INTERNET MANAGEMENT AND MEASUREMENT

265310
MSc TEL/INF/BIT/EL
5 EC

Aiko Pras / Ramin Sadre

Design and Analysis of Communications Systems (DACS) group
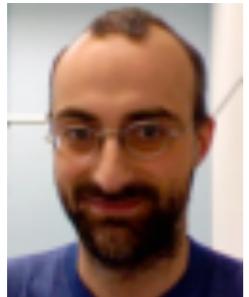University of Twente
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Teaching staff

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PURPOSE OF THIS COURSE

THE PURPOSE OF THIS COURSE
IS TO GET AN UNDERSTANDING OF:

- WHICH MANAGEMENT INFORMATION EXISTS WITHIN THE INTERNET

- WHO DEFINES THIS INFORMATION

- THE SYNTAX IN WHICH THIS INFORMATION IS DESCRIBED

- THE PROTOCOLS THAT ALLOW THIS INFORMATION
  TO BE MONITORED / MODIFIED

- HOW TO MEASURE THE FLOW OF INTERNET DATA

MATERIAL

BOOK
William Stallings: SNMP, SNMPv2, SNMPv3, RMON 1 & 2;
Addison Wesley, ISBN 0-201-48534-6

PODCAST / REAL MEDIA PRESENTATIONS
www.simpleweb.org/wiki/Video_tutorials

SLIDES
www.simpleweb.org/wiki/Internet_Management_Tutorials

EXERCISES
www.simpleweb.org/wiki/Exercises_in_Internet_Management

BLACKBOARD WEBSITE

COURSE ORGANIZATION

COURSE CONSISTS OF THREE ELEMENTS:

- FIVE LECTURES IN CLASS ROOM

- TWO LECTURES AS SELF STUDY

- SEVEN EXERCISES

Classroom lectures

Lecture	Date	Location	Teacher	Topic
1	23/4/2012 13:45-15:30	HB 2C	Aiko Pras	Course intro / SNMP versions 1 and 2
2	7/5/2012 13:45-15:30	HB 2C	Aiko Pras	SNMP version 3
3	14/5/2012 13:45-15:30	HB 2C	Aiko Pras	New approaches for network management
4	21/5/2012 13:45-15:30	HB 2C	Ramin Sadre	Network measurements
5	11/6/2012 13:45-15:30	HB 2C	Ramin Sadre	Network measurements 2

NOTE: No lectures on 30 april 2012, 25 may 2012, 4 june 2012

Slides of the classroom lectures can be found at:
http://www.simpleweb.org/wiki/Internet_Management_Tutorials

Book is: William Stallings: SNMP, SNMPv2, SNMPv3, RMON 1 & 2, Addison Wesley, ISBN 0-201-48534-6

Video lectures

Lecture	Follow before	Topic
1	29/4/2012	Management standards
2	29/4/2012	Introduction to SNMP
3	29/4/2012	Structure of Management Information (SMI)
4	5/6/2012	Introduction to Management Information Bases (MIBs)
5	5/6/2012	MIB-II

Video lectures 1, 2 and 3 are needed to answer exercise 1
Video lectures 4 and 5 are needed to answer exercise 2

Video lectures can be found at:
http://www.simpleweb.org/wiki/Video_tutorials_on_Internet_management

Mapping book - lectures

Book Chapter	Lecture	Topic of the lecture
1	Classroom 1	Course intro
2	Classroom 1	Course intro
4	Classroom 1 Video 2	Course intro
5	Video 3	Structure of Management Information (SMI)
6	Video 4 & 5	Management Information Bases (MIBs)
7	Classroom 1	SNMP versions 1 and 2
11	Video 3	Structure of Management Information (SMI)
12	Classroom 1	SNMP versions 1 and 2
15	Classroom 2	SNMP version 3
16	Classroom 2	SNMP version 3
17	Classroom 2	SNMP version 3

Mapping slides - lectures

Slide titles	Lecture	Topic of the lecture
• About this course • Ad-hoc approaches to network management • Network management standards • Intro to SNMP • SNMP version 1 • SNMP version 2	Classroom 1 Video 1 Video 2	Course intro, SNMPv1 & SNMPv2
• SMIv1, SMIv2	Video 3	Structure of Management Information (SMI)
• Introduction • Relation between MIBs • MIB-II • SNMPv2 MIB • Interfaces MIB • IP MIB • TCP MIB • UDP MIB • Host resources MIB	Video 4 & 5	Management Information Bases (MIBs)
• SNMP version 3	Classroom 2	SNMPv3
• New approaches: COPS-PR and NetConf • New approaches: Web-services for management	Classroom 3	New approaches for network management
• Internet measurements	Classroom 4 Classroom 5	Measurements

Exercises and deadlines

Exercise	Deadline	Topic
1	29/4/2012	Structure of Management Information (SMI)
2	6/5/2012	Management Information Bases (MIBs)
3	13/5/2012	Decode an SNMP packet
4	20/5/2012	Install and configure an SNMP agent
5	29/5/2012	SNMP: Comparison versions 1, 2 and 3
6	From: 29/5/2012 9:00 To: 1/6/2012 17:00	Run a management application
7	18/6/2012	Write an extension to a SNMP agent, plus a report

Answers to exercises must be entered in Blackboard before 23:00 on the day of the deadline

Exercises can be found at:
http://www.simpleweb.org/wiki/Exercises_in_Internet_Management

Grading of exercises

Exercise	Topic	Weight
1	Structure of Management Information (SMI)	10%
2	Management Information Bases (MIBs)	5%
3	Decode a SNMP packet	5%
4	Install and configure a SNMP agent	10%
5	SNMP: Comparison versions 1, 2 and 3	10%
6	Run a management application	20%
7	Write an extension to a SNMP agent, plus a report	40%