SO3 Group

Our turn

Projects **Contact**

Ubiquiti Networks does not yet offer an official recovery tool for EdgeMax routers, so we created an unofficial rescue image.

What can it do?

Right now the following functions are supported:

- Reinstall EdgeOS from an image on a network location (HTTP or FTP).
- Reset the config to default without removing any data.
- Purge any user data from the router.

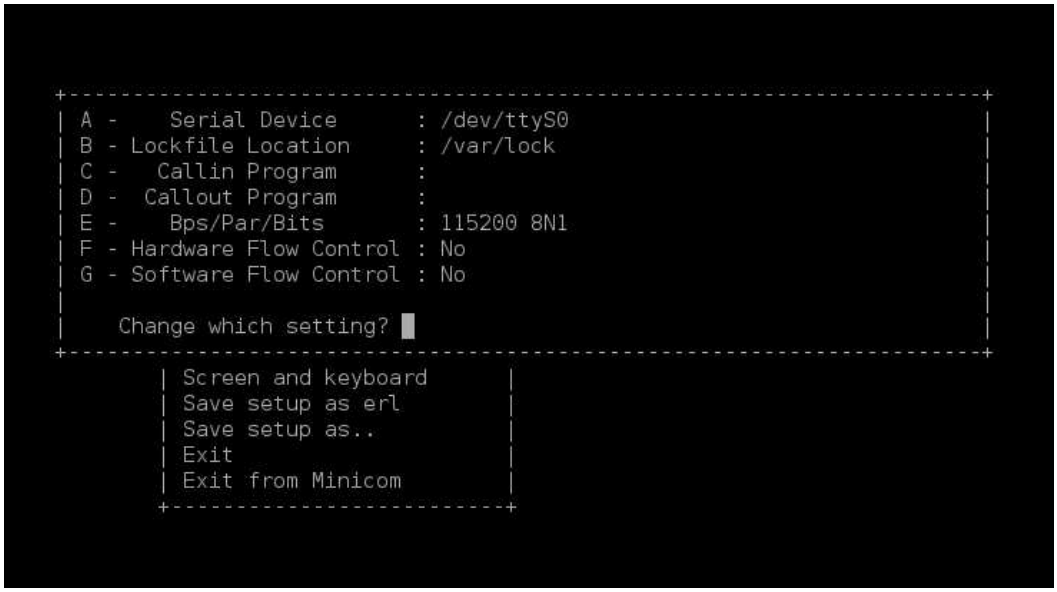
The latter two functions may not be obvious. The point is that when you press reset button, the system renamed the old writable data directory (where your config, additional packages and any other data is stored) to a random name and creates a new one. In most cases it's fine, but there are two shortcomings. First, it renders any data, including installed Debian packages not directly usable. Second, it does not really remove the data, so if you give the router to an untrusted person, they still can access your sensitive information.

EMRK aims to fix this problem by providing tools to remove only the config.boot without touching anything else, and to remove any user data irrecoverably.

How to boot it?

The most practical approach is to boot the image over the network.

You will need a console cable to access the bootloader console. A Cisco blue cable or compatible will work. Serial port settings are 115200,8,N,1, no flow control. Note that those settings are hardcoded in hardware and any other settings will not work.



Once you are connected to the serial console, reboot the router, and press any key before EdgeOS starts booting. When you see something like:

```
Looking for valid bootloader image....
Jumping to start of image at address 0xbfc80000


U-Boot 1.1.1 (UBNT Build ID: 4493936-g009d77b) (Build time: Sep 20 2012 - 15:48:51)

BIST check passed.
UBNT_E100 r1:2, r2:12, serial #: DC9FDB29786B
Core clock: 500 MHz, DDR clock: 266 MHz (532 Mhz data rate)
```

```
DRAM:  512 MB
Clearing DRAM....... done
Flash:  4 MB
Net:   octeth0, octeth1, octeth2

USB:   (port 0) scanning bus for devices... 1 USB Devices found
       scanning bus for storage devices...
  Device 0: Vendor: Kingston Prod.: DataTraveler 2.0 Rev: PMAP
            Type: Removable Hard Disk
            Capacity: 7441.6 MB = 7.2 GB (15240576 x 512)
 0
Octeon ubnt_e100#
```

it means you are in the bootloader console and ready to proceed to next steps.

