Performance and Scalability of Networks, Systems, and Services

Niklas Carlsson
Linköping University, Sweden

Student presentation @ LiU (TDTS06), October 8, 2013

Much of the work in collaboration ...

- **Primary collaborators (alphabetic)**:
    - Martin Arlitt (HP Labs, USA)
    - György Dan (KTH, Sweden)
    - Derek Eager (University of Saskatchewan, Canada)
    - Phillipa Gill (Stony Brook University, USA)
    - Anirban Mahanti (NICTA, Australia)
    - Aniket Mahanti (University of Auckland, New Zealand)
    - Nahid Shahmehri (Linköping University, Sweden)
    - Carey Williamson (University of Calgary, Canada)

Background
Research overview

- Design, modeling, and performance evaluation of distributed systems and networks

- Current topics include
  - Scalable content delivery
  - Measurement analysis and modeling
  - Energy-efficient and sustainable ICT
  - Security and emerging services

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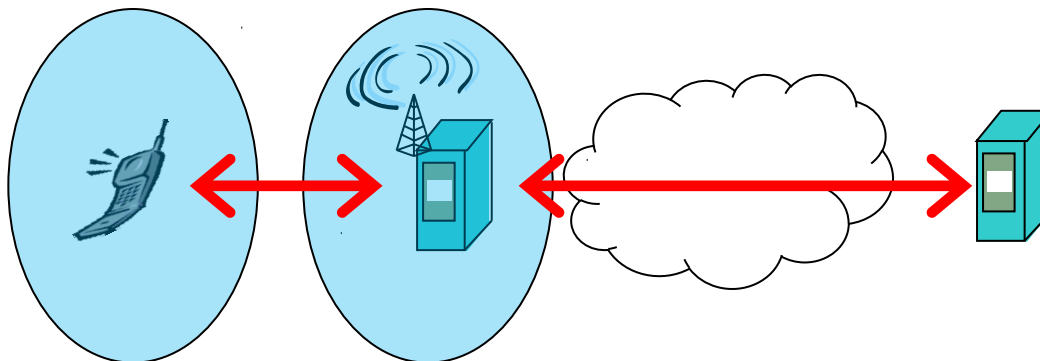
55→90%
of Internet traffic

