

# VLANs & Lightpaths: CineGrid at GLIF 2007 Network Infrastructure

GLIF Working Groups  
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# What is CineGrid?

From <http://www.cinegrid.org>:

“CineGrid is a non-profit international membership organization established in 2007 based on collaborative efforts, since iGrid 2002 in Amsterdam, of leaders in the fields of advanced networking and digital media technology from Japan, America, Canada, and Europe.

CineGrid is building an interdisciplinary community for the research, development, and demonstration of networked collaborative tools to enable the production, use, and exchange of very high-quality digital media over photonic networks.

CineGrid is built on GLIF links by GLIF members.

CineGrid organizes major demonstrations with many GLIF users.”

# CineGrid Activities

- Streaming digital media

	HD	4K (4xHD)
Compressed	30 Mb/s	400-800 Mb/s
Uncompressed	1-1.5 Gb/s	6 Gb/s

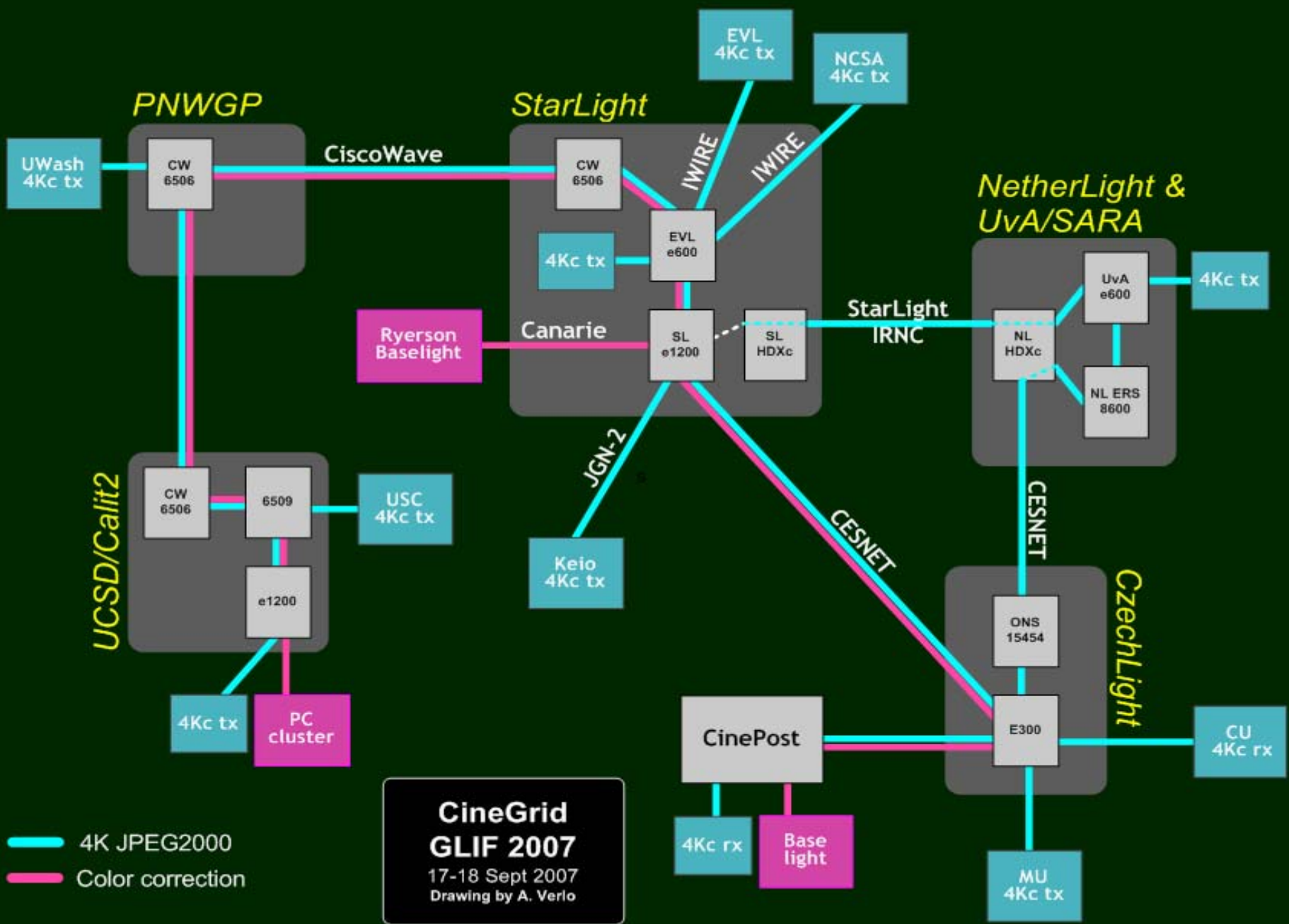
- Holland Festival (June 2007)
- GLIF meeting (Sept 2007)
- Supercomputing conference (Nov 2007)

