HOW TO ENFORCE READ-ONLY MODE ON EVERY CONNECTED USB STORAGE DEVICE

Today, I will show you how to put every connected USB storage device in read-only mode using **udev** dynamic device management, **blockdev** utility and additionally **systemd** service unit configuration.

**udev**

The simplest solution is to create **udev** rule to directly execute **blockdev** command, which will enforce read-only mode on every connected USB storage device. It will work on **Debian Wheezy** and **Debian Jessie** as well.

Create **udev** rule.

```bash
$ cat << EOF | sudo tee /etc/udev/rules.d/10-usb-ro.rules
SUBSYSTEMS=="usb",ACTION=="add",KERNEL=="sd*",RUN+="/sbin/blockdev --setro /dev/%k"
EOF

$ sudo udevadm control --reload
```

Reload **udev** configuration files afterwards.
udev and systemd

This solution will use systemd service unit configuration to execute above-mentioned blockdev command. It will work on Debian Jessie.

Create udev rule.

```bash
$ cat << EOF | sudo tee /etc/udev/rules.d/10-usb-ro.rules
SUBSYSTEMS=="usb",ACTION=="add",KERNEL=="sd*",ENV{SYSTEMD_WANTS}="enforce-usb-ro@%k"
EOF
```

Create systemd template.

```bash
$ cat << EOF | sudo tee /etc/systemd/system/enforce-usb-ro@.service
[Unit]
Description=Enforce read-only mode on USB storage device
BindsTo=dev-%i.device

[Service]
Type=simple
ExecStart=/sbin/blockdev --setro /dev/%I
EOF
```

Reload udev configuration files afterwards.

```bash
$ sudo udevadm control --reload
```
Reload *systemd* configuration files too.

```
$ sudo systemctl daemon-reload
```

**Additional notes**

Notice that created rules will be applied only to newly connected devices.

Use the following command to verify read-only mode on connected devices.

```
$ sudo blockdev --report
```

<table>
<thead>
<tr>
<th>RO</th>
<th>RA</th>
<th>SSZ</th>
<th>BSZ</th>
<th>StartSec</th>
<th>Size</th>
<th>Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>rw</td>
<td>256</td>
<td>512</td>
<td>512</td>
<td>0</td>
<td>1073741312</td>
<td>/dev/sr0</td>
</tr>
<tr>
<td>rw</td>
<td>256</td>
<td>512</td>
<td>4096</td>
<td>0</td>
<td>8589934592</td>
<td>/dev/sda</td>
</tr>
<tr>
<td>rw</td>
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<td>512</td>
<td>4096</td>
<td>2048</td>
<td>8185184256</td>
<td>/dev/sda1</td>
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<tr>
<td>rw</td>
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<td>1024</td>
<td>15990782</td>
<td>1024</td>
<td>/dev/sda2</td>
</tr>
<tr>
<td>rw</td>
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<td>15990784</td>
<td>401604608</td>
<td>/dev/sda5</td>
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<tr>
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<td>4096</td>
<td>0</td>
<td>15518924800</td>
<td>/dev/sdb</td>
</tr>
</tbody>
</table>

Source: https://blog.sleeplessbeastie.eu/2015/05/11/how-to-enforce-read-only-mode-on-every-connected-usb-storage-device/