You Tube

Spotify

NETFLIX

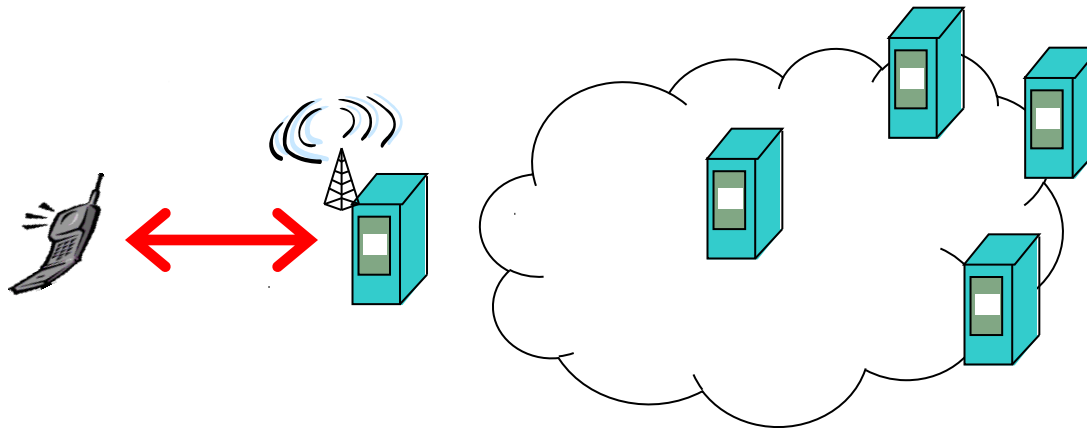# Background
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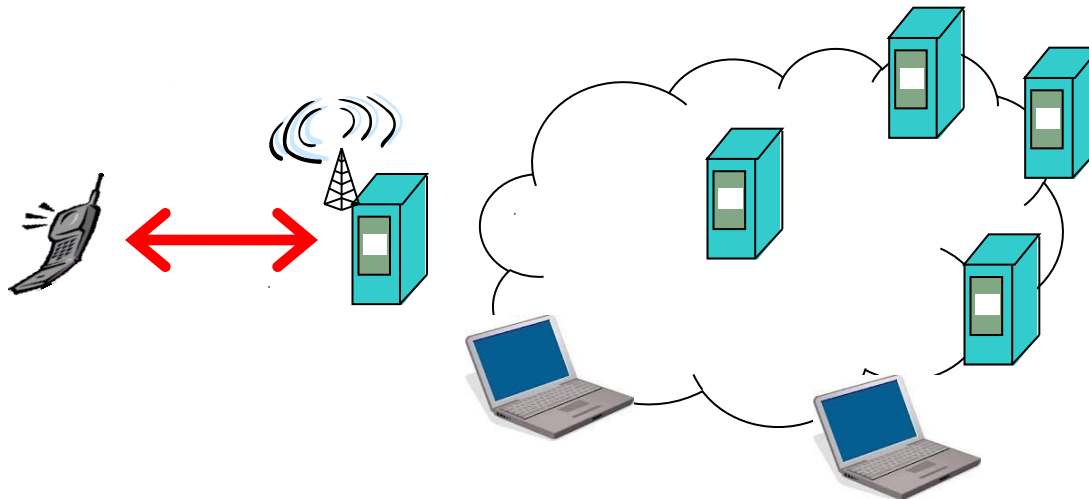
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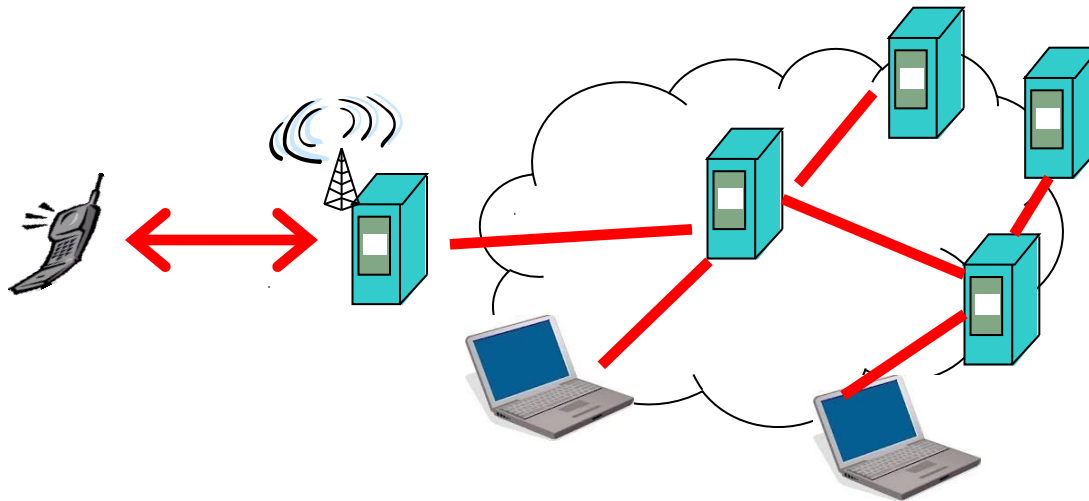
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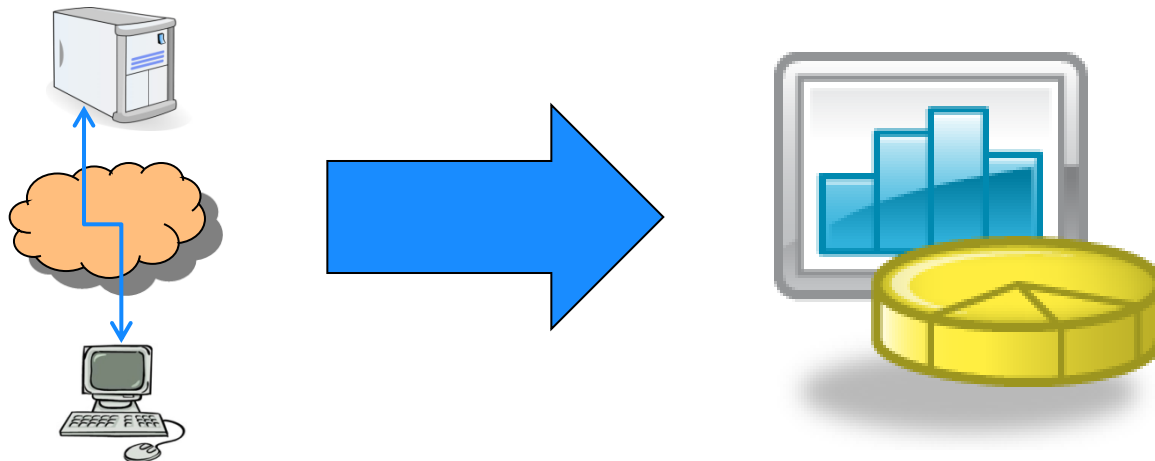
