

GNU/LINUX, CLI

Артур Залевский

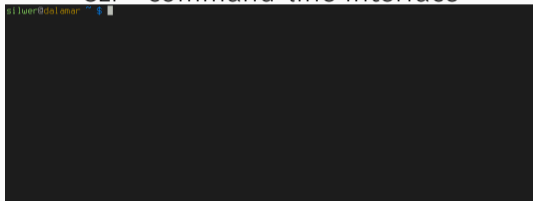
ВШЭ, 2017



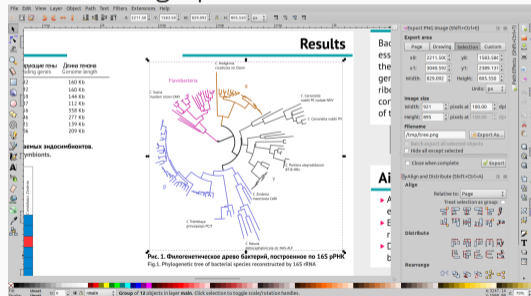
Факультет биоинженерии и биоинформатики
МГУ им. М. В. Ломоносова

CLI VS GUI

CLI - command-line interface



GUI - graphical user interface



a set of **G**oals, a set of **O**perators, a set of **M**ethods for achieving the goals, and a set of **S**elections rules for choosing among competing methods for goals

- ▶ better - faster and produce less errors
- ▶ CLI is better for skilled users for everyday usage
- ▶ GUI is better for time to time usage

MEMORABLE LINUX MILESTONES CELEBRATING 20 YEARS OF LINUX

LINUS TORVALDS
POSTS FAMOUS
MESSAGE - "HELLO
EVERYBODY OUT
THERE..." - AND
RELEASES FIRST
LINUX CODE



1991

SLACKWARE
BECOMES FIRST
WIDELY ADOPTED
DISTRIBUTION



1992

TECH GIANTS
BEGIN ANNOUNCING
PLATFORM SUPPORT
FOR LINUX



1998

IBM RUNS
FAMOUS LINUX
AD DURING THE
SUPERBOWL



2003

THE LINUX
FOUNDATION IS
FORMED TO PROMOTE
PROTECT AND
STANDARDIZE LINUX
LINUX IS A FELLOW



2007

LINUX TURNS 20
AND POWERS THE
WORLD'S
SUPERCOMPUTERS,
STOCK EXCHANGES,
PHONES, ATMS,
HEALTHCARE
RECORDS,
SMART GRIDS, THE
LIST GOES ON



