University of Utah Network Vision

The University of Utah Campus network is an evolving global platform that physically and virtually connects a variety of endpoints to related services at a local campus level, a regional level, a national level, and a developing global level. This platform aims to facilitate insight, data accessibility and a consistent overall security posture regardless of physical, geographical, or virtual locations while delivering a consistent user experience.

The overarching strategic goals for IT at the University of Utah are each supported by the network:

- Support faculty and student success
- Advance research computing
- Support health care
- Promote campus efficiencies and effectiveness
- Strengthen internal operations

A key tenet of our network is the ability to support the goals listed above while maintaining a flexible and agile posture to adapt to and take advantage of disruptive technologies and advancements.

Enterprise Services

In order to deliver common services and maintain a highly available network that delivers a consistent user experience, our network must adopt a standards-based approach that will reduce communication protocols to defined standards, facilitate system and device interoperability, maximize overall network stability, and improve internal and external enterprise data management. Another key aspect that we hope to deliver is a holistic and integrated set of security controls and best practices that meet the myriad of regulations and policies to which the University of Utah is subject.

These strategic goals drive the need for a clear set of definitions, standards and best practices with regard to our shared network as well as specific initiatives listed in the IT Strategic Plan such as:

- Consolidate data centers and server rooms
- Develop unified communications strategy
- Develop campus wireless strategy
- Integrate hosting & cloud (e.g. Google/O365)
- Implement 7x24 monitoring/metrics
- Replace legacy phone system with VOIP solution
- Enable seamless student experience
- Standardize network architecture
- Reduce campus vulnerabilities
The University network must enable common enterprise services throughout the organization in order to accomplish the goals and initiatives set forth. Therefore, the University must adopt clear standards and architectures with minimal exceptions as described. Proposed solutions or architectures should align with one or more strategic goal, thereby contributing to the overall IT strategy.

**Scientific Services and Specialized Architectures**

The University network platform must also facilitate an appropriate set of scientific services and specialized architectures as part of the support for the broader university strategic goals. Additionally, the expectation is to be able to deliver experimental and breakable services in tandem with production level services, in a manner that does not affect other shared services. Similar to enterprise services, proposed solutions or architectures should align with one or more strategic goals, thereby contributing to the overall research and IT strategies. Examples of scientific and specialized initiatives:

- Support national testbed infrastructure for wired and wireless network innovation and exploration (e.g. Cloudlab, APT, Emulab)
- Support secure, production big data workflows within the Science DMZ
- Support innovative, advanced and secure network technologies in conjunction with production science workflows
- Explore new mechanisms for storing/moving large sensitive data sets between institutions around the world at full line rate performance and scale
- Support programmability at scale and in conjunction with national and international research and education networks
- Explore the network platform as part of the “scientific instrument” joining large sensor arrays, compute, storage, and other endpoints across a national footprint
- Support of multi-institutional virtual organizations (i.e. Sloan Digital Sky Survey – current data principal investigator is at the University of Utah)
- Support of Sensitive Compartmented Information Facilities (SCIFs) and other specialized security zones in conjunction with the U.S. government
- Support of multi-disciplinary and multi-institution field stations throughout Utah
- Support of remote medical research with access to specific medical instruments around the world for developing real-time models of clinical care

In order to maintain the common services delivery network, each initiative will meet clearly defined business/research requirements as well as pertinent legal requirements. The University will develop exceptions with input from the Network Architecture Community of Practice and guidance of U’s Architecture and New Technology Committee (ANTC).