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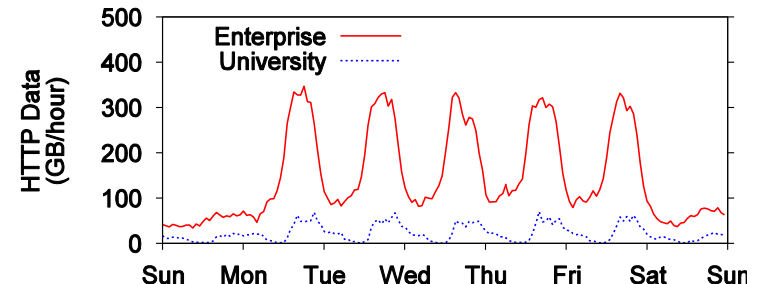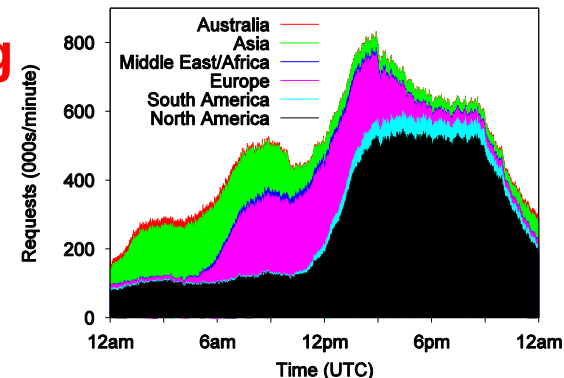
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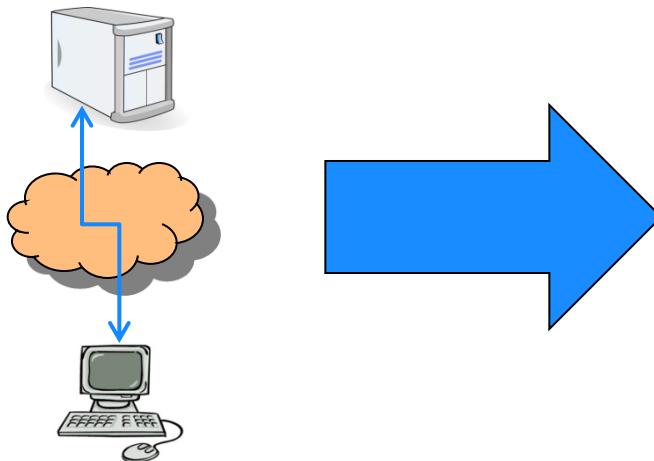
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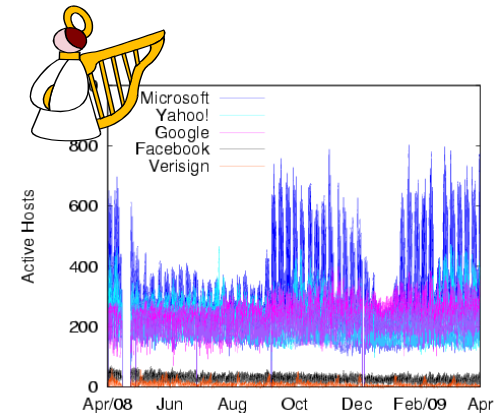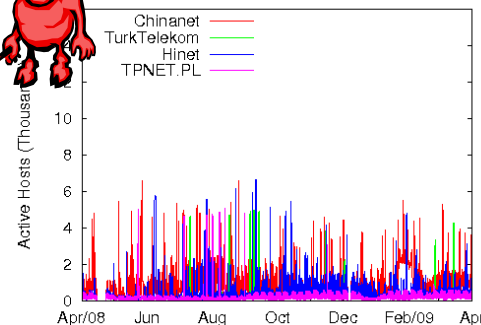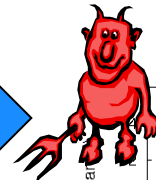
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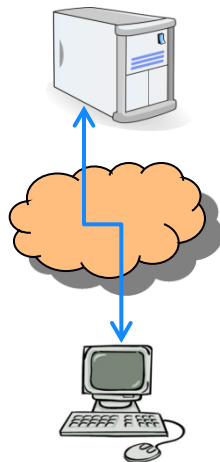
