

**datacenter**light

**How a green field  
data center in 2017  
can look like**

**....**

# Data Center Light

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- Affordable VM Hosting in Glarus
- Everything is Open Source
- ~~Mobile first~~ IPv6 first!
- No active cooling

DIGITAL GLARUS  
*by*  
ungleich<sup>#</sup>



**... digitalize Glarus!**

# Digital Glarus

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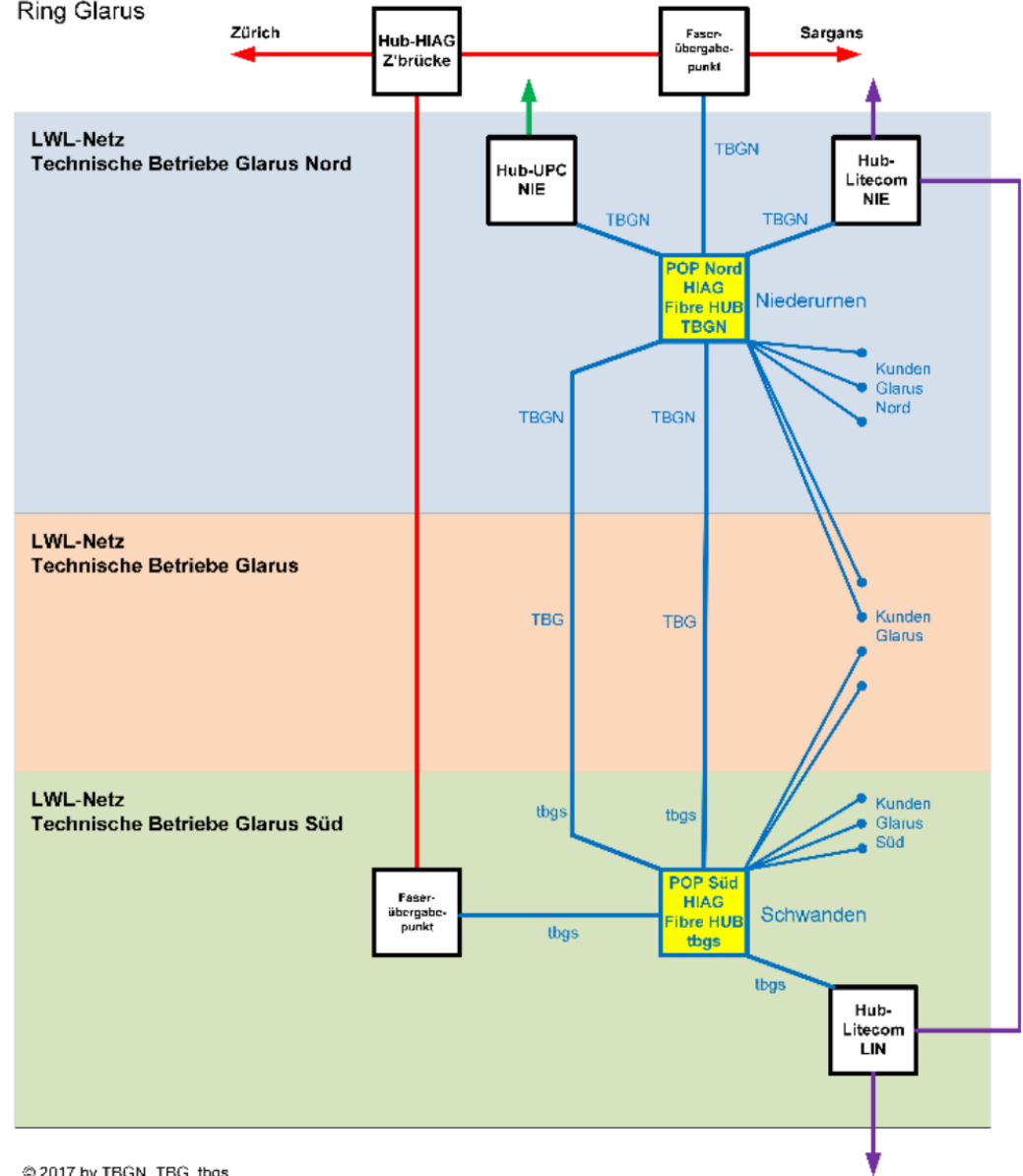
- Co Working
- Tech & Business Meetup
- Club **Digitale Bildung ungleich**
- Pretty old buildings
- Fast internet

