

# Linux System Administration (LSA)

## Course Introduction



**SoftUni Team**  
**Technical Trainers**



**SoftUni**



**Software University**

<https://softuni.bg>

# You Have Questions?

**sli.do**

**#LSA**

**facebook.com**

**/groups/linuxsystemadministrationseptember2024**

# SoftUni Diamond Partners



# Table of Contents

1. Course objectives, scope, and schedule
2. Infrastructure
3. Details: Language and Duration
4. Exam and Evaluation





# **Course Objectives, Scope, and Schedule**

What and When Will Be Covered

# Course Objectives

- Installation and Configuration of Linux Servers
- Feel Comfortable to Work in the Console
- Users and Access Management
- Software and Services Management
- Network Management
- BASH Scripting and Basic Tasks Automation



# Course Scope and Schedule

## ■ Week #1

- Introduction to Linux
- Virtualization and Installation of a Linux distribution
- First Steps in the Console

## ■ Week #2

- Console Navigation. Getting Help
- Working with Files and Folders
- Access Rights. Users and Groups



# Course Scope and Schedule

## ■ Week #3

- Text Editors. Regular Expressions
- Search for Files. Extract Information from Files
- Standard Streams. Command Chains

## ■ Week #4

- Network and Network Services Management
- Packages. Package Managers. Software Management
- Services Management





# Course Scope and Schedule

## ■ Week #5

- Boot Process. Boot Loaders and Managers
- System Startup Process. Runlevels / Targets
- Processes and Resources Monitoring

## ■ Week #6

- Disks and Partition Management
- File Systems and FHS
- Backup and Restore Files



# Course Scope and Schedule

## ■ Week #7

- BASH in Detail
- Script Creation
- Tasks Automation

## ■ Week #8

- Course Overview
- Exam Preparation





# Infrastructure Requirements

- CPU with VT-x/AMD-V
- 4 GB+ of Free RAM
- 80 GB+ of Free HDD Space
- Virtualization Software (**VirtualBox**, VMware ..., Hyper-V)
- ISOs for AlmaLinux OS\*, Debian\*, and openSUSE\*

- \* **Install Media:** ~ 100 MB - 8 GB/ISO
- \* **Virtual Machines :** ~ 4 GB+/VM
- \* **Templates:** ~ 4 GB+/VM
- \* **VM Snapshots:** it depends

\* You can experiment with others as well, but mind that there could be some differences



## Details

Languages and Duration

# Linux System Administration Course – Timeline

04-Sep-2024

26-Oct-2024

02-Nov-2024

**Linux System Administration**

**7 weeks \* 1 time / week**

**6 credits**

**Start: 04-Sep-24**

**Regular Exam: 26-Oct-2024**

**Retake Exam: 02-Nov-2024**

# Training Duration

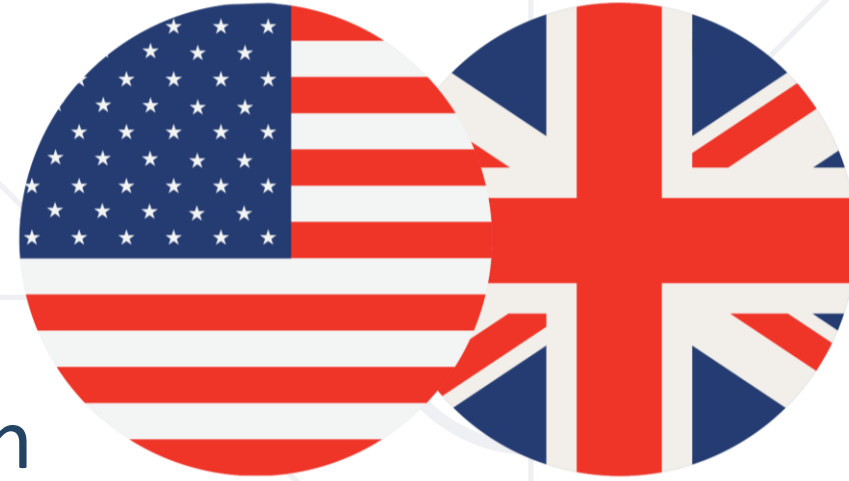
- Lectures: ~ **12 hours** (online)
- Practical exercises (online): ~ **12 hours**
- Homework: ~ **12 hours**
- Schedule: **September 2024 – October 2024**
  - Every **Wednesday** between **18:30** and **22:00**
- Exam: **26 Oct 2024**
- Retake exam: **02 Nov 2024**



