

# Network Basics – Resources

## basics

LAN – IEEE 802.3

[https://en.wikipedia.org/wiki/IEEE\\_802.3](https://en.wikipedia.org/wiki/IEEE_802.3)

Network administrator

[https://en.wikipedia.org/wiki/Network\\_administrator](https://en.wikipedia.org/wiki/Network_administrator)

Classless Inter-Domain Routing

[https://en.wikipedia.org/wiki/Classless\\_Inter-Domain\\_Routing](https://en.wikipedia.org/wiki/Classless_Inter-Domain_Routing)

Internet Control Message Protocol (ICMP)

<https://www.liveaction.com/glossary/internet-control-message-protocol-icmp/>

## segmentation

Network topology

[https://en.wikipedia.org/wiki/Network\\_topology](https://en.wikipedia.org/wiki/Network_topology)

DMZ (computing)

[https://en.wikipedia.org/wiki/DMZ\\_\(computing\)](https://en.wikipedia.org/wiki/DMZ_(computing))

Screened subnet

[https://en.wikipedia.org/wiki/Screened\\_subnet](https://en.wikipedia.org/wiki/Screened_subnet)

Campus network

[https://en.wikipedia.org/wiki/Campus\\_network](https://en.wikipedia.org/wiki/Campus_network)

Wide area network

[https://en.wikipedia.org/wiki/Wide\\_area\\_network](https://en.wikipedia.org/wiki/Wide_area_network)

## static route

Routing table

[https://en.wikipedia.org/wiki/Routing\\_table](https://en.wikipedia.org/wiki/Routing_table) -> no algo – just table lookup

Create a persistent static route

[http://www.microhowto.info/howto/create\\_a\\_persistent\\_static\\_route.html](http://www.microhowto.info/howto/create_a_persistent_static_route.html)

Configure Static Routes In Debian or Red Hat Enterprise Linux

<https://www.cyberciti.biz/tips/configuring-static-routes-in-debian-or-red-hat-linux-systems.html>

Add a Static Route on CentOS

<https://my.esecuredata.com/index.php?/knowledgebase/article/2/add-a-static-route-on-centos>

## fdx vs. hdx

Half duplex

[https://en.wikipedia.org/wiki/Duplex\\_\(telecommunications\)#HALF-DUPLEX](https://en.wikipedia.org/wiki/Duplex_(telecommunications)#HALF-DUPLEX)

Chapter 4. Full-Duplex Ethernet

<https://www.oreilly.com/library/view/ethernet-the-definitive/1565926609/ch04.html>

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## link aggregation

Link aggregation

[https://en.wikipedia.org/wiki/Link\\_aggregation](https://en.wikipedia.org/wiki/Link_aggregation)

Link Aggregation and LACP basics

[https://www.thomas-krenn.com/en/wiki/Link\\_Aggregation\\_and\\_LACP\\_basics](https://www.thomas-krenn.com/en/wiki/Link_Aggregation_and_LACP_basics)

## Chapter 4. VLANs and Trunking

<https://www.oreilly.com/library/view/packet-guide-to/9781449311315/ch04.html>

### balance modes

Chapter: Layer 2 LAN Port Configuration

[https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst6500/ios/15-4SY/config\\_guide/sup6T/15\\_3\\_sy\\_swcg\\_6T/layer2.html](https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst6500/ios/15-4SY/config_guide/sup6T/15_3_sy_swcg_6T/layer2.html)

Aruba 2930F / 2930M Management and Configuration Guide for ArubaOSSwitch 16.05

<https://higherlogicdownload.s3.amazonaws.com/HPE/MigratedAssets/AOS-SW-Management%20and%20Configuration%20Guide-v16.05.pdf>

### lACP

An Overview of Link Aggregation and LACP

<https://web.archive.org/web/20170713130728/https://thenetworkway.wordpress.com/2015/05/01/an-overview-of-link-aggregation-and-lACP/>

Link Aggregation Control Protocol (LACP) (802.3ad) for Gigabit Interfaces

[https://www.cisco.com/c/en/us/td/docs/ios/12\\_2sb/feature/guide/gigeth.html](https://www.cisco.com/c/en/us/td/docs/ios/12_2sb/feature/guide/gigeth.html)

IEEE 802.3ad Link Aggregation (LAG)

[https://www.ieee802.org/3/hssg/public/apr07/frazier\\_01\\_0407.pdf](https://www.ieee802.org/3/hssg/public/apr07/frazier_01_0407.pdf)

Understanding IEEE 802.3ad Link Aggregation

[https://www.juniper.net/documentation/en\\_US/junos15.1/topics/concept/802.3ad-link-aggregation-understanding.html](https://www.juniper.net/documentation/en_US/junos15.1/topics/concept/802.3ad-link-aggregation-understanding.html)

Link Aggregation Control Protocol (LACP) (802.3ad) for Gigabit Interfaces

[https://www.cisco.com/c/en/us/td/docs/ios/12\\_2sb/feature/guide/gigeth.html](https://www.cisco.com/c/en/us/td/docs/ios/12_2sb/feature/guide/gigeth.html)

### linux bonding

Linux Ethernet Bonding Driver HOWTO

<https://www.kernel.org/doc/Documentation/networking/bonding.txt> -> 2. Bonding Driver Options

Manual:Interface/Bonding

<https://wiki.mikrotik.com/wiki/Manual:Interface/Bonding>

Load Balance Setup: Which Is The Best Port Trunking Option?

