

Software Defined Exchange (SDX) Vision, Development, Collaboration

Net Futures 2016

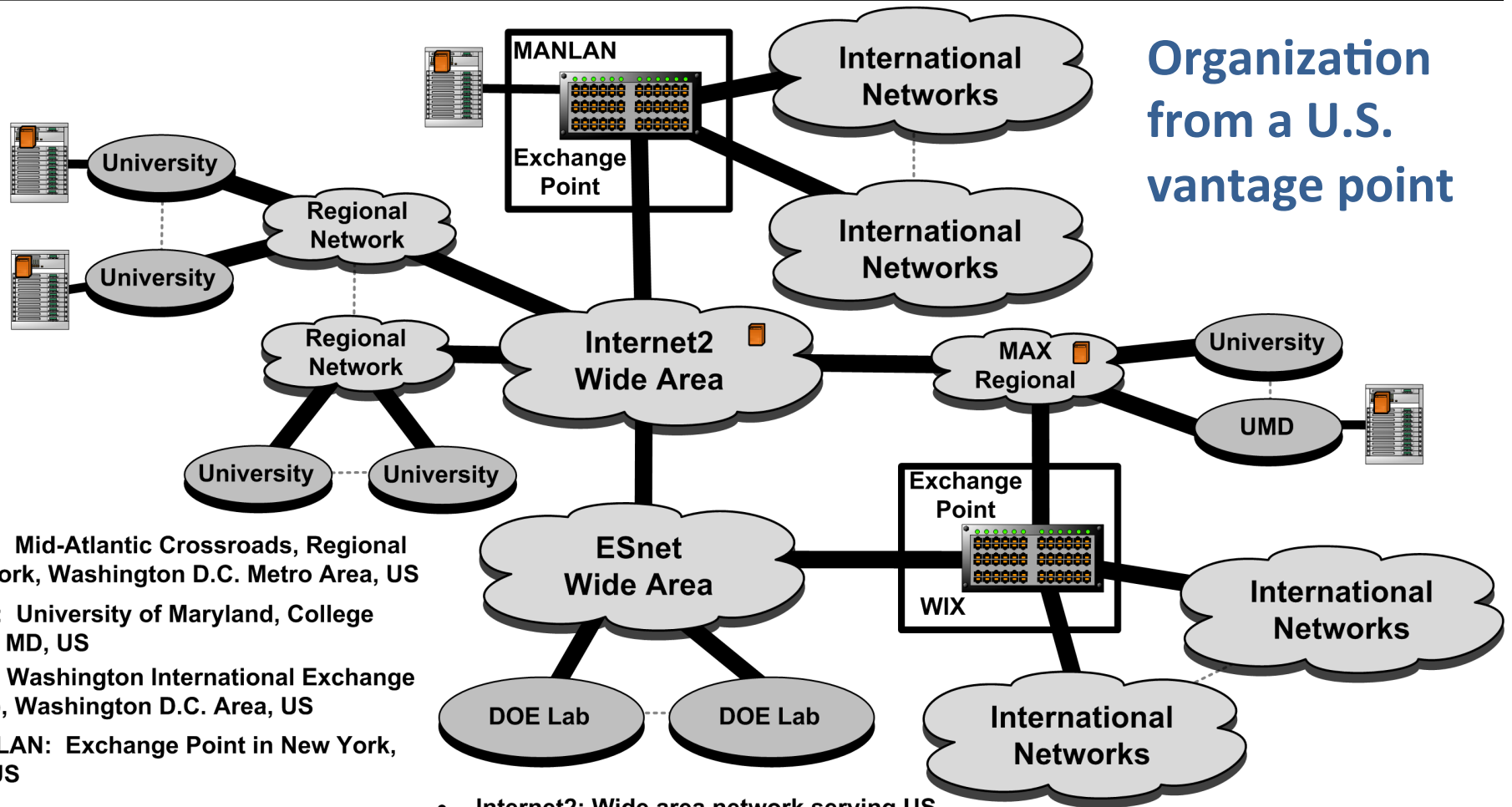
Global Experimentation for Future Internet (GEFI) Session

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Research and Education Infrastructure



