EGI Accounting with AUDITOR - A Test Setup

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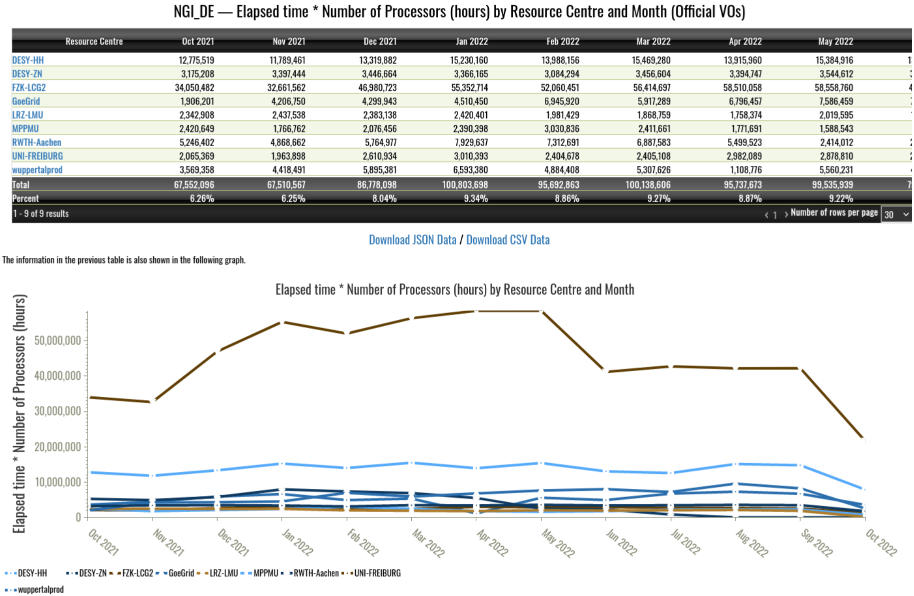
1. Short Overview
2. AUDITOR
3. Test Setup

EGI Accounting



NGI_DE — Elapsed time * Number of Processors (hours) by Resource Centre and Month (Official VOs)

Resource Centre	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022
DESY-HH	12,775,519	11,789,461	13,319,882	15,230,160	13,988,156	15,469,280	13,915,960	15,384,916
DESY-ZN	3,175,208	3,397,444	3,446,664	3,366,165	3,084,294	3,456,604	3,394,747	3,544,612
FZK-LCG2	34,050,482	32,661,562	46,980,723	55,352,714	52,060,451	56,414,697	58,510,058	58,558,760
GoeGrid	1,906,201	4,206,750	4,299,943	4,510,450	6,945,920	5,917,289	6,796,457	7,586,459
LRZ-LMU	2,342,908	2,437,538	2,383,138	2,420,401	1,981,429	1,868,759	1,758,374	2,019,595
MPPMU	2,420,649	1,766,762	2,076,456	2,390,398	3,030,836	2,411,661	1,771,691	1,588,543
RWTH-Aachen	5,246,402	4,868,662	5,764,977	7,929,637	7,312,691	6,887,583	5,499,523	2,414,012
UNI-FREIBURG	2,065,369	1,963,898	2,610,934	3,010,393	2,404,678	2,405,108	2,982,089	2,878,810
wuppertalprod	3,569,358	4,418,491	5,895,381	6,593,380	4,884,408	5,307,626	1,108,776	5,560,231
Total	67,552,096	67,510,567	86,778,098	100,803,698	95,692,863	100,138,606	95,737,673	99,535,939
Percent	6.26%	6.25%	8.04%	9.34%	8.86%	9.27%	8.87%	9.22%

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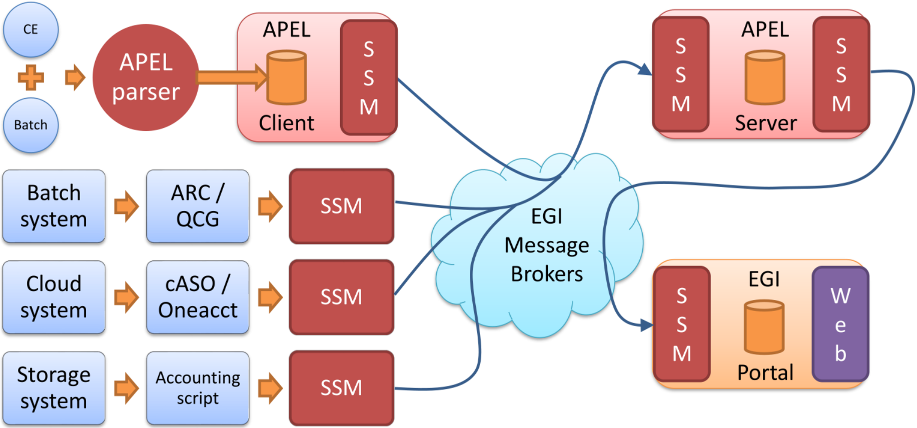
Download JSON Data / Download CSV Data

The information in the previous table is also shown in the following graph.

