



Welcome to

Introduction

Communication and Network Security 2019

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Slides are available as PDF, [kramse@Github](https://github.com/kramse)
0-Introduction.tex in the repo [security-courses](https://github.com/kramse/security-courses)

Contact information



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You are welcome to drop me an email



Course: Communication and Network Security

Ob 1 Netværks- og kommunikationssikkerhed (10 ECTS)

15 days of teaching

Exam: Date April 9. 2019

Teaching dates: 05/02 2019, 07/02 2019, 12/02 2019, 14/02 2019, 19/02 2019, 21/02 2019, 26/02 2019, 28/02 2019, 05/03 2019, 07/03 2019, 12/03 2019, 14/03 2019, 19/03 2019, 21/03 2019, 26/03 2019

Changes: the dates 19/3 and 21/3 will be moved!

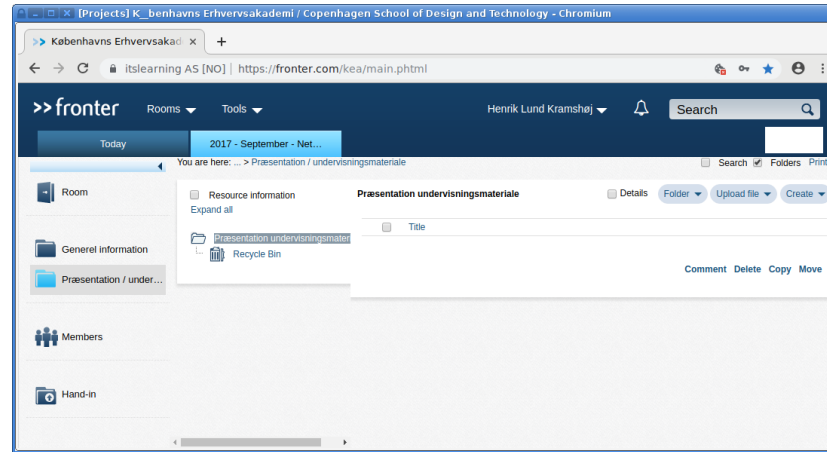
And since we are here, lets try to agree on best dates

Deliverables and Exam



- Exam
- Individual: Oral based on curriculum
- Graded (7 scale)
- Draw a question with no preparation. Question covers a topic
- Try to discuss the topic, and use practical examples
- Exam is 30 minutes in total, including pulling the question and grading
- Count on being able to present talk for about 10 minutes
- Prepare material (keywords, examples, exercises, wireshark captures) for different topics so that you can use it to help you at the exam
- Deliverables:
- 2 Mandatory assignments
- Both mandatory assignments are required in order to be entitled to the exam.

Fronter Platform



We will use fronter a lot, both for sharing educational materials and news during the course.

You will also be asked to turn in deliverables through fronter

<https://fronter.com/kea/main.phtml>

If you haven't received login yet, let us know

Course Description



From: STUDIEORDNING Diplomuddannelse i it-sikkerhed August 2018

Indhold:

Modulet går ud på at forstå og håndtere netværkssikkerhedstrusler samt implementere og konfigurere udstyr til samme.

Modulet omhandler forskellig sikkerhedsudstyr (IDS) til monitorering. Derudover vurdering af sikkerheden i et netværk, udarbejdelse af plan til at lukke eventuelle sårbarheder i netværket samt gennemgang af forskellige VPN teknologier.

My translation:

The module is centered around network threats and implementing and configuring equipment in this area.

Module includes different security equipment like IDS for monitoring. The evaluation of security in a network, developing plans for closing security vulnerabilities in the network and a review of various VPN technologies.

