

NEXT-RNAi via VirtualBox

- Download and install [VirtualBox](#)
- For minimal installation of Ubuntu 9.10 download alternate version [here](#)
- Start virtual box
 - select 'New'
 - enter name for new virtual machine ('nextrnai') and select 'Linux' as 'Operating System' and 'Ubuntu' as 'Version'
 - Adjust base memory size to 1024 MB
 - Leave 'Boot Hard Disk' (Primary Master) and 'Create new hard disk' checked
 - Select 'Dynamically expanding storage' as 'Storage Type'
 - In the 'Create New Virtual Disk' window type 'nextrnai' as location and leave 'Size' at 8.00 GB
 - 'Finish' will create the new virtual machine 'nextrnai'
 - Select 'nextrnai' virtual machine and 'Start'
 - Select the Ubuntu iso image (e.g. 'ubuntu-9.10-alternate-i386.iso') as 'Media Source' ('Add' the location of the *.iso file in the 'Virtual Media Manager' window)
 - 'Finish' will start the Ubuntu iso image
- Installation of Ubuntu
 - Select the language (e.g. 'English')
 - In the Ubuntu startup screen press F4 and select 'Install a command-line system'
 - Then 'Install Ubuntu'
 - Choose language, location and keyboard layout (e.g. 'English', 'Germany' and 'USA')
 - Type 'nextrnai' as hostname
 - Use 'Manual' partition to initialize a primary partition with ext4 format and root (/) mount point and a logical 'swap area' partition
 - 'Finish and write partitions to disk' to start installation of the system
 - Type 'NEXT-RNAi', as full user name; 'nextrnai' as username and password, do not use encryption for the home directory
 - Further configurations: do not specify any proxy, use UTC time, unmount CD and finally allow restart
 - login as 'nextrnai' with password 'nextrnai'
 - to update the system, run the following commands (sudo password is 'nextrnai'):
 - sudo apt-get update
 - sudo apt-get upgrade
 - to get a small graphical user interface running run the following commands:
 - sudo apt-get install xorg
 - sudo apt-get install xfce4
 - type 'startx' to start XServer with xfce4
 - install unzip program with 'sudo apt-get install unzip'
 - install Firefox webbrowser via X terminal with 'sudo apt-get install firefox'
 - install emacs editor via X terminal with 'sudo apt-get install emacs'
 - generate autologin file (e.g. using emacs editor) that runs 'startx' command during system restart and paste the following content
 - sudo emacs /etc/init/X.conf

```
•  
# X - start X  
description "Start X"  
author "Thomas Horn"  
  
start on (filesystem and started hal)  
stop on runlevel [016]  
  
task  
console output  
emits starting-x  
  
script  
su - nextrnai -c startx  
end script
```

- Installation of VirtualBox support for Linux
 - To improve graphics support etc. of VirtualBox with the Linux system run 'Install Guest Additions' in the VirtualBox 'Devices' option, allow to 'autorun' the installation in the virtual machine (use again sudo password 'nextrnai' when asked)
 - Unmount the virtual box guest addition drive (on the desktop) and restart the system

- Installation of NEXT-RNAi (including dependencies)
 - via apt-get
 - build-essential package: `sudo apt-get install build-essential`
 - Blast alignment program: `sudo apt-get install blast2`
 - primer3 program: `sudo apt-get install primer3`
 - download and install other dependencies
 - make folder 'NEXT-RNAi' in nextrna home folder
 - change to NEXT-RNAi folder and make folder 'software' (for software downloads)
 - [Bowtie](#)
 - Download e.g. `bowtie-0.12.5-linux-i386.zip` (or more recent releases)
 - Unpack file
 - [mdust](#)
 - Download file and unpack (e.g. in X terminal with `'tar xvf mdust.tar.gz'`)
 - Change to mdust folder and type 'make' in X terminal
 - [BLAT](#)
 - make folder 'blat' in software folder
 - Download BLAT suite for linux to 'blat' folder, e.g. [blatSuite.34](#)
 - unzip BLAT suite
 - [ViennaRNA](#)
 - Download ViennaRNA package, e.g. [ViennaRNA-1.8.4.tar.gz](#) and unpack (e.g. in X terminal with `'tar xvf ViennaRNA-1.8.4.tar.gz'`)
 - Change to ViennaRNA-1.8.4 and run `'./configure'`, `'make'` and `'sudo make install'` (during 'make' and 'sudo make install' error messages for the 'RNAforester' program are reported, they do not influence NEXT-RNAi that only requires the 'RNAfold.pl' script in the 'ViennaRNA-1.8.4/Perl' folder)
 - [NEXT-RNAi](#)
 - Download latest version of NEXT-RNAi and unpack in 'NEXT-RNAi' folder
- Clean up virtual machine to decrease its size
 - Open 'Synaptic Package Manager' in Ubuntu (in 'System' option)
 - 'Mark for complete removal' for packages 'Mixer' and 'orage'
 - Leave 'Synaptic Package Manager'
 - Run the following commands in the X terminal: `'sudo apt-get clean'`, `'sudo apt-get autoclean'` and `'sudo apt-get autoremove'`
 - Open 'Synaptic Package Manager' and under 'Status' check for packages in 'Not installed (residual config)', mark all of these for 'complete removal'