Software Defined Networking

Lecture Organization
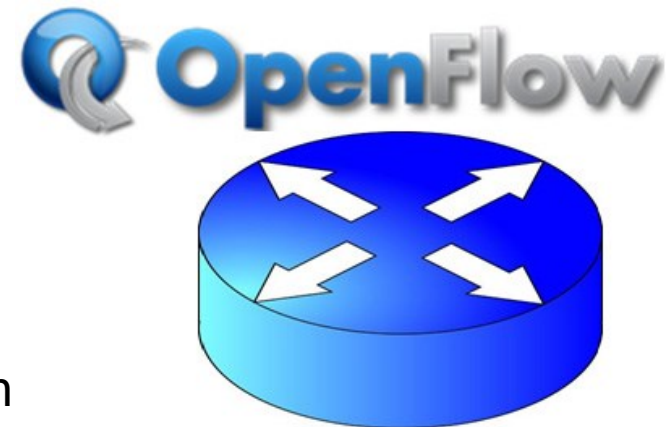
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3. Lecture Overview (revised)

Oct 12	(DH)	Lecture 1:	Organization and Introduction
Oct 19	(DH)	Lecture 2:	Past, Current, and Future
Oct 26	(DH)	Lecture 3:	SDN Relatives and OpenFlow
Nov 2	(DH)	Lecture 4:	Network Virtualization and Slicing
Nov 9	(JB)	Lecture 5:	SDN Hardware and Use Case
Nov 16	(DH)	Lecture 6:	Invited Talk: Dirk Kutscher (NEC)
Nov 23	(DH)	Lecture 7:	SDN Security
Nov 30	(DH)	Lecture 8:	SDN in Wireless Networks
Dec 7	(JR)	Lecture 9:	NOS and Languages
Dec 14	(DH)	Lecture 10:	SDN Applications
Christmas Break			
Jan 11	(DH)	Lecture 11:	Tight Network Control
Jan 18	(DH)	Lecture 12:	Tight Network Control (cont'd)
Jan 25	(DH)	Lecture 13:	Invited Talk: Nic Leymann (Deutsche Telekom)
Feb 1	(DH)	Lecture 14:	Invited Talk: Zoran Despotovic (Huawei)
Feb 8	(DH)	Lecture 15:	Invited Talk: NN (Alcatel-Lucent Bell Labs)

5. Exercise Overview (Revised)

Oct 13   No Exercise – Introduction to CN Lab
Oct 20 (JR)   Introduction / Exercise 1 Hand-out
Oct 27 (LN)   Exercise 1 Discussion / Exercise 2 Hand-out
Nov 3 (CK)   Lab Work 1 Introduction
Nov 10 (JB)   Lab Work 1 Discussion / Lab Work 2 Introduction
Nov 17 (JR)   Exercise 2 Discussion / Exercise 3 Hand-out
Nov 24 (JR)   Exercise 3 Discussion / Exercise 4 Hand-out
Dec 1 (CK)   Lab Work 2 Discussion / Lab Work 3 Introduction
Dec 8 (LN)   Exercise 4 Discussion / Exercise 5 Hand-out
Dec 15 (JB)   Lab Work 3 Discussion

Christmas Break

Jan 12 (JR)   Exercise 5 Discussion / Exercise 6 Hand-out
Jan 19 (LN)   Exercise 6 Discussion / Exercise 7 Hand-out
Jan 26 (LN)   Exercise 7 Discussion
Feb 2   Consultation hour for the exam (ALL)
Feb 9   Backup

9. Exam

❖ The written exam will take place on **Thu, 10.3.16 (tent.)**

❖ 90 minutes exam

❖ Exam material: lecture slides (incl. invited talks)
  ➢ Further reading helps to understand the material better

❖ Max. 90 points
  ➢ General SDN knowledge questions
  ➢ Understanding and application of basic SDN concepts
    ▪ E.g. completion of signaling scheme for a specific use case
  ➢ Understanding of differences between alternatives
  ➢ Calculations based on specific use case examples
  ➢ Etc.

❖ *In case of few registrations, an oral exam will be held.*

10. Registration in TUCaN

Complementary SDN Lab Work:
SmartNetsLab WS 2015/2016
Virtual Customer Premises Equipment (vCPE)

❖ vCPE
  ➢ Currently a hot topic in the industry

❖ Task
  ➢ Program home gateway functionality with OpenFlow
  ➢ Implement Software-Defined Multicast (SDM)
  ➢ Design a video chat application that runs in a web browser that leverages SDM for packet duplication

❖ Orga
  ➢ Challenge: Multiple groups, the best gets a prize
  ➢ **6 Credit points** - In the scope of the **CN Lab** (Introduction: **13.11.15, 16:15, S311|006**)

Provider Edge

Student home network

Aggregation Network

Metro

SDN

TP-LINK AP with OpenFlow

Registration extended till 23.10.

