RIPE 62
Technical Report

Erik Romijn <eromijn@ripe.net>
Senior Software Engineer

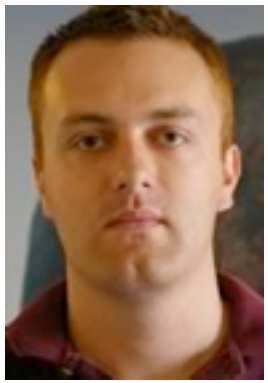
Introduction

The Technical Team

Ben, Brian, Darius, Erik,

Menno, Paolo, Răzvan, Sjoerd



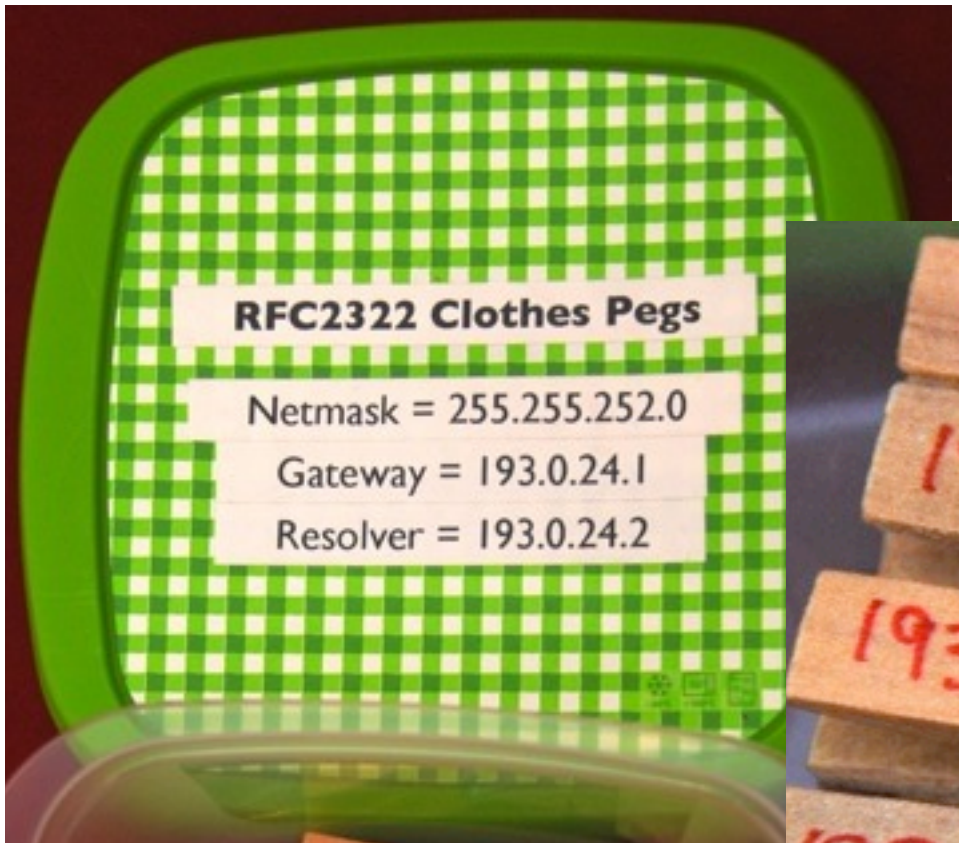





What Do We Do?

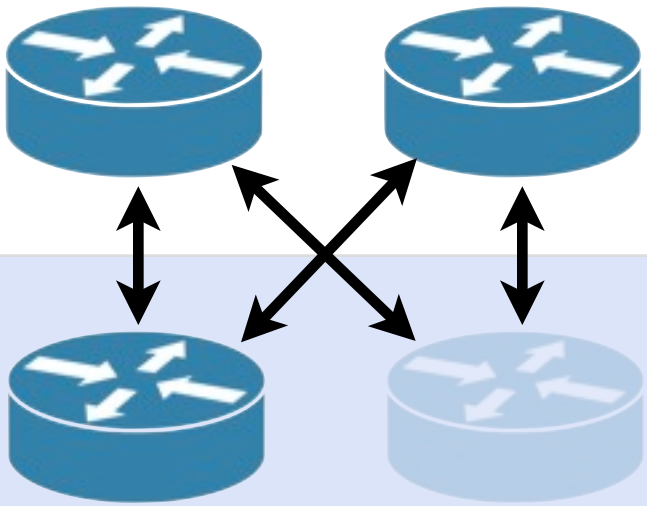
- If it has wires, it's ours
  - (except for beamers, lighting, audio and stenography)
- Some highlights:
  - Local servers running DHCP, IRC, ripe62.ripe.net, registration software, ...
  - Webcasts / recordings
  - (Wireless) network
  - Presentation system
  - Services centre

What do we do?


RFC2322 Clothes Pegs
Netmask = 255.255.252.0
Gateway = 193.0.24.1
Resolver = 193.0.24.2


