Software Defined Networking

Summer

(in German: Software Defined Networking)

Module-ID: FIN-INF-120460

Abbreviation	Credit Points	Semester	Term	Duration	Language	Level
SDN	6	Summer	starting at 1.	1 Semester	english	Master

Link:	LSF
Limited accessability:	false
Responsibility:	David Hausheer
Lecturer:	David Hausheer
Classes:	• Lecture *Software Defined Networking* • Exercise *Software Defined Networking*
Applicability in curriculum:	- M.Sc. INF: Informatik - M.Sc. INGINF: Informatik - M.Sc. WIF: Informatik - M.Sc. DE: Methoden der Informatik - M.Sc. DE: Fachliche Spezialisierung - M.Sc. VC: Computer Science

Intended learning outcomes:
Students...

- gain competence in the area of software defined networking
- understand software defined networking concepts

- can explain these concepts to other participants
- are able to apply these concepts in theoretical use cases and practical exercises
- gain expertise in practical network applications

Content:
The course deals with topics in the area of software defined networking:

- 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)

Workload:

- 28h lectures
- 22h theoretical exercises
- 6h practical exercises
- 124h homework (further studies, practical work, preparation for the final exam)

Pre-examination requirements:	**Type of examination:**	**Teaching method / lecture hours per week (SWS):**
Prerequisites for the exam required; details will be announced at the beginning of the semester.	Written exam 120 minutes	• 2 SWS lecture • 2 SWS exercise

Prerequisites according to examination regulations:	**Recommended prerequisites:**
none	Modul *Computernetze*

Media:	**Literature:**
	Textbooks as indicated. Slides and paper copies as necessary.

Comments:

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