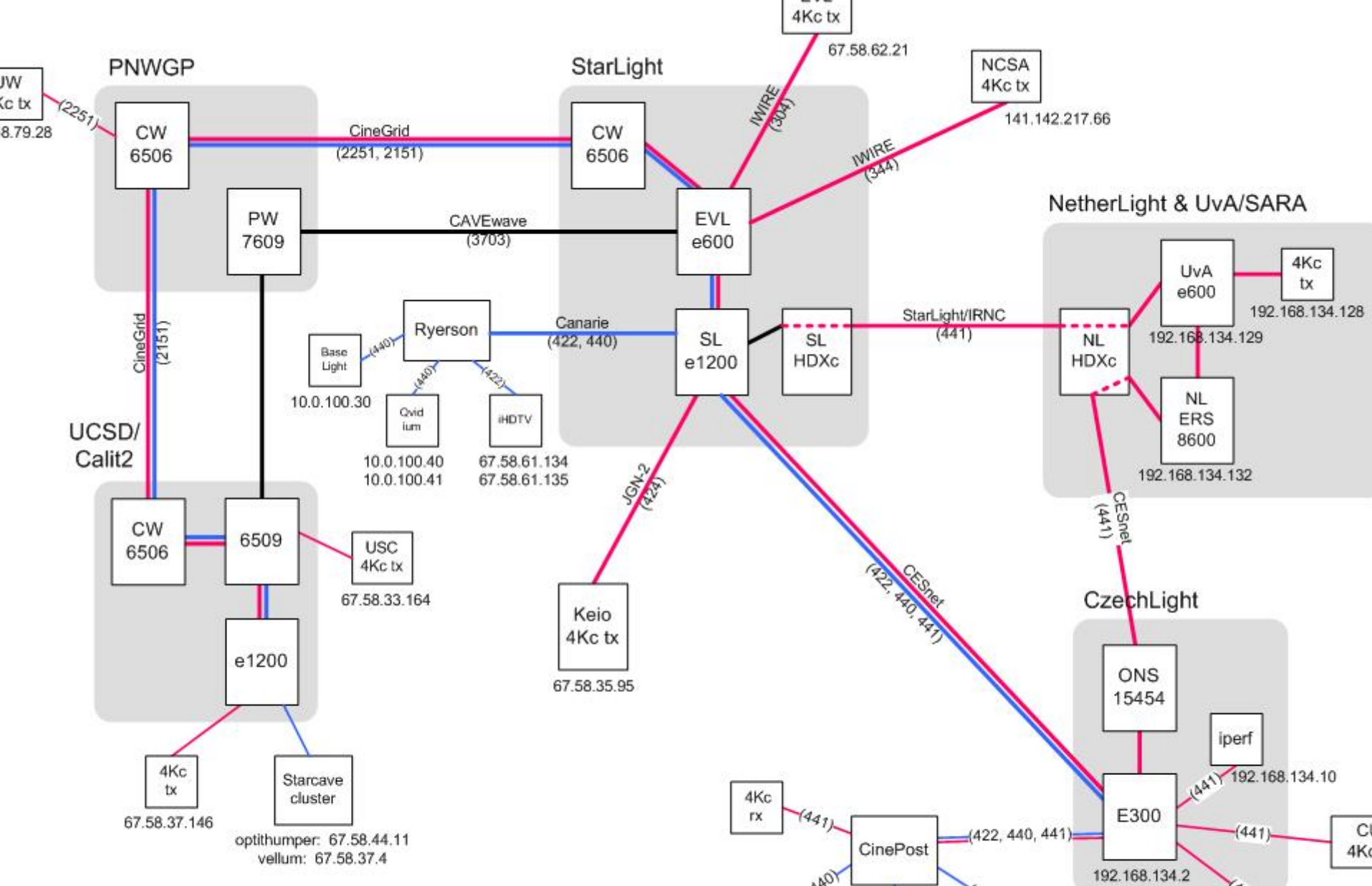
# GLIF 2007 Venue & Demonstrations

- Sept 2007 meeting for GLIF, held at Charles Univ in Prague, Czech Republic
- CineGrid demonstrated two applications
  - 4K JPEG2000 streamed from several sites to Charles University/Prague (Keio Univ, UCSD/Calit2, UIC/EVL, StarLight, NCSA, UvA/SARA, UWash, USC)
  - Color correction/post production in real-time (CinePOST & Ryerson Univ)

# Network Requirements

- Physical network circuits - 10G (wide area)
  - JGN-2 (Keio Univ)
  - CiscoWave (Calit2, USC, UWash)
  - Canarie (Ryerson Univ)
  - IWIRE (EVL, NCSA)
  - CESNET (StarLight-Prague, AMS-Prague)
- IP connectivity
  - Vlans and routed connections
  - Private addressing and routable addressing