193.0.24.37
193.0.24.38
193.0.24.39
193.0.24.41
193.0.24.42

Network setup



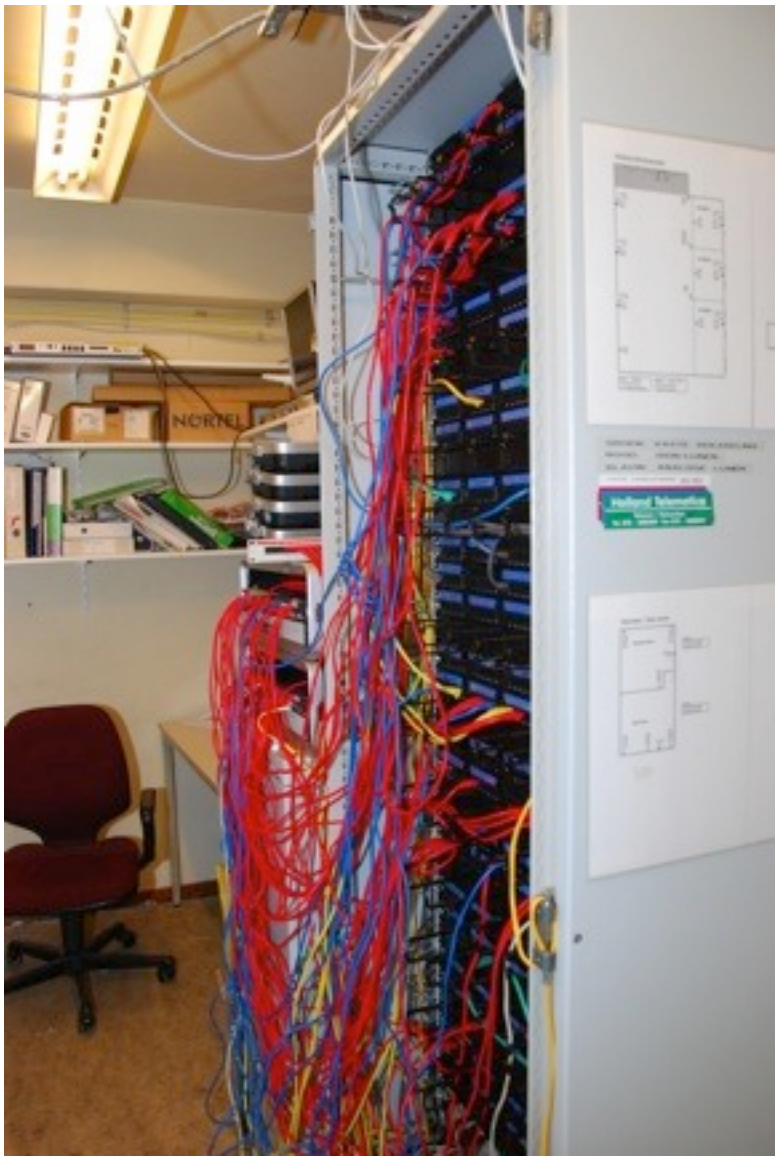
RIPE meeting venue

Public network
Wireless
Terminal room

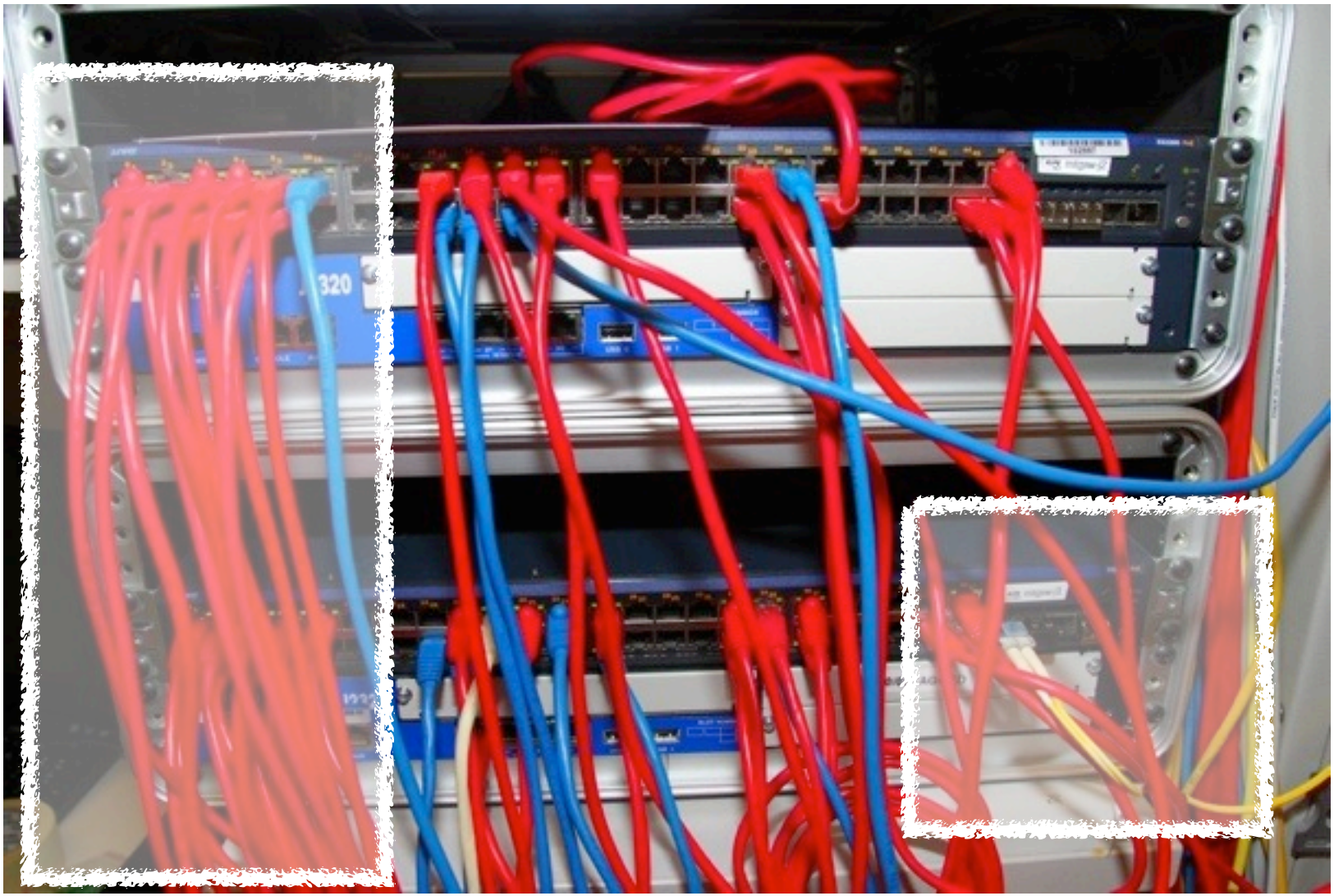
Service network
Streaming