2011



LINUS LICENSES
LINUX UNDER
THE GPL, AN
IMPORTANT
DECISION THAT
WILL CONTRIBUTE
TO ITS SUCCESS IN
THE COMING YEARS



LINUS VISITS
AQUARIUM, GETS
BIT BY A PENGUIN
AND CHOOSES
IT AS LINUX MAŠCOT



RED HAT
GOES PUBLIC



LINUS APPEARS ON
THE COVER OF
BUSINESSWEEK WITH
A STORY THAT HAILS
LINUX AS A
BUSINESS SUCCESS



THE LINUX-BASED
ANDROID OS
OUTSHIPS ALL OTHER
SMARTPHONE OSes
IN THE U.S. AND
CLIMBS TO
DOMINANCE

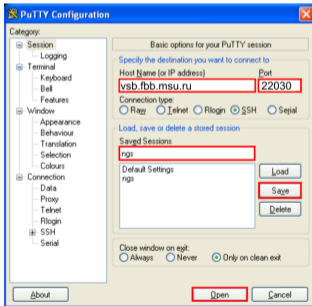


CLI

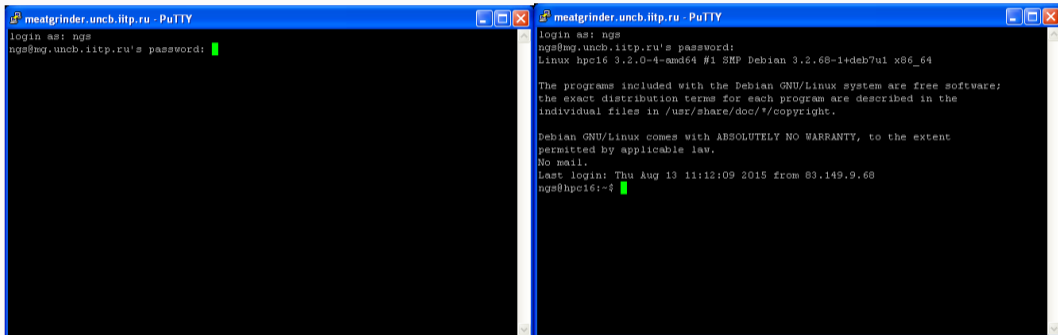
BEFORE START: WINDOWS

► Connect

putty.exe



BEFORE START: WINDOWS



The image shows two side-by-side PuTTY terminal windows. The left window shows the initial login prompt for user 'ngs' on the host 'meatgrinder.uncb.iitp.ru'. The right window shows the same login process but with the password entered and the system boot messages displayed, including the kernel version 'Linux hpc16 3.2.0-4-amd64 #1 SMP Debian 3.2.68-1+deb7u1 x86_64' and the Debian GNU/Linux warranty disclaimer. The prompt has changed from 'ngs@mg.uncb.iitp.ru' to 'ngs@hpc16'.

```
meatgrinder.uncb.iitp.ru - PuTTY
login as: ngs
ngs@mg.uncb.iitp.ru's password: █

meatgrinder.uncb.iitp.ru - PuTTY
login as: ngs
ngs@mg.uncb.iitp.ru's password: █
Linux hpc16 3.2.0-4-amd64 #1 SMP Debian 3.2.68-1+deb7u1 x86_64

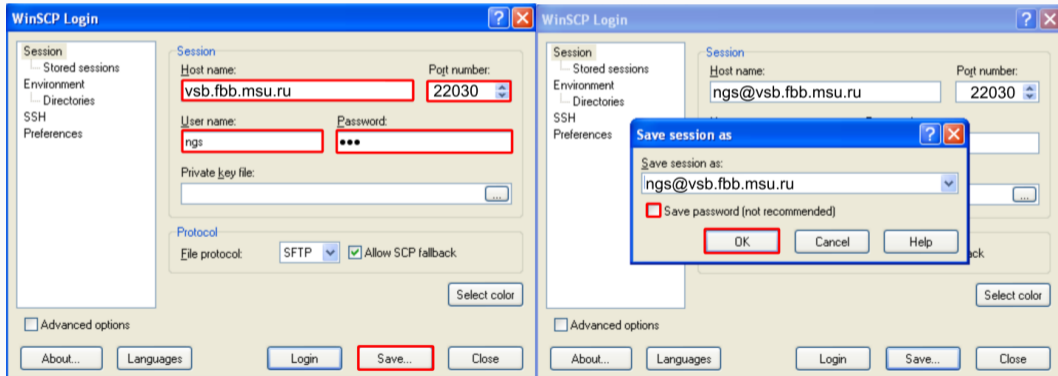
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
No mail.
Last login: Thu Aug 13 11:12:09 2015 from 83.149.9.68
ngs@hpc16:~$ █
```

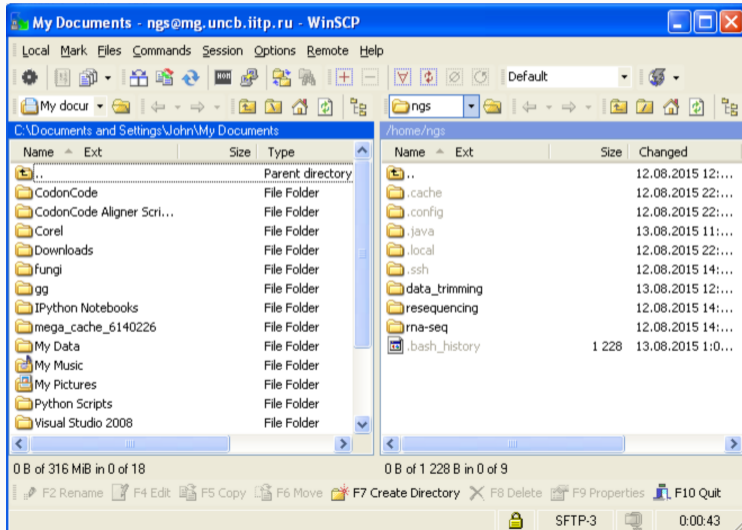
BEFORE START: WINDOWS

► Copy

winSCP.exe



BEFORE START: WINDOWS



- ▶ Connect

```
ssh -p 443 @xwing.cmm.msu.ru
```

```
password: qwerty
```

- ▶ Hint

```
~/.ssh/config
```

BASH - Bourne again shell

Let's talk with AI!

Wherea are we?

NB Directory hierarchy /, /home, /home/ngs

Let's **make** own place (**directory**)

```
mkdir username
```

And **list** directory content to find our dir

```
ls
```

And change our current **directory**

```
cd username
```


Create empty file

```
touch filename
```

Fill it with some content

```
echo 'Blabla' > filename
```

And edit it...

```
vim filename
```

- ▶ man
- ▶ Google
- ▶ colleagues

```
scp -P 443 src @xwing.cmm.msu.ru:/home/dst
```

```
scp -P 443 @xwing.cmm.msu.ru:/home/src dst
```

- ▶ top
- ▶ htop
- ▶ ps (CPU; STATE: R, S, D; MEM: VIRT, RES)
- ▶ iotop

- ▶ <http://overapi.com/linux>
- ▶ <https://gist.github.com/MohamedAlaa/2961058>

Q&A

aozalevsky@gmail.com

+79268299066