

Let's Communicate

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Neuland im Internet 2019

Personas

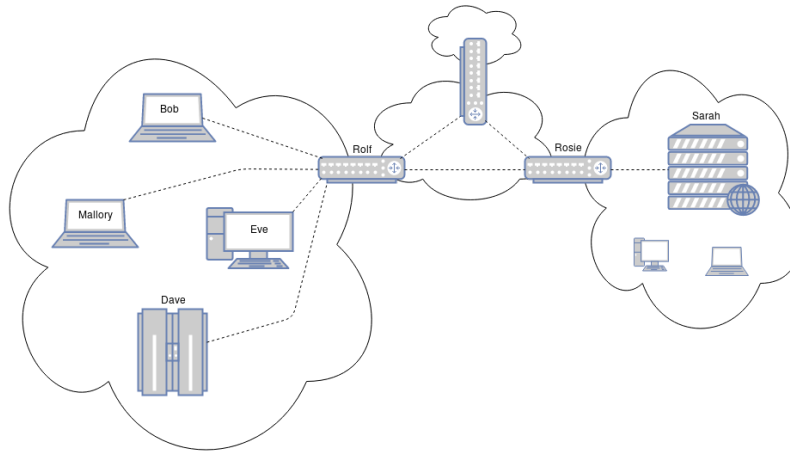


Figure 1: Figure under CC0 1.0

Bob, a Browser

- Process on some Internet host



Figure 2: Figure under CC0 1.0

- Host with one network card
 - IP address 10.0.0.42
 - MAC address 0:0:0:0:0:42
 - Default router with IP address 10.0.0.1
 - Name server with IP address 10.0.0.2

Routers: Rolf and Rosie

- Each with lots of network cards, two relevant here

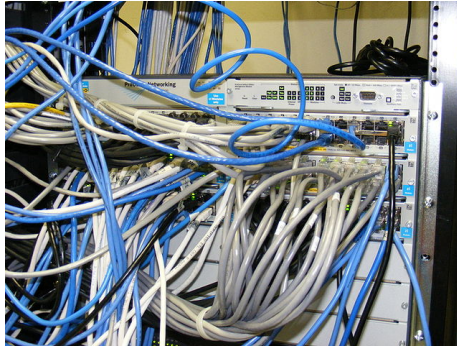


Figure 3: “Switch with cable nest” by Justin Smith under CC BY-SA 2.5; from Wikimedia Commons

- Rolf, first network card
 - * IP address 10.0.0.1
 - * MAC address 0:0:0:0:1
- Rolf, second network card
 - * IP address 128.42.42.1
 - * MAC address 0:0:0:0:42:1
- Rosie, first network card
 - * IP address 128.42.42.2
 - * MAC address 0:0:0:0:42:2
- Rosie, second network card
 - * IP address 128.176.6.1
 - * MAC address 0:0:0:0:6:1

Sarah, the Web Server

- DNS name `www.wwu.de`, listening on TCP port 80



Figure 4: Figure under Public domain

- One network card
 - IP address 128.176.6.250
 - MAC address 0:0:0:0:6:250

Eve, a curious Eavesdropper

- One network card



Figure 5: Figure under CC0 1.0

- IP address 10.0.0.5
- MAC address 0:0:0:0:0:5

Mallory, the Malicious Attacker

- One network card



Figure 6: “Anonymous-Hacker” by Frank Schwichtenberg under CC BY 4.0; from Wikimedia Commons

- IP address 10.0.0.6
- MAC address 0:0:0:6:6:6

Supporting Roles

- Dave, DNS server at IP address 10.0.0.2
- TCP/IP interfaces as necessary
 - E.g., `java.net.Socket` with `Socket(IPAddressOrHostName, Port)`
 - * Standard interface
 - * Vs Internet architecture?
- More characters as necessary

Task

- Send request from browser Bob to Web server Sarah
 - Use HTTP request `GET /exam-solutions.html HTTP/1.1`
 - * More on HTTP in separate presentation
 - * Maybe tell a story involving all personas/roles
 - You may want to change the name of the Web server and choose a suggestive name for the requested resource ...

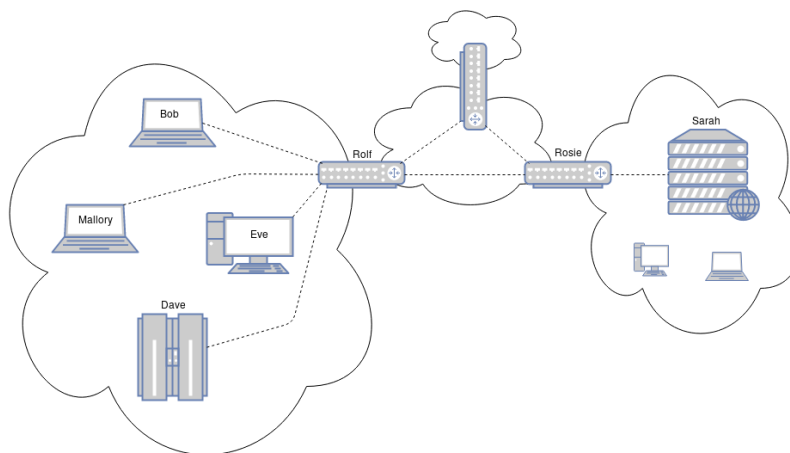


Figure 7: Figure under CC0 1.0

Persona Summary

- Endpoints
 - Sarah, server `www.wwu.de`, `128.176.6.250`, `0:0:0:0:6:250`
 - Bob, browser, `10.0.0.42`, `0:0:0:0:0:42`
 - Dave, DNS server `10.0.0.2`, `0:0:0:0:0:2`
- Routers
 - Rolf
 - * `10.0.0.1` with `0:0:0:0:0:1` and `128.42.42.1` with `0:0:0:0:42:1`
 - Rosie
 - * `128.42.42.2` with `0:0:0:0:42:2` and `128.176.6.1` with `0:0:0:0:6:1`
- Eve, eavesdropper, `10.0.0.5`, `0:0:0:0:0:5`
- Mallory, malicious attacker, `10.0.0.6`, `0:0:0:0:6:6`

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