



USCMS Tier-2 Storage Sites

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Common Characteristics

- At all sites
 - SRM-dCache
 - No tape backend
 - Worker nodes used as storage elements
 - 10 GigE external, 1 GigE to pools
 - Not using group/role (except UCSD) yet
 - Not using storage classes



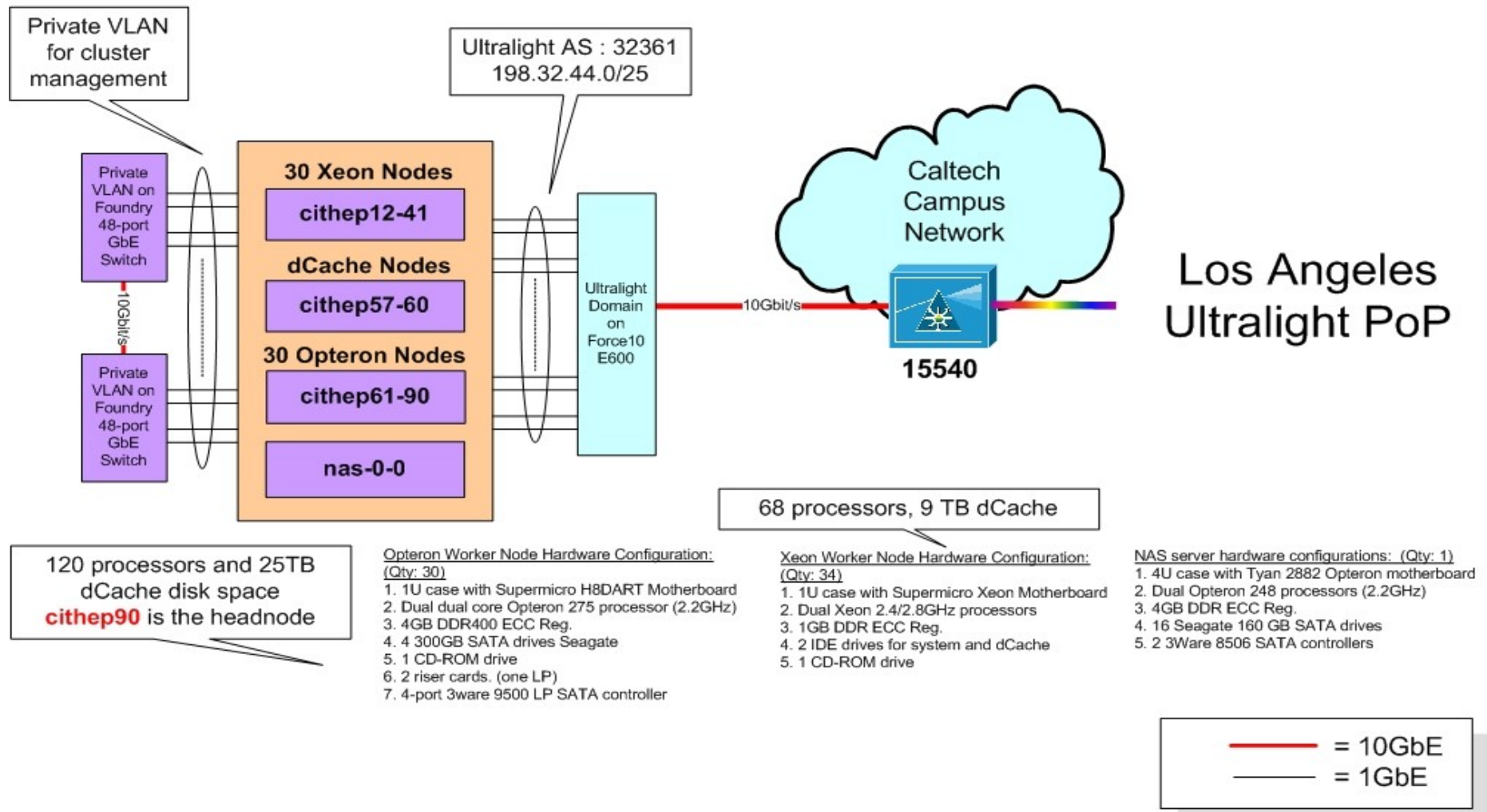
Variable Characteristics

- Depends on site
 - 2 to 5 infrastructure nodes
 - RAID vs resilient dCache
 - Pools on public vs private networks
 - Installation via scripts vs Rocks
 - Using VOMS (via GUMS and gPlazma0 for authorization)



