Introduction to Hands-on

How to get around in Linux and how to use Anaconda

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Outline

- How to work with VMs, setup and access
- Getting around in Linux **practical** (40+ min)
- Intro to Anaconda
- Managing environments in Anaconda **practical** (10+ min)

Introduction to Hands-on

Most bioinformatic analyses tools require Linux to work.
We will be working on virtual Ubuntu machines hosted in a cloud

Virtual machines via remote desktop

To use your designated virtual machine you need to connect to it using a VNC remote desktop tool
We will use a tool called TigerVnc to achieve this

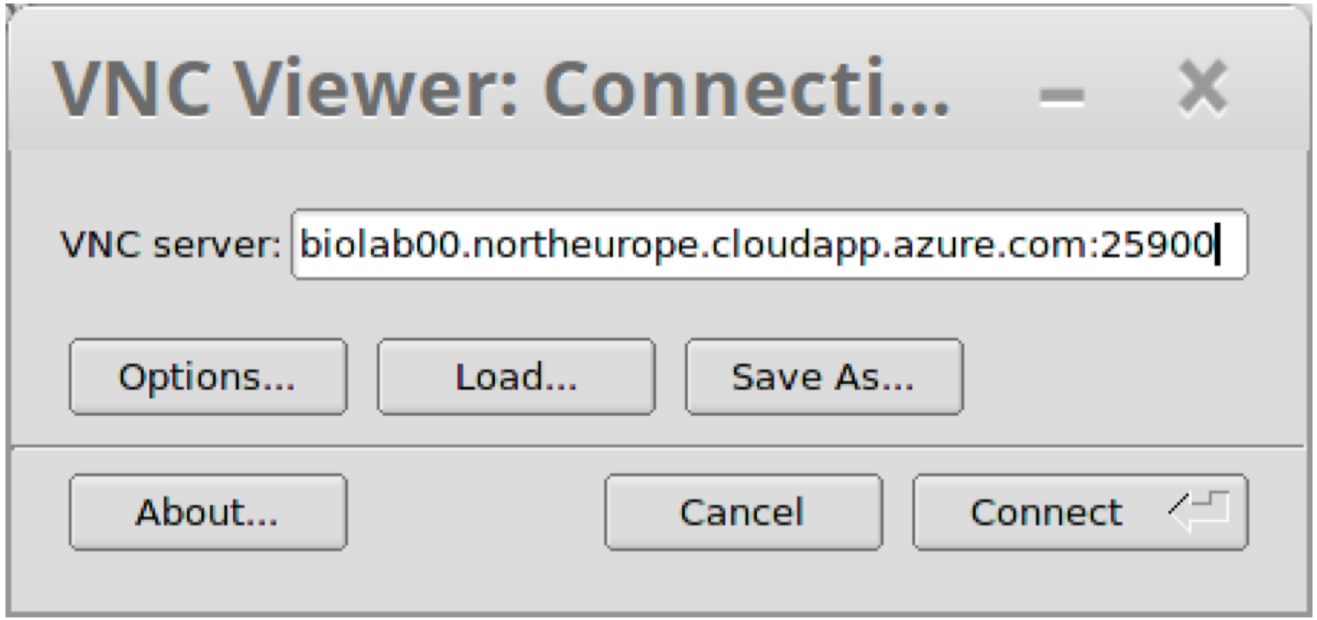
Client (Windows)

VM (Ubuntu)

Someone else's computers (Cloud)

