Data Intensive Networks

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What are our goals?

• To provide a high quality commodity network to the campus.
• To provide the research community a tool that meets their needs as well.
  – This might be a bandwidth requirement
  – It might be that they need a layer 2 connection.
  – The tool needs to support far more variability than the commodity network.
Differences between these networks.

• The DIN does not have any in-line data analysis or data management tools.
  – These sorts of tools, firewalls, rate limiters may well exist in the “corporate” network.

• While you may need to pass some security to get into some systems in the DIN the data path will be open.
Differences between these networks.

• The end-to-end characteristics of the DIN path will almost always be critical to success.
  – This is far less important for applications like mail, web applications for campus services and social networking activities.
How have we done this so far?

- Essentially we have built a physically distinct network that our high performance projects use.
  - Direct fiber connects to the campus edge router supporting their activities.
- Will this scale?
  - That depends. If there are 5 labs that need this yes, if there are 10 probably not.
- We have even utilized separate wide area connections for individual projects.
Advantages

• It keeps that traffic off the campus backbone.
  – Extends the life of the backbone some.
  – Prevents a problem if more than one run at the same time.

• I prefer this to logically sub-dividing a single infrastructure.
  – I do not have contention issues on the backbone.
Future

• One path I think worth looking into is a greater use of optical equipment in the campus network.
  – Maybe a trade off between the cost of laying fiber and the cost of the electronics.