

# **Messungen und Vergleich von Virtualisierungsumgebungen**

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# Virtualisation

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- ▶ **Virtualisation**

- ▶ Virtual representation of a physical thing
- ▶ Needs controlling mechanism to act correct

- ▶ **Hardware virtualisation**

- ▶ Basis to create a virtual machine

- ▶ **Other virtualisation**

- ▶ Memory: virtual memory
- ▶ Storage: distributed file system
- ▶ Network: desktop virtualisation



# Virtualisation - Benefits

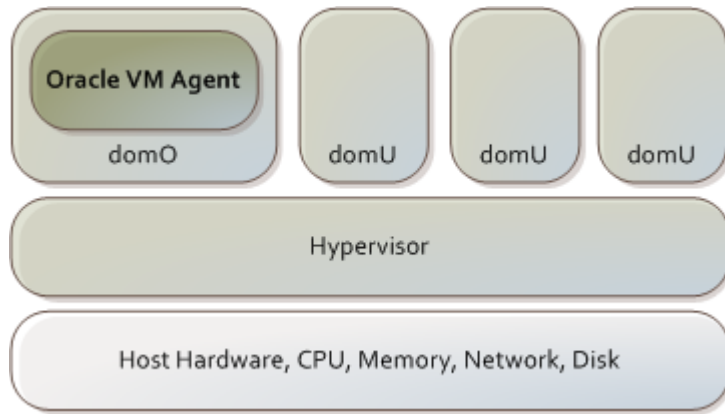
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- ▶ Multiple OSs
- ▶ No Impact (Guest – Host, Guest – Guest)
- ▶ Reduction of costs
- ▶ Scalability
- ▶ Flexibility



# Structure VM

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- ▶ **Host system:** OS with installed hypervisor
- ▶ **Guest system:** OS using the virtualised hardware
- ▶ **Hypervisor:** distributes the hardware resources between OSs.

# My goals (1)

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- ▶ **Implementation of a framework**
  - ▶ Easy to handle
  - ▶ Portability
- ▶ **Test**
  - ▶ Research of tests
  - ▶ Implementation of test frameworks



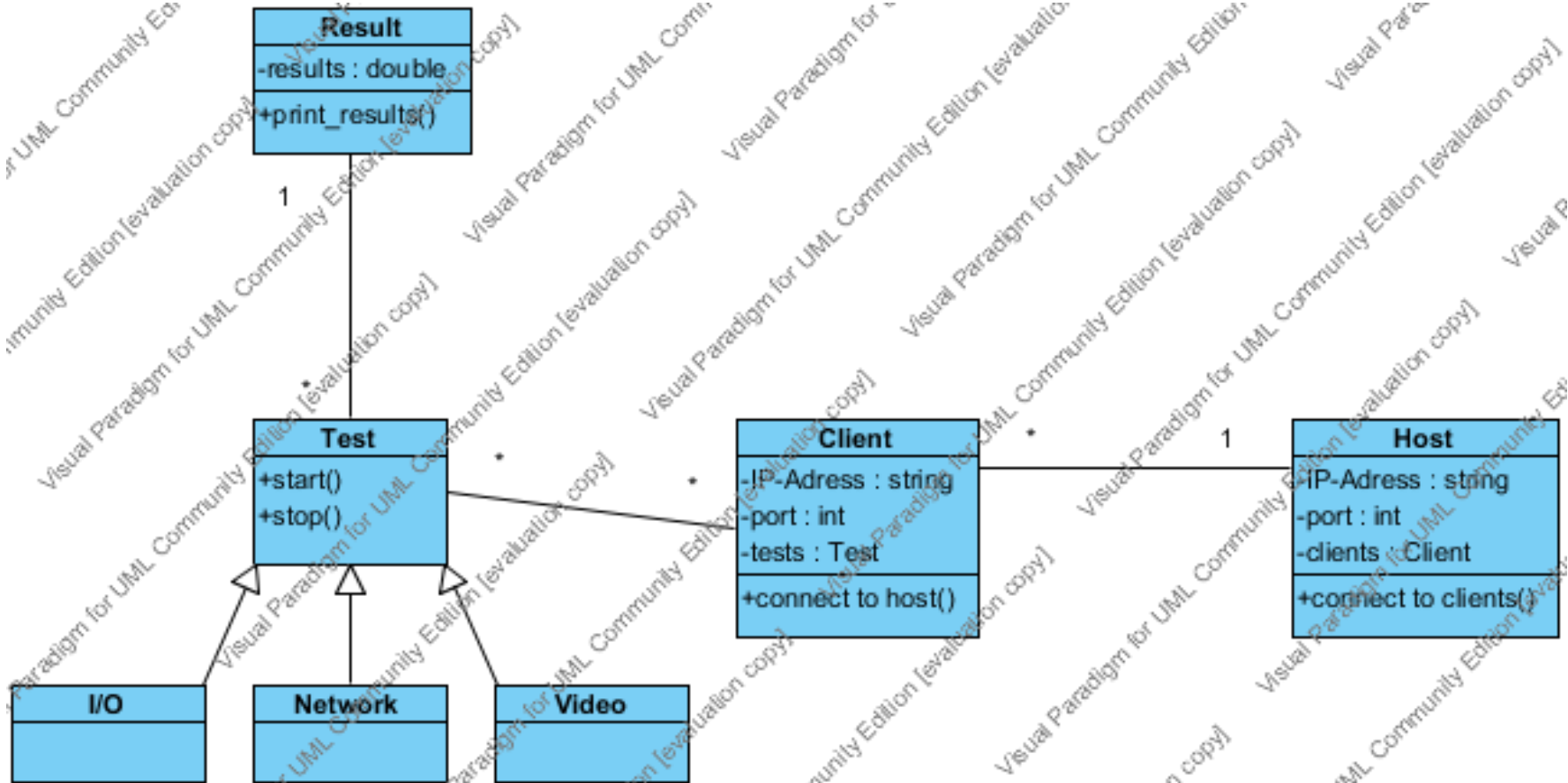
# My goals (2)

