

1

Lecture 1

Linux Usage Basics

Upon completion of this unit, you should be able to:

- Log into a Red Hat Enterprise Linux system
- Change your password
- Understand the nature of root privileges
- Elevate your privileges
- Edit plain text files

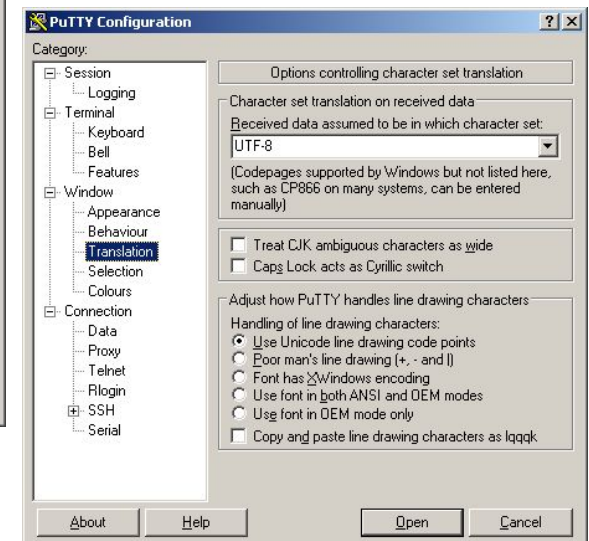
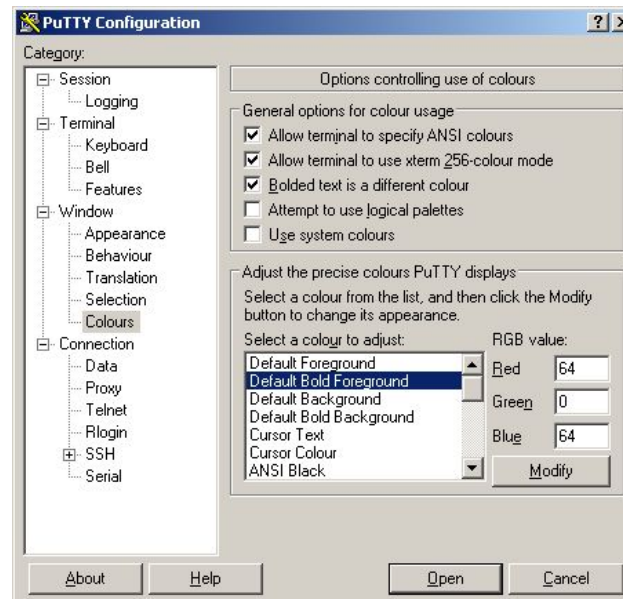
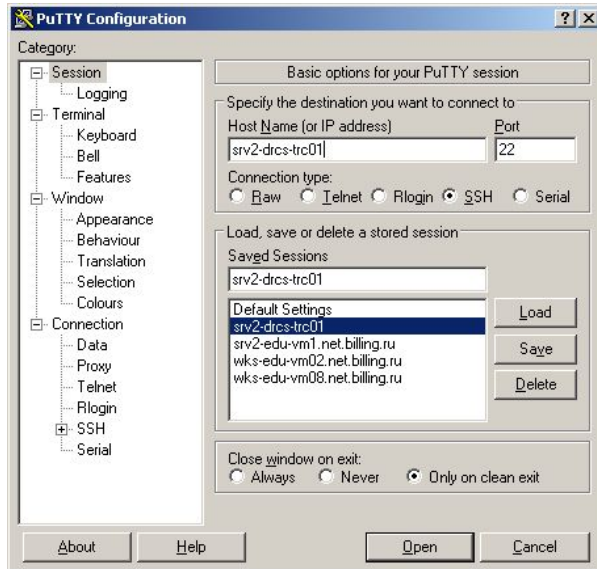
Logging in to a Linux System

- Login using username and password
- Two types of login screens: text-based and graphical
 - Text-based login leaves you at a *shell prompt*
 - Graphical login starts a *desktop environment*
- Each user has a home directory for personal file storage
 - User-specific configuration data is often kept there as well

```
Red Hat Enterprise Linux Server release 5.4 (Tikanga)
Kernel 2.6.18-164.el5 on an i686

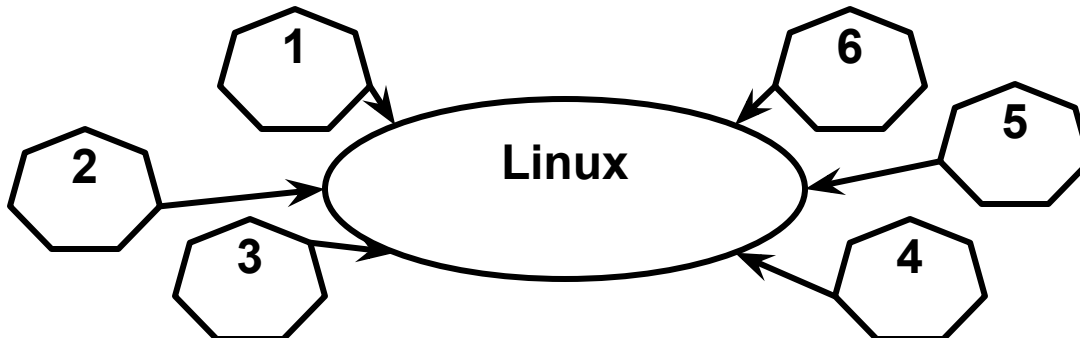
SRUZ-DRCS-TRC01 login: vsobennikov
Password: _
```

