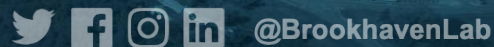




Operations in the US Cloud

Ofer Rind

US ATLAS WBS 2.3 F2F Meeting
November 30th, 2022



Continuous Integration and Operations

Help to ensure efficient operations across the US Cloud

- Provide crucial operational support to site admins
 - Includes management of ADCoS Shifts, identifying and troubleshooting site or ADC problems, improving monitoring and documentation for admins (see Armen's slides)
- Support and coordinate the deployment of ATLAS and OSG service updates
 - Includes new deployments/capabilities such as those involving the transition to token-based AAI infrastructure and deprecation of the GSIFTP protocol in favor of HTTP-TPC, Containerized Edge Services (SLATE), improving OSG Site Topology integration, and more

Personpower: Ofer, Armen, Fred (ex-officio), Mark, Xin

Coordination of Services

US ATLAS Facilities Services ☆

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A1	A	B	C	D	E	F	G	H	I
1	3	Linux OS version	Storage type and version	HTTP-TPC enabled?	OSG s/w version	Batch system and version	HTConder-CE Version	IPv6 enabled?	SLATE services offered? / type
2									
3	Tier-1:								
4	BNL	SL 7.3	dCache 7.2.16	Yes, primary	3.6 (21)	HTConдор 9.0.6	HTConдор-CE-5.1.3-1.osg36	Yes	No
5									
6	Tier-2's:								
7	AGLT2	CentOS 7.9	dCache 7.2.19	Yes, primary	3.6	HTConдор 9.0.16	HTConдор-CE-5.1.5-1.osg36	Yes	Yes/XCache/Frontier/Squid
8									
9	MWT2	CentOS/SL 7.9 (20)	dCache 7.2.15	Yes, primary	3.6	HTConдор 9.0.13	HT-Conдор-CE-5.1.3-1.osg3.6	Yes	Yes/XCache/Frontier/Squid (15)
10									
11	NET2	CentOS 7.9.2009	GPFS 3.2, Ceph Nautilus, XRootD 5.3.2	Yes, primary	3.6	SGE 2011.11	HTConдор-CE-5.1.3 (HTConдор 9.0.12)	Yes	Yes/XCache/Frontier/Squid
12	NET2 is in transition from BU to UMass and the values above apply to the BU legacy site. The new UMass site will be configured somewhat differently.								
13									
14	SWT2-CPB	CentOS 7.9 + updates	XRootD 5.4.0 (18)	Yes, primary	3.6	SLURM 17.11.13	HTConдор-CE-5.1.3.o sg35up (HTConдор-9.0.10-1.o sg35.up)	No (11)	Yes/XCache/Frontier/Squid
15	SWT2-OU	CentOS 7.8.2003 (2)	XRootD 5.4.2	Yes, primary	3.4/3.5 (19)	SLURM 20.02.4	HTConдор-CE-3.2.2 (HTConдор 8.6.13)	Yes(12)	Soon (17)

Federated Service Operations

- Centralized management of common edge services (Frontier/Squid, XCache) via SLATE
 - SLATE provides a way for a small central team to take over managing services for the sites
 - Each site provides a Kubernetes environment and sets up a basic SLATE infrastructure on top of Kubernetes.
 - The SLATE infrastructure allows a remote operations team to maintain specific services allowed by the site.
 - GitOps is used to track the changes and allow for reversion.
 - Considerable effort has been put into understanding the interaction between a site and the federated operations team (site [instructions](#))

Federated Operations Experience

- Remote service operation using SLATE works nicely.
- Installing / maintaining Kubernetes by the site is non-trivial.
 - It is hard for a site to keep up with the new versions and the operations team efforts happen inside the installed environment.
- Once SLATE is working, we have an operations model that works for University sites, but...
 - It is often hard to determine whether problems are on the site side or the SLATE-operated service side.
 - Who is responsible for debugging (e.g. squid failovers)...site admins or central ops?
 - We don't have enough people trained in doing operations (ops manual in progress)

Upcoming Facility-wide Concerns

- Network data challenge
 - Feb/Mar 2024...but several “mini-challenges” along the way (see Shawn’s talk on Friday for details)
- Token auth implementation, incl. Storage
 - WLCG [Timeline](#) with milestones (incl. DC24 “only” tokens)
 - Cooperation with DOMA BDT effort and OSG (see Brian’s talk on Friday)
- Update planning, e.g. HTCondor10

Improving Operations

- Communication and knowledge sharing
 - [Mattermost](#), etc.
 - Shared [knowledgebase](#)
- Interactions with ADC
 - Improvements in monitoring and training (including site admins)
 - Identify and fund a person to serve in an ADC liaison role
 - Top of site admins' operational concerns two years ago
 - ADCoS participation



Extra Slides