Service Sharing at NORDUnet

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Aspects of Service Sharing

- Service production for sharing
- Joint service procurement
- Infrastructure sharing
- Infrastructure to facilitate delivery of joint services
- Facilitation and clearinghouse functions
Facilitation

- Strong user and NREN drive
  - Few examples of “build from the top”
  - Drive from CIO’s – SUNET model
  - Start with single NREN, spread to more
  - Sharing the burden of getting support for “the NREN way” (i.e., federated Id)

- NORDUnet facilitation functions
  - Project Management
  - Procurement-as-a-Service
  - Financial clearing house – also for projects
  - Teckal

- Coordination of participation in European initiatives
Nordic CTO Group

- Community coordination group
  - (sometimes the InterNREN Services Group)
  - Spawned the NREN Service Matrix
  - Regular VC and F2F meetings
- Information Sharing
  - Local NREN initiatives
  - Service announcements, feedback
  - Roadmap sharing
- Strategy Discussions
  - Spawning projects and initiatives
- “Joint Nordic Position” process
  - When required only
NOREUnet
Nordic infrastructure for Research & Education

NREN-produced Services

- Services produced for sharing
  - MCU service
  - Adobe connect
  - Kaltura
  - FileSender

- Service produced for local use, may be shared
  - OwnCloud
  - Virtual Servers
  - Web hosting
  - Wiki space

- Primarily NREN services
Procured Services

- Cloud
  - Box / desktop storage
  - Project Place (SUNET)
  - ...
  - Generally focused on 2nd-tier providers
- Campus-focused services
  - Backup-as-a-Service
  - Infrastructure-as-a-Service
- Hardware Procurement
  - PRISM
- Procurements done for all, “just in case”
Infrastructure Sharing

- Dark Fibre, Transport networks
  - Within Nordic NRENs
  - With European NRENs
  - With commercial operators
  - Swaps
- NOC / Operations
  - Economy of scale
  - Serving smaller units
- Global Connectivity
- Peering Fabric
  - With US partners
  - In Europe
• NRENs providing network
• NORDUnet MPLS service
ANA-100G Production Network: A 100 Gbit/s production quality ring across the North Atlantic for Research and Education. Collaborators: Internet2, NORDUnet, CANARIE and SURFnet.
Infrastructure for Sharing

- Network must
  - Have capacity to transport shared services
  - Be able to connect directly to service providers
  - Be agile and operated in an agile way
  - Keep cost of sharing services at a minimum

- At NORDUnet we want
  - No acceptable use policy on transit network
  - Have as much settlement-free traffic as possible
  - Connections at Internet Exchanges
  - Private Network Interconnects with key providers
  - Connections at Open Exchanges
  - Network, peering, and PNI capability in the US

- Federated ID a must
Next Steps

- Connecting Service Providers to Open Exchanges
  - NetherLight leading the way
  - Enable multiple NRENs to connect directly to service providers
  - Enable a range of commercial setups
  - Economy of scale for service providers

- Networking for Cloud Providers
  - Open Cloud Exchanges (GN3+)
  - Integration of network resources into cloud resource provisioning

- Continue campus-driven service introduction model
Open Exchanges for Service Sharing