Linux System Administration (LSA)

Course Introduction

SoftUni Team

Technical Trainers

Software University

SoftUni

Software University

https://softuni.bg

sli.do

#LSA

facebook.com

/groups/linuxsystemadministrationseptember2024

SoftUni Diamond Partners

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Course Objectives and Scope

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

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** (or **IT DEPENDS**) ☺

- **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 ;)

Requirements

Required Resources

- 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

Required* Knowledge

- At least intermediate computer literacy

- Basic operating systems knowledge

- Basic networking knowledge

* It is nice to have

Additional Details

Linux System Administration Course – Timeline

04-Sep-2024   **26-Oct-2024**   **02-Nov-2024**

Linux System Administration

8 weeks * 1 time / week

6 credits

Start: 04-Sep-24

Regular Exam: 26-Oct-2024
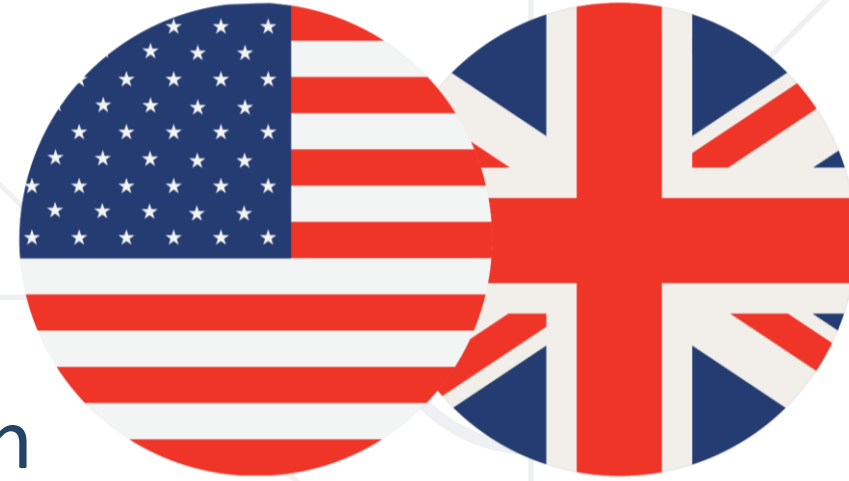Retake Exam: 02-Nov-2024

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

Learn to Search on the Internet

- The course assignments require to **search on the Internet**

  - This is an important part of the learning process

  - Some exercises intentionally have no hints

- Learn to find solutions!

  - Working in IT requires
    everyday searching and learning

  - No excuses, just **learn to study**!

  - IT people learn new technologies and tools every day!
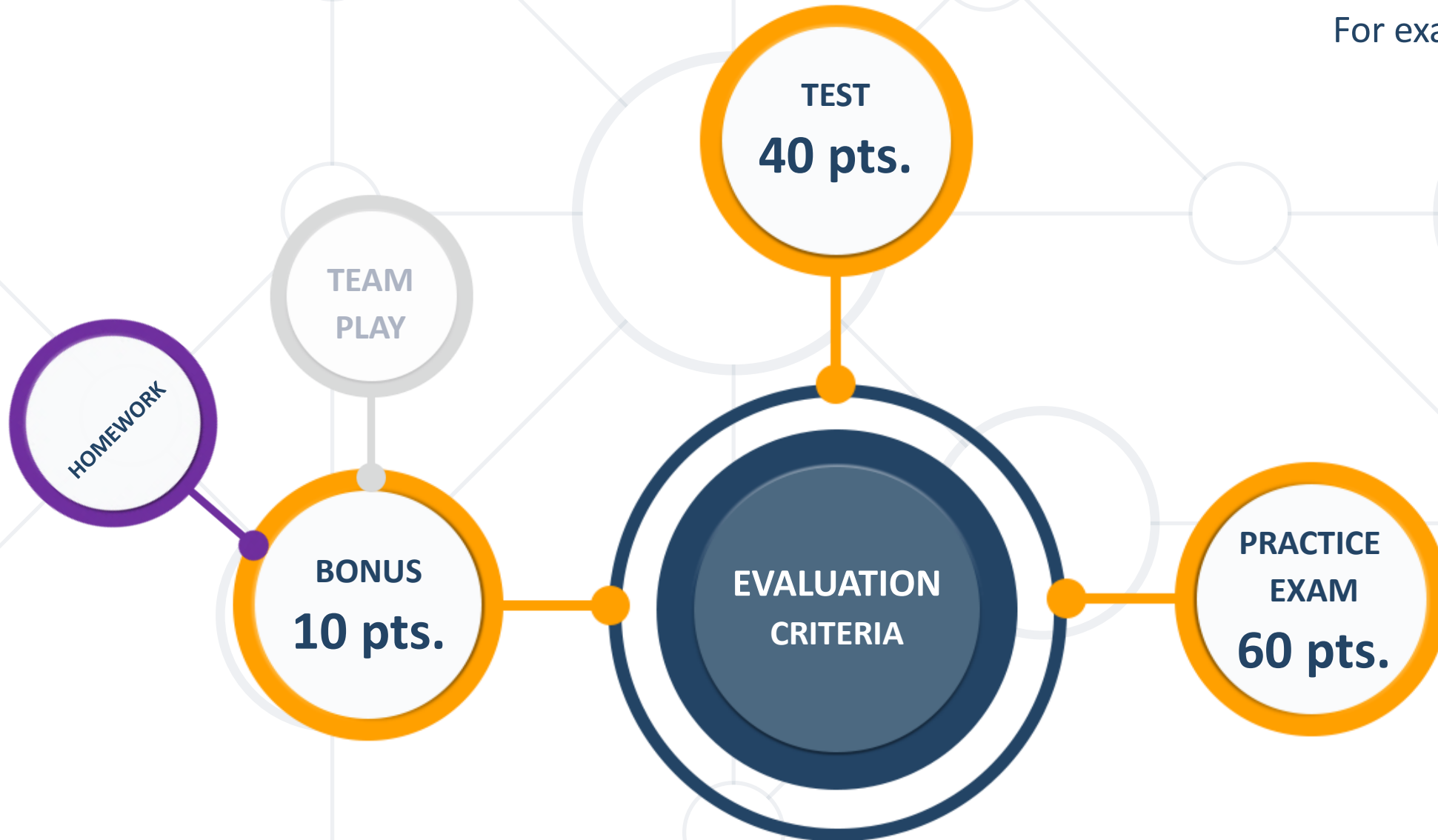
Course Web Site and FB Group

