Chair of Network Architectures and Services - Prof. Dr.-Ing. Georg Carle
Mission: Instrumenting and Improving Networked Systems

Topics

- Network measurements
  - High-performance packet processing
  - Internet-scale infrastructure properties
  - Reproducibility
- Network architecture
  - Network programming (SDN, NFV, P4)
  - High-performance software router
  - Low-latency communication
  - Low-power: 6TiSCH, 802.15.4e TSCH, CoAP
- Network security (Firewalls, IPsec, TLS)
- Privacy-preservation (metadata protection)

Methods

- Automated performance measurements
- Large-scale distributed measurements
- Formal methods for network security
Demo: MoonGen Performance Experiments

- Measurement of network function chains
  - **MoonGen** as measurement tool
  - NFV written in Lua (Snabb)

- Utilizing synthetic network functions:
  - Emulating CPU processing time
  - Emulating CPU cache/ memory load
  - Replication of real NFs with known CPU load profile, e.g., routing, VPN, firewall

- Visit our demo to see live performance measurements

Latency distribution of firewall NF

Latency distribution of router NF

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