

NOTED activity

Fermilab, LHCONE meeting - 31st of October 2018
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Exploring options to select outgoing network path from a site to load balance traffic across links to

- smooth peaks
- increase usable bandwidth

Uses information from transfer services (FTS, Rucio ...) to identify “significant” data transfers

Principles

Shared knowledge:

- **Data transfers repository:** centralized repository of upcoming and ongoing major(*) data transfers
- **Network status repository:** centralized repository with information of congested interconnecting links

Act local:

- Network Providers can use such info to more efficiently use their own networks

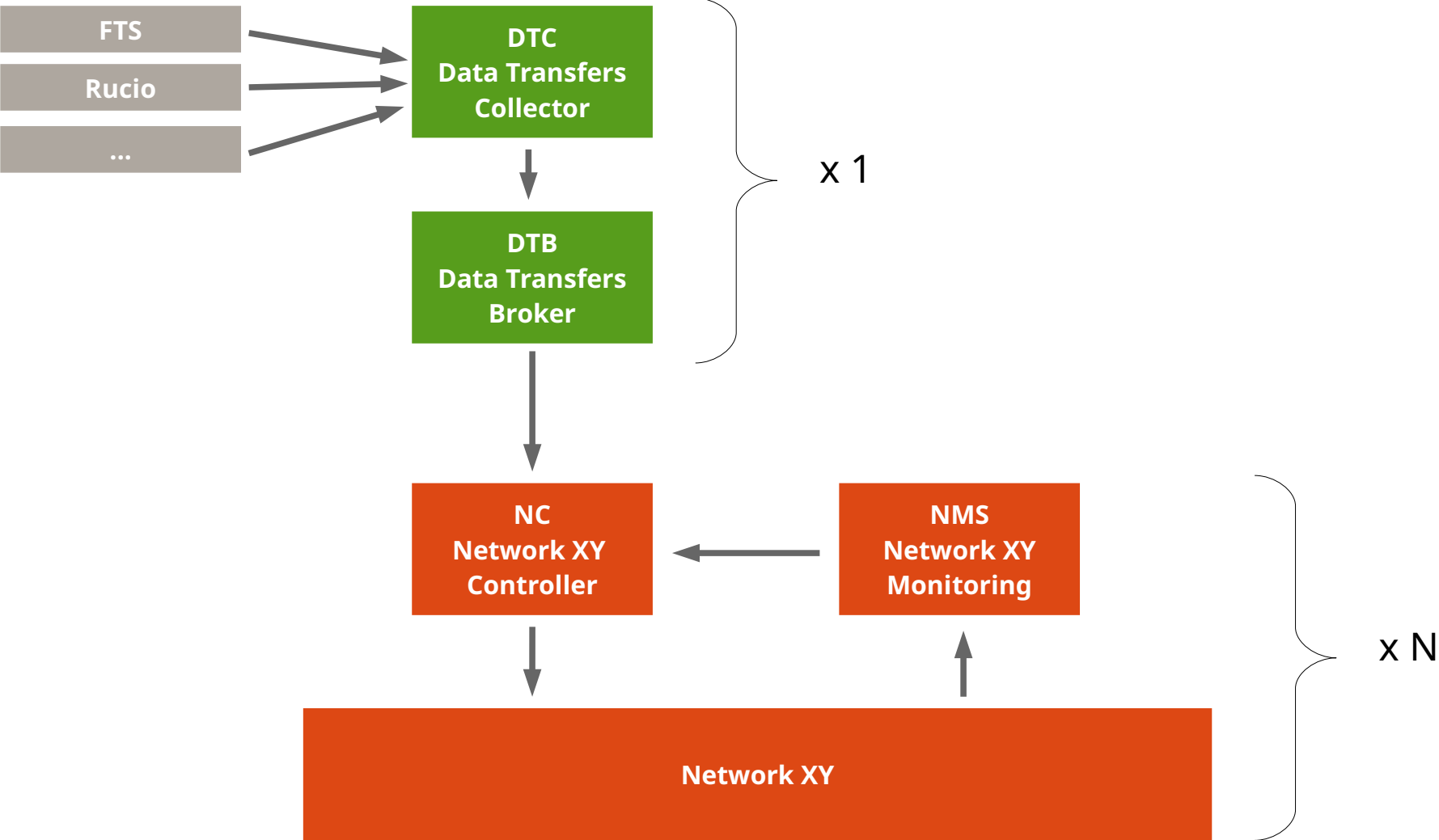
(*) Terabytes, lasting more than tens of minutes