TTM / Rosie

Private network
Registration
Network mgt

Network setup



Network setup



We need to be creative

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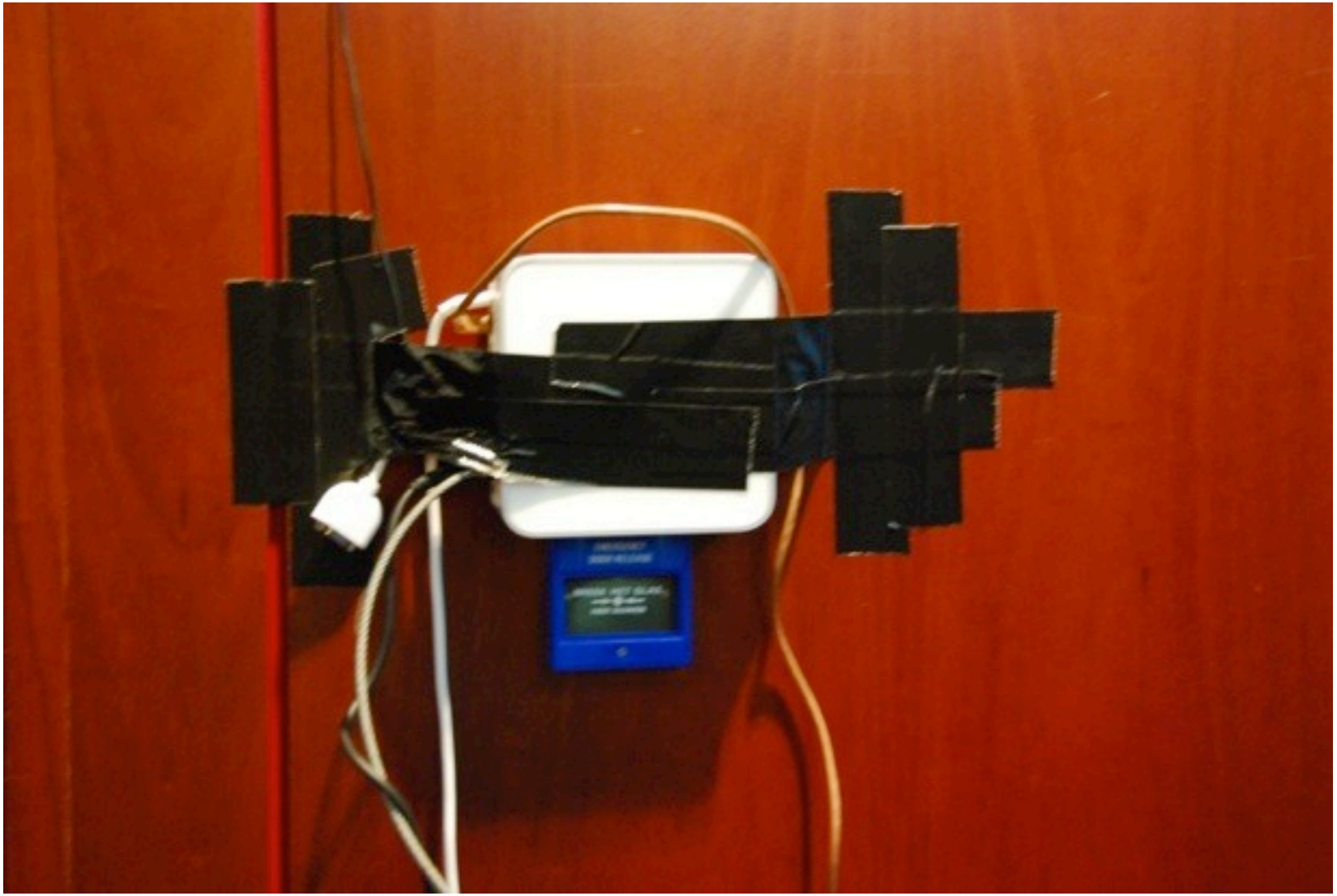
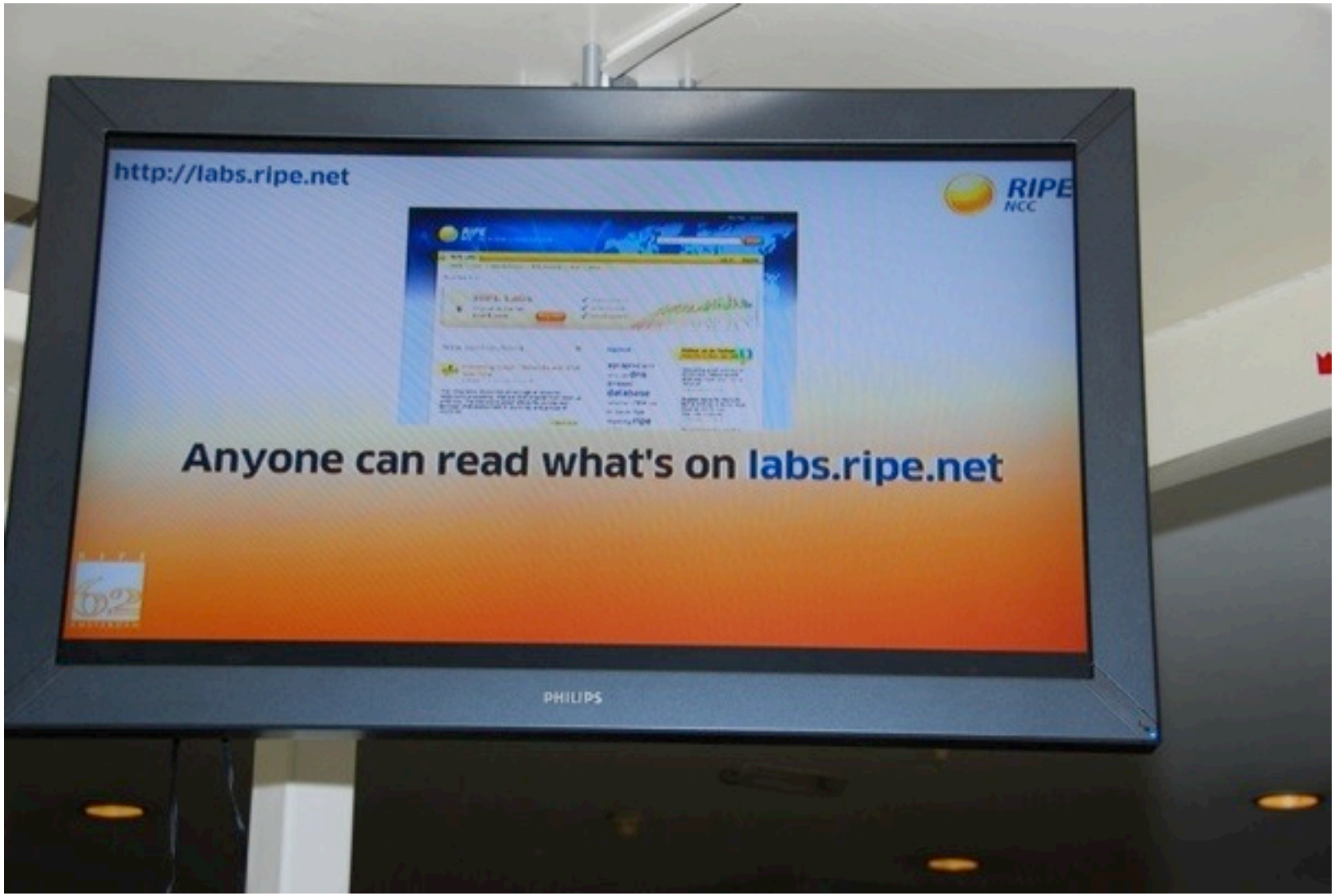