Final word is the Studieordning which can be downloaded from

<https://kompetence.kea.dk/uddannelser/it-digitalt/diplom-i-it-sikkerhed>

Studieordning_for_Diplomuddannelsen_i_IT-sikkerhed_Aug_2018.pdf

Expectations alignment



In groups of 2 students, brainstorm for 5 minutes on what topics you would like to have in this course

Use 5 minutes more on Agreeing on 5 topics and prioritize these 5 topics

Primary literature

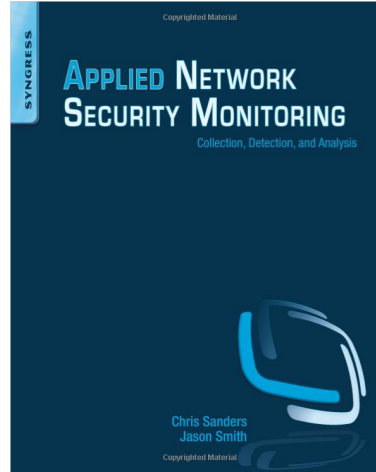


Primary literature are these three books:

- Applied Network Security Monitoring Collection, Detection, and Analysis, 2014 Chris Sanders ISBN: 9780124172081 - shortened ANSM
- Practical Packet Analysis - Using Wireshark to Solve Real-World Network Problems, 3rd edition 2017, Chris Sanders ISBN: 9781593278021 - shortened PPA
- Linux Basics for Hackers Getting Started with Networking, Scripting, and Security in Kali by OccupyTheWeb, December 2018, 248 pp. ISBN-13: 978-1-59327-855-7 - shortened LBfH

Price check around January 2019 - all three can be bought in hardcopy for 1.000-1.100DKK

Book: Applied Network Security Monitoring (ANSM)

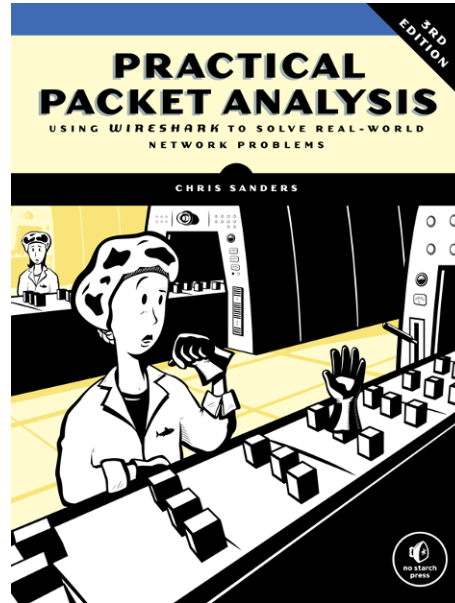


Applied Network Security Monitoring: Collection, Detection, and Analysis 1st Edition

Chris Sanders, Jason Smith eBook ISBN: 9780124172166 Paperback ISBN: 9780124172081 496 pp. Imprint: Syngress, December 2013

<https://www.elsevier.com/books/applied-network-security-monitoring/unknown/978-0-12-417208-1>

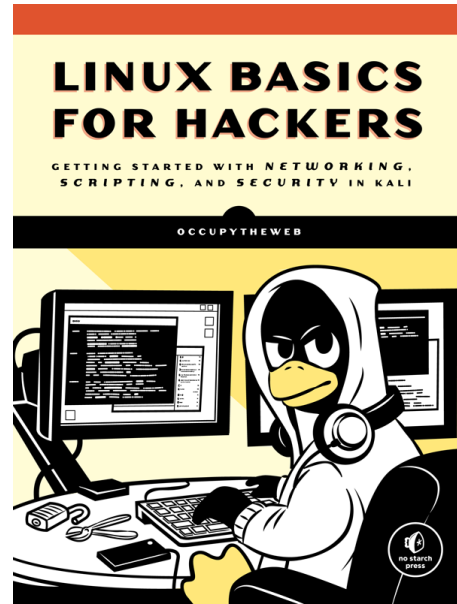
Book: Practical Packet Analysis (PPA)



Practical Packet Analysis, Using Wireshark to Solve Real-World Network Problems by Chris Sanders, 3rd Edition April 2017, 368 pp. ISBN-13: 978-1-59327-802-1