Tier 2 Site

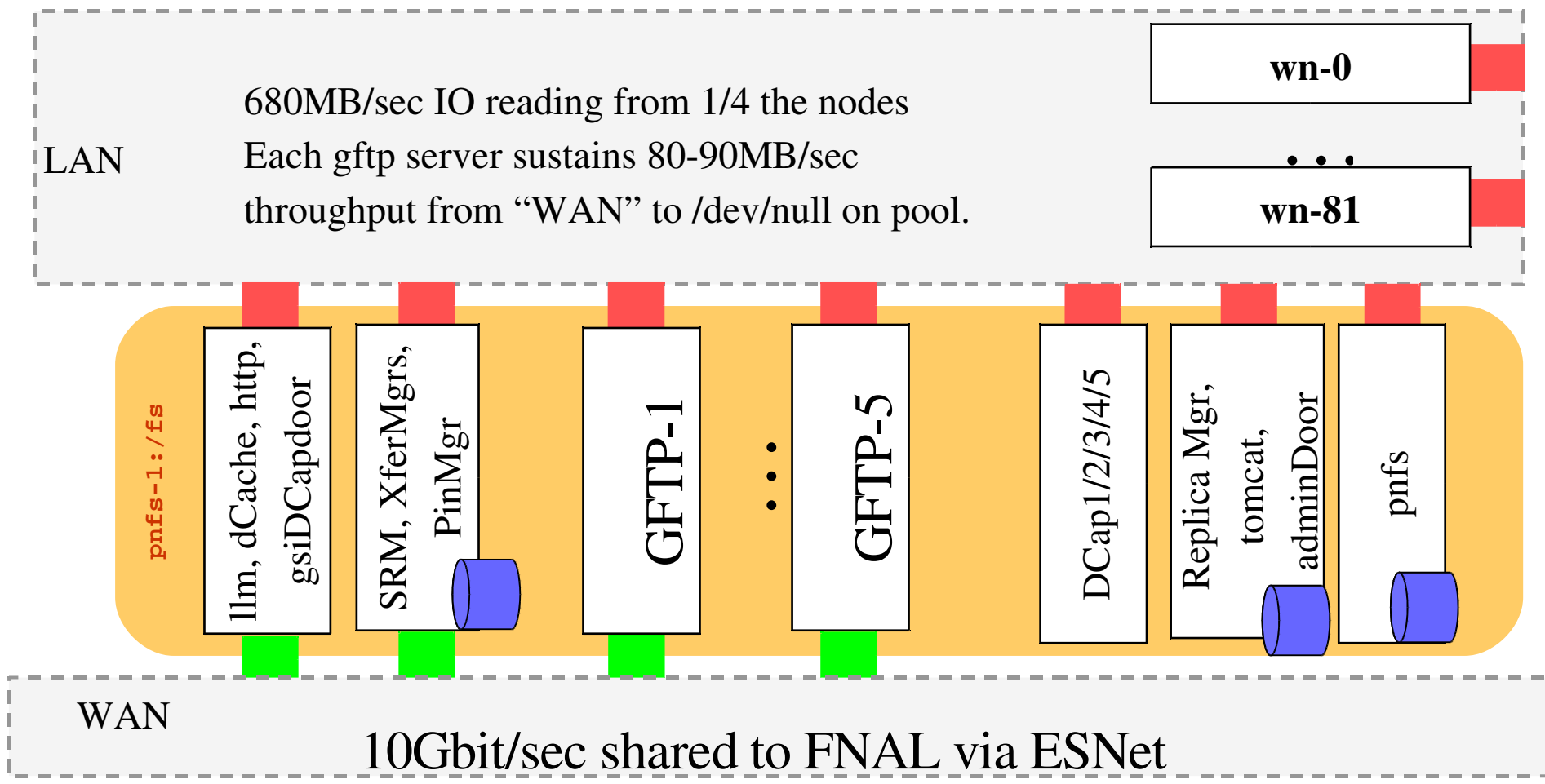
Caltech CMS Tier2 Production Cluster





Software

- VOMS





Other Example Configurations

- Purdue
 - 2 infrastructure nodes
 - 3 gridftp doors
 - 6 pool nodes, 28 TB
 - RAID, no resilient dCache
- UW Madison
 - 4 infrastructure nodes
 - 4 doors
 - 18 x 2TB RAID pool nodes
 - 28 x 1TB resilient pool nodes



Authorization

- gPlazma being deployed as sites upgrade to 1.7
- Authorizes through GUMS
 - Maintains db of authorized users from VOMS servers
 - No maintenance at storage site needed
- Supports group/role



VDT Installation Bundle

- Offered as a package in Virtual Data Toolkit
- Open Science Grid project
- Includes postgres, pnfs server, and dCache
- To be used by all USCMS storage sites
- Staffing
 - Frank Wuerthwein (UCSD)
 - 2.25 FTE at Fermilab
 - Documentation Writer



VDT Installation Features

- Easier deployment of dCache
 - Dialog-based
 - Supports multinode sites
 - Single configuration file for all nodes
 - Step-by-step documentation
- Support Process
- Administration Utilities



Partitioning for OSG Usage

- Devote an amount of storage space to OSG users
- VO Dependency
 - Present: CMS VO only
 - Future: VOs belonging to OSG
- Solutions
 - Dedicate all pools on some nodes to OSG
 - Dedicate some pools on all nodes to OSG
 - Use new Storage Spaces to reserve space for OSG
 - Administrator will obtain a space token for all OSG