Udev / Lab 1 – Using *udev*

Objective: Modify the *udev* configuration to react on specific kernel events

After this lab, you will be able to

- Use the *udev* related tools to list and identify events in your system
- Creating custom udev rules corresponding to specific events

Root filesystem

We will use a root filesystem generated by Buildroot, containing cross-compiled `udev` executables.

It is located in the `root` directory in your lab directory.

Kernel settings

Reuse the Linux 2.6.29 kernel from the "Tiny system" lab. If you prefer to start from fresh sources, use the configuration supplied in the `data` directory.

Now add or modify the below settings to your kernel:

- Enable loadable module support: CONFIG_MODULES=y
- Module unloading: CONFIG_MODULE_UNLOAD=y
- Support for Host-side USB: CONFIG_CONFIG_USB=**m** Make sure this is set as a module!
- OHCI HCD support: CONFIG_USB_OHCI_HCD=**m**
- USB Mass Storage support: CONFIG_USB_STORAGE=**m**

Compile your kernel. Install the modules in `root/lib/modules/<kernel-version>` .

Booting the system

Boot your system through NFS with the given root filesystem.

To make sure that module loading works, try to load the `usb-storage` module:

```
modprobe usb-storage
```

Testing mdev

<Not ready yet>

Using `udevadm monitor`, identify an event that occurs when you plug and unplug an USB key, USB mouse or any other USB device that you have at hand. Then, write a udev rule in `/etc/udev/rules.d/` that matches one of the event, and that runs the following command:

```
/bin/touch /tmp/udevtest_$MAJOR_$MINOR
```

If this rule is properly executed, one or several files should be created in the `/tmp` directory upon insertion or removal of an USB device.

Free Electrons

Development tools
for embedded Linux systems
Training lab book

Improving the rule

Our goal now is to display a dialog box when a USB device is inserted and removed. The dialog box should only displayed once for an insertion and for a removal, and should mention whether an insertion or a removal is occurring.

To display a dialog box, we suggest you to use `zenity` (available in the Ubuntu package of the same name). An example of `zenity` usage could be:

```
zenity --info --text "USB device inserted"
```

As udev is not aware of the display on which the dialog box should be shown, we suggest you to modify the udev rules to run a shell script, which could look like:

```
#!/bin/sh
export DISPLAY=:0
/usr/bin/zenity --info --text "USB device inserted"
```