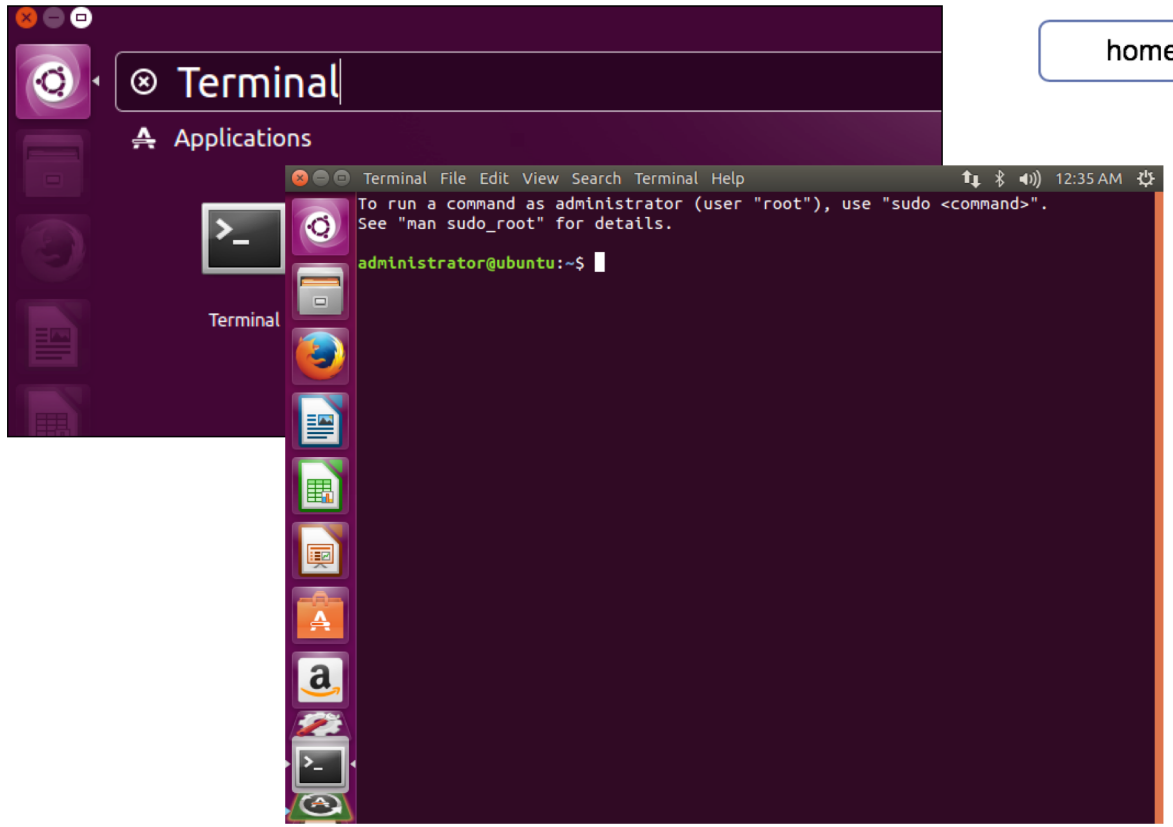
Connecting with TigerVNC

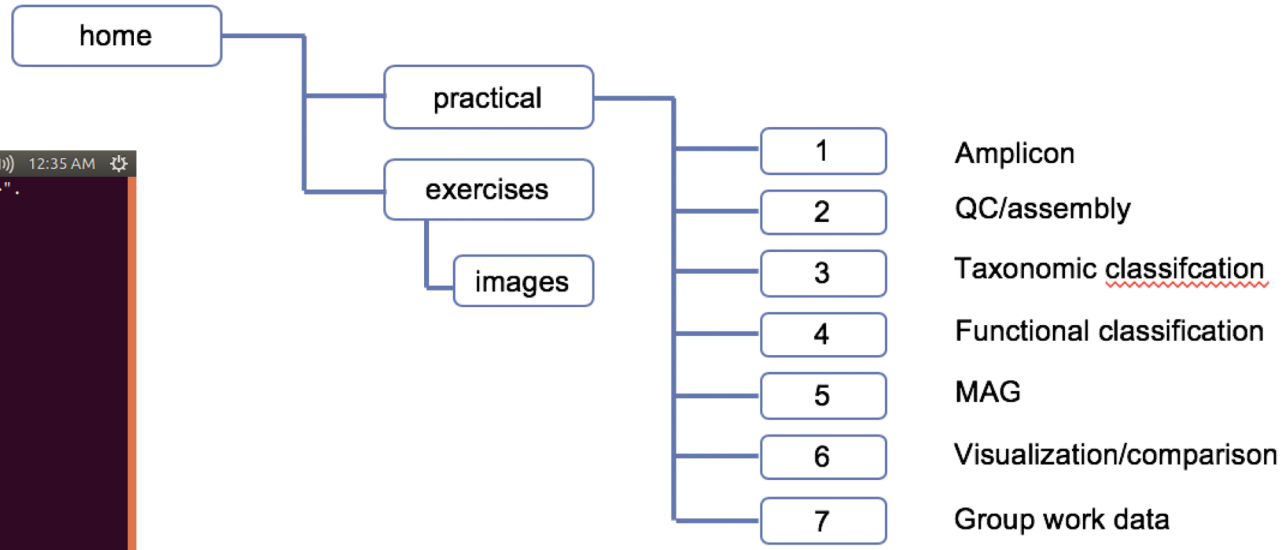
To use your VM you need an IP, a username and a password
Start TigerVNC and connect to your VM



