SSL

activities and towards year 2

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SSL program of work

- WBS 6.1 – creating and operating scalable cyberinfrastructure
- WBS 6.2 – establishign devOps patterns through blueprint meetings & workshops
- WBS 6.3 – participate in functional testing
- WBS 6.4 – provide database services for metrics aggregation and dashboards
- WBS 6.5 – as needed, provide backend cyberinfrastructure for training

WBS 6.1: acquiring & operating SSL cyberinfrastructure

- Recall the SSL has no dedicated equipment
- We'll need to improvise:
  - leveraged – use existing LHC computing facility and other resources for dedicated tests
  - repurpose – adoption from finished projects
  - purchased – smallish cloud resources for development
- Andrew Chien providing CS research cluster from his lab we can repurpose to base platform

River cluster – SSL base platform services

- Repurposed UChicago CS research cluster

- Vintage but nice: (~50)
  - CPU: 2 x Intel Xeon E2650 v3 12-core processor, 2.3GHz, 30MB cache
  - DRAM: 16 x 16GB TruDDR4 Memory 2133MHz, 256GB
  - Disks: 2 x 800GB SATA MLC SSD, 1.6TB
  - 10G NICs

- 2x40 Gbps to SciDMZ
- Rebuild as Kubernetes
- Explore federation to aggregate w/ others

Federated ID access (institutional, CERN account), edge services hosting, Unix account provisiong, LHC sofware env.
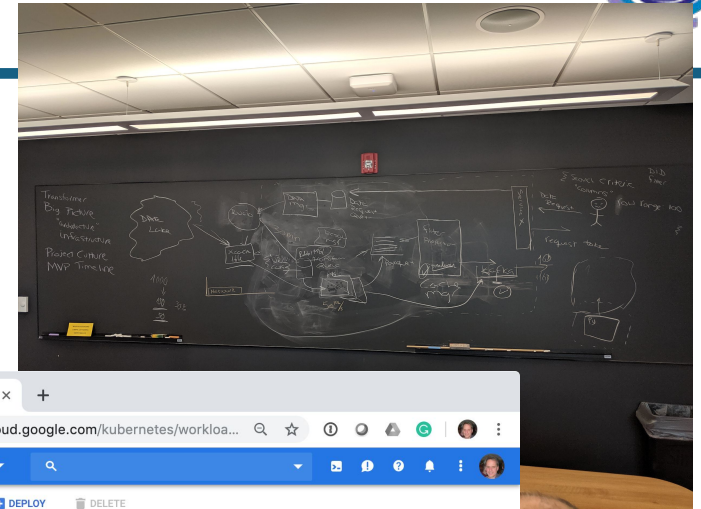
WBS 6.2: DevOps patterns

- Goal here is align with industry devops best practices where its practical.
- We discussed reproducible "deployments" of orchestrated at the Kickoff.
- Will have opportunity to collect input at Analysis Systems–SSL blueprint at NYU

WBS 6.3 Functional Testing

Until SSL base platform operational we can use GKE for testing. Early deployments for iDDS/ServiceX

WBS 6.5 cyberinfrastructure for training

- http://codas.slateci.net/
- JupyterLab machine learning platform for CODAS–HEP last year – available again
- Leverage NSF projects: PRP, CHASE–CI, and SLATE
- Coordinate with SSC for detailed requirements

Towards Year 2

WBS 6.1: Creating and operating a scalable cyberinfrastructure platform for IRIS-HEP R&D: the first SSL research cluster will be operational and supporting both DOMA and Analysis Systems prototypes. Year 2 goals include supporting G2.16 Move prototype of Analysis Systems Components to SSL.

WBS 6.2: Through blueprint workshops and prototyping efforts, best practice DevOps patterns will be established and documented. We will continue process begun in Year 1 associaed with G2.5, the first IRIS-HEP Blueprint workshop on Analysis Systems R&D on Scalable Platforms at NYU on June 21 & 22, 2019.

WBS 6.3: Participate in functional and scalability testing of data lake and analysis system prototyping efforts.   In Year 2, the SSL will work to support DOMA goals:
- **G3.14**: IDDS prototype that can automatically transform / optimize data formats.
- **G3.15**: With SSL, scale test a data lake prototype across multiple sites.

WBS 6.4: Provide database services for metrics aggregation, visualization and analytics for IRIS-HEP testing campaigns on the SSL. In Year 2 the SSL will provide a dashboard for iDDS/ServiceX.

WBS6.5 Provide the Institute with user-facing and back-end cyberinfrastructure components as needed for education, training and outreach events, supporting two training events during the year. In Year 2, this will include CoDaS school and FIRST-HEP events as needed.