# CUSTOM LINUX LIVECD TUTORIAL

1) making custom LiveCD booting and entirely running in RAM memory one could find quite fast and useful. This distro is configured for M-script ( MATLAB / Octave ) and C++ programming issues. It consist of removing packages; installing a pack of different programms; deleting welcome Try/Install window; repository updates. Minimal requirements:

- any modern: motherboard, processor, power suply and RAM memory
- author recommends ~4GB of RAM for typical basic scientific usage ( 0.9-1.1 GB consumes Ubuntu Desktop 16.10 operating system )
- PC's with lower amount of RAM should boot with other solution like Puppy LINUX
- a HDD is useful anyway for results backup – pendrive should do the job

2) to start from scratch one needs LINUX running enviroment ( this tutorial was built on Ubuntu 16.04 LTS and produced a modified liveCD Ubuntu 16.10 64bit Desktop at 15.03.2017y. ) and LINUX distribution ISO file ( ~1.6GB ) downloaded from:

https://www.ubuntu.com/download/desktop

3) download and start customizing program Cubic on host OS:

```
#sudo apt-add-repository ppa:cubic-wizard/release
#sudo apt-get update
#sudo apt-get install cubic
#cubic
```

4) after choosing custom liveCD project folder and downloaded ISO file, Cubic starts a customized client OS console ( default running as root user #sudo su ) for further liveCD operating system changes. Firstly one should upgrade repo's – author uses those polish mirror repos listed below:

```
#nano /etc/apt/sources.list      #( delete content )
deb http://pl.archive.ubuntu.com/ubuntu/ xenial main restricted
deb http://pl.archive.ubuntu.com/ubuntu/ xenial-updates main restricted
deb http://pl.archive.ubuntu.com/ubuntu/ xenial universe
deb http://pl.archive.ubuntu.com/ubuntu/ xenial-updates universe
deb http://pl.archive.ubuntu.com/ubuntu/ xenial multiverse
deb http://pl.archive.ubuntu.com/ubuntu/ xenial-updates multiverse
deb http://pl.archive.ubuntu.com/ubuntu/ xenial-backports main restricted universe multiverse
deb http://security.ubuntu.com/ubuntu xenial-security main restricted
deb http://security.ubuntu.com/ubuntu xenial-security universe
deb http://security.ubuntu.com/ubuntu xenial-security multiverse
#add-apt-repository universe
#add-apt-repository main
#add-apt-repository restricted
#add-apt-repository multiverse
```

5) remove office, email, full system install packages ( ~770MB ):

```
#apt-get remove libreoffice-*
#apt-get remove thunderbir*
#apt-get remove ubiquit*
```

6) update repos:

```
#apt-get update && apt-get upgrade && apt-get update && apt-get autoremove
```

7) install packages ( Qt, Octave, editors, git, VNC server+client, link aggregation, samba ~900MB):

```
#apt-get install htop aptitude w3m gpm vim git konsole screen kate parallel p7zip-full mc
qt5-default cppman vlc libvncserver-dev tightvncserver xtightvncviewer xfce4 xfce4-
goodies octave octave-communications octave-communications-common octave-control
octave-image octave-signal doxygen iperf ifenslave samba cifs-utils openssh-server
traceroute geany
```

8) drag & drop needed files and directories to Cubic console

9) customize vim ( after „syntax on" ):

```
#nano /etc/vim/vimrc
```

set autoindent
set ts=4
set sw=4
set mouse=a
set number

10) customize grub:

#vim /etc/default/grub

#GRUB_HIDDEN_TIMEOUT_QUIET=true
#GRUB_TIMEOUT=10
GRUB_CMDLINE_LINUX_DEFAULT="toram"

#update-grub

11) allow remote ssh login:

#sudo ufw allow 22

12) set polish language ( „pl_PL.UTF-8” ) as default:

#apt-get install language-pack-pl-base language-pack-pl
#dpkg-reconfigure locales

13) start a boot disc creator for pendrive and choose a customized ISO file, restart, change boot options in BIOS and voile:)

14) customized liveCD has ~1.8GB in size ( +0.2GB comparing to original Ubuntu Desktop )

15) one can add some further additional features to liveCD using customized ISO file as input to Cubic package.