<https://nostarch.com/packetanalysis3>

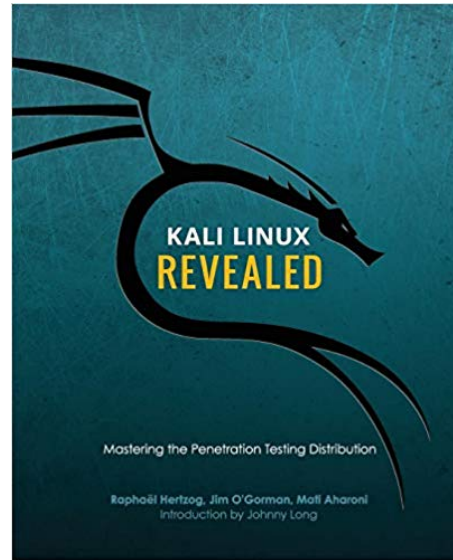
Book: Linux Basics for Hackers (LBhf)



Linux Basics for Hackers Getting Started with Networking, Scripting, and Security in Kali by OccupyTheWeb December 2018, 248 pp. ISBN-13: 9781593278557

<https://nostarch.com/linuxbasicsforhackers>

Book: Kali Linux Revealed (KLR)

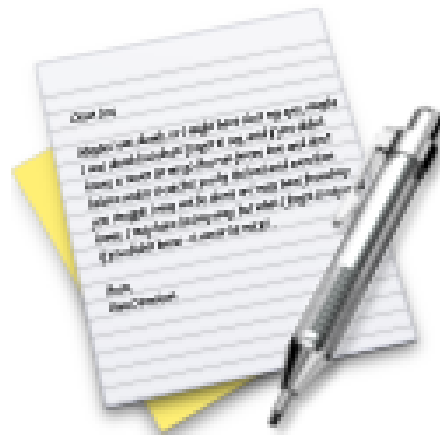


Kali Linux Revealed Mastering the Penetration Testing Distribution

<https://www.kali.org/download-kali-linux-revealed-book/>

Not curriculum but explains how to install Kali Linux

Exercise

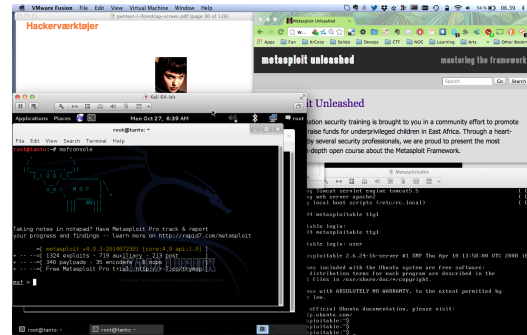


Now lets do the exercise

Download Kali Linux Revealed (KLR) Book

which is number **1** in the exercise PDF.

Hackerlab Setup



- Hardware: modern laptop CPU with virtualisation
Dont forget to enable hardware virtualisation in the BIOS
- Software Host OS: Windows, Mac, Linux
- Virtualisation software: VMware, Virtual box, HyperV pick your poison
- Hackersoftware: Kali Virtual Machine <https://www.kali.org/>
- Soft targets: Metasploitable, Windows 2000, Windows XP, ...

Having a Debian 9 Stretch will also be recommended, one pr team

Wifi Hardware



Since we are going to be doing exercises, sniffing data it will be an advantage to have a wireless USB network card.

- The following are two recommended models:
- TP-link TL-WN722N hardware version 2.0 cheap but only support 2.4GHz
- Alfa AWUS036ACH 2.4GHz + 5GHz Dual-Band and high performing
- Both work great in Kali Linux for our purposes.

I have some available for teams if you dont buy them.

Exercise

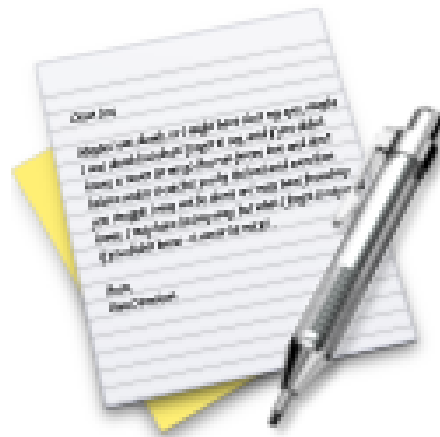


Now lets do the exercise

Check your Kali VM, run Kali Linux

which is number **2** in the exercise PDF.

Exercise



Now lets do the exercise

Bonus: Check your Debian VM

which is number **3** in the exercise PDF.