

# Unix bootcamp Outline

## Basic Unix Concepts and Terms

Types of unix environment

Linux vs other Unix

Different linux flavours

Servers, Desktops, Virtual Machines, Cloud Servers

Shells

## Basic shell usage

Structure of a unix command

Man pages

Short and long options, combining options

Redirecting and piping

grep, sort, wc

Creating combined commands

Checking exit status

Creating simple loops in bash

Environment variables

Simple BASH scripting

## Installing software

The PATH variable

General layout of the unix filesystem

`/bin/`

`/usr/bin`

`/opt/`

`/srv/`

`/usr/local/bin/`

Types of installation

Operating system packages

Binary distributions

Source distributions

Installing OS packages

Apt

Yum

Installing binary packages

Tar Unzip etc.

Dynamic libraries

LD\_LIBRARY\_PATH

Ldd

Installing source packages

Compilers and make systems

Development packages

Configure options

Prefix

Make options

Parallelisation

Troubleshooting and debugging

Adding packages to other languages

Python

Pip

Anaconda?

Manual installation

R

Install.packages

biocLite

R CMD INSTALL

Makevars

Perl

Cpan

Manual install (two systems)

Automated installations

Conda / miniconda

Docker

Other useful stuff

SSH / SCP / keys

Nohup and detached processes

Building virtual machines

Using cloud infrastructure