87th IETF Meeting

The NorNet Testbed:
A Platform for
Evaluating Multi-Path Transport
in the Real-World Internet

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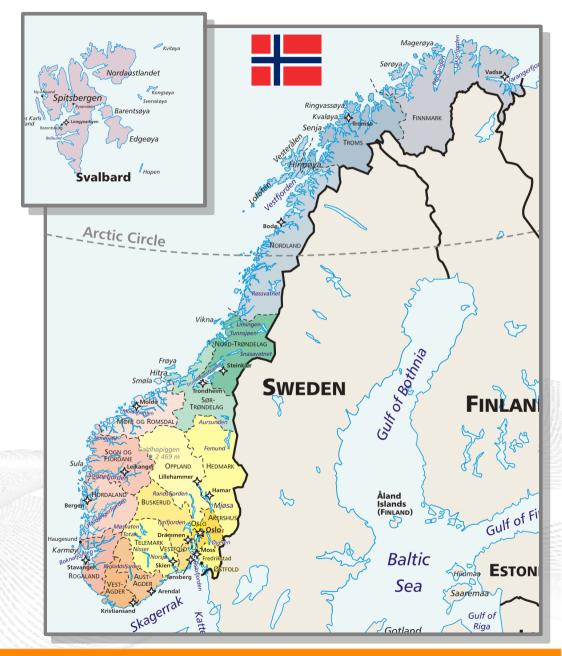Simula Research Laboratory A/S

29 July 2013

Goals of the NorNet Project

- Building up a **realistic** multi-homing testbed

- Wired and wireless

    – Wired → "NorNet Core"

    – Wireless → "NorNet Edge"

- **Perform research with the testbed!**

How to get a _realistic_ testbed?

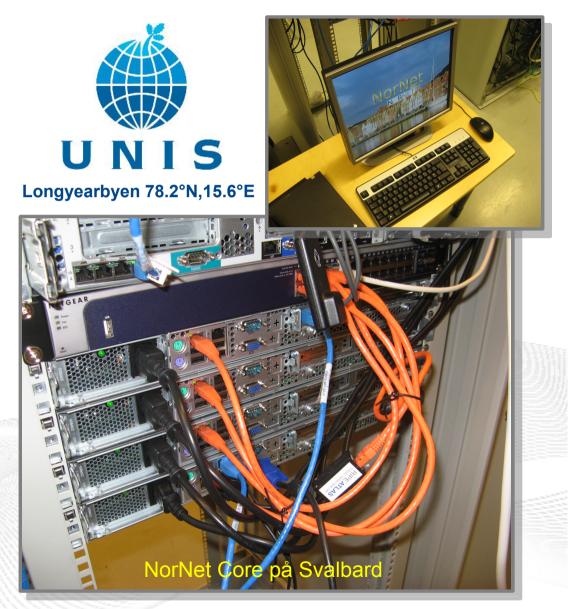# Idea: Distribution of NorNet over whole Norway

- **Challenging topology:**
  - Large distances
  - A few "big" cities, many large rural areas
  - Svalbard:
    - Interesting location
    - Many polar research institutions
- NorNet Core:
  - Currently 10+1 sites
- NorNet Edge:
  - Currently ca. 400 nodes
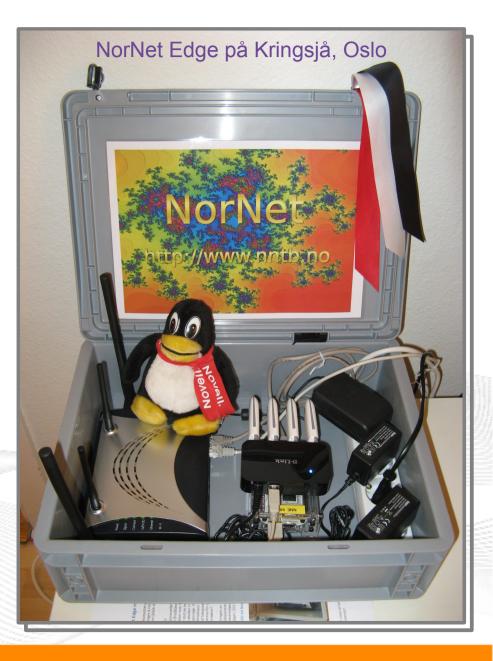
A NorNet Core Site Deployment

