



UCSD CMS T2

Spring 2015 Site Report

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Current Hardware Deployment 2015

- ▶ 5000+ Cores
 - ▶ ~50% of these cores were deployed in the past 4 months
- ▶ 50,000+ HS06
- ▶ 3.1PB Raw Storage
 - ▶ ~1PB deployed in the past 4 months

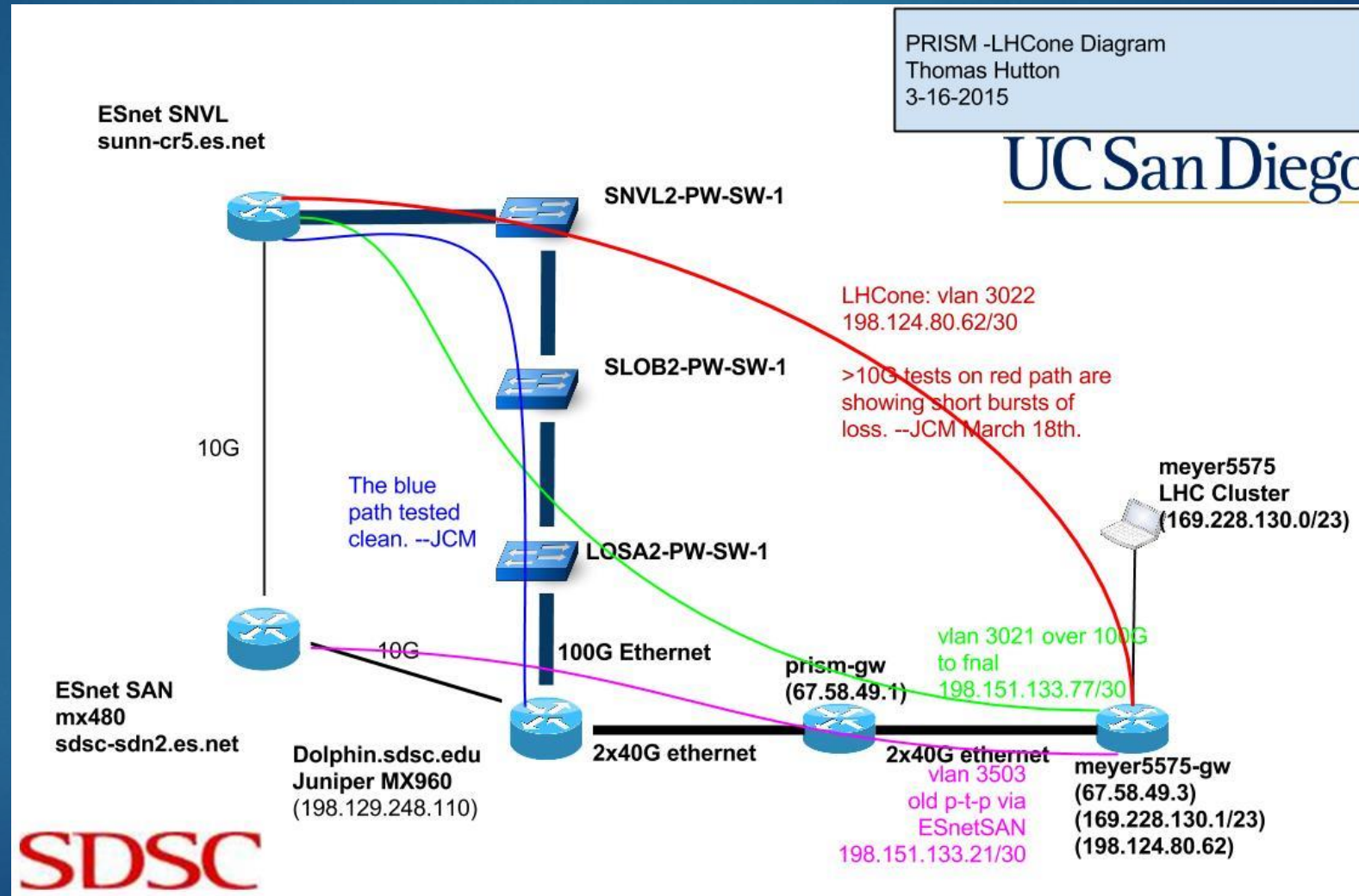
2015 Hardware Purchase Plan

- ▶ Plan is to purchase mostly CPU in 2015
 - ▶ Higher density CPU is working out well for us, new Intel servers from Colfax International have been very reliable and easy to deploy
 - ▶ Colfax CX22850i-X5 2U Rackmount Server
- ▶ We are assuming MiniAOD and its much reduced data storage requirements
- ▶ If necessary we can deploy more disk fairly quickly as we have 300+ open 3.5" hard disk bays available

