

NETWORKS AND DISTRIBUTED SYSTEMS LAB

Software Defined Networking

"**Software Defined Networking**" is a course for **B.Sc./M.Sc.** students of Computer Science (and related study programs). It is held as a combination of a › **lecture** (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&publishid=207077&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung>) and

› **exercises** (<https://lsf.ovgu.de/qislsf/rds?state=verpublish&status=init&vmfile=no&publishid=207420&moduleCall=webInfo&publishConfFile=webInfo&publishSubDir=veranstaltung>) .

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| Instructor: | Prof. Dr. David Hausheer |
| Assistants: | Lars-Christian Schulz, Robin Wehner, Tony John |
| Hours per week: | 2 + 2 |
| Credits: | 6 |
| Lecture: | Wednesday, 15:00 - 16:30, Location: Room G28-027 |
| Exercises: | Monday, 11:15 - 12:45, Location: Room G29-334 Friday, 09:15 - 10:45, Location: Room G29-334 |
| Exam: | Written Exam (In case of few registrations, an oral exam will be held.) |
| Languages: | English |

Course Description

The course deals with cutting edge topics in the area of software defined networking (SDN):

- ▶ SDN Architecture (Application, Control, Infrastructure Layer)
- ▶ SDN Interfaces (North/South-bound vs. East/West-bound interface)
- ▶ SDN Applications and Use Cases (e.g. Multicasting)
- ▶ Network Virtualization and Slicing (e.g. FlowVisor)
- ▶ Network Function Virtualization (NFV) and Network Service Chaining
- ▶ SDN Security
- ▶ Network Operating Systems and Languages
- ▶ OpenFlow Controller (e.g. NOX, Beacon, etc.)
- ▶ Hardware Switches (e.g. NEC IP8800, Pronto) vs. Software Switches (e.g. NetFPGA, OpenVSwitch)
- ▶ SDN in Wireless Networks (e.g. OpenWRT)

Students will get a deep insight into Software Defined Networking and its applications.

Literature

Textbooks as indicated.

Slides and paper copies as necessary.

Requirements

Basic courses of the first 4 semesters are required. Knowledge of lectures Communication and Networks are recommended.

Resources

The course material will be made available using the **Moodle platform**:

› <https://elearning.ovgu.de/course/view.php?id=16134> (<https://elearning.ovgu.de/course/view.php?id=16134>)
