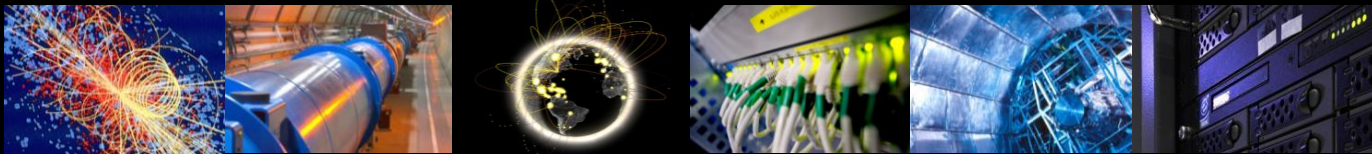# ETF/perfSONAR Updates

Marian Babik, CERN
IPv6 F2F, October 2021

News

- IPv6 status
  - ATLAS, CMS running dedicated IPv6-only instances in QA (production foreseen)
  - IPv6 results available in MONIT/SiteMon
  - ETF [central instance](#) - shows tests from both IPv4 and IPv6 nodes for ATLAS and CMS
- DUNE now has both QA and production instance
  - Raja added a test to detect IPv6 on the WNs
- Updates to Checkmk 1.6 and CS8
  - Includes migration to python 3
- Started working on support for tokens
  - IAM infrastructure on dual-stack will be needed (CMS/ATLAS QA switched to new IAM)
  - Plan is to integrate token support alongside x509
- CMS developed new HTTP/webdav probe
  - IPv6 ready
  - Integration has started and should be in QA in couple of weeks
- K8s prototyping ongoing
  - Dual stack support recently added in 1.21 - to be evaluated
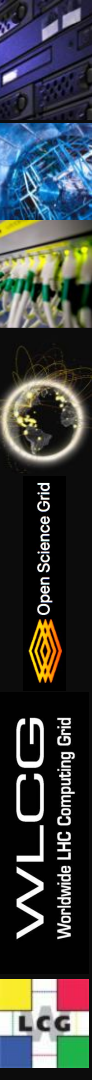
Plugins/Tests

Plugins	Users/Experiments	Maintained by
Job Submission		
ARC, HTCONDOR-CE	LHCb, ALICE, ATLAS, CMS, DUNE	ETF
Worker Nodes		
ATLAS (3), CMS (11), LHCb (7), DUNE(1)	ATLAS, CMS, LHCb, DUNE	ATLAS, CMS, LHCb, DUNE
Storage		
GFAL2 (SRM, gsiftp, XRoot, HTTP)	ATLAS	ATLAS
GFAL2 (SRM)	CMS	CMS
XRoot**, **new HTTP/webdav**	CMS	CMS
~~HTTPs/WebDAV**~~	HTTP TF*	HTTP TF*
Network		
perfSONAR infrastructure**	WLCG Network Throughput WG	OSG, WLCG

**Uses new library for writing plugins (python-nap) *Probe no longer supported by GFAL2 team

perfSONAR

News

- The [4.4.0 release](#) on July 8, 2021 added a number of new features
  - Support for loopback tests, graphs archive whitelist and a new RabbitMQ archiver
  - We identified some issues for our WLCG use-cases.
- [4.4.1 bug fix](#) released September 7, 2021
  - Numerous pScheduler fixes to improve reliability and resource use
  - Currently seeing issues with 4.4.1 nodes and problems with hitting thread limits
- Some US instances now write directly to the RabbitMQ bus
- New hire John Grigutis has taken over PWA, **working on many fixes/updates** that have been identified/requested.   Still have issues with Auto-URL
- [LHCOPN detailed dashboard](#) updated (now has IPv6 traffic for some sites)
- [ESnet](#) and [GEANT](#) LHCONE traffic information in Grafana dashboards
- New [psDash](#) which summarizes perfSONAR analytical results
- New Alarms & Alerting service on perfSONAR results
  - Advanced alarms based on aggregated results
- WLCG Data Challenge

Questions ?