TFTP Server

TFTP is the only protocol bootloaders can use, so you will need a TFTP server. On UNIX systems some implementation usually can be installed from the default software distribution system (repositories, ports etc.). Examples include atftpd, tftpd-hpa and others. TFTP server configuration is usually trivial, consult the man page.

Microsoft Windows users can use tftpd32, which is also straightforward.

Boot using DHCP

If you are using ISC DHCP, add the following to your subnet declaration:

```
option tftp-server-name "x.x.x.x"; # Your TFTP server address
next-server x.x.x.x;                    # Your TFTP server address
option bootfile-name "emrk-0.9c.bin"; # Replace "emrk-0.9c.bin" with actual file name if needed
filename "emrk-0.9c.bin
```

Once you setup DHCP, go to the bootloader console and enter:

```
dhcp;tftpboot;bootoctlinux $loadaddr
```

If everything is right, it will fetch the image and boot it.

Using static address

DHCP is convenient, but not required. You also can configure the network manually. Go to the bootloader console and enter the following commands:

```
set ipaddr x.x.x.x (where x.x.x.x is desired router IP address)

set netmask 255.255.255.0 (or whatever mask you want)

set serverip y.y.y.y (where y.y.y.y is your TFTP server address)

set bootfile emrk-0.9c.bin (or whatever the file name is)

Optionally,
set gatewayip z.z.z.z (where z.z.z.z is your default gateway)

tftpboot
bootoctlinux $loadaddr
```

How to use it?

Reinstall the OS

Download an EdgeOS image and put it on your HTTP or FTP server. The alternative is to find a direct link to desired image on the Internet.

Boot to EMRK and enter **emrk-reinstall** command. This is an example session that involves it:

```
Loading EMRK 0.9a
Mounting filesystems
Bringing up eth0

Checking boot partition
Boot partition looks intact
Attempting to mount boot partition
Boot partition successfully mounted
Looking for kernel file
Found a kernel
Checking kernel MD5 sum file
Found kernel MD5 sum file
Checking kernel MD5 sum
Kernel MD5 sum is correct

Checking root partition
Root partition looks intact
Attempting to mount root partition
kjournald starting.  Commit interval 5 seconds
EXT3 FS on sda2, internal journal
EXT3-fs: mounted filesystem with writeback data mode.
Root partition successfully mounted
Looking for system image file
Found a system image file
Checking system image MD5 sum file
Found system image MD5 sum file
Checking system image MD5 sum
System image MD5 sum is correct

*******************************************
Welcome to EdgeMax Rescue Kit!

This tool is distributed under the terms of
GNU General Public License and other licenses

Brought to you by SO3 Group

WARNING: This tool is not developed, officially
supported or endorsed by Ubiquiti Networks!

Using it may lead to destroying your router
configuration or operating system

Ubiquiti Networks support will not help you
with using it or fixing consequences of
using it.

This tool itself is distributed without any
warranty and authors are not liable for
any damage it may cause

By using this tool you agree you are doing
it at your own risk and understand what
you are doing

*******************************************

Enter 'Yes' to proceed, 'No' to reboot
yes or no: yes

Do you want to configure network via DHCP?
yes or no: yes
udhcpc (v1.17.1) started
Sending discover...
Sending select for 10.91.19.175...
Lease of 10.91.19.175 obtained, lease time 86400
```

```
/usr/share/udhcpc/default.script: Resetting default routes
route: SIOCDELRT: No such process
/usr/share/udhcpc/default.script: Adding DNS 10.91.19.1

EMRK provides some scripts for automated
recovery procedures:

emrk-factory-reset -- reset config to factory default
emrk-remove-user-data -- remove all the user data including
    config and everything
emrk-reinstall -- reinstall EdgeOS from scratch
    (wipes any user data too)

Enter 'reboot' to reboot your router


BusyBox v1.17.1 (Debian 1:1.17.1-8) built-in shell (ash)
```