

Linux fundamentals commands

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| sudo -i | |
| apt-get <...> | |
| <command> --help [-H] | Options for the <command> [help] |
| man <command> | Help for <command> |
| export LD_LIBRARY_PATH=/usr/local/lib:\$LD_LIBRARY_PATH | Update the path |

Install Anaconda

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| conda info | Verify if conda is installed (check version number, etc.) |
| Download anaconda | https://docs.continuum.io/anaconda/install/ |
| bash Anaconda3-4.4.0-Linux-x86_64.sh | Install the downloaded package |
| conda update conda | Update conda to the current version |
| conda update anaconda | Update all packages in the environment to the versions in the latest release of Anaconda, all of which are tested for compatibility. May not contain the newest versions |
| conda update --all | Update the environment |
| conda --version | Verify that conda is installed |
| conda list | View a list of packages and versions installed in an environment |
| conda install <package-name> | Install the conda package |

Install FEniCS on Ubuntu

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| Download FEniCS options | https://fenicsproject.org/download/ |
| sudo add-apt-repository ppa:fenics-packages/fenics | |
| sudo apt-get update | |
| sudo apt-get install --no-install-recommends fenics | |
| sudo apt-get dist-upgrade | |

Install dolfin-adjoint on Ubuntu

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| Download dolfin-adjoint options | www.dolfin-adjoint.org |
| sudo apt-add-repository ppa:libadjoint/ppa | |
| sudo apt-get update | |
| sudo apt-get install python-dolfin-adjoint | |

Install FEniCS on Anaconda

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| conda config --add channels conda-forge | Installing fenics from the conda-forge channel |
| conda create -n fenicsproject -c conda-forge fenics | Create an environment |
| source activate fenicsproject | Activate the environment |
| conda install fenics | Install the last stable version of FEniCS |
| source deactivate fenicsproject | To deactivate this environment |

Install dolfin-adjoint on Conda

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| conda install -c conda-forge dolfin-adjoint | |
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Install IpOpt

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| Download Ipopt | http://www.coin-or.org/download/source/Ipopt |
| tar xvf Ipopt-3.3.1.tar | Decompress the folder |
| cd \$IPOPTDIR/ThirdParty/Blas | |
| ./get.Blas | |
| cd ../Lapack | |
| ./get.Lapack | |

Install IpOpt (cont)

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| cd ../ASL | |
| ./get.ASL | |
| cd ../Metis | |
| ./get.Metis | |
| cd ../Mumps | |
| ./get.Mumps | |
| cd \$IPOPTDIR/ | |
| mkdir build | |
| cd build | |
| ./configure | |
| sudo ldconfig | |
| sudo make | |
| sudo make test | |
| sudo make install | |

Install pyIpOpt

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| git clone http://github.com/xuy/pyipopt | Get the latest source code |
| python setup.py build | |
| sudo python setup.py install | |
| python hs071.py | To see if you have Pylpopt ready |
| Pylpopt is a python module that allows you to use IPOPT in Python Web page | |

