

# Docs on SwarmLab.io !

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Lab docs

## 1. Prepare your development and test environment

### 1.1. [Install docker](#)



Το Docker είναι μια πλατφόρμα λογισμικού ανοιχτού κώδικα που υλοποιεί Εικονικοποίηση (Virtualization) σε επίπεδο Λειτουργικού Συστήματος.

## 2. IoT Docs

### 2.1. [Intro IoT](#)



How It Works, Apps, Swarm: The Five Principles of Swarm Intelligence

## 3. Sec Docs

## 3.1. Scan and network statistics



This tutorial demonstrates some common **nmap** port scanning scenarios and explains the output.

## 3.2. Network analysis



**tcpdump** is a common packet analyzer that runs under the command line. It allows the user to display TCP/IP and other packets being transmitted or received over a network to which the computer is attached. Distributed under the BSD license, tcpdump is free software.

## 3.3. Network Filter



Netfilter offers various functions and operations for **packet filtering**, **network address translation**, and **port translation**, which provide the functionality required for **directing packets** through a network and **prohibiting packets** from reaching sensitive locations within a network.

**iptables** is a command line utility for configuring Linux kernel firewall implemented within the Netfilter project. The term "iptables" is also commonly used to refer to this kernel-level firewall. It can be configured directly with iptables, or by using one of the many

### 3.3.1. Traversing of tables and chains



When a packet first enters the firewall, it hits the hardware and then gets passed on to the proper device driver in the kernel.

Then the packet starts to **go through a series of steps in the kernel**, before it is either **sent to the correct application** (locally), or **forwarded to another host** - or whatever happens to i

## 3.4. Iptables with shorewall! - Three-Interface Firewall



**Shorewall** is an open source firewall tool for Linux that builds **upon the Netfilter (iptables/ipchains)** system built into the Linux kernel, making it easier to manage more **complex configuration schemes** by providing a higher level of abstraction for describing rules using text files.

## 3.5. virtual private network (VPN)



A **virtual private network (VPN)** extends a private network across a public network, and enables users to send and receive data across shared or public networks as if their computing devices were **directly connected to the private network**.

## 3.6. SSH Tunneling



**SSH Tunneling**, is the ability to use ssh to **create a bi-directional encrypted network connection** between machines over which data can be exchanged, typically TCP/IP.