New setups

Better cameras for plenary

Better cameras for plenary

Plasma screen setup



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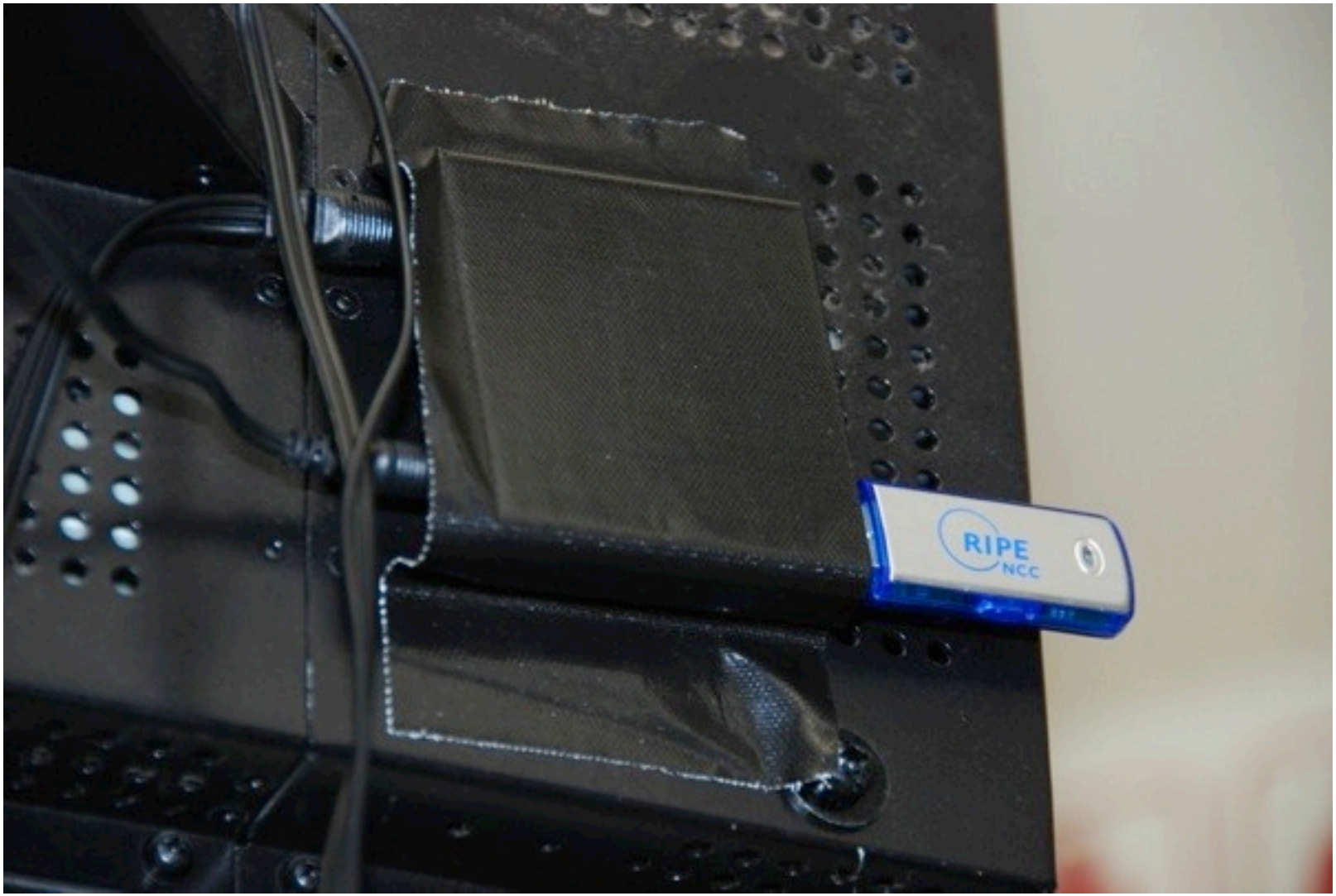
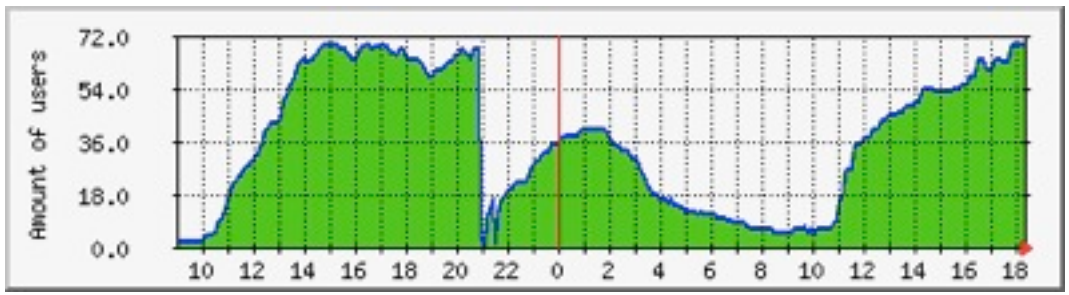
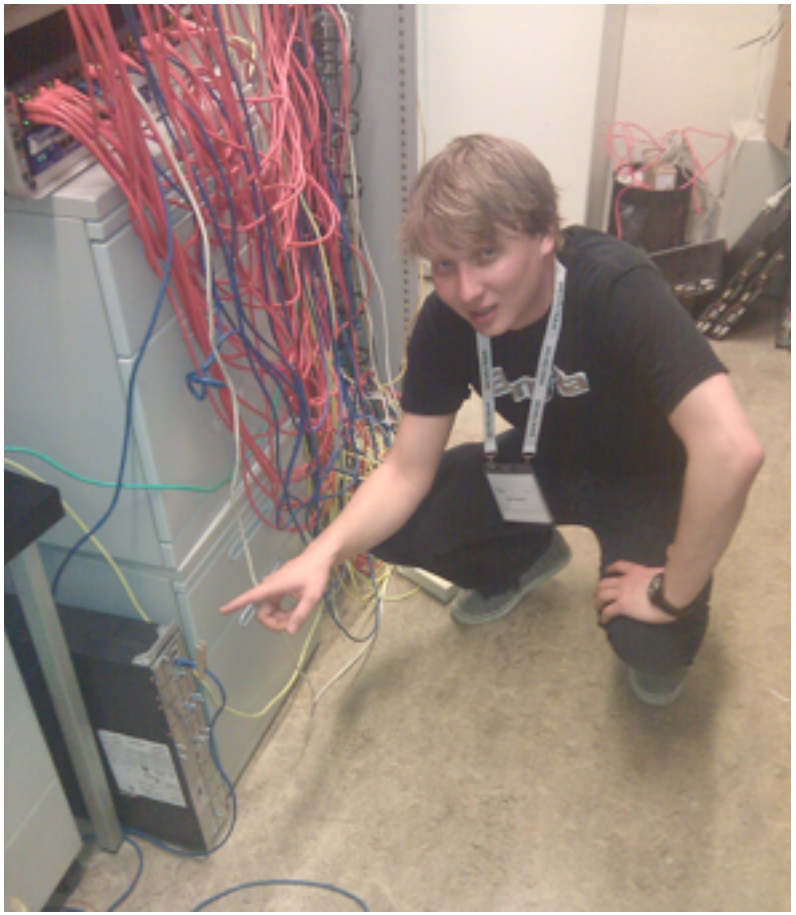