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- ▶ **Perform tests**
  - ▶ Different settings
  - ▶ Different test cases
- ▶ **Evaluate tests**
  - ▶ Get most relevant parameters
  - ▶ Show relations graphically



# Architecture (I)



# Architecture (II)

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## ▶ Host

- ▶ Supervisor of the test
- ▶ Tells the clients when to perform a test

## ▶ Client

- ▶ Each VM is a client
- ▶ Registers at host
- ▶ On each client a set of tests/benchmarks is installed

## ▶ Test

- ▶ Multiple tests exist testing different fairness qualities of VMM

## ▶ Results

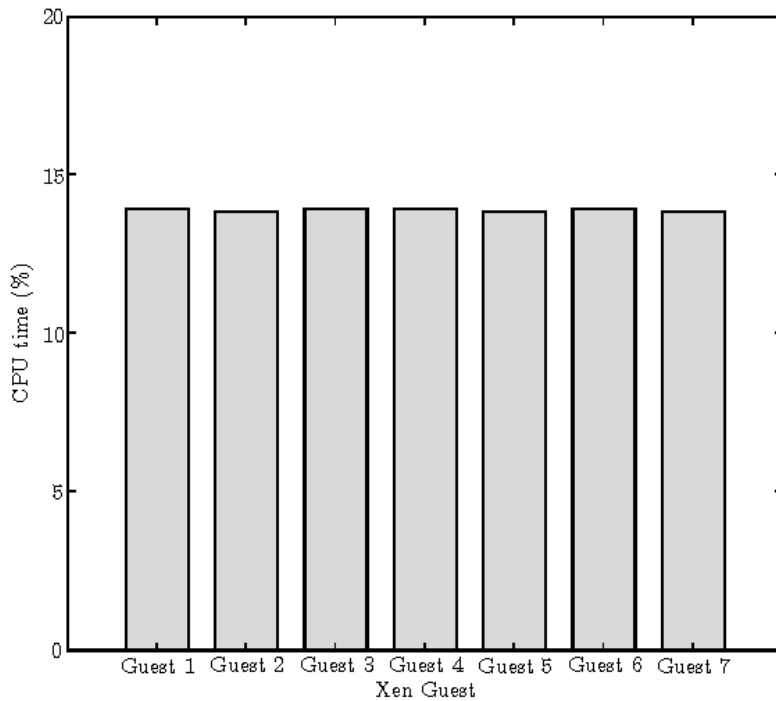
- ▶ Results are collected and sent to host



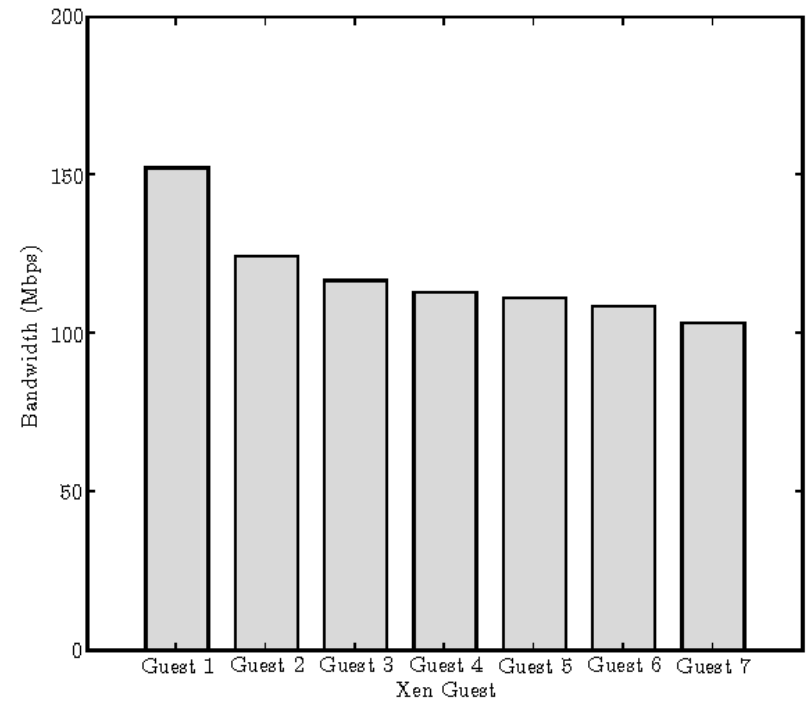


# Why?

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**Figure 2.** CPU fairness with Xen's default configuration.



**Figure 3.** I/O fairness with Xen's default configuration.



# Why?