Organization from a U.S. vantage point

- **MAX:** Mid-Atlantic Crossroads, Regional Network, Washington D.C. Metro Area, US
- **UMD:** University of Maryland, College Park, MD, US
- **WIX:** Washington International Exchange (WIX), Washington D.C. Area, US
- **MANLAN:** Exchange Point in New York, NY, US

 Distributed GENI Resources located at many Universities, Regional Networks, Exchange Points

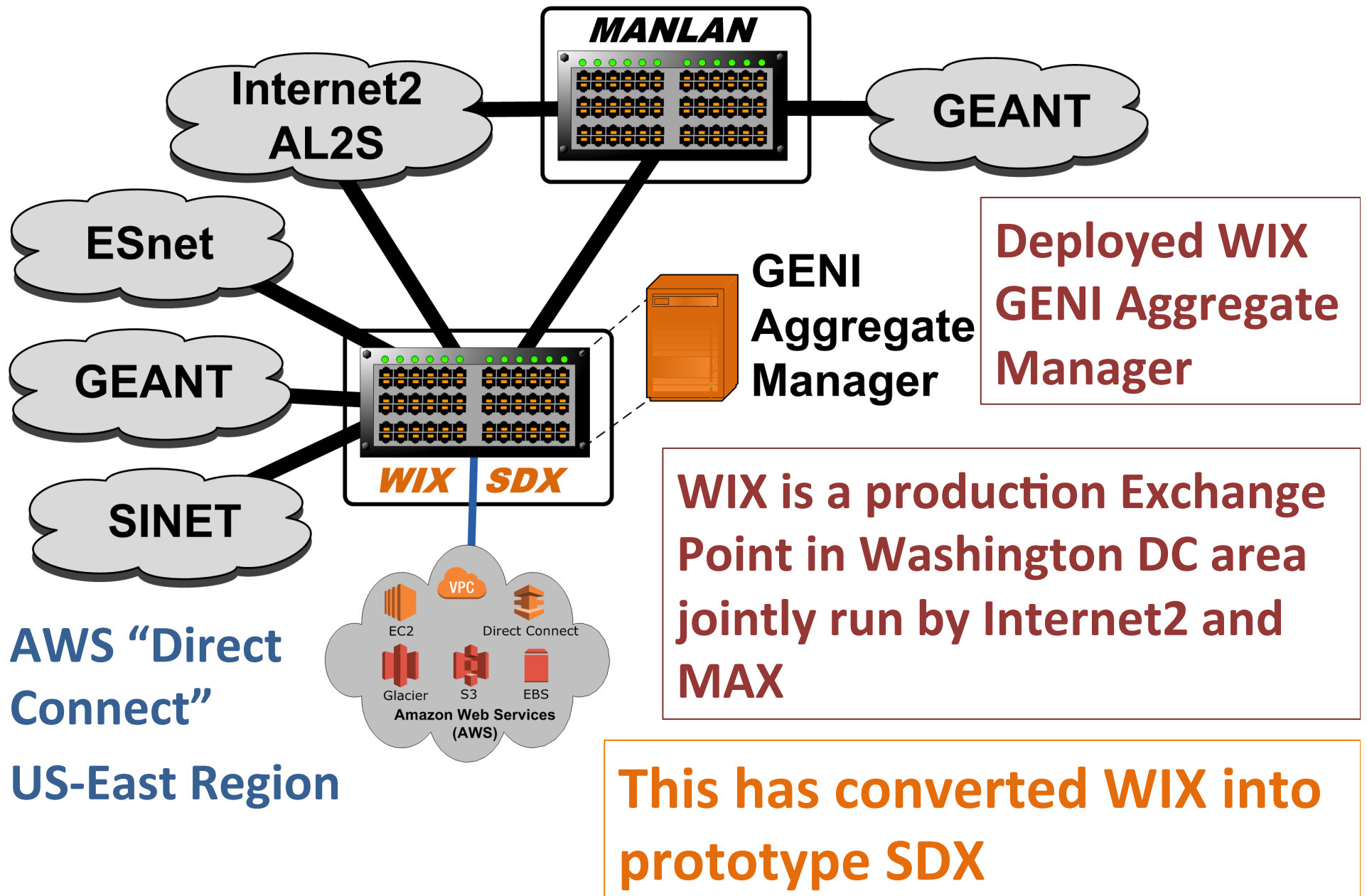
- **Internet2:** Wide area network serving US Universities
- **ESnet:** Wide area network serving DOE Research Laboratories