LISP

- Separate SSID setup to experience LISP connectivity, IPv4 and IPv6





Issues encountered

IPv6 printing

IPv6 printing

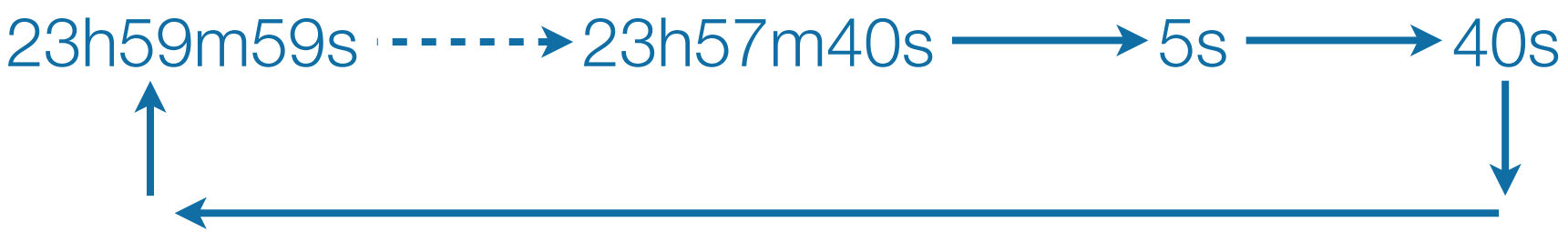
IPv6 connectivity

- Several issues with IPv6 connectivity this time
  - RAs from LISP router together with Mac OS X bug
  - Rogue 6to4 RAs from Windows box
  - Issues in multicast traffic

- IPv6 debugging is difficult
  - Less experience than IPv4
  - Wireless can influence the result
  - All problems very intermittent

IPv6 debugging is tricky

```
dhcp-24-90:~ eromijn$ ndp -na
Neighbor                        Linklayer Address  Netif Expire    St Flgs Prbs
2001:67c:64:42:223:6cff:fe8a:2e8a 0:23:6c:8a:2e:8a   en1 permanent R
fe80::1%lo0                     (incomplete)         lo0 permanent R
fe80::42:0:0:1%en1              0:0:5e:0:2:2a        en1 23h59m59s S  R
fe80::223:6cff:fe8a:2e8a%en1    0:23:6c:8a:2e:8a     en1 permanent R
fe80::250:56ff:febc:7746%en1    0:50:56:bc:77:46     en1 9h13m31s  S
fe80::288c:82de:eb60:60ed%en1   0:24:d7:18:53:18     en1 5h11m3s   S  R
```



Rogue RAs

- LISP router used public network for uplink
- Interface with autoconfigured address: receives address, then sends RAs from there...
- Enable `ipv6 nd surpress-ra`?
  - No luck, only suppresses unsolicited RA - no way to disable solicited RA
- Set RA lifetime to zero
  - Mac OS X bug (fixed in Lion) treats this as "infinite lifetime"
- Solution: disable IPv6 on interface

Rogue 6to4

- Windows laptop announcing 6to4 RA
- Shouldn't affect anyone, because native is preferred
- Very difficult to find, despite not being Apple

```
host goaway {
  hardware ethernet ..:..:..:..:53:18;
  deny booting;
}
```

Multicast issues

- Effect: not getting an address, getting an address but not reaching first hop

- AP not sending (parts of) multicast traffic
  - Fixed by repatching: new patch, reboot of AP and reset of switch port
- Probably not caused by filling up multicast channel
- Lots of mdns traffic
- Further causes unknown

Other issues

- Newest model MacBook Pro can drop off wireless
  - Workaround reported by users: frequent pings

