NIKHEF OPENSTACK/OPENCONTRAIL UPDATE
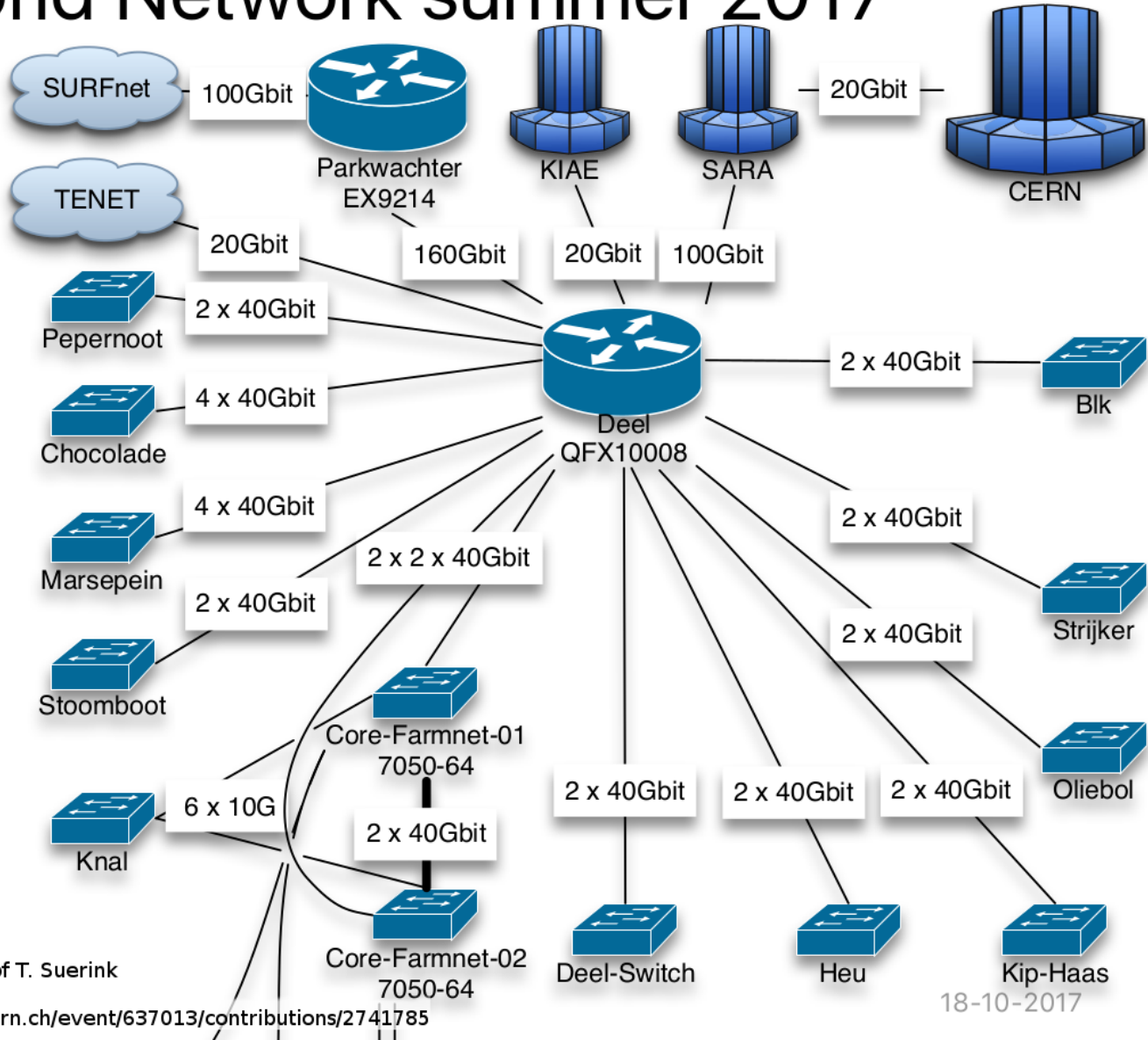
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HEPIX NFV WG MEETING TUESDAY 2018-06-20

NIKHEF NETWORK RECAP

We began to rethink our network setup after the last upgrade in 2012; a trend towards virtualisation was looming and we needed to be ready.

Decided to go with Juniper's QFX10000 platform. We now have a QFX10008 as the backbone of our grid network.

Grid Network summer 2017

VIRTUALISATION PLANS

- Plans to set up a local 'cloud' starting 2016.
- Would be based on Openstack + Juniper Contrail.
- Initially for local use:
  - extend the local compute cluster based on demand
  - absorb (part of) the grid compute resources
  - very little for cloud services within the lab (careful until we get a feel for the support burden).

EXTEND NATIONALLY

Working together with SURF (SURFnet, SURFsara) and University of Groningen to build a national cloud infrastructure.