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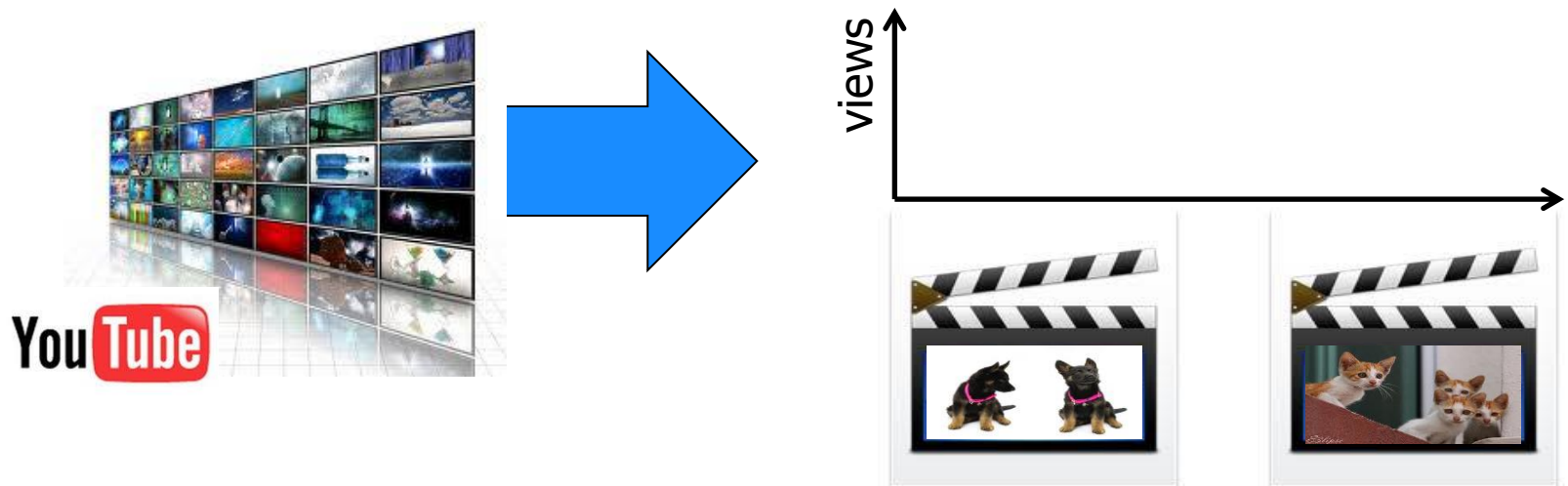
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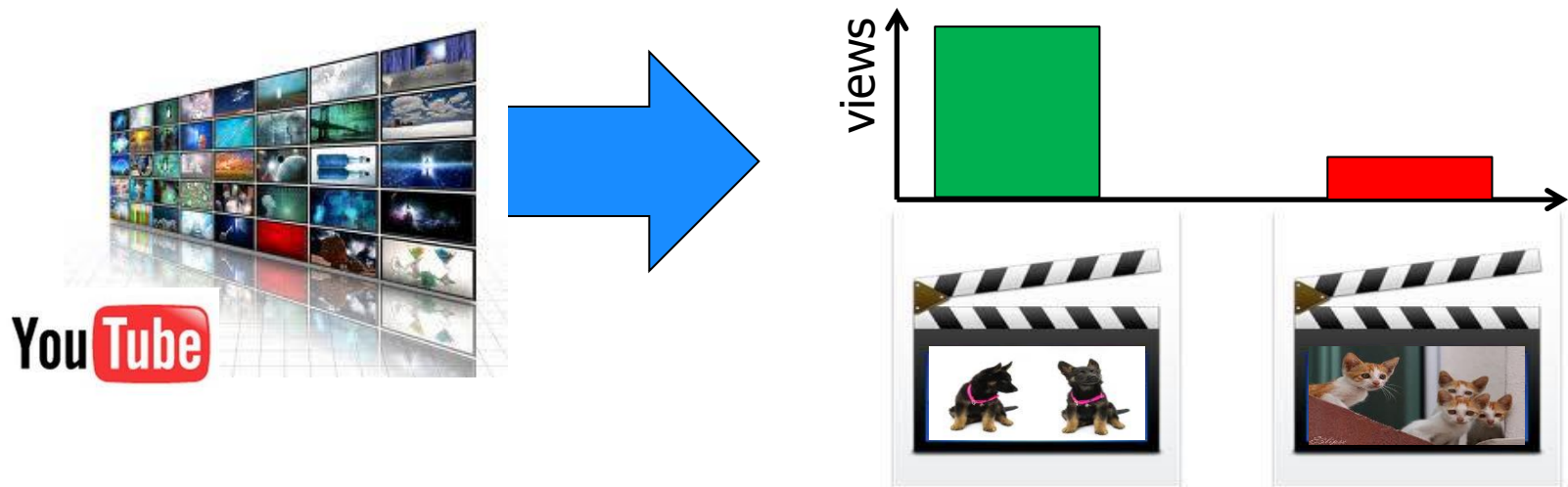
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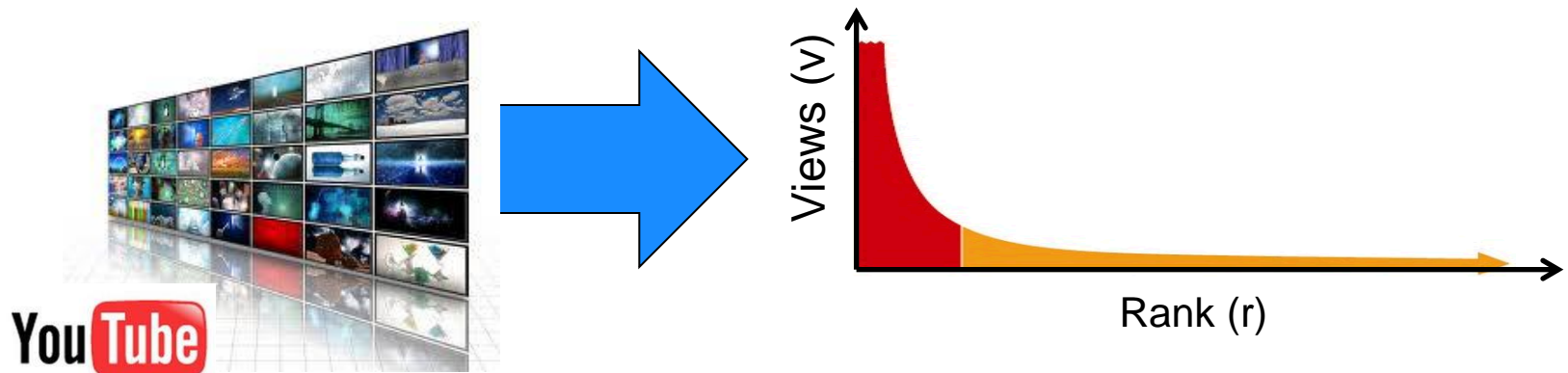
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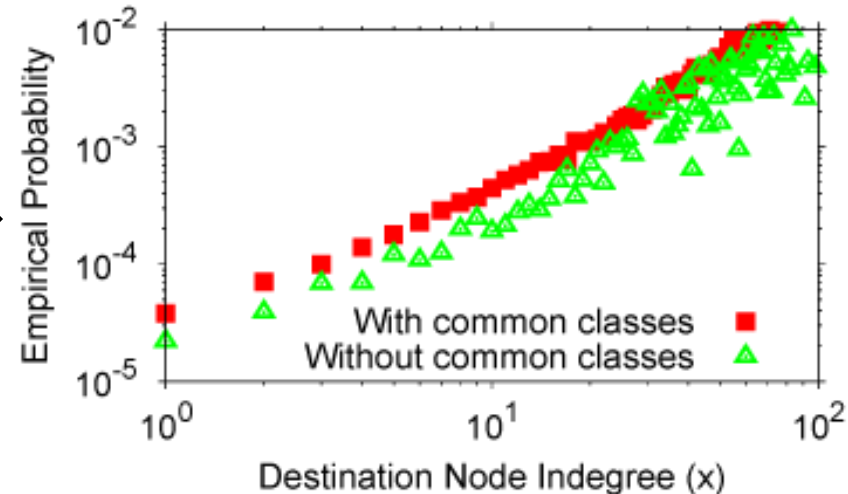 - Security and emerging services

