



# Rubin Observatory US Data Facility

## SA3CC+NET Networking Update

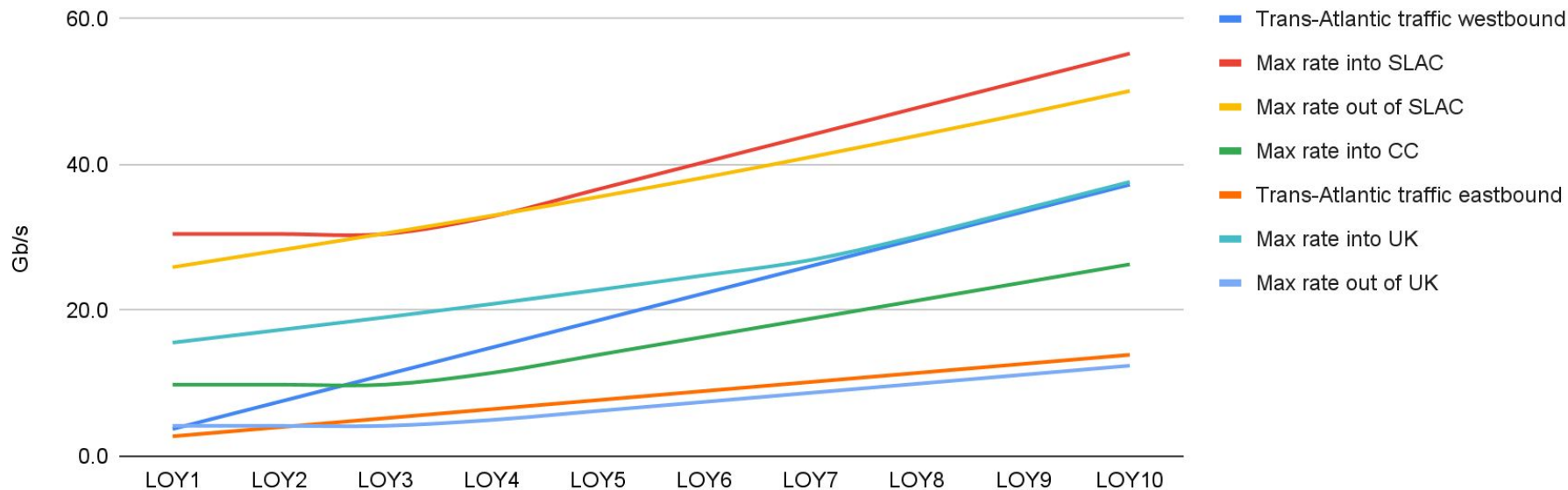
Mark Foster / Matthew Mountz  
with Richard Dubois and Others  
August 2023