- High throughput, so fast networks.
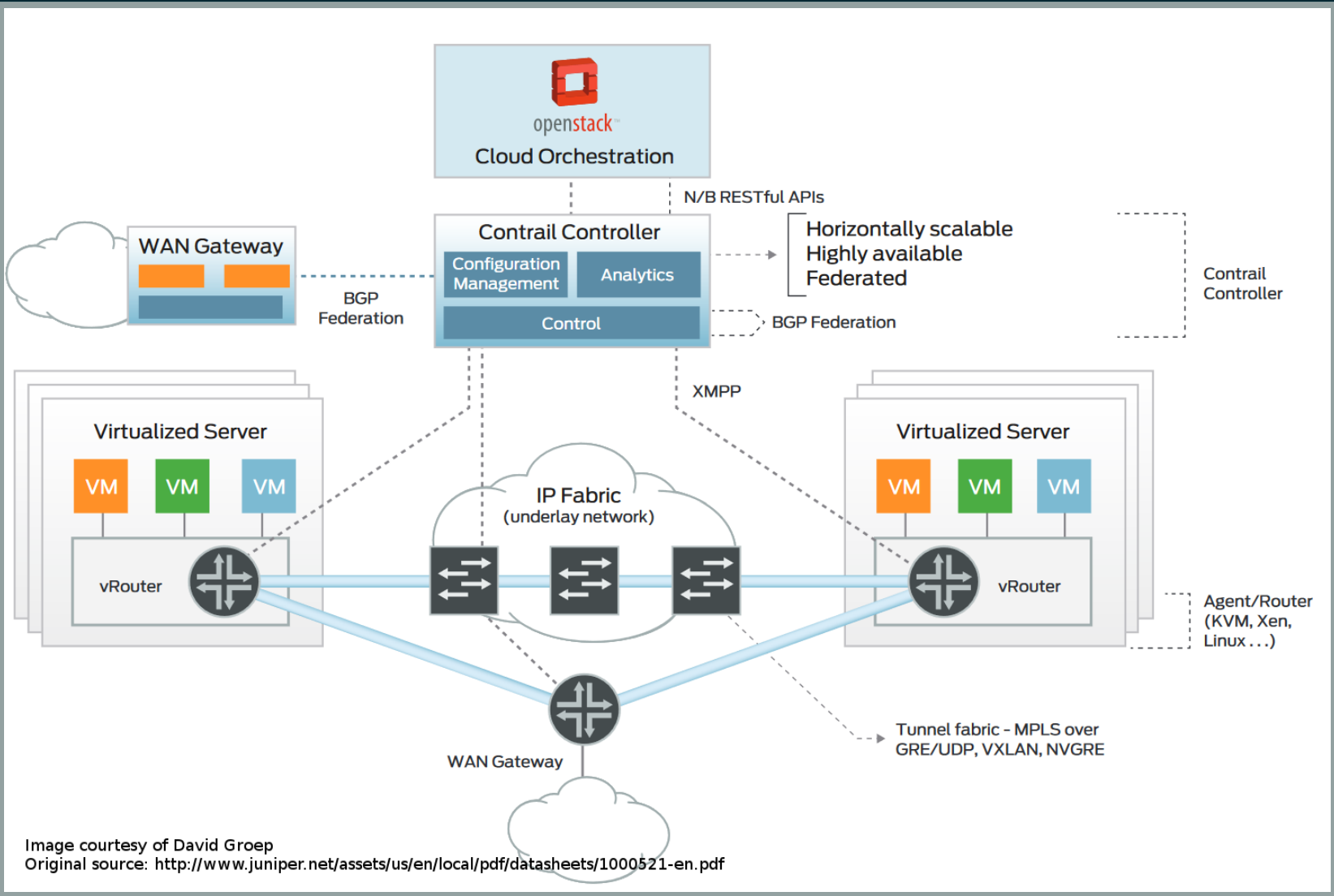- Using MPLS to extend tenant networks across sites.

Image courtesy of David Groep
Original source: http://www.juniper.net/assets/us/en/local/pdf/datasheets/1000521-en.pdf

INITIAL CHALLENGES

- Opencontrail proved to be difficult to get running.
- Personally, steep learning curve in combination with Openstack. I bit of more than I could chew.
- Fast pace in development means spending a lot of time just staying up-to-date. (Opencontrail → Tungsten Fabric).

CURRENT STATE OF AFFAIRS

The plan is still on but we are eyeing alternatives to Tungsten; https://docs.openstack.org/networking-bagpipe/latest/

Currently evaluating a setup based on

http://github.com/Juniper/contrail-ansible-deployer
http://github.com/Juniper/contrail-kolla-ansible

CONTAINERS

Everything in docker containers. At the moment we are running

- opencontrailnightly:latest
- kolla/centos-binary-*:ocata

FUTURE WORK

- Serious evaluation of Tungsten network throughput.
- Deploy and evaluate Openstack Kolla beyond experimental setup.