How to get started with assignments

Once inside your virtual VM, you need to start a terminal window to do the exercises. Practical/Exercises will be copied from shared disk.





Overview of VMs

VM (machine name)	User (username)	Password	Port range (ssh)	Port range (vnc)	Student 1 Name / Email		Student 2 Name / Email	
kurslab00	**kurs00**	**---**	**22000**	**25900**	**---**	**---**	**---**	**---**
kurslab01	kurs01	NaiHei7r	22001	25901	Mushtaq	mushtaq.t.al-rubaye@uit.no	Jie wang	jie.wang@nmbu.no
kurslab02	kurs02	bu4haiVa	22002	25902	Nerea Aalto	nerea.j.aalto@uit.no	Yanxian Li	yanxianl@nmbu.no
kurslab03	kurs03	agaiWuc4	22003	25903	Andrea Elvheim	andreaelvheim@gmail.com	Lotte Geerlings	lotte.geerlings@student.hu.nl
kurslab04	kurs04	aphaeM4v	22004	25904	Jaya Kumari Swain	jaya.k.swain@uit.no	Saradhi Borra	saradhi.borra@njorthbio.com
kurslab05	kurs05	guiM9Aik	22005	25905	Inga Leena Angell	inga.angell@nmbu.no	Kristin Heggland	kristin.n.heggland@uit.no
kurslab06	kurs06	Yec4thoh	22006	25906	Vincent Carrier	Vincent.carrier@uit.no	Filipe Figueiredo	filipe.figueiredo@uit.no
kurslab07	kurs07	aa4Vied3	22007	25907	Richard Ingebrigtsen	richard.a.ingebrigtsen@uit.no	Supathep Tansirichaiya	supathep.tansirichaiya@uit.no
kurslab08	kurs08	aev3xae9	22008	25908	Jessin Janice Peter	jessin.j.peter@uit.no	Adriana Sanabria	adriana.m.moreno@uit.no
kurslab09	kurs09	Eefeiya3	22009	25909	Lars Snipen			
kurslab10	kurs10	uPook3ou	22010	25910				

Practical: Getting around in Linux

We will use the first 40+ minutes to get to know the terminal in Linux before we continue with an Anaconda intro.

Quick reference guide to essential linux commands:

Command	Function	Relevant Examples
cd	Change directory	“cd”, “cd ..”, “cd practical/”
ls	List the contents of a directory	“ll”, “ls -h”
mv	Move and / or rename files / directories	“mv text.txt ~/text.txt”
cp	Copy files / directories	“cp text.txt ~/text.txt”
mkdir	Create a directory	“mkdir mydir”
rm	Remove files / directories	“rm text.txt”, “rm -rf my_dir/”
passwd	Change user password	“passwd”
df	Overview of disk space usage	“df”, “df -h .”
free	Overview of memory usage	“free”, “free -m”
top	Overview of processes running	“top”
less	View contents of file	“less text.txt”

Getting everything to work in Linux can be frustrating

"I don't understand, it worked last week?!"

