

# DIRAC Project status

*A. Tsaregorodtsev,  
CPPM-IN2P3-CNRS, Marseille,  
DIRAC@IN2P3 meeting,  
5 April 2023*



- ▶ Project main axis
  - ▶ Developments
  - ▶ Services
  - ▶ Conferences, dissemination, support, etc
- ▶ Project status
- ▶ Consortium news

- ▶ OAuth2/OIDC AAI (*Andrei*)
- ▶ HTTPS services
- ▶ REST
- ▶ WebAppDIRAC
- ▶ Computing and Storage Resources
- ▶ Production System (*Alice*)
- ▶ Developments to support services and applications (*Natthan, Bertrand*)

- ▶ **Currently: DISET**
  - ▶ Custom, non “standards based”, X.509 security
  - ▶ Performant
  - ▶ Becoming obsoleted, e.g. no OAuth2 support, TLS, etc
- ▶ **New: HTTPS**
  - ▶ Standards based
  - ▶ Performance reported good, to be confirmed in real production
  - ▶ Standards based
    - ▶ Tornado framework
    - ▶ OAuth2 ready
  - ▶ Common basis for RPC, REST and WebApp interfaces
  - ▶ Support for both X.509 and OAuth2

- ▶ Services migration progress
  - ▶ Most simple cases done
- ▶ Problem solved with running different services with the same handler codes
  - ▶ E.g. multiple File Catalogs – EGI case
- ▶ Problem: no support for files upload/download
  - ▶ StorageElement
  - ▶ SandboxStore

All dips services should have a counterpart on https. #6495

Open

22 of 31 tasks

fstagni opened this issue on Nov 3, 2022 · 0 comments



fstagni commented on Nov 3, 2022 · edited

Member

- ☐ DataStore
- ☐ careful ReportGenerator
- ☒ Configuration
- ☒ DataIntegrity
- ☒ FileCatalog
- ☒ FTS3Manager
- ☒ S3Gateway
- ☐ does it make sense? StorageElement
- ☒ BundleDelivery -> not doing, see [Incorrect behaviour of BundleDelivery with HTTPS #6821](#)
- ☒ ComponentMonitoring
- ☒ Notification
- ☒ ProxyManager
- ☒ UserProfile
- ☐ SystemAdministrator
- ☒ Monitoring
- ☒ ProductionManager
- ☒ ReqManager
- ☐ does not make sense, or does it? ReqProxy
- ☒ Publisher
- ☒ ResourceManager
- ☒ ResourceStatus
- ☒ StorageManager
- ☒ TransformationManager
- ☒ JobManager
- ☒ JobMonitoring
- ☒ JobStateUpdate
- ☐ does not make sense, will need a "proper" solution Matcher
- ☐ does not make sense, will need a "proper" solution OptimizationMind
- ☐ PilotManager
- ☐ SandboxStore
- ☒ WMSAdministrator

- ▶ WMS is not complete without SandboxStore
  - ▶ We can not demonstrated support for EGI users with tokens only (provided other tokens related problems solved)
- ▶ Possible ways to go – open discussion
  - ▶ Temporary non-streaming solution
    - ▶ Non-scalable, but for the EGI service can be OK
  - ▶ Finding a proper solution for data streaming
    - ▶ Not evident with Tornado, but should be studied
    - ▶ Applying another framework

- ▶ Current implementation (8.0)
  - ▶ Common BaseRequestHandler in the Tornado framework
    - ▶ Common AAI subsystem for RPC, REST, Web
      - Supporting OAuth2 flows
    - ▶ Complicated, (overly) universal
    - ▶ Needs revision
  - ▶ Using a fork tornado-m2crypto package
    - ▶ Compatible with M2Crypto module (SSL python wrapper)
- ▶ Further evolution
  - ▶ Passing to the latest tornado version together with a native python SSL support
    - ▶ In development
  - ▶ Contributions are welcome
    - ▶ Even on the conception level