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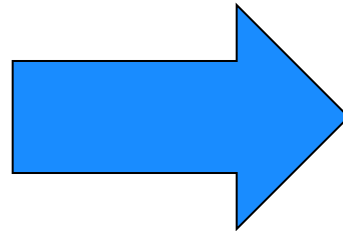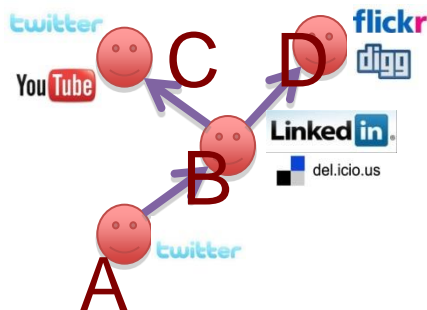 - Security and emerging services

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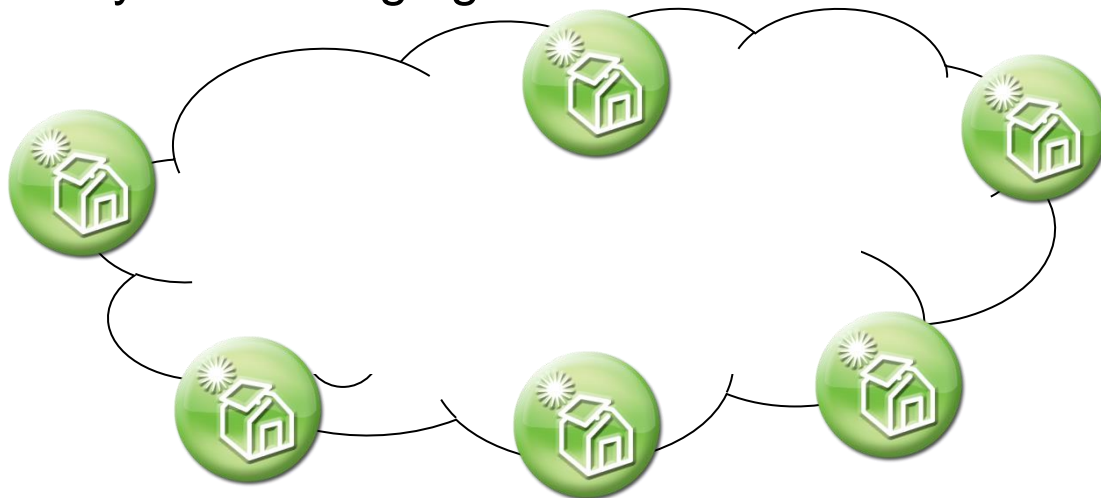
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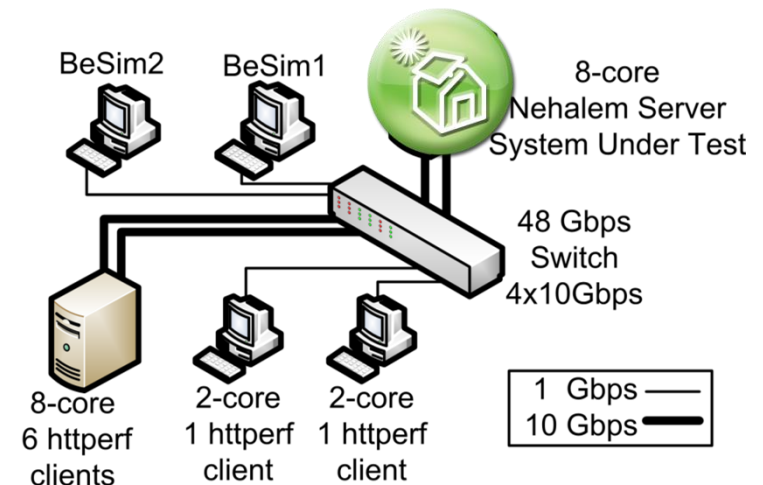
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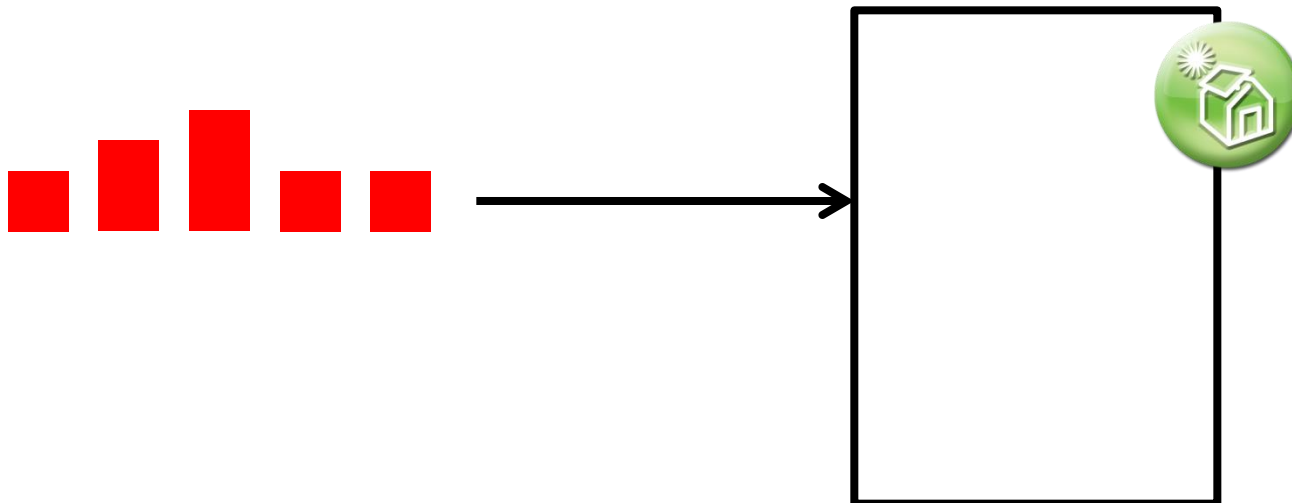
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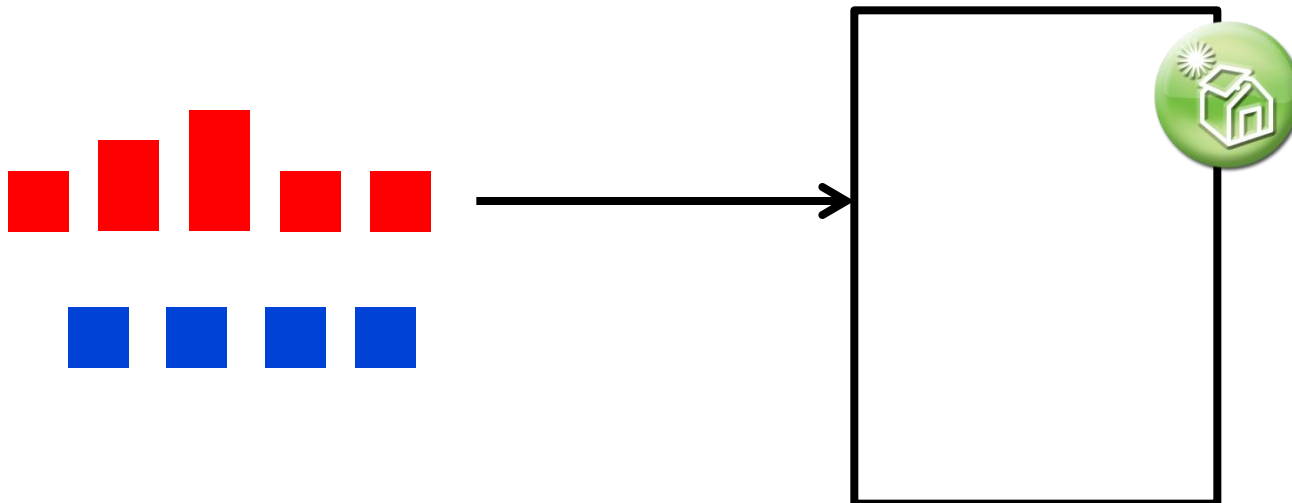