Day 1: Installing and running **Program 1**	Day 2: Installing and running **Program 2**	Day 3: Running **Program 1** again...
Program 1 Numpy 1.10.1 Scipy 1.1.0 Zlib 1.0	**Program 2** Numpy 1.15.4 Scipy 1.1.0 Zlib 1.0	**Program 1** Numpy 1.15.4 Scipy 1.1.0 Zlib 1.0
Works fine!	**Works fine!**	**"!#%!#¤**
Mood: 	Mood: 	Mood: 

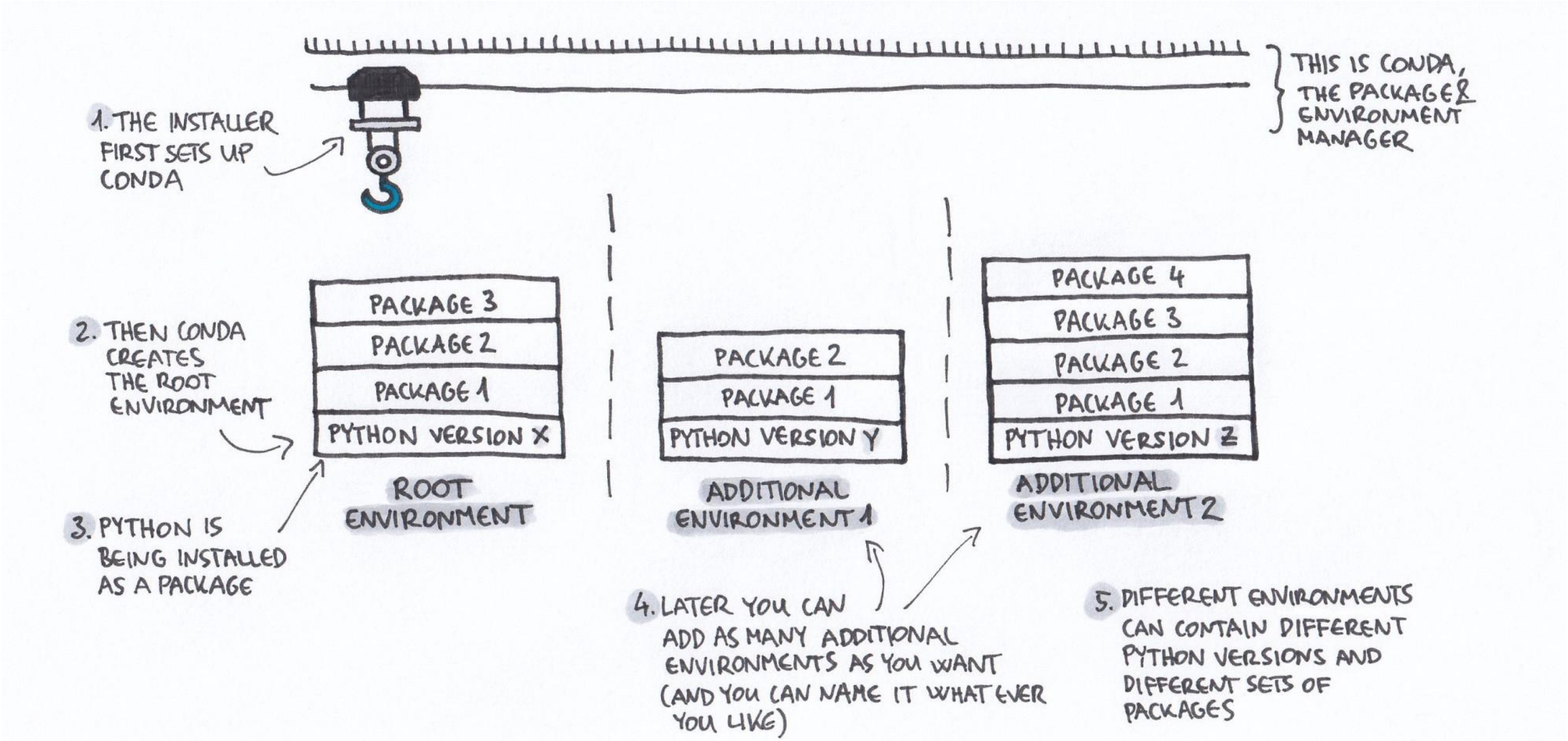
Introduction to Anaconda

Anaconda is an environment and package manager which makes it easier to install and manage software

Most software require certain dependencies to run. These are also installed automatically with anaconda

You will be using Anaconda to switch between different environments which contain different tools during this workshop

How Anaconda works



Introduction to Anaconda

- Practical: Introduction to Anaconda (15+ min)