From our NSF CC-NIE grant to a Science DMZ as a Service through Penn State’s Research Networking Engagement

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Scalability and Sustainability
B1G Data Instrumentation Site

Pricing*:
- VDX 6740 1/10/40G Switch ~$125 each
- 10G Core Router Port (2) ~$6 each
- 10G Core LR Optics (4) ~$15 each

SFPs:
- 40G Edge SR Optics ~$25 each
- 10G Edge SR Optics ~$5.00 each
- 1G Edge Copper ~$2 each

* Existing equipment from original grant only pays for support, around 25% of above costs.
Data Center/CoLo Server

- 10G Core Port ~$6 each
- 10G Edge SR Optics ~$5 each
Dedicated Ethernet Fabric Switch

- 1/10G Edge 24 port Switch ~$30
- 1/10G Edge 48 port Switch ~$45
- 10G Core Optics $15 each
- 10G Edge SR Optics ~$5
- 1G Edge Copper No Cost
1G Converged/Compliance Port

- 10G Core Port
  - $12.58 each
- 10G Core Optics
  - $22.38 each
- 1G Edge Copper
  - $2.95 each
Science transfer trends from network data

- We use sFlow switch packet sampling on all Science DMZ switches
- Each switch interface becomes a sensor of science data transfers and workflow
- Providing statistics on the data transfers has assisted greatly with science engagement