Networking 2015 WAN

- ▶ In February 2015 we transitioned from our Cisco 6509 to our Arista Arista DCS-7150S for our Upstream connection
- ▶ Connection provides 2 x 40Gbps redundant links to CENIC
- ▶ Testing of the 100Gbps LHCONE path via Sunnyvale and ESNET is in progress
 - ▶ We are working directly with ESNET, UCSD Networking and CallT with testing our link and confirming its performance. We will adjust as necessary to ensure reliability and performance

Network 2015 WAN Continued..



Networking 2015 LAN

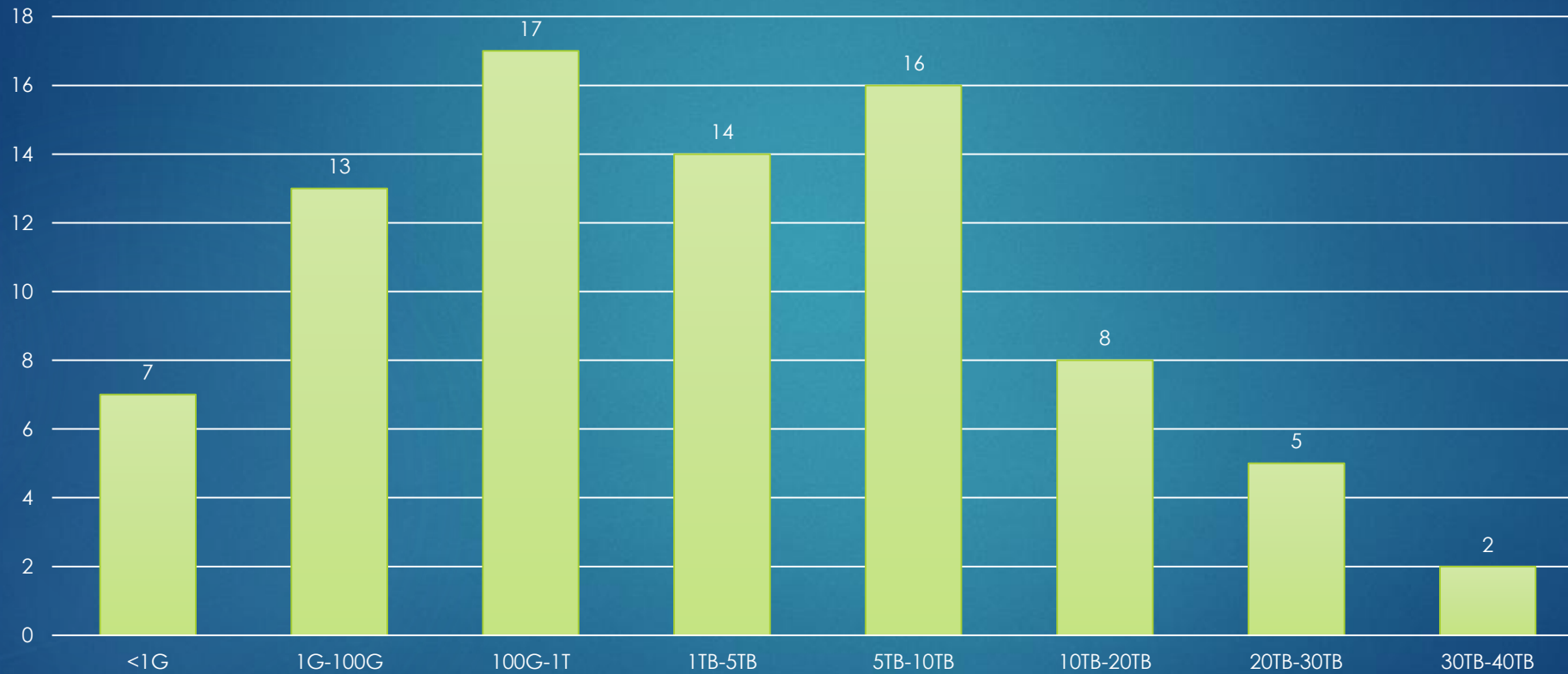
- ▶ We recently replaced an old Cisco 6513 with new 4 new Arista 7010T-48 Switches
- ▶ 48 100/1000/10000 Mbps Copper Uplinks per switch
- ▶ Each Arista 7010T-48 has 4 x 10Gbps uplinks to our central Arista 7150S
- ▶ The flexibility to quickly deploy 10Gbps copper is very helpful moving forward with a variety of the potentially higher network load services like CVMFS and xrootd proxies.
- ▶ Our older Cisco 6509 will stay in operation for probably 5 more years until it is no longer supported by Cisco and Campus. It also has 4 x 10Gbps fiber uplinks to our Arista 7150S