18:30 – 19:30 Part 1  
19:30 – 19:45 Break 1  
19:45 – 20:45 Part 2  
20:45 – 21:00 Break 2  
21:00 – 22:00 Part 3

# Why English?

- Why the slides are in English?
  - English is the native language of the IT people
  - Specific terminology should be in English
    - Translations are inaccurate and funny
- Just learn English!
  - No excuses






# We Will Cover

- More than 250 commands
- 3 distribution families
- 3 file systems
- ... and many other interesting things



# Is This Enough? \*

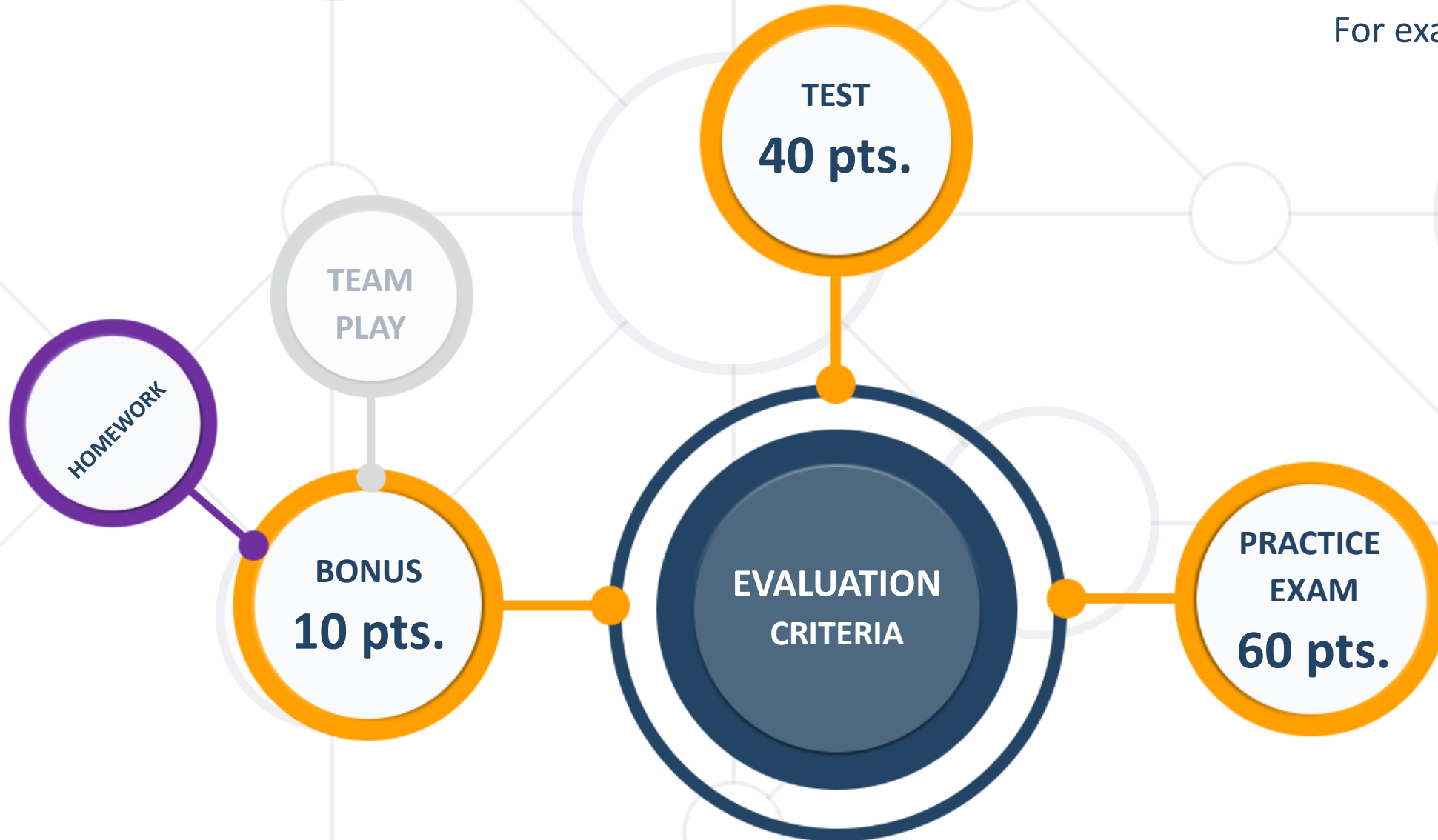
- 
- The short answer is **NO**
  - **Learning by doing** is the key
  - Experiment with **different distributions**
  - Use **various platforms** (virtual and physical)
  - Try **different scenarios** and solve a **variety of tasks**
  - Read a **book** or **two** (or **even more**) on the subject
  - Attend **other courses** on the subject as well