- Next meeting:
  - IPv6 RA filtering
  - Consider mdns filtering

Very long patches

Very long patches

Stats

TTM Observations

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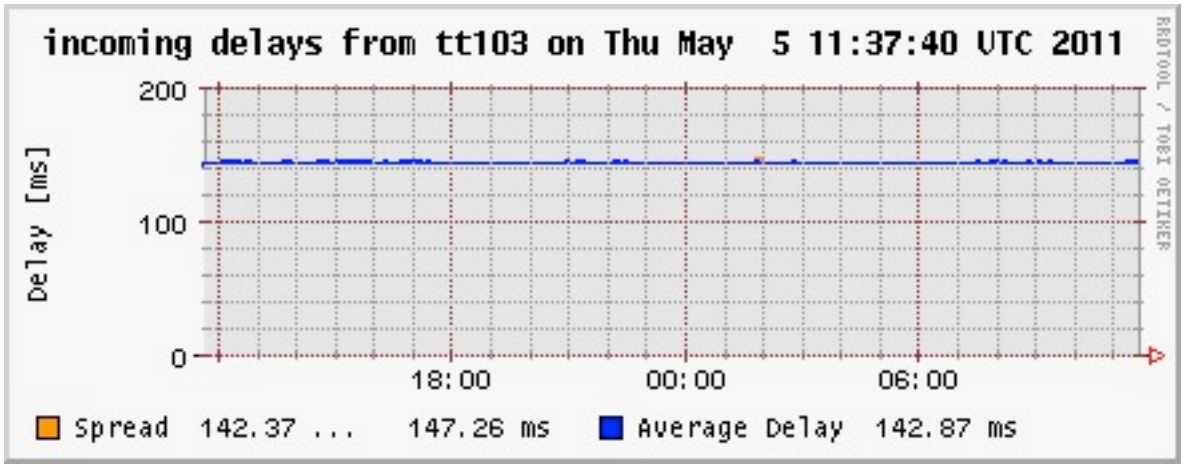
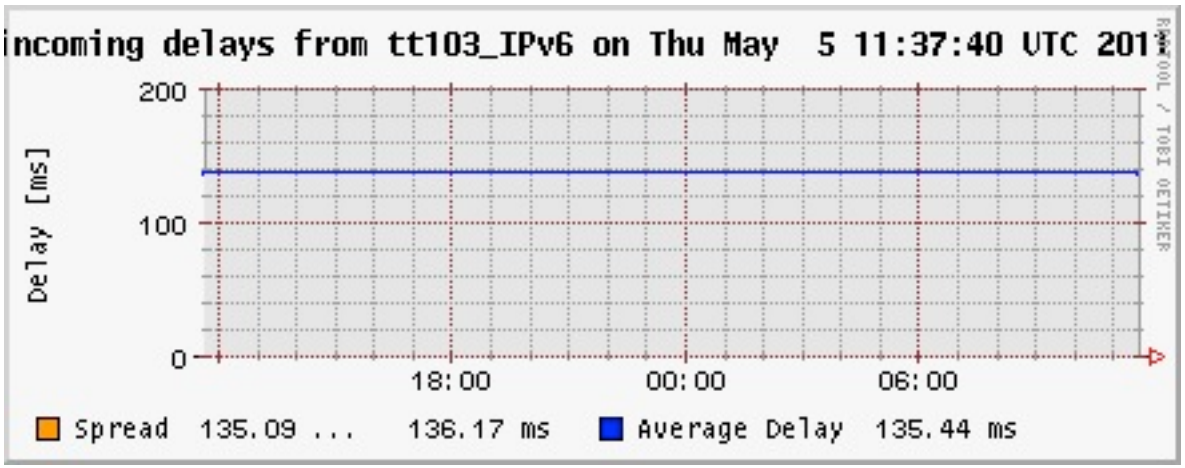
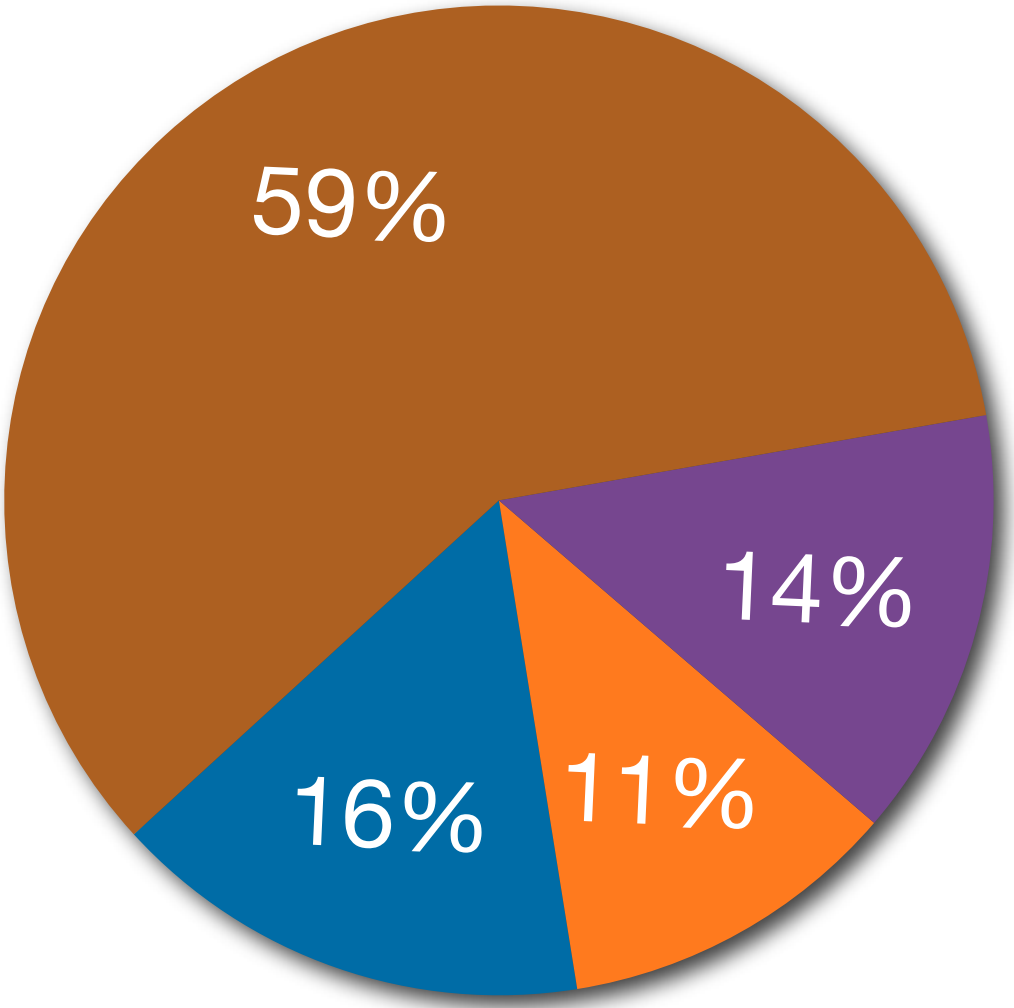




Internet Initiative Japan:

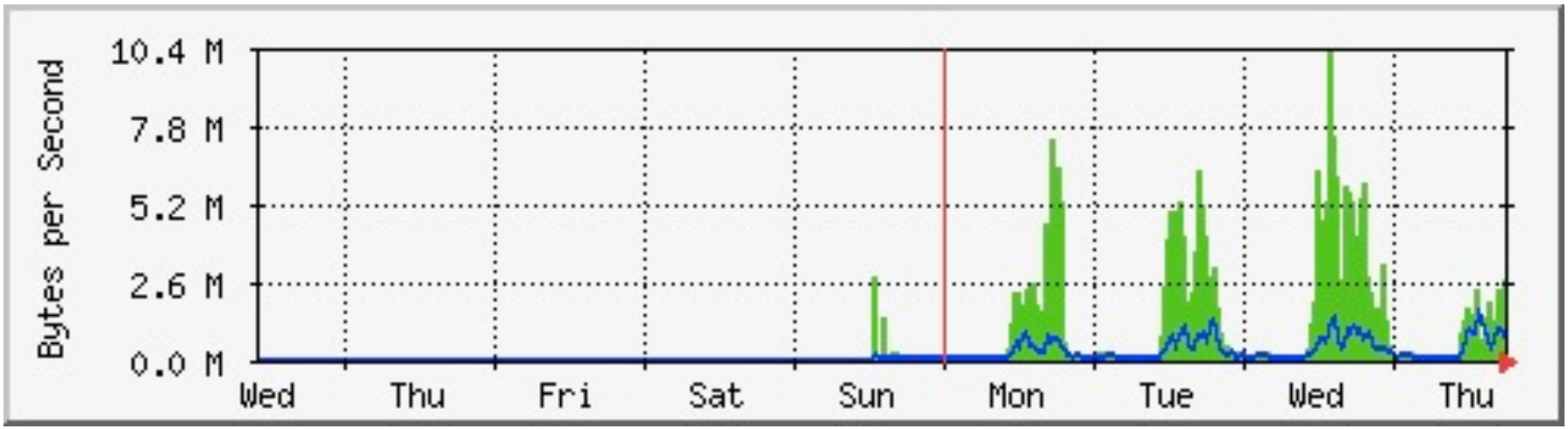
lower IPv6 than IPv4 latency

DHCP lease vendors



- Apple
- HTC
- Intel
- Other / unknown

Uplink traffic



Peak: 48 Mbit/s in, 9 Mbit/s out

Average: 10 Mbit/s in, 2.5 Mbit/s out

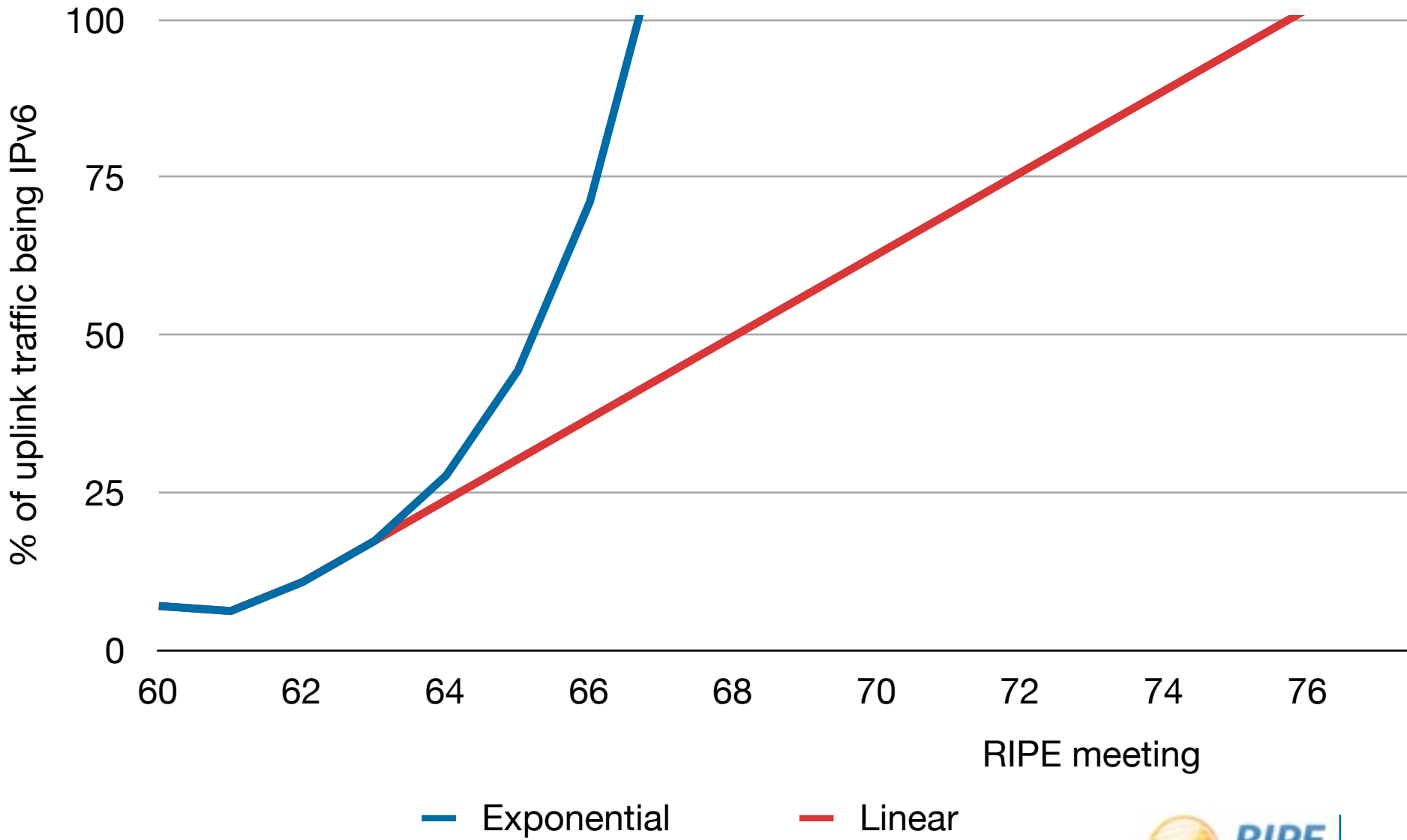
IPv6 traffic

17.3% of uplink traffic is IPv6

Peak: 35 Mbit/s in, 2 Mbit/s out