Possible outcome

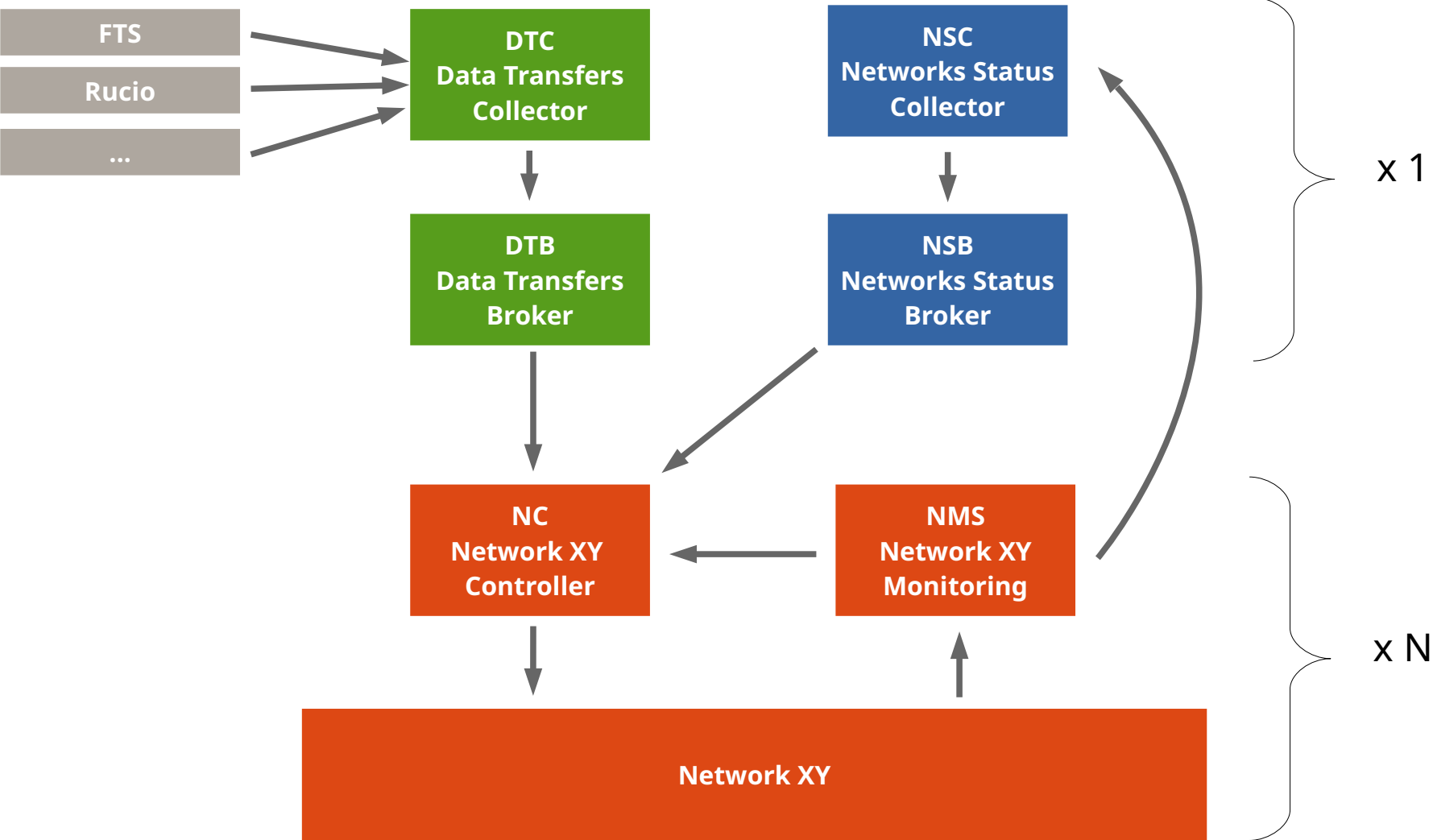
Build a **repository of on-going data transfers** that network operators can look up to optimize their own network utilization

Enhance it with global **network status information** so to make better next-domain decision

Architecture proposal - phase 1, transfer information



Architecture proposal - phase 2: add network status



Some practical examples

Example of possible actions on the CERN network:

- If LHCOPN link congested, load-balance with LHCONE access
- If LHCOPN link congested, requires additional temporary link
- If one LHCONE upstream is congested, load-balance with the others LHCONE upstreams (mind the RTTs, though)
- Route to Firewall-Bypass instead of Firewall
- Choose an alternative internet upstream if the best one is congested or is not performing well

Questions?

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