Cubbli Linux

The current version of Cubbli Linux (Cubbli 20) is based mostly on Ubuntu 20.04. Cubbli 18, which is based on Ubuntu 18.04, is still getting security updates until April 2023 but will no longer receive software updates. If you wish to have the newest available software you should upgrade your Cubbli version (see link below). The next version of Cubbli, Cubbli 22, is most likely based on Ubuntu 22.04 and will be available in the autumn of 2022.

Cubbli linux comes preconfigured to the University's environment, which means that accessing University's network services, like printers, file shares, virtual desktops, remote accessible Linux machines, High-performance computation (HPC) clusters and Virtual private networks (VPNs) should be easy.

If your own machine is using any other older Linux distribution, including older Cubbli Linux distributions, you should contact helpdesk to get an upgrade. In most situations the update can be done remotely and shouldn't take longer than 1-2 hours.

Instructions for upgrading Cubbli yourself is found here

For seeing the version of a specific software installed in the computer, you can, for example (from the command line):

```
# list everything
$ dpkg -l

# check specific package, for example Zoom version
$ dpkg -l | grep zoom
ii  zoom
5.9.3.1911                                    amd64        Zoom Cloud Meetings

# check availability of a package with apt
$ apt list zoom
zoom/stable,stable,now 5.9.3.1911 amd64 [installed]
```

2021-09-06: R updated to version 4.4.1. R Studio updated to version 1.4.1717. Nextcloud updated to version 3.3.3.

2021-09-03: Updated sofware: atom-1.58, qgis-3.20.2, Zoom-5.7.31792.0820, Nextcloud 3.3.1, vmware-horizon-client 2106-8.3.0-1

2021-06-07: Updated software: qgis 3.18.2, atom-1.57.0, Zoom 5.6.20278.0524 and Nextcloud 3.2.2

2021-05-06: Updated irssi to irssi-1.2.3

2021-04-28: Short instructions to printing added to wiki.

2021-04-19: Nvidia CUDA 11-3 has been installed.

2021-04-19: Qgis version 3.18.2

2021-04-15: Featherpad editor added to default applications.

2021-04-13: Solaar version 1.0.4 supports Logitech lightspeed receivers in addition to Nano and Unified receivers.

2021-04-12: Nextcloud upgraded to version 3.2.0

2021-04-06: Fix chromium browser problems by removing the snap package and installing deb-package instead.

2021-04-06: Update Cinnamon Desktop to version 4.8.1 (supports non integer HIDPI scaling).

2021-04-06: Updates: Zoom 5.6.13632.0328, Cryptomator 1.5.14

2021-03-26: xournal++ added to default installation.

2021-03-26: No Machine clients updated to version 7.3.2.

2021-03-23: Some new instuctions for MS Teams users.

2021-03-22: Qgis updated to version 3.18.1.

2021-03-18: melkinpaasi.cs.helsinki.fi remote accessible ssh host has been upgraded to Cubbli 20 / Ubuntu 20.04-

Matlab 2020b release 5 is now installed by default in Cubbli 20.

Cubbli version 20 based on Ubuntu 20.04 is now in production use.

2020-08-20: Zoom has been updated to version 5.2.446620.0816. SSO and GUI scaling bugs have been fixed.
2020-07-20: Atom text editor updated to version 1.49.0.
2020-07-20: Rstudio updated to version 1.3.1056
2020-07-20: Zoom has been updated to version 5.1.422789.0705
2020-07-20: Nodejs has been updated to version 12.18.2.
2020-07-20: R has been updated to version 3.6.3.
2020-07-06: Zoom desktop client updated yet again to version 5.1.418436.0628. Release notes here.
2020-06-12: Zoom desktop client upgraded to version 5.0.418682.0603.
2020-06-01: Zoom desktop client upgraded to version 5.0.413237.0524.
2020-05-13: Fish shell has been added to defautl installations. Instructions about how to use other shells has been added to wiki.
2020-05-12: File share \\ad.helsinki.fi\dept (Departments' own file servers) is now available from path /home/ad/dept.
2020-05-12: Zoom desktop client upgraded to version 5.0.399860.0429
2020-04-28: Zoom desktop client upgraded to version 5.0.398100.0427.
2020-04-24: Freesurfer 6.0 is available in VDI hosts and Pultti.
2020-04-15: Added tig, surfraw and mstmp to default installation.
2020-04-07: Stata updated to version 16.
2020-03-26: Instructions for OneDrive access are now available.
2020-03-23: Zoom updated to version 3.5.361976.0301
2020-03-23: Rclone versio 1.51 added.
2020-03-20: New OpenVPN configuration options available.
2020-02-27: Matlab R2019b release 4.
2020-02-17: Zotero has been updated to version 5.0.82.
2020-01-29: Mendeley Desktop is now part of default installation.
2020-01-27: Qgis has been updates to version 3.10.2
2020-01-27: Putty and MS Teams added to default intallation.
2020-01-14: R has been upgraded to version 3.6.2 and RStudio to version 1.2.5033.
2020-01-14: Nextcloud client has been updated to version 2.6.1
2020-01-14: ida2 command line tools for https://www.fairdata.fi/en/ have been installed.