Docs: https://etf.cern.ch/docs/latest/

New central instance: https://etf-10.cern.ch/etf/check_mk/

Instances (access requires IGTF/x509 cert loaded in the browser):

CMS production   CMS QA IPv6   CMS QA   Code: CMS gitlab

ATLAS production   ATLAS QA IPv6   ATLAS QA   Code: ATLAS gitlab

LHCb production   LHCb QA   Code: LHCb gitlab

ALICE production   ALICE QA   Code: ALICE gitlab

pS production   pS QA   Code: pS gitlab

ETF framework

ETF core containers   ETF Job Submission (Jess)

ETF nagios plugins lib. NAP   ETF rule-based configuration (ncgx)

ETF support channels: GGUS: Grid Monitoring or etf-support@cern.ch (SNOW)
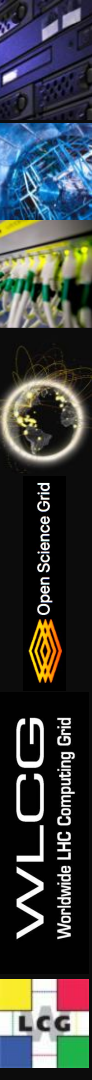
Summary

- ETF is a container-based application combining open source software with a set of frameworks and APIs to provide flexible testing suite
- Easy to extend, re-locate and support new experiments and technologies
- Supported as part of the CERN IT Monitoring Stack
- Currently deployed at CERN for five experiments
  - Supporting IPv4-only and IPv6-only testing
  - Experiments contacts have access in case they need to debug and/or follow up on issues
  - Central instance provides a site-level view (one place to see results from all experiments)
- Additional deployment at OSG for perfSONAR infrastructure monitoring
  - Strong interest from other communities to have this available as a generic tool
- Feedback welcome via standard support channels or directly
  - Experiments priorities for different tasks and new use cases best communicated via tickets
  - Technical issues/merge requests can be added directly via gitlab

Jess

- **Simple job submission framework used to develop ETF JS plugins**
  - Independent (not tied to Nagios), rewrite from scratch
- **Pluggable** - easy to extend to support different submission systems
  - Direct submission to ARC, CREAM and HT-Condor-CE
  - Submissions via local HT-Condor (to ARC/CREAM/HTCondorCE and potentially other backends supported by HT-Condor)
  - **Submissions via remote HT-Condor pool**
  - ETF can also host a **local HT-Condor pool** (in a separate container) to which remote startds can connect (implements pull-based submission model - tested for CMS DODAS)
- Generic **job tracking and monitoring**
  - Currently tracking a single job per CE; can also be extended to track multiple jobs/CE
  - Manual re-scheduling of job submissions via web interface improved
  - Full log(s) of the running job (details depend on the backend)
- **Support for configuration/env on the worker nodes**
  - This can be configured by the experiments in the ETF core plugin (per host/service/site)
- Drops length limit on the worker node results and job submission results

WN-µFM
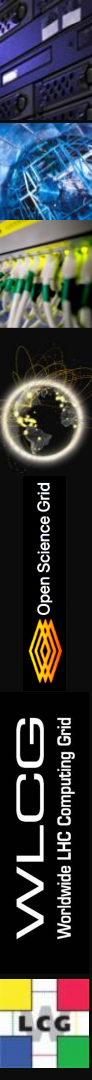
- **Micro-framework to execute tests on the worker nodes**
  - Moving away from a statically compiled nagios binary
- Supports basic scheduling of tests
  - Can run tests in parallel (configurable), can timeout/kill runaway tests
  - Initial support for alternate schedule of tests (execute once every 3 runs)
- Runs nagios standard compliant tests
  - **Supports performance metrics readout** (numerical values)
- Configured directly from ETF frontend
- **WN environment setup**
  - Using env/config passed from JESS (via env file) - easy to pass variables directly from frontend to the WN (like sitename, paths, originating CE/queue, etc.)
- Support different backends for metric output
  - Directory queues, message queues, json, http upload, etc.
- **Can also run as a standalone component**
- **Supports py 2.6, 2.7 and 3.4+; statically compiled version also avail.**