Elapsed time * Number of Processors (hours) by Resource Centre and Month

EGI Accounting



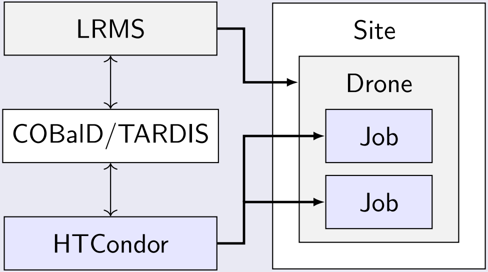
(APEL Accounting: Data Flow and Work Plan)

EGI Accounting

It's running already! So why do we care?

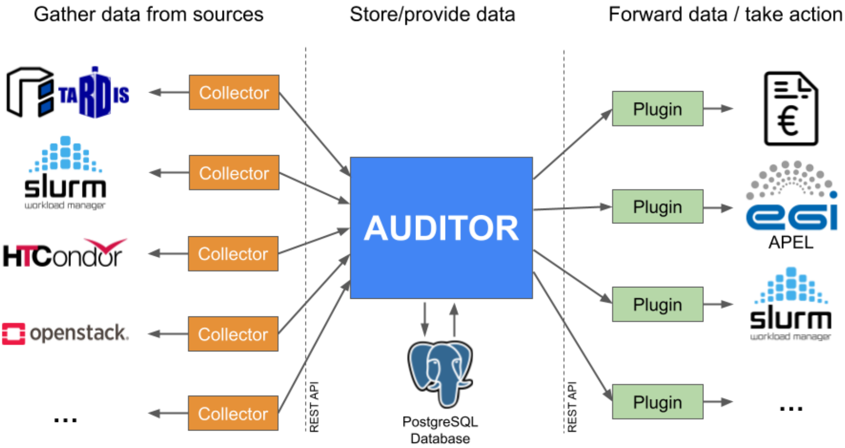
Opportunistic resources

- There might be no CE or APEL Client
- Pool might be distributed (e.g. GridKa, COBalD/TARDIS)



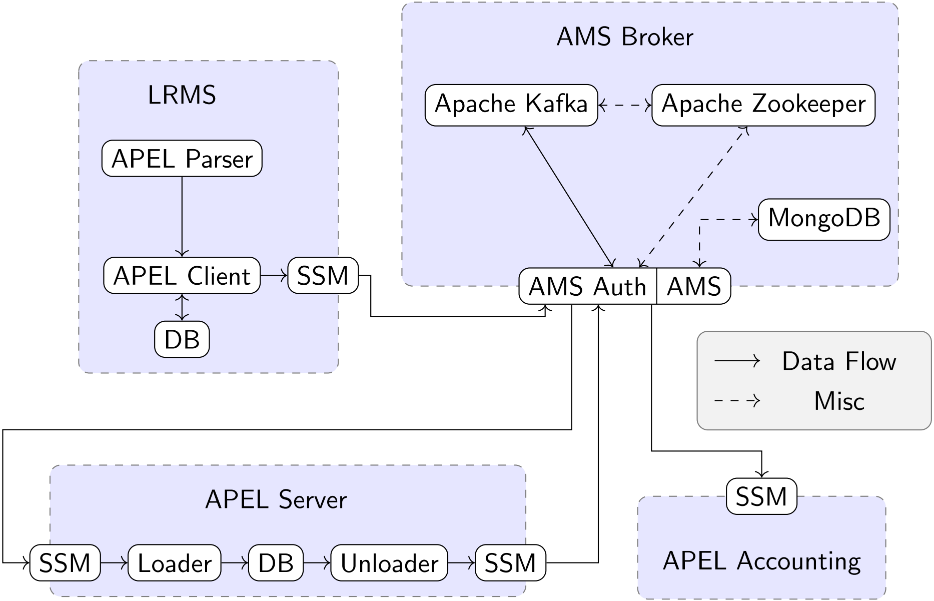
We need very flexible aggregation and reporting of accounting data.
→ AUDITOR (Freiburg)