- ▶ Single component per host
  - ▶ Operating all the services, instantiating all kinds of handlers
  - ▶ Natural load-balancing
    - ▶ In conjunction with nginx
  - ▶ Easy installation
    - ▶ Just run the Tornado “container”
    - ▶ Good for K8 like installations
  
- ▶ Complicated logging
  - ▶ Central service logging is necessary (ES/OS)
    - ▶ ELK -> ES database
    - ▶ Fluentd/Bit -> ES database
  - ▶ Dashboards for looking up logs are necessary
    - ▶ Logging messages are to be revisited (source, contents)



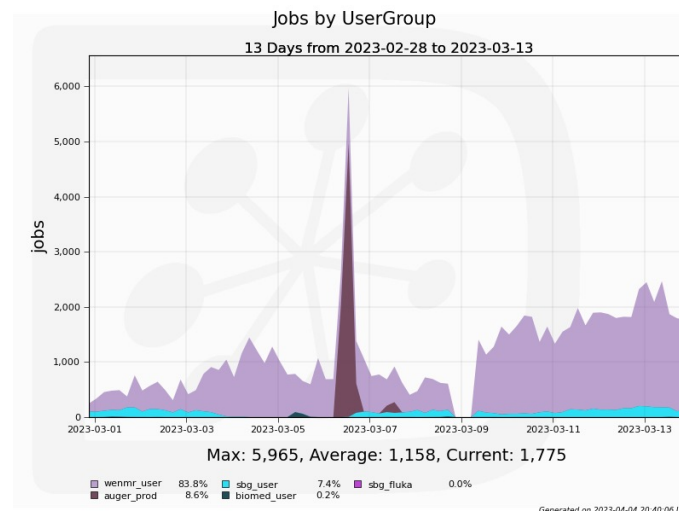
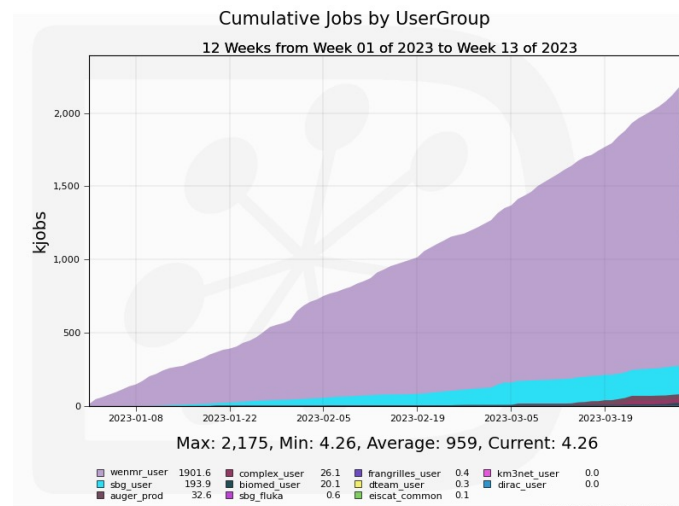
- ▶ Access to HTCondorCE and ARC with tokens
  - ▶ In development, practically working, but should follow evolution of Chec-IN/IAM vs HTCondorCE/ARC
- ▶ CloudComputingElement replaced VMDIRAC
  - ▶ Simpler although less universal – good example of pragmatic approach
  - ▶ Token support through Application Credentials (ACs)
    - ▶ ACs generated once by hand after authentication with tokens
    - ▶ AC per VO
    - ▶ Cloud site admins are not against that
      - Padova, CNIC, IPHC, ULAKBIM, IJCLAB, CESNET
    - ▶ More sites to be solicited
    - ▶ WeNMR, biomed, dteam
- ▶ HPC
  - ▶ No recent developments as no new real cases
  - ▶ May be Galaxy

- ▶ Access storage with tokens
  - ▶ Scopes based, e.g.
    - ▶ `storage.read:/path/to/file`
- ▶ Not yet started, many conceptual things to decide on
  - ▶ Who issues the tokens
    - ▶ Identity Provider or DIRAC
  - ▶ How File Catalog ACLs are applied
  - ▶ Accessing different SEs with dedicated tokens
  - ▶ How this will all scale
  - ▶ No time pressure
- ▶ Have to study the existing experience
  - ▶ ATLAS/Rucio

