



Advanced Troubleshooting of IP Networks, 7.5credits

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For the Development of Organisations, Products and Quality of Life



Introduction and course overview

Knowledge and understanding

- describe different techniques and tools for advanced troubleshooting TCP/IP network

Skills and abilities

- use monitoring tools for documenting and maintenance TCP/IP networks
- apply accrued quality for be able to identify, describe, analyse and restore failure in routed and switched networks with focus on security and availability
- implement different troubleshooting tools in large and complex networks with integrated services such as wireless, VoIP and video

Judgement and approach

- compare different models for planning, maintaining and documenting computer networks

Introduction and course overview

Examples of Course Contents

Planning, documenting and maintaining of fault tolerant TCP/IP networks with integrated services such as wireless communication, VoIP and video.

Troubleshooting IPv4 and IPv6 routing.

Troubleshooting switched and routed networks with focus on security and availability.



Introduction and course overview

Course Disposition

- Lecture part
- Laboratory exercises
- Project part
- Final Exam
- Skills exam with written questions by the end of the course

Introduction and course overview

Lectures

Week 35

- Introduction, Network Maintenance, Troubleshooting Processes, Troubleshooting Tools

Week 36

- Troubleshooting Switched Solutions, Troubleshooting NAT/PAT, DHCP

Week 38

- Troubleshooting Routing Solutions, Troubleshooting Security



Introduction and course overview

LABs

Participation in laboratory work and is mandatory.

- w 36 Assembling Maintenance and Troubleshooting Tools
- w 37 Troubleshooting Switched Solutions
- w 38 Troubleshooting Routing Solutions
- w 39 Troubleshooting Security
- w 40 Troubleshooting Complex Environment

Introduction and course overview

Project

Week 41

Part 1 Create own troubleshooting case study

- Create network documentation (Topology diagram and IP addressing table)
- Write scenario and implement five problems or error
- Describe verification commands and corrective action (commands used)

Week 42

Part 2 Troubleshooting

- Troubleshoot another group's case study
- Solve the problems
- Document verification commands and corrective action
- Write short report

Introduction and course overview

Examination

- Laborations and Project, 2 credits, grades not passed and passed.
- Final exam, 2 credits, grades not passed and passed.
- Skills exam 3,5 credits grades not passed, 3, 4 and 5.

Introduction and course overview

Course materials

Ranjbar, Amir Troubleshooting and Maintaining Cisco IP Networks (TSHOOT), Cisco Press, 2010.

Course home page

<https://www.hh.se/dk4011>

Extra materials

YOU MUST CHECK THE COURSE HOME PAGE AND READ THOSE INTRODUCTION SLIDES



Introduction and course overview

Teachers

Olga Torstensson Olga.Torstensson@hh.se

- Examiner, course responsible, lecturer
- CNAP Primary Instructor
- Conducting the laboratory exercises
- Final exam

Malin Bornhager Malin.bornhager@hh.se

- Lecturer
- Conducting the laboratory exercises, project
- Skills exam

