

Networks and protocols security



ECTS
3 crédits



Hourly volume 40h

Introducing

Description

- Identify the weak protocols currently used in networks; propose solutions for these weaknesses, through the use of tunnels when this is necessary; use SSH and its associated functionnalities (file transfers ,proxies, etc); describe the good practices for the definition of a secure network protocol

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

- the main concepts of network security, main threats targeting these networks and associated protection mechanisms
- the main concepts of non wired network security (Wifi, GSM, GPRS, LTE, UMTS)
- the main weaknesses of the network protocols and how to eliminate these weaknesses

The student will be able to:

- Understand and carry out basic networks attacks in the context of intrusion tests; identify and imlement protection mechanisms mitigating these attacks, use and install protection infrastructures
- Choose a security solution dedicated to a Wifi access point; carry out intrusion tests on an access point
- Distinguish the security objectives in different cellular networks; describe authentication mechanisms and key exchange protocols; describe the different attacks targeting these different technologies; identify the architectural components of security in operator networks

Necessary prerequisites

Knowledges and skills in computer networks and the underlying protocols are required (TCP/IP, routing protocols). The corresponding terminology must be known and the main concepts of cryptography must be clearly understood.

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)



Toulouse