Virtual environnement

vCPE controller

Policy manager

VM

VM

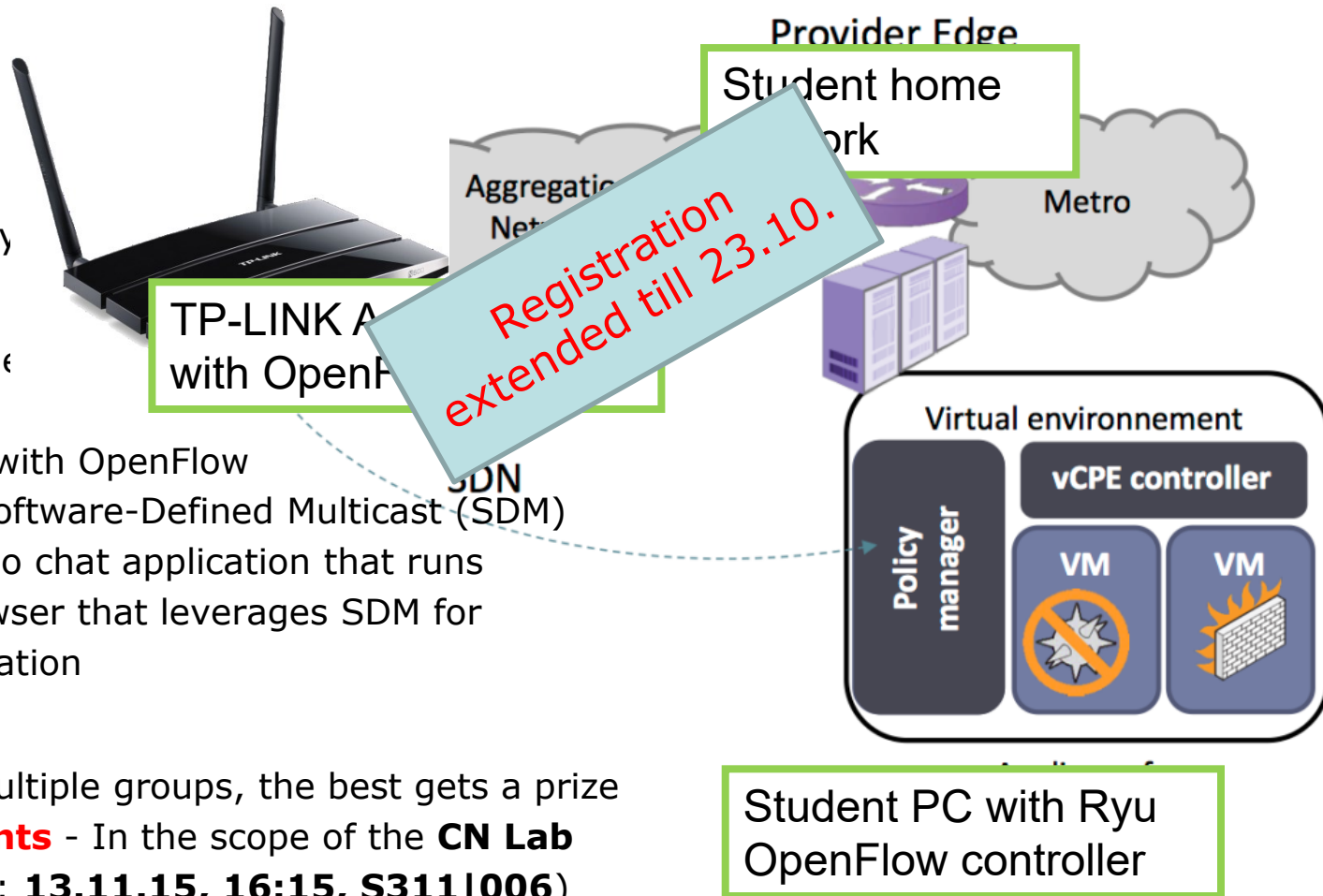Student PC with Ryu OpenFlow controller

Image source: Wilkinson: "The Critical Role of the CPE", SDN World Congress 2014