Very capable and far reaching network infrastructure

R&E Exchange Points

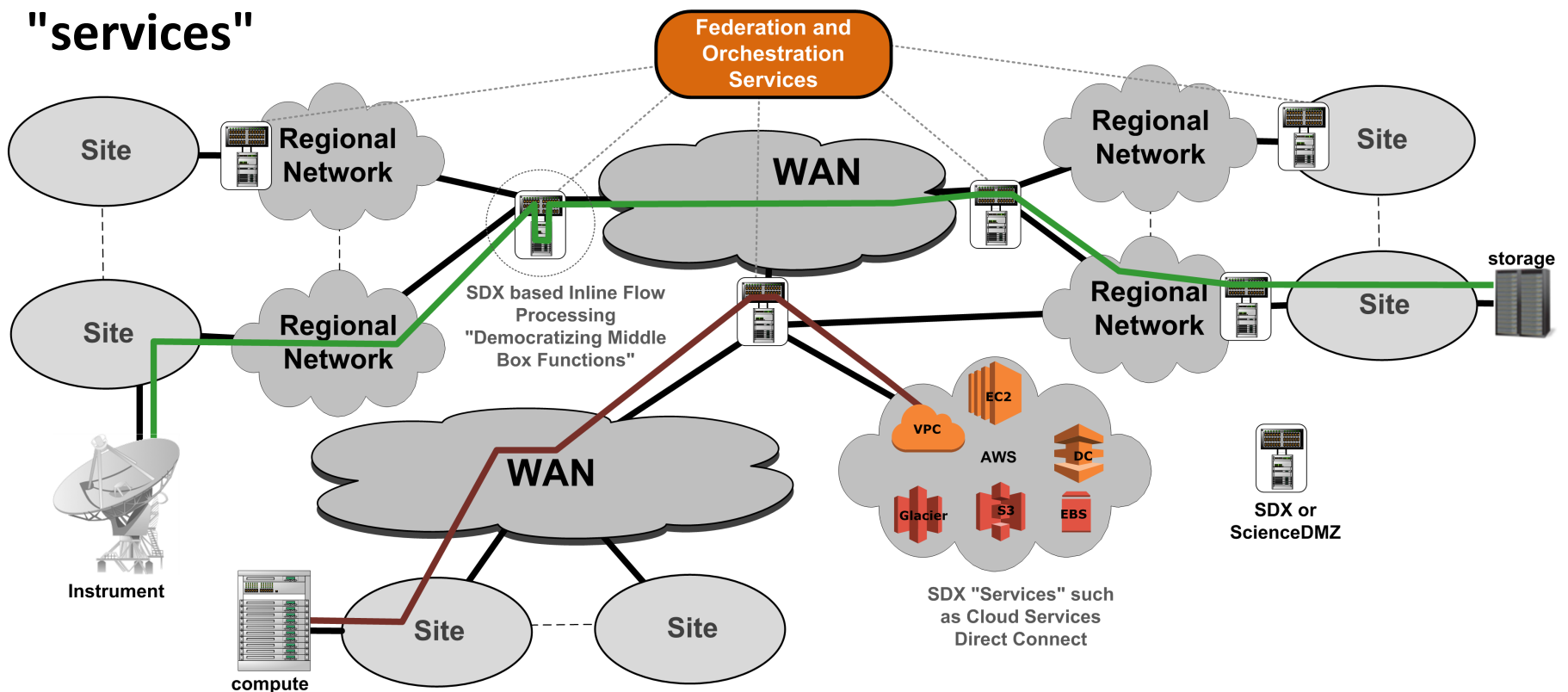
- **Today managed in a mostly manual fashion**
- **Providing basic Layer2 interconnects for peering purposes or specialized flow control**
- **We would like to see these evolve into “Software Defined Exchanges (SDX)”**
- **Programmatic control of existing functions, enable new services, become a “service marketplace” platform**

Washington International Exchange (WIX)



Distributed SDX Ecosystem

- Imagining a distributed ecosystem of SDXs which can be orchestrated to enable control of end-to-end flows
- Allow application owners to develop their own middle box functions
- Facilitate development of a marketplace where others can offer "services"



Prototype, Development, Collaboration