Connecting to a Linux System with Putty



Switching between virtual consoles and the graphical environment

- A typical Linux system will run six virtual consoles and one graphical console
 - Server systems often have only virtual consoles
 - Desktops and workstations typically have both
- If graphical console is inactive, it may be started manually
 - The X server must be pre-configured by the system administrator
 - Log into a virtual console and run **startx**
- Switch among virtual consoles by typing: *Ctrl-Alt-F [2 - 7]*
- Access the graphical console by typing *Ctrl-Alt-F1*



gnome-terminal

- Applications->Accessories->Terminal
- Graphical terminal emulator that supports multiple "tabbed" shells
 - *Ctrl-Shift-t* creates a new tab-создает новую вкладку
 - *Ctrl-PgUp/PgDn* switches to next/prev tab- переключается на след/ пред вкладку
 - *Ctrl-Shift-c* copies selected text-копирует выделенный текст
 - *Ctrl-Shift-v* pastes text to the prompt-вставляет текст в приглашение
 - *Shift-PgUp/PgDn* scrolls up and down a screen at a time-прокручивает вверх и вниз по экрану

Changing Your Password

- Passwords control access to the system
- General guidelines for best security:
 - Change the password the first time you log in
 - Change it regularly thereafter
 - Select a password that is hard to guess
- To change your password:
- GUI: System->Preferences->About Me and then click **Change Password**
- CLI: **passwd**

The *root* user

- The *root* user: a special administrative account
 - Also called the `superuser`
 - `root` has near complete control over the system
 - ...and a nearly unlimited capacity to damage it!
- Do not login as root unless necessary
 - Normal (*unprivileged*) users' potential to do damage is more limited

Changing Identities

- **su** - creates new shell as root
- **sudo** command runs `command` as root
 - Requires prior configuration by a system-administrator
- **id** shows information on the current user

Command Line Shortcuts

The *Tab* Key

- Type `Tab` to complete command lines:
 - For the command name, it will complete a command name
 - For an argument, it will complete a file name
- Examples:

```
$ xte<Tab>
```

```
$ xterm
```

```
$ ls myf<Tab>
```

```
$ ls myfile.txt
```

Command Line Shortcuts

History

- **bash** stores a history of commands executed in file `~/.bash_history` name of file is in env. variable `HISTFILE`
- **history** lists all commands
- **history N** lists the last *N* commands

```
$ history 4
15  ls -l
16  cd
17  cp /etc/passwd .
```

```
18vi passwd
```

```
$ history !!,
$ history !300,
$ history !string
```

More History Tricks

- Use the *up* and *down* keys to scroll through previous commands
- Type *Ctrl-r* to search for a command in command history.
 - (reverse-i-search)":
- To recall last argument from previous command:
 - *ESC, .* (the escape key followed by a period)
 - *Alt-.* (hold down the alt key while pressing the period)
 - Can be pressed multiple times
 - *!\$* (only valid for the last command)