\* Soon a Linux Essentials study group will be organized. Stay tuned ;)



# Exam and Evaluation Criteria

# Scoring for Linux System Administration



For example, if you score

Practice: **56**

Test: **37**

---

Total: **93**

Homework: **10**

---

New total: **103**



Final: **100**

- Manage and configure a set of machines
- Install and configure **a set of software** and services
- Create a set of **files, folders, users and groups**
- Set the **appropriate permissions**
- **Write a script** that does what requested
- Additional tasks **as per the exam requirements**

The **practice exam** will be held **remotely** in a **controlled environment**

All you need is just a PC with **SSH client** and **Internet connectivity**

40

minutes

40

single-choice  
questions

40

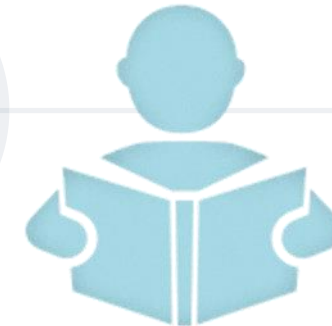
points in total

# Homework \*

- (Almost) every week there will be a homework
- You must submit the solution within 7 days
- 7 assignments worth 1,43 points each
- 10 bonus points in total

\* You can validate and test your solution before submitting it

- The course assignments require to **search in Internet**
  - This is an important part of the learning process
  - Some exercises intentionally have no hints
- Learn to find solutions!
  - Software development includes **everyday searching and learning**
  - No excuses, just **learn to study!**
  - Developers learn new technologies, tools, languages every day!







# The Team

- During office hours work as **Consultant**
- Passionate about technology and teaching
- Other side activities:
  - **openSUSE Advocate**
  - **VMUG Bulgaria Co-Leader**



**About You**

- Go here

<https://zahariev.pro/go/lsa-form>

- And share a few words about your
  - Environment
  - Experience
  - Expectations

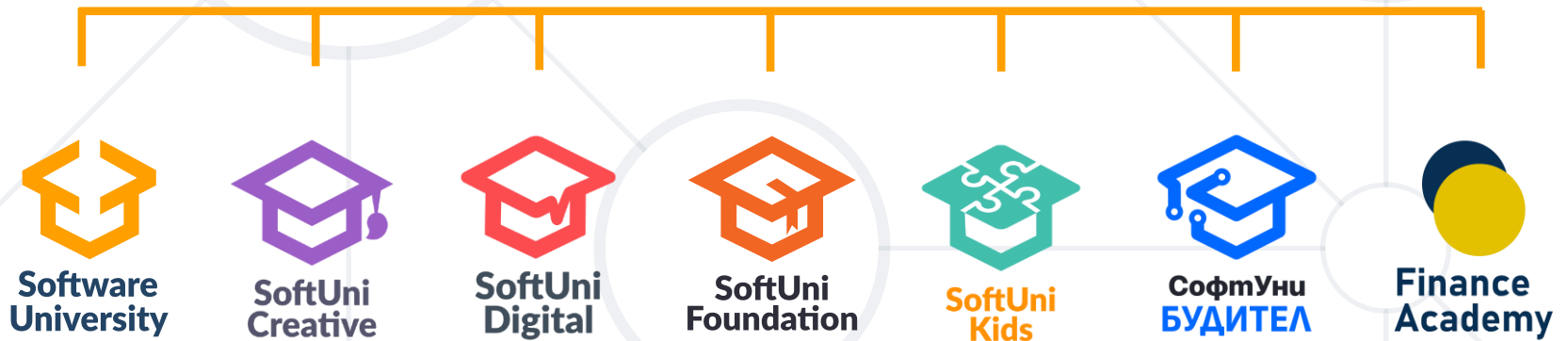
We are ready to move **forward.**



# Questions?



SoftUni



- Software University – High-Quality Education, Profession and Job for Software Developers
  - [softuni.bg](http://softuni.bg), [about.softuni.bg](http://about.softuni.bg)
- Software University Foundation
  - [softuni.foundation](http://softuni.foundation)
- Software University @ Facebook
  - [facebook.com/SoftwareUniversity](https://facebook.com/SoftwareUniversity)



- This course (slides, examples, demos, exercises, homework, documents, videos and other assets) is **copyrighted content**
- Unauthorized copy, reproduction or use is illegal
- © SoftUni – <https://about.softuni.bg/>
- © Software University – <https://softuni.bg>