Different Cubbli Linux flavors

- Classroom installations use shared network home directories. They are mostly located in publicly accessible spaces where there are multiple potential users, like classrooms and lecture halls.
- Remotely accessible VDI (Virtual Desktop Infrastructure) hosts share network home directories and default to Mate desktop environment, since 3D hardware accelerated graphics is not available in our current VDI environment.
- Workstation installations have local home directories, but network file shares are available by default. These are mostly staff's personal computers and can have multiple hard drives (a fast SSD drive and a slower but larger spinning hard drive) and sometimes GPUs for scientific computation.
- Personal laptop installations don't have network home directories available (mounted) by default. These include staff's laptops, but also freshmen (fuksi) laptops.
- Remotely accessible with ssh (or mosh) interactive multi user Cubbli hosts, which use shared network home directories. Currently these are **melkinpaasi.cs.helsinki.fi, melkinkari.cs.helsinki.fi, melkki.cs.helsinki.fi** and **pangolin.it.helsinki.fi.** These hosts can also be used as a gateway host to other Linux hosts which provide ssh access, but are not visible outside University's firewall. They also listen for ssh connections in https port 443 to circumvent 3rd party firewalls.

Home Directories

In a perfect world users would have only one home directory. However, we aren't living in a perfect world:

- Laptop and workstation Cubbli Linuxes use local home directories with a home directory path /home/local/user or sometimes just /home/user. **By default no backups are made of local home directories**, since we don't have enough shared disk space (or network capacity) to maintain them.
- Classroom, interactive and VDI Cubbli Linuxes use shared NFS **lxhome** directory with path /home/ad/lxhome/u/user/Linux. This home directory has a default quota of 50 gigabytes, but it is regularly backed up and you can access snapshots of older versions of files from a hidden .snapshot sub directory.
- Computer Science department CS home directory /home/fs/user is available to Computer Science department's staff and students. It has a much larger quota than the default **lxhome** directory. You can use the command line tool cubbli-home-dir to change your default Cubbli home directory to CS home directory instead of lxhome.
- Z-drive is the default IT department home directory for Windows hosts and is available for Linux users too. It is available from path /home/ad/home/u/user. If you are using classroom, VDI or interactive Linux, then Desktop, Download and Documents subdirectories in lxhome are symlinks pointing to your Z-drive to enable easy document and space sharing with Windows installations.
- Physics department's home, group and scratch directories are available from path /home/phys-data/
- If you had a home directory in the old and now defunct Unix servers (Kruuna, Klaava, Myntti, Cedi), the home directory is now available from path: /home/ad/lxhome/u/user/HY-Unix

Group Directories

- University's P-drive group directories are available from path /home/ad/dfs/group in workstations and classroom installations. Laptop users can use command mount /home/ad/dfs/group to mount it when they are inside University's network. Outside University's network you can use Pangolin and sftp with path sftp://pangolin.it.helsinki.fi/home/ad/dfs/group .
- Computer Science Department's group directories are available from path /home/group/ in workstations and classroom installations. In laptop installations you can mount the group directory with the command mount /cs/group but remember to unmount it before suspending the laptop or moving outside University's network (NFS is likely to crash the Linux hosts if NFS server gets lost).

Desktop

The desktop environments available be default include:

- Cinnamon
- Mate
- Unity
- Gnome
- KDE
- XFCE

And also some windows managers which aren't available directly from the login screen.

Dropbox, Google Chrome, Skype (MS beta package), Spotify local client and Open Broadcast Streaming (https://obsproject.com/) are available by default.

Programming

We try to have all open source and freely available Linux programming languages and programming environments installed by default (this is why default Cubbli installation needs about 50G of disk space). The programming languages include GNU C, C++, Perl, Python, OpenJDK, Oracle JDK, Haskell. Unlike in University's Windows environments, you are free to compile, install and run your own software (from your home directory). Nodejs, heroku and npm are installed.

If we have missed some useful programming languages, environments or utilities, please contact helpdesk@helsinki.fi so that we know that it should be installed.

NVidia CUDA drivers and programming environment with the NVIDIA CUDA® Deep Neural Network library is installed by default in Cubbli Linux hosts which have the required NVidia GPU (including VDI GPU hosts).

Scientific Software

Cubbli includes lots of software intended for scientific usage, including some commercially licensed software using University's licenses (this list is not complete).

- R project for statistic computing version: https://www.r-project.org/
- RStudio Desktop open source version.
- GNU Octave Scientific Programming Language https://www.gnu.org/software/octave/
- Julia 1.0.2, high-level, high-performance dynamic programming language for numerical computing
- Matlab version 2019b.
- IDL Interactive Data Language version 8.7.0
- SPSS version 25.
- Qgis Open Source Geographic Information System 3.4.4.
- NoMachine Enterprise client version 6.4.6.

Some software packages are too large to be installed in the default installation, but are however packaged and configured to work with Cubbli Linux. These include:

- FreeSurfer 6.0 open source software suite for processing and analyzing (human) brain MRI images. https://surfer.nmr.mgh.harvard.edu/
- Mathematica
- SPSS
- VMD Visual Molecular Dynamics 1.9.3: http://www.ks.uiuc.edu/Research/vmd/

Cubbli Linux is maintained by IT Center's IT for Science group.