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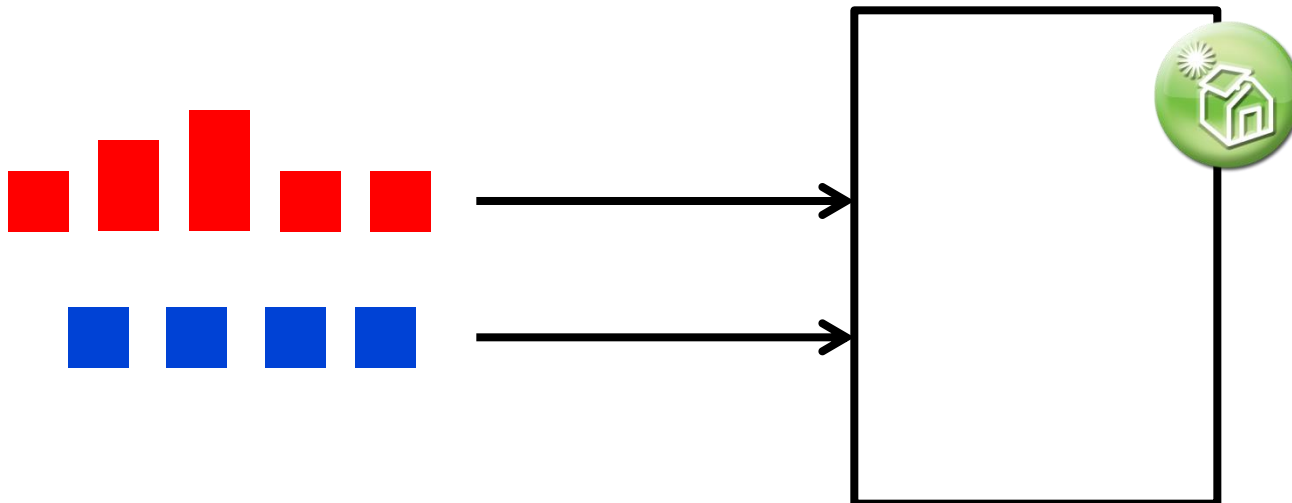
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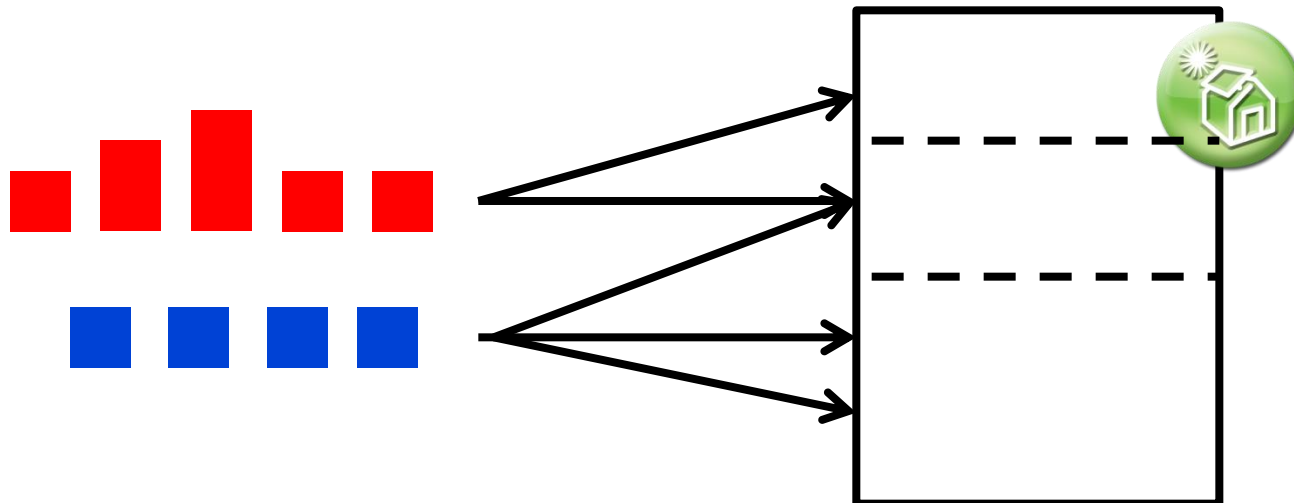
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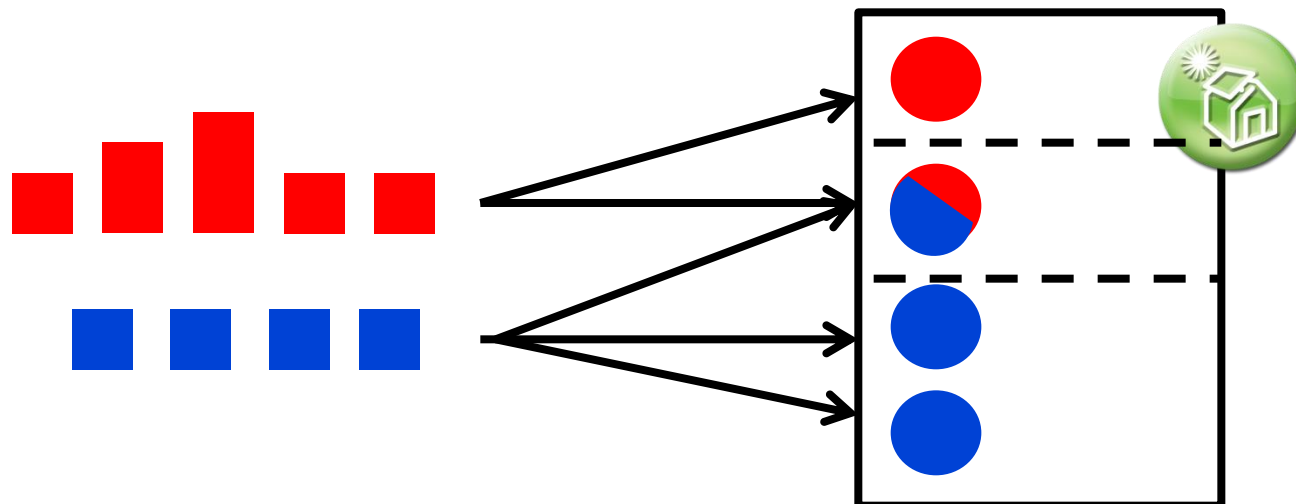
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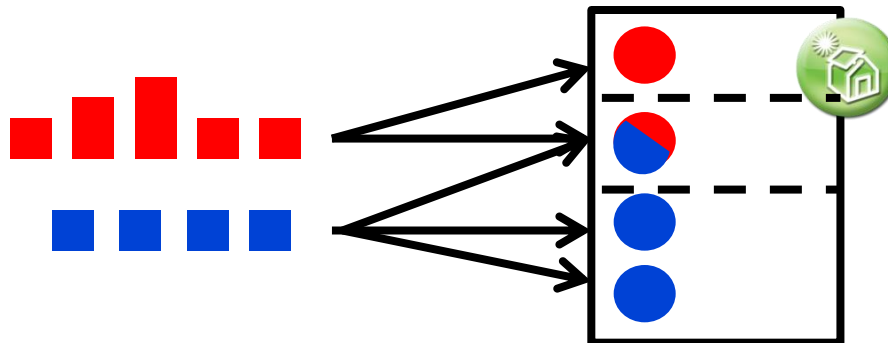
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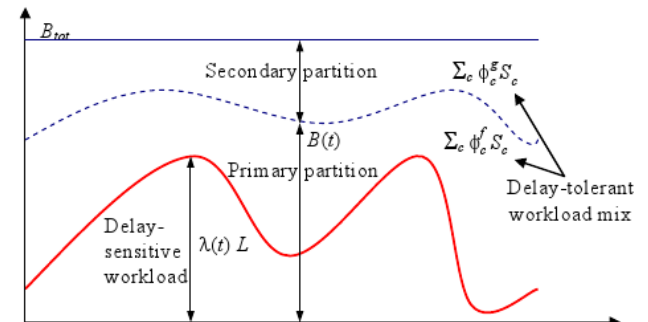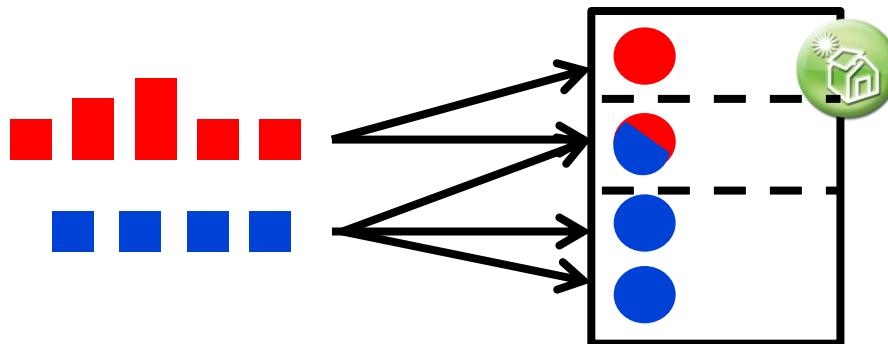
