
SSL Overview

Scalable Systems Laboratory for Innovation & Integration

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IRIS-HEP AS-SSL Blueprint & NYU
June 21, 2019





IRIS-HEP SSL Purpose

- Provide the Institute and the HL-LHC experiments with **scalable platforms** needed for development in context
- Provides **access** to **infrastructure and environments**
- Organizes software and resources for **scalability testing**
- Does foundational systems R&D on **accelerated services**
- Provides the **integration path** to the OSG-LHC production infrastructure

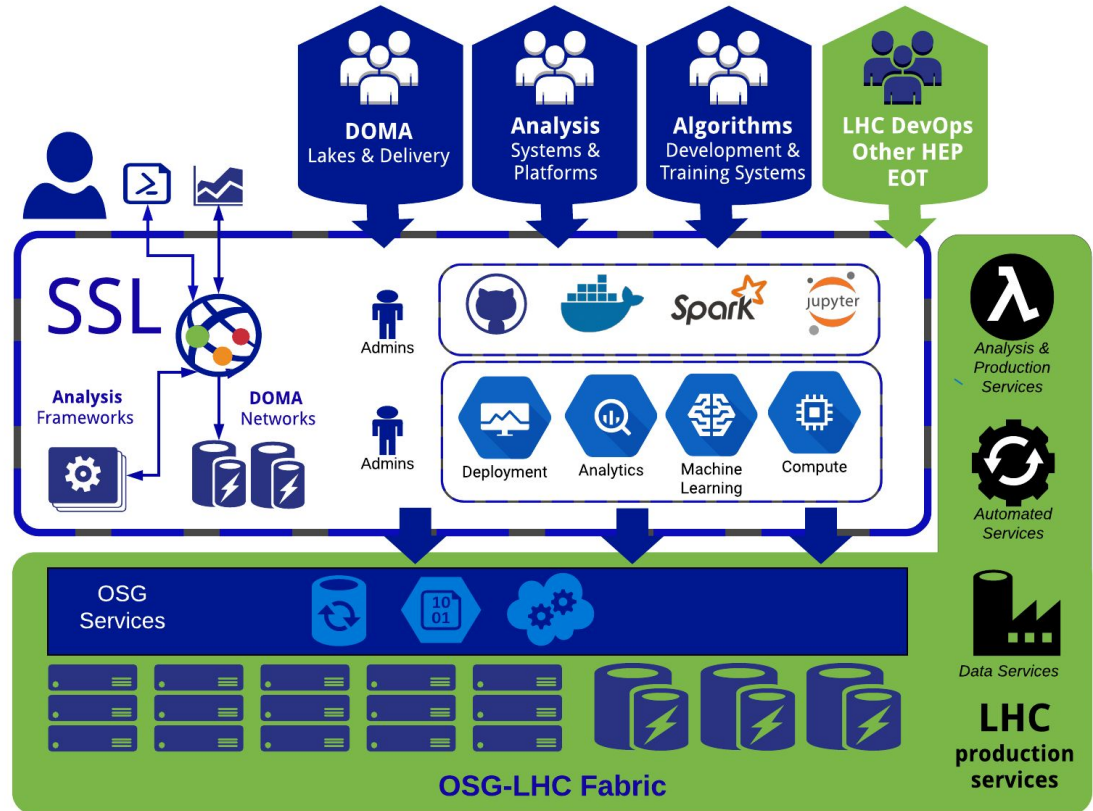
SSL: Path to Production



Provisioning of software **environments** and development tools.

Distributed platforms materialized with tools like containerized edge services.

Integration point with the OSG and LHC experiment services (data, analysis).





SSL Team & Resources

- Small core group to support base environment
- Dynamically **draws effort from R&D pillars**
- Interfaces to OSG-LHC and LHC Ops
- Organizes leveraged resources needed to scale



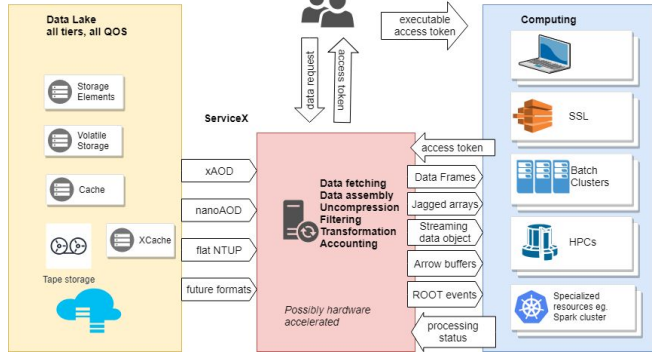
SSL program of work

- WBS 6.1 – creating and operating scalable cyberinfrastructure
- WBS 6.2 – establishing 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

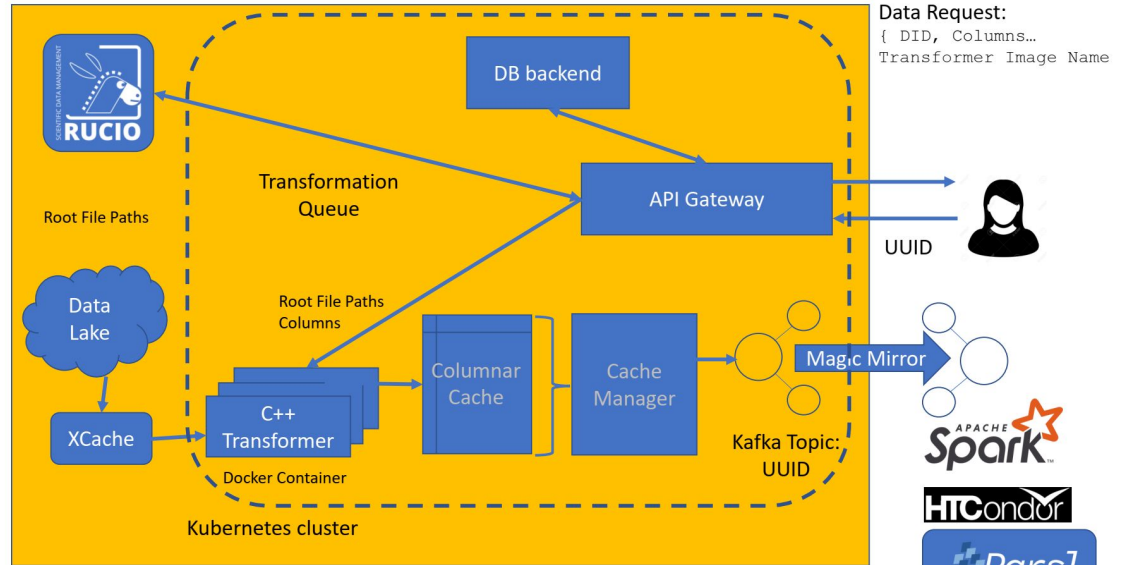
SSL and Analysis Systems



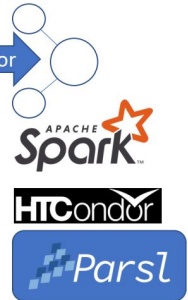
Architecture: ServiceX



in production
(design)



gke -> ssl deployment





SSL Challenges

- community platform
- support groups and projects
- bespoke resources & configurations
- declarative & reproducible deployments
- services to build & manage artifacts
- scalable up and back down

c.f. Lincoln's presentation





SSL Opportunities

- spark adhoc collaborations across traditional organizational boundaries (e.g. experiments)
- contributions and involvement from diverse resource providers
- new modes of infrastructure development, supporting more rapid innovation
- redeployable artifacts and reproducible patterns