A NorNet Core site:

- 1x switch

- 4x server

  - 1x tunnelbox

  - 3x research systems

- At least two ISP connections

  - Uninett **UNINETT**

  - Other providers

- IPv4 and IPv6 (if available)

Longyearbyen 78.2°N,15.6°E
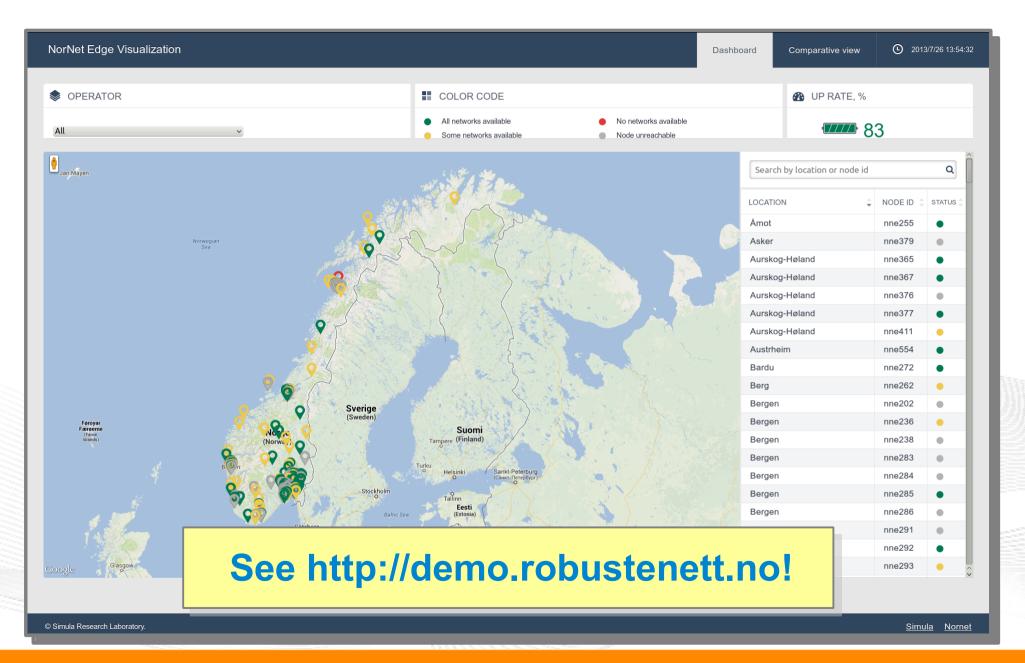
NorNet Core på Svalbard

The NorNet Edge Box: Ready for Deployment

Box contents:

- Beagle Bone or Ufoboard embedded Linux system

- 4x USB UMTS:

  – Telenor, NetCom,

  – Network Norway, Tele2

- 1x ICE CDMA mobile broadband

- 1x Ethernet

- Power supplies

- Handbook

NorNet Edge på Kringsjå, Oslo

NorNet

http://www.nntb.no

NorNet Edge Visualisation

See http://demo.robustenett.no!

Users

> **"The road to hell is paved with unused testbeds."**
> **[James P. G. Sterbenz]**

- Of course, NorNet does **not** intend to be another unused testbed!

- NorNet will be open for all interested users!

    - Similar to PlanetLab ...

    - … but with higher node availability and tighter monitoring

    - … and, of course, **multi-homing**

- **Particularly, it can also be used by the <u>MPTCP community</u>!**

More details to be announced soon!

The 1st NorNet Users Workshop (NNUW-1)

Any Questions?

Visit http://www.nntb.no for further information!