Chair of Network Architectures and Services
School of Computation, Information, and Technology
Technical University of Munich

TUM

# Advanced Computer Networking (ACN)

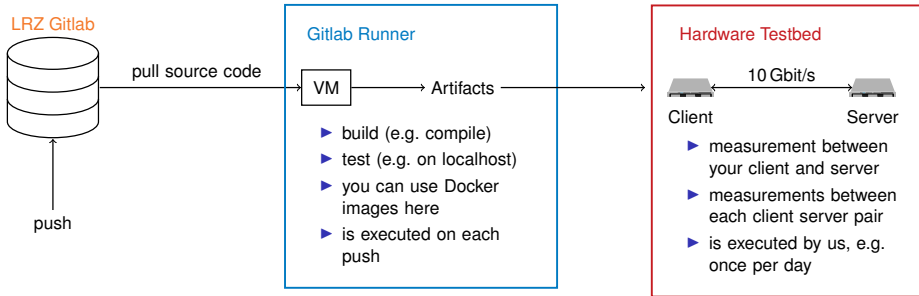## QUIC Project – Description

**Prof. Dr.-Ing. Georg Carle**
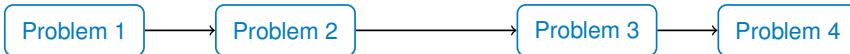
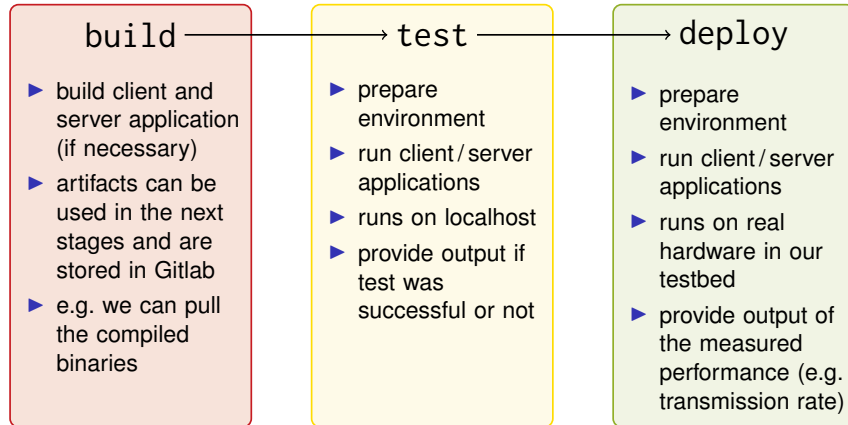Benedikt Jaeger, Marcel Kempf, Johannes Zirngibl

Chair of Network Architectures and Services
School of Computation, Information, and Technology
Technical University of Munich

# Infrastructure

- We use the LRZ Gitlab as infrastructure for this project
- You will get access to some shared repositories as well as a personal working repository

## Gitlab CI

- This allows you to automatically compile your applications and access the artifacts via Gitlab
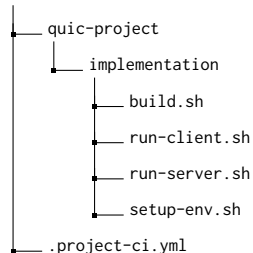
## build → test → deploy

**build**

- build client and server application (if necessary)
- artifacts can be used in the next stages and are stored in Gitlab
- e.g. we can pull the compiled binaries

**test**

- prepare environment
- run client / server applications
- runs on localhost
- provide output if test was successful or not

**deploy**

- prepare environment
- run client / server applications
- runs on real hardware in our testbed
- provide output of the measured performance (e.g. transmission rate)

Problem 1 → Problem 2 → Problem 3 → Problem 4

**Deadline:** <span style="color:red">**December 19, 2023, 4:00 PM**</span>

**Tasks:**

- Implement a HTTP/3 client and server based on the chosen library
  - Your implementation needs to use specified environment variables during setup
  - They need to support a QUIC handshake and download a file using HTTP/3 afterwards
- Setup a script that allows to build your implementation in the Gitlab CI
- Pass the first test in the Gitlab CI (*HANDSHAKE* test)

**We will provide you with template files used by the CI:**

```
__ quic-project
  |__ implementation
  |    |__ build.sh
  |    |__ run-client.sh
  |    |__ run-server.sh
  |    |__ setup-env.sh
  |__ .project-ci.yml
```

| files | |
| --- | --- |
| .project-ci.yml | configuration file for the CI |
| build.sh | this script is called to compile your binaries |
| setup-env.sh | this script is called to prepare the environment |
| run-client.sh | this script is called to run the client application |
| run-server.sh | this script is called to run the server application |