# 1-100 Gbit/s

energie die bewegt

## HIAG DATA

TBNet  
Ring Glarus



# 100 % Glarus



# Initiative [NüGlarus.ch](http://nueglarus.ch) & Entrepreneur lunch 27 June

NüGlarus-Entrepreneur-Workshop „The common path to an innovative Region“ (in German)

- **\*\*\* SAVE THE DATE \*\*\*** Tuesday, 27 June 2017, 10.45h-13.00h, Hotel Glarnerhof, Glarus
- With subsequent Networking lunch
- Partner **ungleich** offers NüGlarus Corporate and Private Members free Co-Working space (1x per Month ½ Day in Schwanden)
- Presentation of the possibilities to work and partner with NüGlarus for innovative entrepreneurs of the region (broader Linthebene), potential IT Partners and further interested parties.
- **Registration via [nueglarus.ch](http://nueglarus.ch) by 23 June (free). Programme:**
  1. Initiative NüGlarus – New Co-Innovation possibilities for local companies  
Speaker: **Roberto Balmer, President NüGlarus**
  2. Transformation of business models at Glarner Kantonalbank  
Speaker: **Ralf Luchsinger, CIO Glarner Kantonalbank**
  3. The fastest and cheapest data highway of the Alps  
Speaker: **Martin Zopfi, CEO Technische Betriebe Glarus (tb.glarus)**
  4. On the importance and management of innovation in SMEs  
Speaker: **Thomas Marti, CEO marti engineering ag, Mitlödi**
  5. On the role of Startups and the Industry Working Group of NüGlarus  
Speaker: **Robin Jud, CEO of first regional Incubator Linklabs**



# 100% Open Source

Ubuntu

PostgreSQL

RubyOnRails

cdist Grafana Prometheus

Consul tayga (dns64)

Python3 Devuan

radvd (nat64) Ceph

Arch CentOS OpenVPN

nginx bind9 nftables

Django Debian keepalived

iptables OpenNebula

Gluster



- Not perfect
- But easy to use
- Good IPv6 Support

# cdist

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- Simple and easy
- Configuration Management System
- Developed at ETH Zurich and ungleich

**ETH** zürich

 ungleich<sup>#</sup>

# Devuan

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- Debian without systemd
  - No fsck timeouts
  - No systemd-resolved
  - No errors when restart services
  - No PID 1 root exploits / Denial of Service
  - ...
- But with easy network names (eth0, eth1, ...)

# ZFS?

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- Not in this release ...
- ... but maybe soon!

# IPv6 First!

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- Servers: IPv6 only
- Virtual machines: IPv6 only
- Switches: IPv6 only
- Fridges: ?

**IPv4?**

# IPv4

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- IPv4 only on routers
- Stateless NAT64 via tayga
- A /22 IPv4 network mapped to IPv6 addresses
  - Only for Virtual Machines



# IPv6 Again!

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- Testing **IPv6 only** Virtual Machines
- Additionally to "regular" Virtual Machines
- Stateful NAT for access of IPv4 Internet

# 100% SSL

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- Let's encrypt everywhere
- **No** http sites

# Cooling

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- Glarus has a unique environment
- Huge old factory halls
- Affordable power prices
- ~~42 hosts on 1 m<sup>2</sup>~~
- **1 host on 5m<sup>2</sup>**



**VERY  
GREEN.**