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## Introduction

## Research questions

1. What different parameters can we appoint when measuring network?
2. What different loads can influence the performance of a network

## What different parameters can we appoint when measuring network?

When measuring a networks performance, various terms are introduced to help put a name to various behavioural patterns inside of a network. Below we list 6 of the most applicable ones to our research.

### Latency

Network latency is a term used to describe the time it takes one data-packet to go to its destination, and back. The time it takes this packet is described in milliseconds.

This information is not always useful, but can negatively impact communication protocols which wait for an ACK-signal to progress in their control loop.

### Jitter

Jitter refers to a variable latency. Ideally, in a network, the user would like either no latency; or a steady, low, latency.

Jitter happens when the latency fluctuates heavily. This is especially noticeable with livestreams/feeds or voice connections, as it will seem like the connection either slows down or significantly speeds up randomly.

### Packet Loss

Previously we already mentioned packets, in those contexts; we assume that all packets make the target destination. Though in some cases, they do not. This is called packet loss.

While previously, those packets would always more or less arrive, though just with a delay; in this case they do not at all. Which means it has more drastic effects on the application in need of that data.

### Throughput

Throughput utilizes latency to portray the amount of data which travels through a network during a set amount of time. Throughput is measured by loading a network with lots of data, and observing how much time it takes to reach its destination.

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### Bandwidth

Bandwidth is a very common term. It refers to the total amount of data a network can transmit in a set amount of time. Usually, the bigger the bandwidth, the more data can be pushed through the network.