<http://qnapsupport.net/load-balance-setup-which-is-the-best-port-trunking-option/>

What are differences between balance-rr and 802.3ad?

<https://serverfault.com/questions/445839/what-are-differences-between-balance-rr-and-802-3ad>

bonding

<https://wiki.linuxfoundation.org/networking/bonding>

Understanding NIC Bonding with Linux

[https://web.archive.org/web/20201203072140/http://www.enterprisenetworkingplanet.com/linux\\_unix/article.php/3850636/Understanding-NIC-Bonding-with-Linux.htm](https://web.archive.org/web/20201203072140/http://www.enterprisenetworkingplanet.com/linux_unix/article.php/3850636/Understanding-NIC-Bonding-with-Linux.htm)

### linux teaming

Infrastructure Specification

<https://github.com/jpirko/libteam/wiki/Infrastructure-Specification>

If You Like Bonding, You Will Love Teaming

<https://www.redhat.com/en/blog/if-you-bonding-you-will-love-teaming>

## **eBPF filtering engine**

A thorough introduction to eBPF

<https://lwn.net/Articles/740157/>

The kernel report

<https://www.youtube.com/watch?v=yt29BKVfI0I> -> BPF minute 21 -> tannenbaum was right all along? @29m

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## **netemu products**

Packet Tracer

[https://en.wikipedia.org/wiki/Packet\\_Tracer](https://en.wikipedia.org/wiki/Packet_Tracer)

Cisco Packet Tracer

<https://www.netacad.com/courses/packet-tracer>

Introduction to Packet Tracer

<https://www.netacad.com/courses/packet-tracer/introduction-packet-tracer>

## **commercial router systems**

Software

<https://mikrotik.com/download>

## **open-source router systems**

NVIDIA Cumulus Linux

<https://cumulusnetworks.com/products/cumulus-linux/>

m0n0wall

<https://en.wikipedia.org/wiki/M0n0wall>

pfSense

<https://en.wikipedia.org/wiki/PfSense>

OPNsense

<https://en.wikipedia.org/wiki/OPNsense>

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## **nat & firewall - linux**

Netfilter Workshop 2018 Berlin summary

<https://ral-arturo.org/2018/06/16/nfws2018.html>

TLUG Talk: Netfilter - AN!Wiki

[https://www.alteeve.com/w/TLUG\\_Talk:\\_Netfilter](https://www.alteeve.com/w/TLUG_Talk:_Netfilter)

Enable iptables on one interface - Server Fault

<https://serverfault.com/questions/244767/enable-iptables-on-one-interface>

Iptables Stateful Firewall and NAT Routing | fabiobaltieri

<https://fabiobaltieri.com/2011/09/12/iptables-firewall-nat/>

How does IP Masquerade Work?

<https://tldp.org/HOWTO/IP-Masquerade-HOWTO/ipmasq-background2.5.html>

Linux NAT(Network Address Translation) Router Explained

<https://www.slashroot.in/linux-nat-network-address-translation-router-explained>

Quick-Tip: Linux NAT in Four Steps using iptables

<https://www.revsys.com/writings/quicktips/nat.html>

howtoforge nat iptables [https://www.howtoforge.com/nat\\_iptables](https://www.howtoforge.com/nat_iptables)

NAT with Linux and iptables - Tutorial (Introduction)

[https://www.karlsruh.net/en/computer/nat\\_tutorial](https://www.karlsruh.net/en/computer/nat_tutorial)

How to Set Up Gateway Using iptables and route on Linux - SysTutorials

<https://www.systutorials.com/setting-up-gateway-using-iptables-and-route-on-linux/>

### **dnat - linux**

Forward a TCP port to another IP or port using NAT with Iptables | Jensd's I/O buffer

<http://jensd.be/343/linux/forward-a-tcp-port-to-another-ip-or-port-using-nat-with-iptables>

linux - iptables error: unknown option -dport - Server Fault

<https://serverfault.com/questions/563033/iptables-error-unknown-option-dport>

Understanding Port Forwarding- Beginners Guide

<https://stevesmarthomeguide.com/understanding-port-forwarding/>

### **nat - obsd**

OpenBSD PF: Getting Started

<https://www.openbsd.org/faq/pf/config.html>

Building the Network You Need with OpenBSD's PF

<https://home.nuug.no/~peter/pf/bsdcan2014/>

### **nat - nbsd**

NPF improvements

[https://wiki.netbsd.org/projects/project/npf\\_improvements/](https://wiki.netbsd.org/projects/project/npf_improvements/)

NetBSD NPF часть №1 — Dreamcatcher.ru

<http://dreamcatcher.ru/2014/09/16/netbsd-npf/>

NetBSD desktop pt.3: simple stateful firewall with NPF - NetBSD - UnitedBSD - BSD forum

<https://archive.unitedbsd.com/t/netbsd-desktop-pt-3-simple-stateful-firewall-with-npf/286>

rmind/npf: NPF: packet filter with stateful inspection, NAT, IP sets, etc.

<https://github.com/rmind/npf/>

### **load-balance**

Load Balancing

<https://forum.mikrotik.com/viewtopic.php?t=32737>

Load Balance Incoming Connections

<https://www.openbsd.org/faq/pf/pools.html#incoming>

PF - Packet Filtering

<https://www.openbsd.org/faq/pf/filter.html>

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### **unix**

The Secure Shell (SSH) Frequently Asked Questions

<https://web.archive.org/web/20170213004928/http://www.employees.org/~satch/ssh/faq/TheWholeSSHFAQ.html>

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