Storage

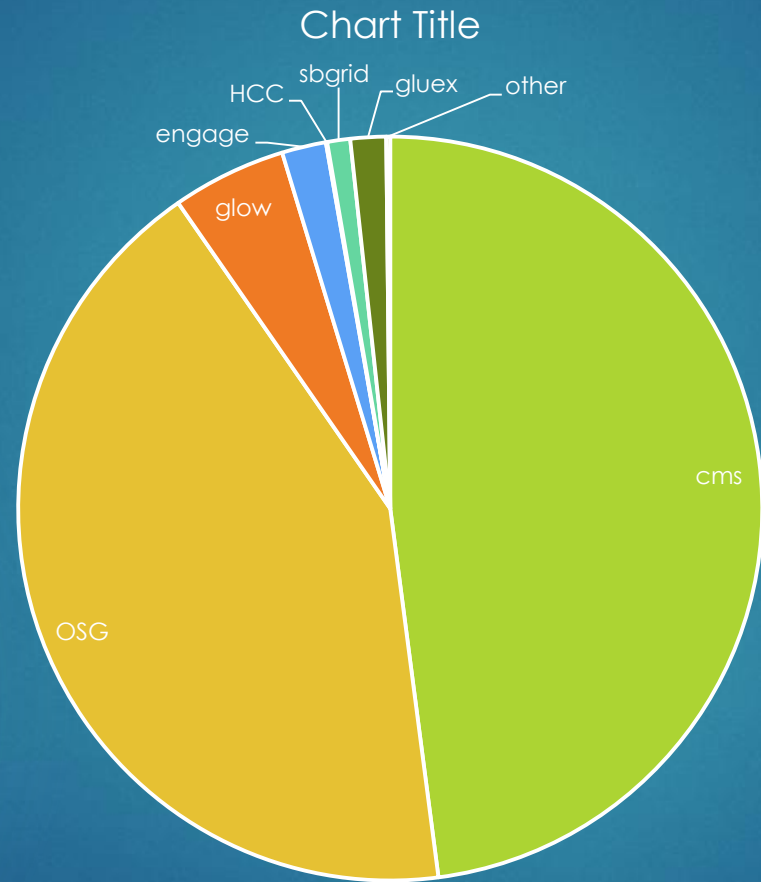
- ▶ Still Hadoop
- ▶ Xrootd fallback deployed and self healing, No ssh logins required! 😊
- ▶ New xrootd proxy server hardware deployed, software installation happening this week

Local Users Storage Use

Users Storage Usage at UCSD



2014 VO Usage at UCSD



■ cms ■ OSG ■ glow ■ engage ■ HCC ■ sbgrid ■ gluex ■ other

User Analysis Hardware at UCSD

- ▶ 6 UAF Nodes deployed
 - ▶ 3 x 8 CPU Xeon Servers
 - ▶ 3 x 24 CPU Xeon Servers
- ▶ Hadoop Storage mounted on all UAF nodes (/hadoop)
- ▶ 75TB of NFS mounted space
- ▶ Users are permitted RW access to the hadoop storage via the local logins and the grid (lcg-cp)

2015 Site Plans

- ▶ Transition of worker and service nodes to Foreman/Puppet ongoing
- ▶ Transition of appropriate services to a full failover Virtual Server setup
 - ▶ Phedex and GUMS will be the first services moved to this system
- ▶ Increased usage of 10Gbps copper uplinks to key services to more fully leverage our new network infrastructure
- ▶ Continued testing and deployment of IPv6 services
- ▶ Fully transition off of GRAM CE to HTCondor-CE
- ▶ Update and deployment of new monitoring services for hardware and software