

## authorization.txt

Authorizing (or not) your USB devices to connect to the system

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This feature allows you to control if a USB device can be used (or not) in a system. This feature will allow you to implement a lock-down of USB devices, fully controlled by user space.

As of now, when a USB device is connected it is configured and its interfaces are immediately made available to the users. With this modification, only if root authorizes the device to be configured will then it be possible to use it.

Usage:

Authorize a device to connect:

```
$ echo 1 > /sys/bus/usb/devices/DEVICE/authorized
```

Deauthorize a device:

```
$ echo 0 > /sys/bus/usb/devices/DEVICE/authorized
```

Set new devices connected to hostX to be deauthorized by default (ie: lock down):

```
$ echo 0 > /sys/bus/usb/devices/usbX/authorized_default
```

Remove the lock down:

```
$ echo 1 > /sys/bus/usb/devices/usbX/authorized_default
```

By default, Wired USB devices are authorized by default to connect. Wireless USB hosts deauthorize by default all new connected devices (this is so because we need to do an authentication phase before authorizing).

Example system lockdown (lame)

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Imagine you want to implement a lockdown so only devices of type XYZ can be connected (for example, it is a kiosk machine with a visible USB port):

```
boot up
rc.local ->

for host in /sys/bus/usb/devices/usb*
do
    echo 0 > $host/authorized_default
done
```

Hookup an script to udev, for new USB devices

authorization.txt

```
if device_is_my_type $DEV
then
    echo 1 > $device_path/authorized
done
```

Now, `device_is_my_type()` is where the juice for a lockdown is. Just checking if the class, type and protocol match something is the worse security verification you can make (or the best, for someone willing to break it). If you need something secure, use crypto and Certificate Authentication or stuff like that. Something simple for an storage key could be:

```
function device_is_my_type()
{
    echo 1 > authorized          # temporarily authorize it
                                # FIXME: make sure none can mount it
    mount DEVICENODE /mntpoint
    sum=$(md5sum /mntpoint/.signature)
    if [ $sum = $(cat /etc/lockdown/keysum) ]
    then
        echo "We are good, connected"
        umount /mntpoint
        # Other stuff so others can use it
    else
        echo 0 > authorized
    fi
}
```

Of course, this is lame, you'd want to do a real certificate verification stuff with PKI, so you don't depend on a shared secret, etc, but you get the idea. Anybody with access to a device gadget kit can fake descriptors and device info. Don't trust that. You are welcome.