U.S. DEPARTMENT OF  
**ENERGY**

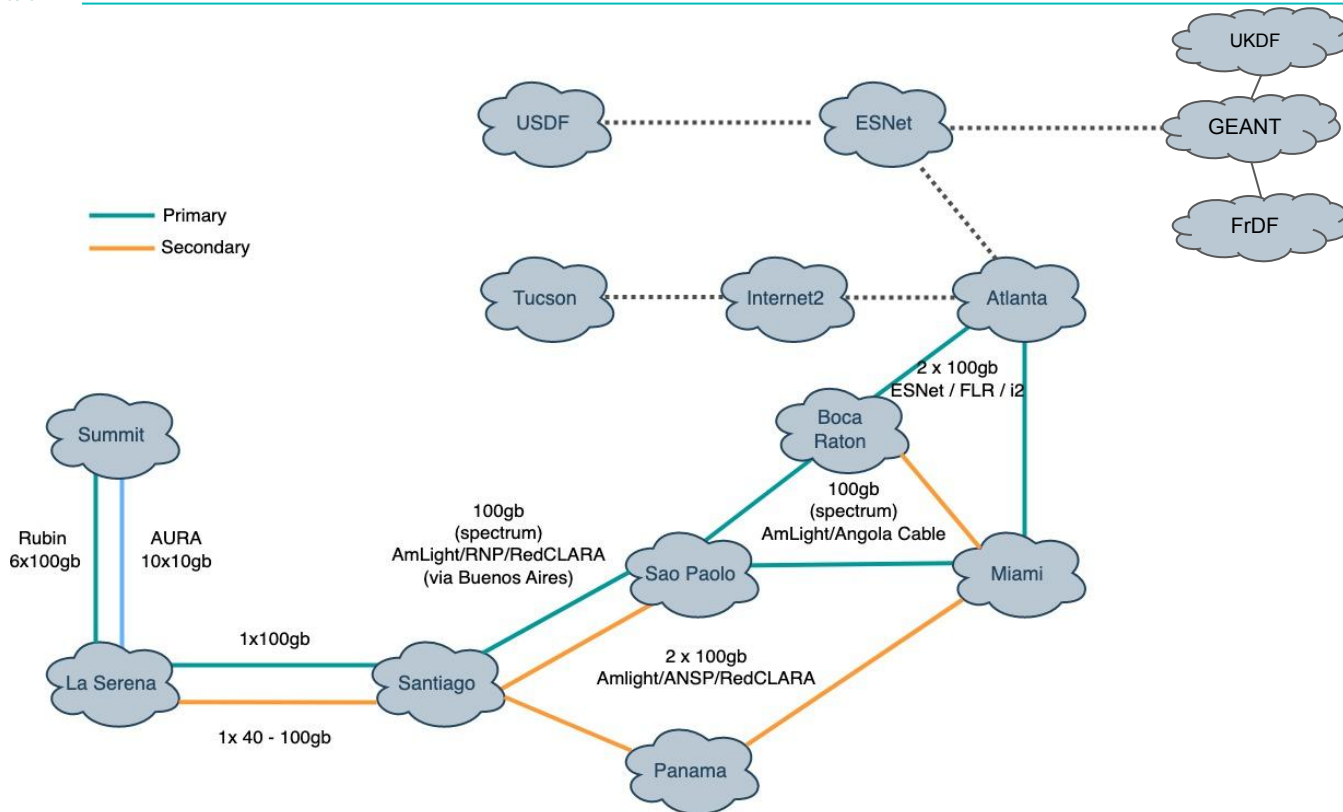
# Projected Network Transfer Rates

SLAC outbound dominated by feeding IDACs and brokers



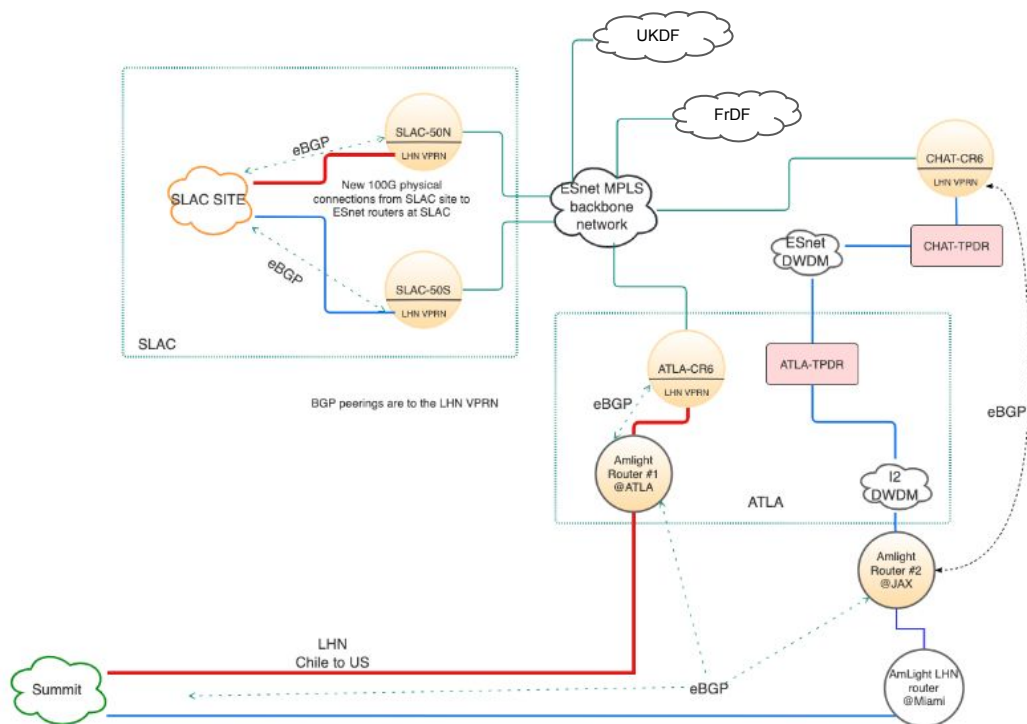
Assumes DRP transfers can proceed in parallel with processing