- ▶ 4 patch releases since last meeting in February
  - ▶ v7r3p36
  - ▶ 8.0.18
  - ▶ Minor fixes
    - ▶ Fixes for AREX and HTCondorCE Ces
      - Enabled for using tokens
    - ▶ Support for sqlalchemy 2.0
    - ▶ added setPriority() to Job API
    - ▶ Tornado Handlers report to ActivityMonitor

- ▶ No change for 8.1.0
  - ▶ 8.1.0a12 is compiled
    - ▶ 6 hackthons already passed
      - Only minor problems
  - ▶ 8.1.0 features
    - ▶ Moving all the services to HTTPs
    - ▶ Remove Setup concept and related codes
    - ▶ Support for non-DIRAC clients: REST, HTTPs
    - ▶ Deprecate dirac-proxy-init -> dirac-login
    - ▶ Remove VMDIRAC
      - Use CloudComputingElement instead
    - ▶ Support for centralized pilot logging

- ▶ Running smoothly
  - ▶ Since beginning 2023
    - > 2M jobs
    - Up to 6k concurrent jobs
    - > 1K on average last month
- ▶ WMS History is broken currently ☹️



- ▶ All servers running at DIRAC version 8.0
  - ▶ Except ccdircac08 – running oooold REST interface
- ▶ One server is running Tornado container
  - ▶ TokenManager
  - ▶ Auth API to support OAuth2 flows
- ▶ We have to see whether we can pass more services to HTTPS

- ▶ EC Procurement
- ▶ Infra TECH-01-01
- ▶ *Gino's presentation*

- ▶ ESCAPE

- ▶ NTR

- ▶ Galaxy

- ▶ Discussions with Galaxy developers restarted sloooowly
    - ▶ Setting up testing environment
      - ☐ Interested in a custom Pilot Factory with custom scheduling algorithms
    - ▶ Setup done on our side
      - ☐ The ball is on their side



- ▶ Participating laboratories as reported in the last EAP
  - ▶ CC/IN2P3, CPPM, LUPM, LPSC, IPHC, CREATIS
    - ▶ Explicitely listed in the last DIRAC Consortium documents
  - ▶ 11 engineers, but ~2 FTEs in total in 2023
    - ▶ 13 engineers/3 FTEs in 2022
  - ▶ Stronger involvement of CC/IN2P3 – good news !
  - ▶ Participation of some partners to be revisited
    - ▶ LPSC ? IPHC ?

- ▶ Johan is about to leave the function of the Technical Coordinator
  - ▶ Taking important role in the LSST Collaboration
  - ▶ Thanks Johan !
- ▶ Vanessa takes over as the DIRAC@IN2P3 Technical Coordinator

- ▶ DIRAC Community workshop at the EGI Conference 2023 (suggested by EGI)
  - ▶ June 2023
  - ▶ Scheduled a 10mins DIRAC service overview talk (Gino)
  - ▶ 90 minutes training/demo session
    - ▶ Would be great to run the demos with tokens !
  
- ▶ Joint DIRAC + Rucio Workshop
  - ▶ 16-20 October 2023
  - ▶ KEK
  - ▶ Program Committee to meet on the 17th April

- ▶ CHEP 2023
  - ▶ General DIRAC dev overview (Federico)
  - ▶ CTA Production (Alice)
    - ▶ With publication
  
- ▶ ISGC, march 2023
  - ▶ DIRAC OIDC/OAuth2 (Andrei)
    - ▶ Remote presentation
    - ▶ Publication is being prepared

- ▶ University of Montpellier withdrew from the Consortium
  - ▶ Approved by the Consortium Board on the 24th March
- ▶ Consortium Agreement Amendment 2 is updated to reflect the changes
  - ▶ Removes conflict between IN2P3 and the University of Montpellier
  - ▶ Awaiting final confirmation for the Amendment text by the Parties