- *HISTCONTROL=ignoreboth*

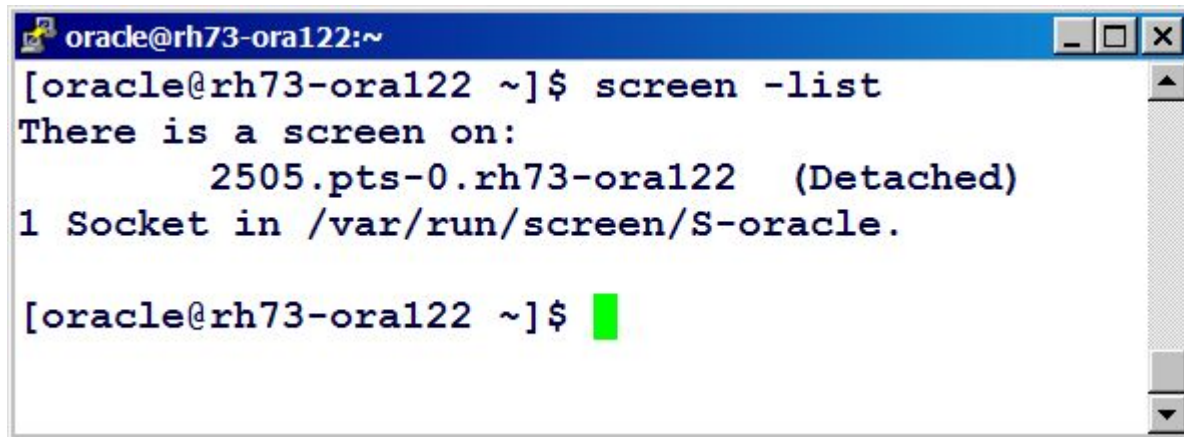
Editing text files

- The nano editor
 - Easy to learn, easy to use
 - Not as feature-packed as some advanced editors
- Other editors:
 - **vi**, **vim**, an advanced, full feature editor
 - **gvim**, a graphical version of the vim editor

screen command

- screen

- Ctrl+a ? help
- Ctrl+a d detach
- Ctrl+a N



```
oracle@rh73-ora122:~  
[oracle@rh73-ora122 ~]$ screen -list  
There is a screen on:  
          2505.pts-0.rh73-ora122  (Detached)  
1 Socket in /var/run/screen/S-oracle.  
  
[oracle@rh73-ora122 ~]$ █
```

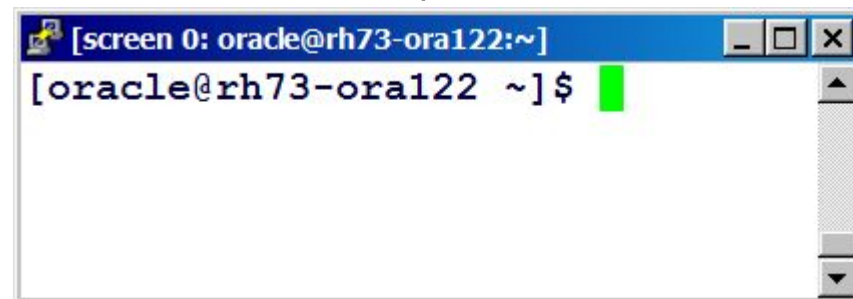
- screen ping 8.8.8.8

- screen -list list of screen's sessions

- screen -r [[pid.]tty[.host]] connect to this screen (when it detached)

- screen -S download create name *download* for screen

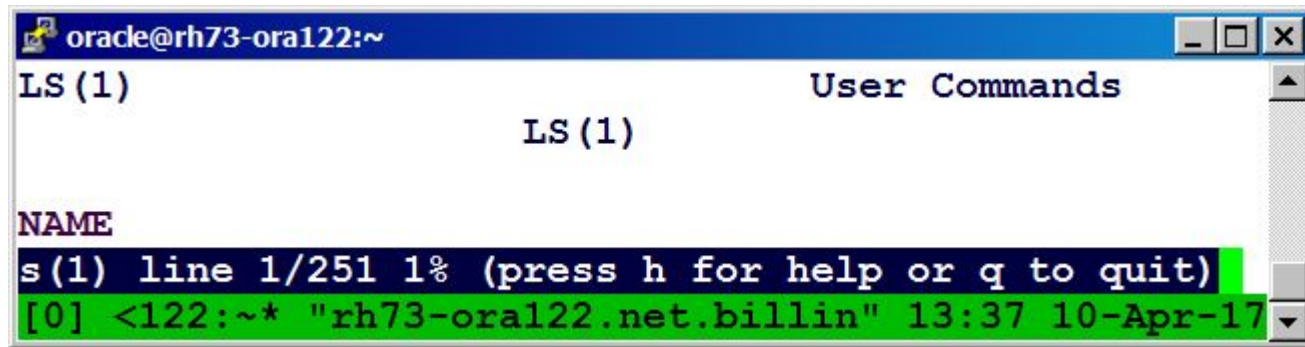
- screen -x PID:download connect to this screen (if user disconnected when attached)



```
[screen 0: oracle@rh73-ora122:~]  
[oracle@rh73-ora122 ~]$ █
```

tmux command

- `tmux new` create new screen
- `tmux attach` connect to existing tmux
 - `Ctrl+b n` switch to next window
 - `Ctrl+b p` switch to previous window
 - `Ctrl+b c` create new window
 - `Ctrl+b &` close window (`exit`)



```
oracle@rh73-ora122:~  
LS (1) User Commands  
LS (1)  
NAME  
s(1) line 1/251 1% (press h for help or q to quit)  
[0] <122:~* "rh73-ora122.net.billin" 13:37 10-Apr-17
```

End of Lecture 1

- Questions and Answers Summary
- Login name and password
 - **startx**
 - **gnome-terminal**
 - **passwd**
 - **su**
 - **nano**