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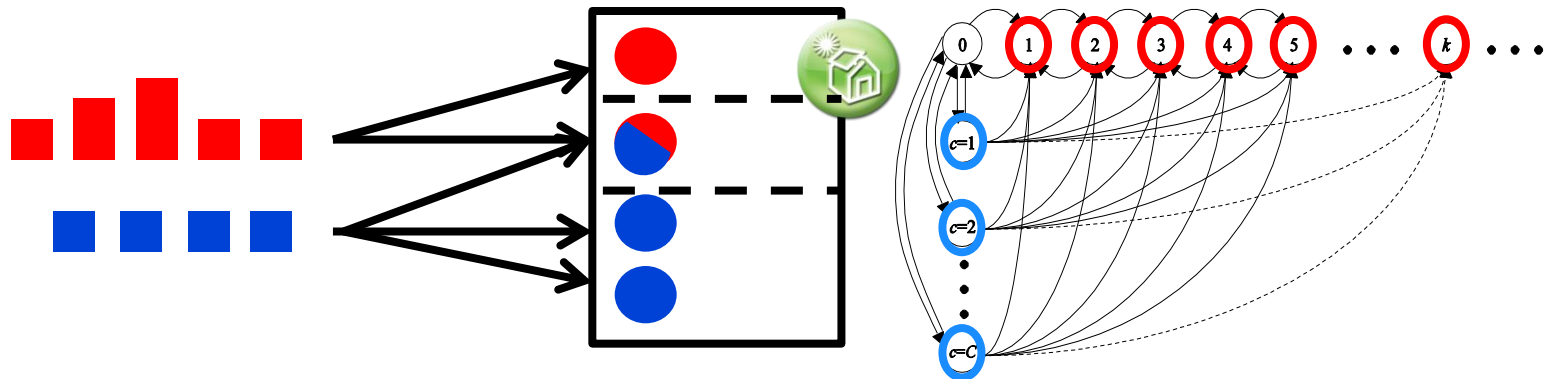
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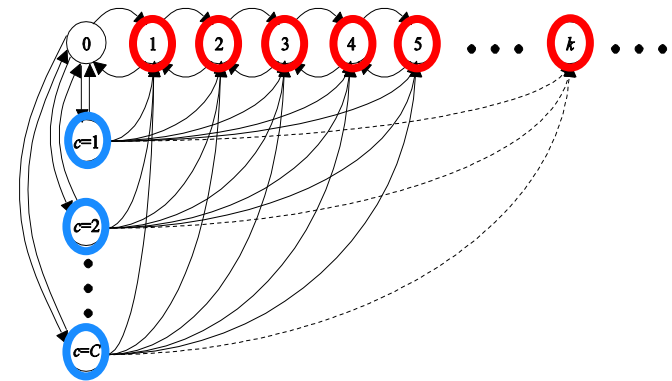
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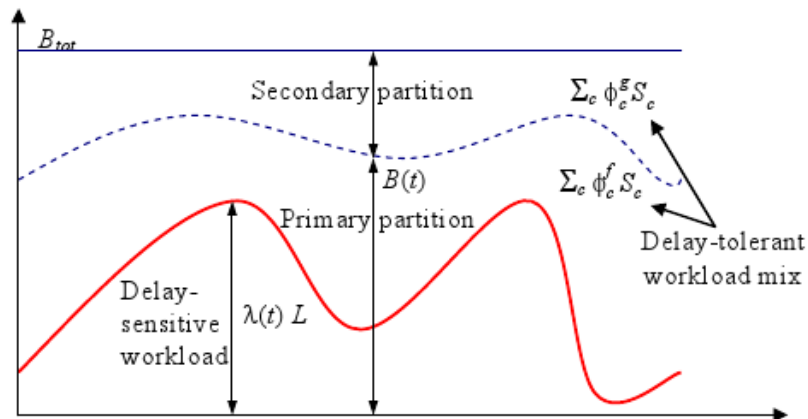
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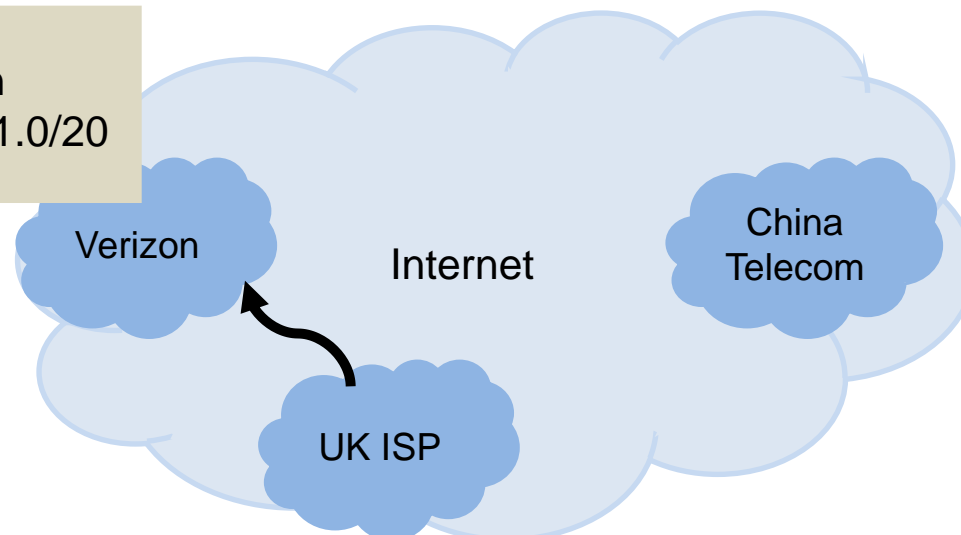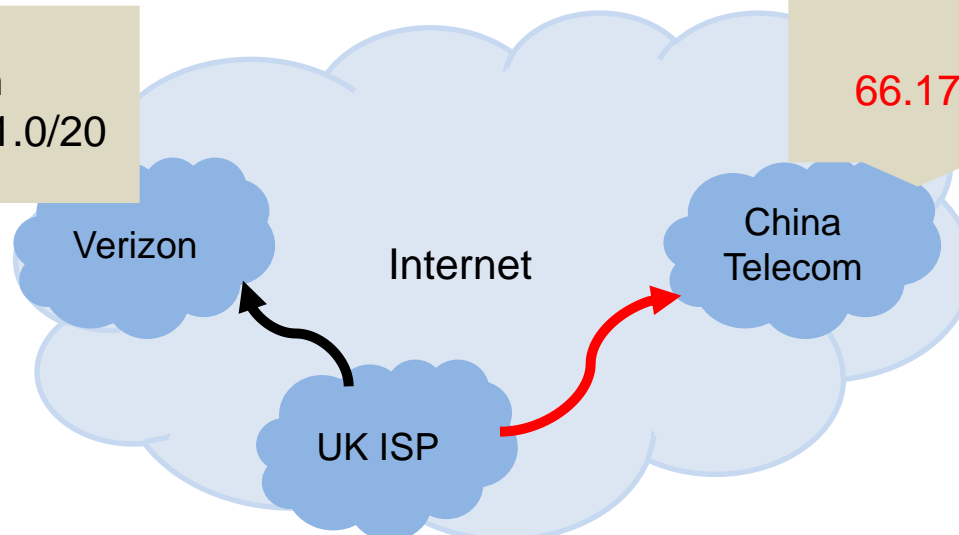 - **Security and emerging services**