- Official web site:

  https://softuni.bg/trainings/4622/linux-system-administration-september-2024

- Official Facebook group:

  https://www.facebook.com/groups/linuxsystemadministrationseptember2024

Exam and Evaluation Criteria

Scoring for Linux System Administration

TEST
40 pts.

TEAM PLAY

HOMEWORK

BONUS
10 pts.

EVALUATION
CRITERIA

PRACTICE EXAM
60 pts.

For example, if you score

Practice: **56**

Test: **37**

Total: **93**

Homework: **10**

New total: **103**

Final: **100**

Exam: Practice*

- 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**

* Check the **Exam Blueprint** document in the **Course Introduction** section available at:
https://softuni.bg/trainings/4622/linux-system-administration-september-2024#lesson-80292

Software University

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

Certifications

Introduction to Certifications

- **Authorities**
  - LPI, CompTIA, Linux Foundation, Red Hat, SUSE, Oracle, …
- Categories
  - **By Validity** – Lifetime, Fixed Term, or Fixed Version
  - **By Distribution** – Agnostic or Not
  - **By Type** – Question (test) based, or Performance based
  - **By Place** – At home or at an Exam center
  - **By number of exams**

Linux Professional Institute (LPI) *

- **LPI Linux Essentials**

  - Entry level lifetime certificate

  - Distribution agnostic, question based, 1 exam (010-160)

- **LPIC-1: Linux Administrator**

  - Associate level certificate with 5 years validity

  - Distribution agnostic, question based, 2 exams (101/102-500)

- **LPIC-2: Linux Engineer** – 5 years, 2 exams (201/202-450)

- **LPIC-3: Linux Enterprise Professional** – 5 years, 4 types, 1 ex/t

http://www.lpi.org/our-certifications/summary-of-certifications

Others

- **CompTIA** (Linux+)
  - https://www.comptia.org/certifications/linux
- **Linux Foundation**
  - https://training.linuxfoundation.org/certification-catalog
- **Red Hat**
  - https://www.redhat.com/en/services/certifications
- **SUSE**
  - https://www.suse.com/training/exam/
- **Oracle**
  - https://education.oracle.com/oracle-certification-path/pFamily_358

The Team

Dimitar Zahariev

- During office hours work as **Consultant** and **Trainer**

- Passionate about technology and teaching

- Other side activities:

  - **openSUSE Advocate**
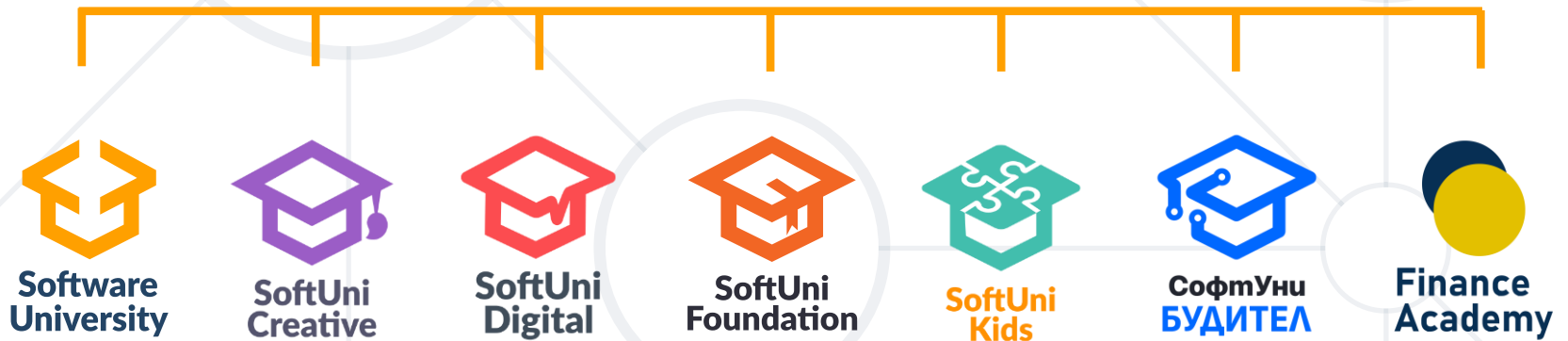
  - **VMUG Bulgaria Co-Leader**

About You

About You

- Go here

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

- And share a few words about your

  - Environment

  - Experience

  - Expectations

Questions?

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