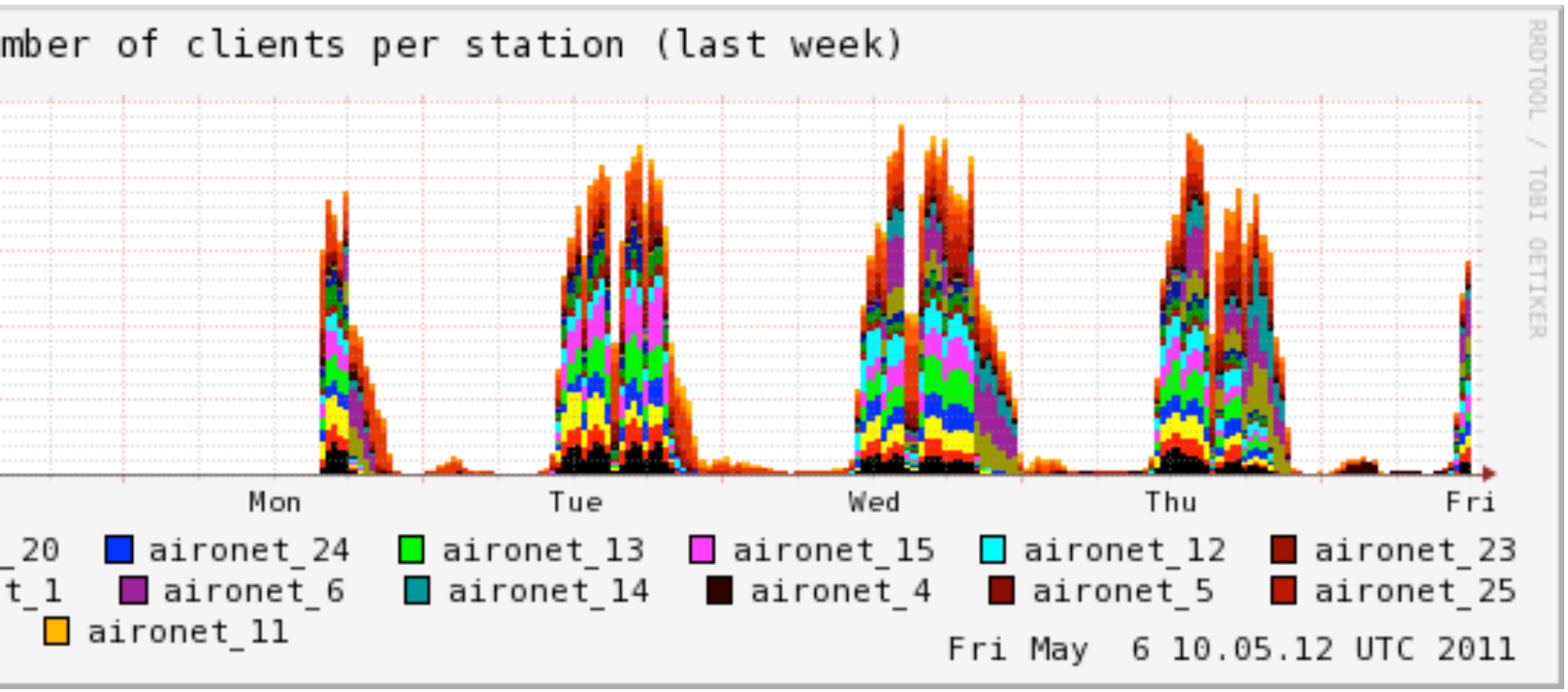
Average: 3 Mbit/s in, 144 kbit/s out

IPv6 traffic on the RIPE meeting network



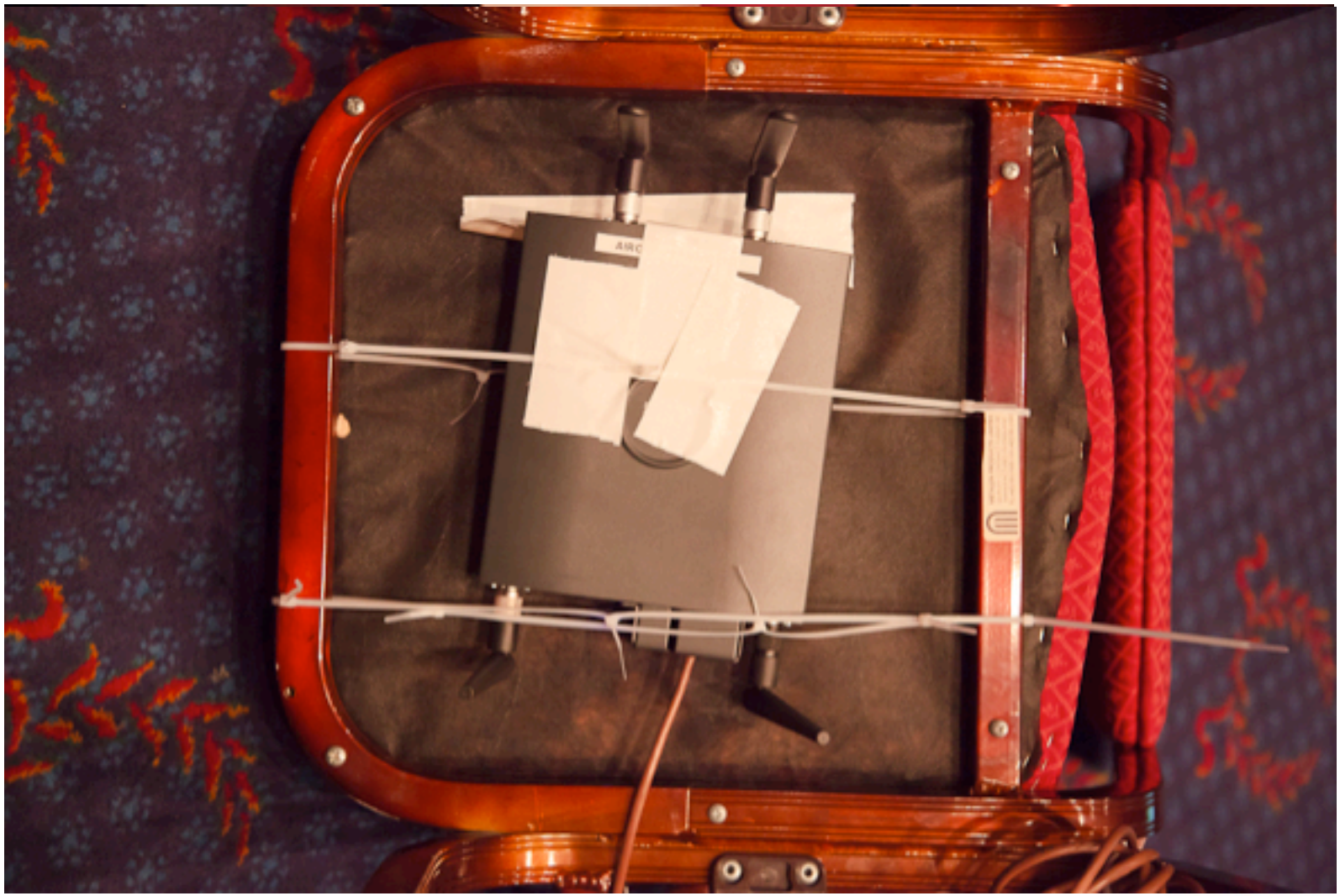
Wireless

20 base stations deployed



Peak: 450 associations

High-density access point distribution



See you in Vienna!

Questions?

Erik Romijn
<opsmtg@ripe.net>