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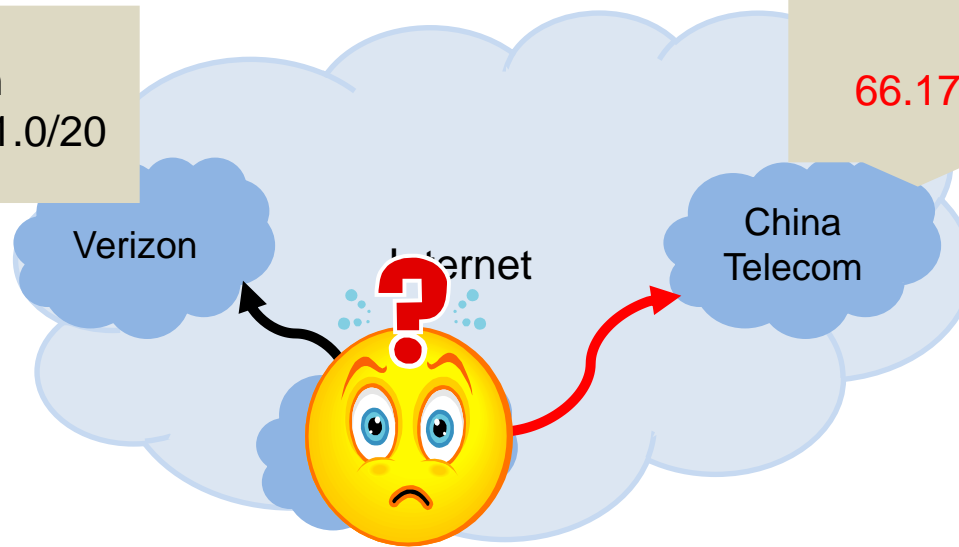
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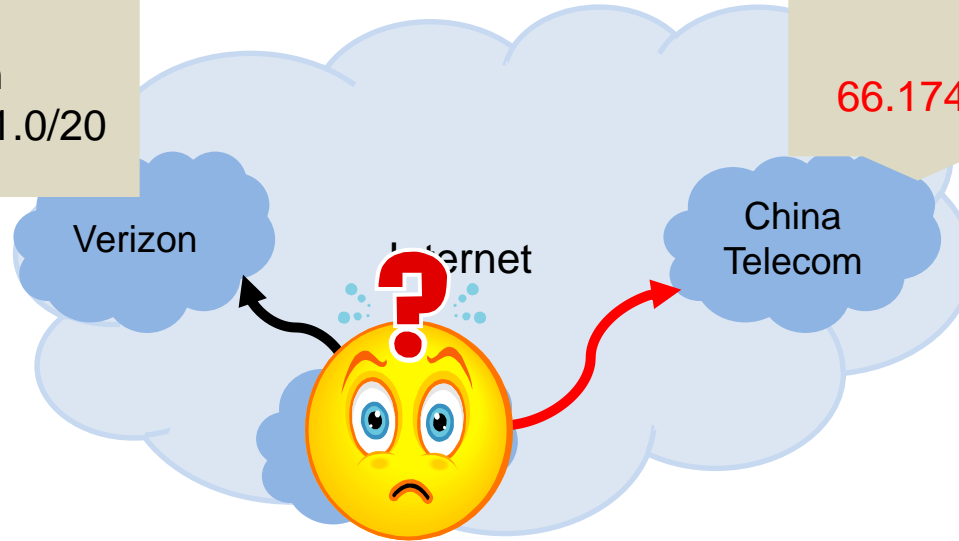
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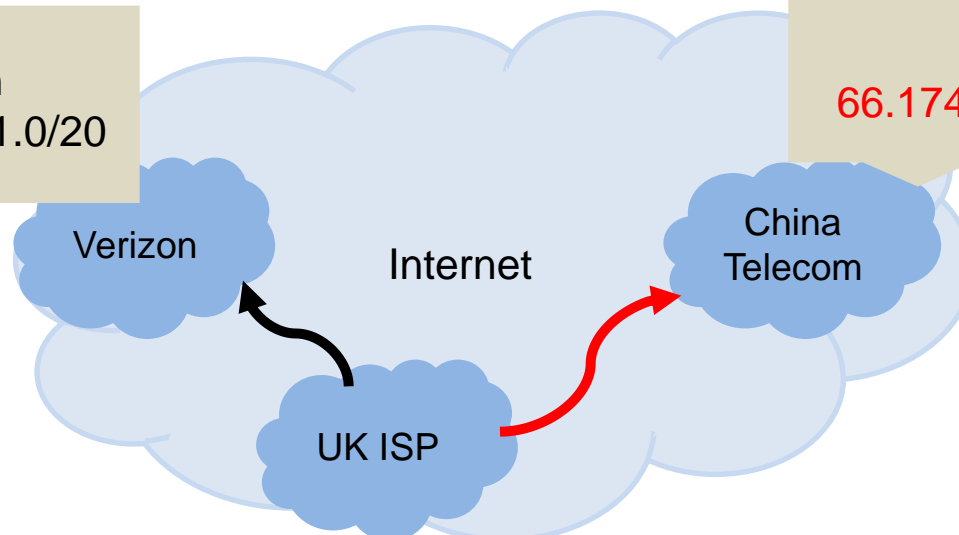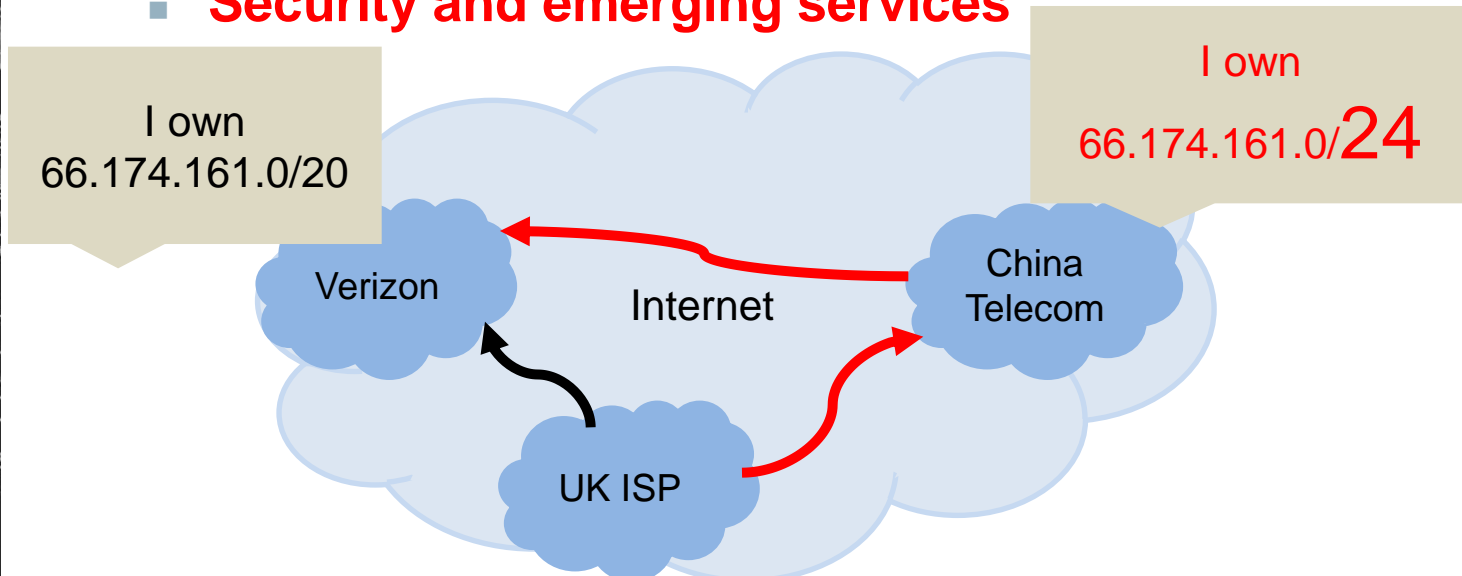
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ACM SIGMETRICS
special interest group on performance evaluation

IEEE computer society

Special Technical Community on Sustainable Computing

GREEN METRICS '09

Methodology overview

- **Measurements**
  - Data mining/analytics/statistics
  - Modeling
- **System and policy design**
  - Analytic modeling
  - Optimization
  - Implementation
- **Evaluation**
  - Analytic, simulations, and instrumentation

A final note …

- I am looking for ambitious students
    - Projects, BSc/MSc thesis, and PhD positions
- Please do not hesitate to contact me if you are interested in one (or more) topic(s) related to
    - Computer networks, distributed systems, security, ...
    - Data mining/analytics/statistics, measurements, analytical modeling, optimization, simulation, implementation or system design
- There are always lots interesting problems!!!
- You can also find out more about my research here: www.ida.liu.se/~nikca/

Thank you!

Niklas Carlsson (niklas.carlsson@liu.se)

Research overview and pubs: www.ida.liu.se/~nikca/