# Network: Summit to US and via ESnet to Europe

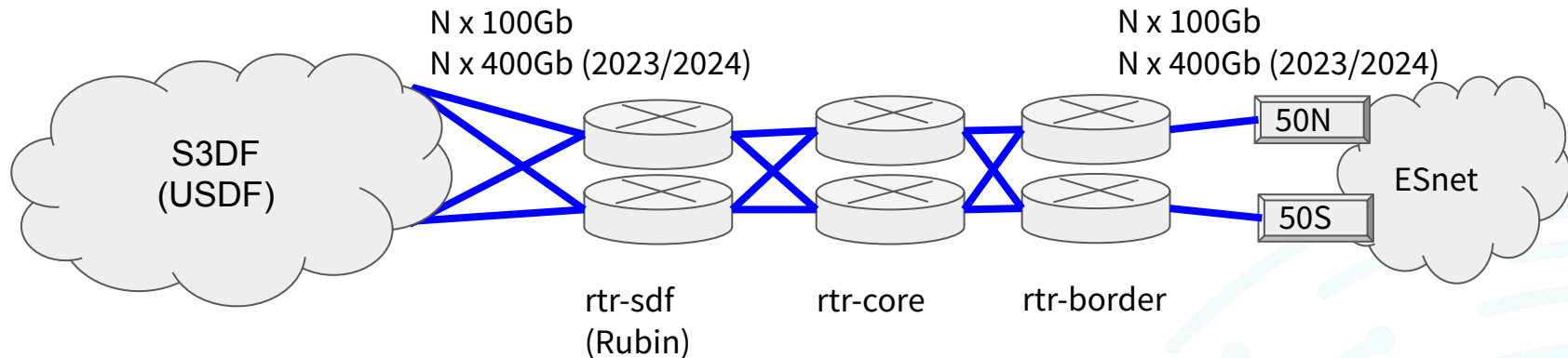


# Network: AmLight/ESnet/SLAC

- Primary, backup optical waves AmLight to Atlanta, Chattanooga
- ESnet VPRN
- BGP between AmLight and ESnet VPRN
- Two 100G links SLAC/ESnet for USDF, additional BGP to ESnet VPRN
- LHN PerfSONAR nodes at SLAC, Atlanta, Chattanooga, AmLight
- SLAC/USDF transit to UKDF, FrDF via ESnet layer 3



# SLAC / USDF Networking

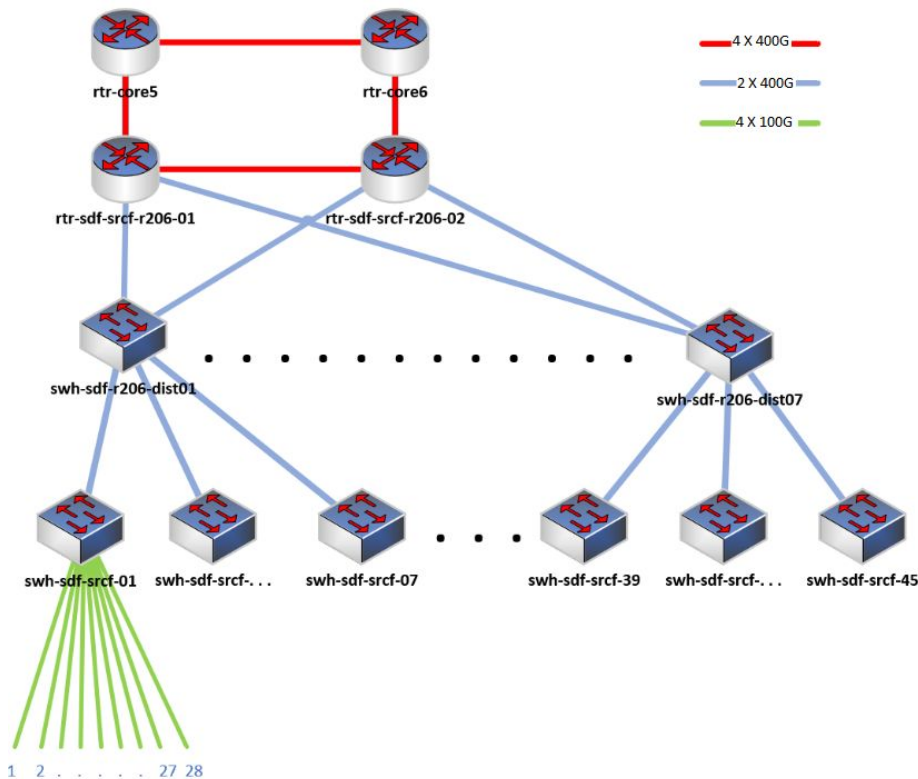


USDF Server/Storage enclave: Nx100G (layer2) to routing infrastructure via SLAC core and SLAC border. Expand to Nx400G during 2023/2024 timeframe.

Currently support 400Gbps aggregate capability between SLAC and other sites with multiple ESnet 100Gbps links, Expect Nx400Gbps later in 2023 or early 2024.

ESnet6: two optical nodes on SLAC premises (50N, 50S): part of Bay Area optical ring (multi-Tbps optical capacity)

# S3DF Networking (in progress)



## S3DF in SRCF-II

97 racks (6 rows @ 15 racks, 1 row @ 7)

### Plan:

2 Tbps to ESnet (aggregate)

100 GbE per compute node

200 GbE per storage server (2x100G)

45 32-port x 400 GbE TOR switches

Fat tree / distribution to layer 3 routers

(alt: direct connect switches to L3 routers)

5040 100GbE connections via 1260

4x100GbE breakouts

# Questions?



**SRCF-II + SRCF**



**SRCF-II isles**