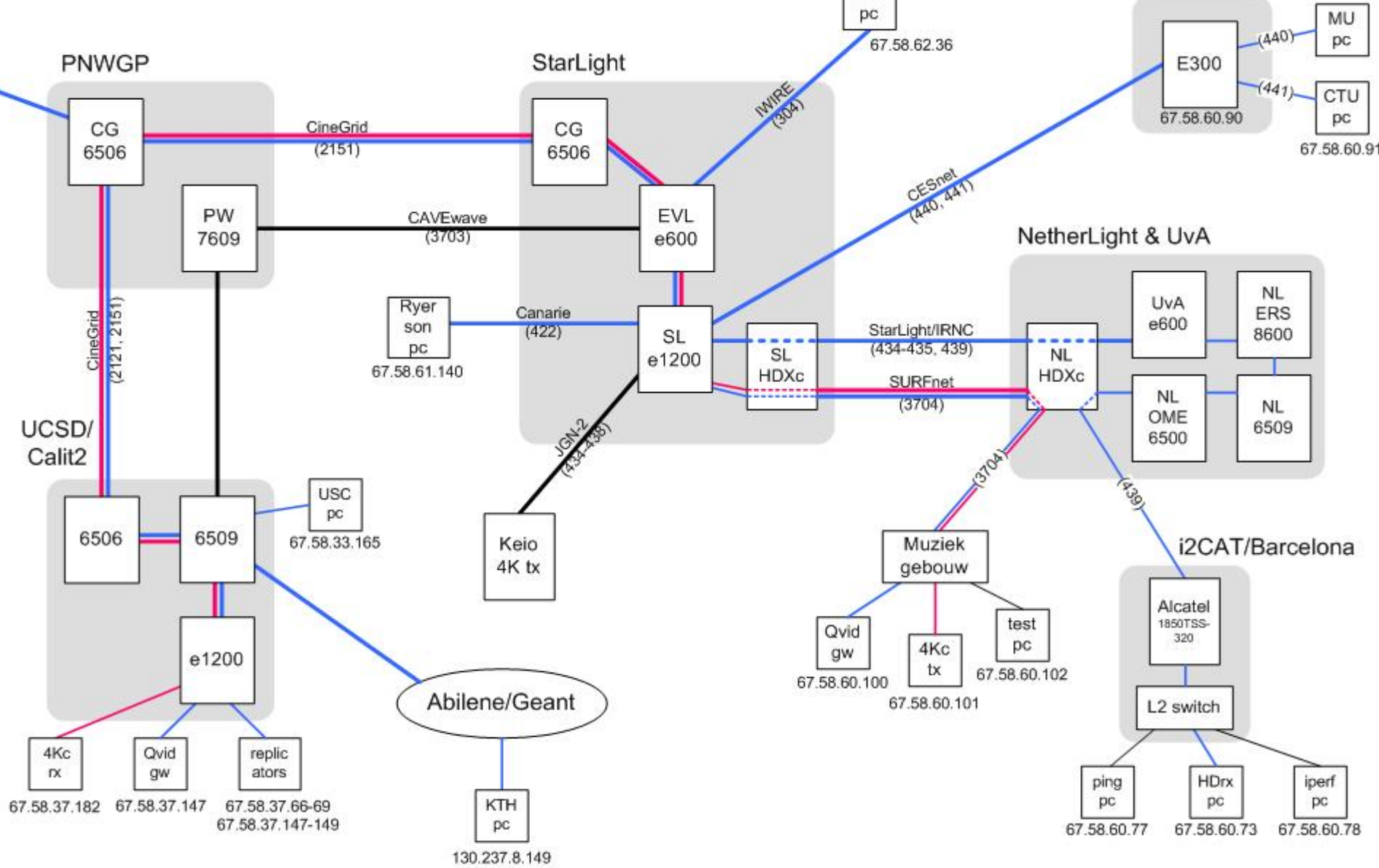




— sites -> Prague  
— 4K compressed streaming  
— Prague-Ryerson-Calit2  
— Color correction

**GLIF Meeting  
 CineGrid 2007**  
 17-18 Sept 2007  
 V. 0.4 Drawing by A. Verlo





— AMS -> Calit2  
 4K compressed  
— AMS -> Calit2 -> sites  
 HD compressed

**Holland Festival  
 CineGrid 2007**  
 19-21 June 2007  
 Drawing by Alan Verlo, et al.



# Some Issues & Considerations

- Contiguous lightpath not always available
- L1/L2 transitions along path
- Terminating equipment might not support GFP/VCAT/LCAS
- Some apps want  $> 1$  GE but  $< 10$  GE
- Interdomain communication & configuration
- Resources shared at end sites
- Multiple sites collaborating on one app
- Many apps use b/w only sporadically
- Persistence
- Policing/admission control
- Global vlan id coordination
- Debugging considerations
- Service requirements and guarantees