

# Load Balancing

- [Per connection classifier](#)

## Introduction

Network load balancing is the ability to balance traffic across two or more links without using dynamic routing protocols.

There are two type of balancing methods:

- per-packet - each packet of a single stream can be forwarded over different links. This method will work reliably especially on TCP and secure connections only when you are able to control both balancing endpoints.
- per-connection - all packets of the same connection (stream) is always sent over one link. This method is mandatory in setups where only one end of the balancing is under our control, for example, home router with multiple WAN connections.

Method		Per-connection	Per-packet
Firewall Mangle	Nth	Yes	Yes
	PCC (Per Connection Classifier)	Yes	No
	Other matchers	Yes	Yes
ECMP (Equal Cost Multi-Path)		Yes	No
Bonding		No	Yes
OSPF		Yes	No
BGP		Yes	No

## Simple Failover Example

Simplest failover setup would be to use multiple gateways when one gateway is active and another one takes over when the first one fails.

To make this work, configure larger **distance** value for the secondary one, and **check-gateway** for the first one:

```
/ip route add gateway=192.168.1.1 distance=1 check-gateway=ping
/ip route add gateway=192.168.2.1 distance=2
```

The *check-gateway* will make sure the gateway is up only when actual traffic can reach the gateway. When the ping fails the first gateway will become inactive and the second one will take over, and when the first gateway recovers it will become active and make the second gateway to work again as a backup.