AUDITOR



(alu-schumacher.github.io/AUDITOR)

Requirements for the Plugin



Requirements for the Plugin

Plugin needs to

- Send records to the broker
- Use a format the APEL server understands records

Communication between SSM and AMS uses REST:

1. SSM contacts authentication server with client certificate
2. Authentication server provides user token
3. SSM sends records to the AMS

Record format can be found in `github.com/apel/apel/db/records/*.py`

(`twiki.cern.ch/twiki/bin/view/EMI/ComputeAccounting` outdated)

Requirements for the Plugin

Sending data to AMS:

```
# Obtain user token for ams
echo "Request user token..."
TOKEN=$(curl --capath /etc/grid-security/ca \
    --cert /etc/grid-security/client.pem \
    --key /etc/grid-security/client.key \
    -H "Content-Type: application/json" \
    -X GET "https://localhost:${AUTH_PORT}/v1/\
      service-types/ams/hosts/ams:authx509" \
    | jq ’.token’ | tr -d ’"’)

# Send message
echo "Send message"
curl --capath /etc/grid-security/ca \
    -H "Content-Type: application/json" \
    --data "${MSG}" \
    -X POST "https://localhost:${AMS_PORT}/v1/\
      projects/accounting/topics/topic1:publish?\
      key=${TOKEN}"
```

Requirements for the Plugin

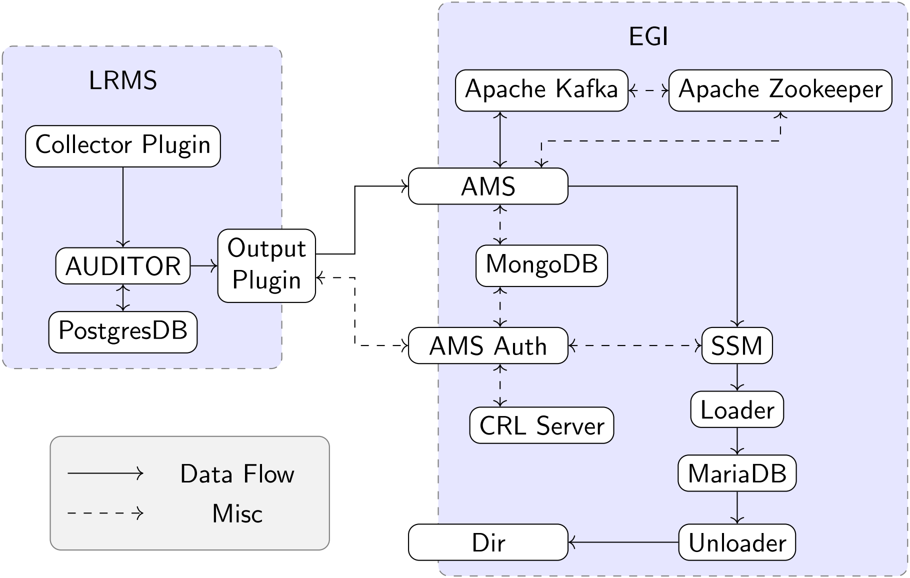
Relevant apel records:

- Job Records: ”APEL-individual-job-message: v0.3”
- Summaries: ”APEL-summary-job-message: v0.3”

Example for a job record:

```
APEL-individual-job-message: v0.3
Site: wuppertalprod
SubmitHost: wn21265
LocalJobId: 11295712
WallDuration: 4457
CpuDuration: 4457
StartTime: 1666180492
EndTime: 1666180566
ServiceLevel: 1.1
ServiceLevelType: hepspec
```

Test Setup


LRMS
Collector Plugin
AUDITOR
PostgresDB
Output Plugin
EGI
Apache Kafka
Apache Zookeeper
AMS
MongoDB
AMS Auth
SSM
CRL Server
Loader
MariaDB
Dir
Unloader
Data Flow
Misc

Test Setup

Some pitfalls

- User roles need to be in MongoDB

```
db.roles.drop()
db.roles.insertMany([
{"resource" : "ams:metrics", "roles":
    ["service_admin", "metrics_viewer"]},
{"resource" : "ams:dailyMessageAverage", "roles":
    ["service_admin", "metrics_viewer"]},
{"resource" : "users:byUUID", "roles":
    ["service_admin", "argo_api_authn"]},
...
```

- Parts of APEL rely on Python2
- Custom DN format:
  - OpenSSL new: C = DE, O = Pleiades, CN = Pleiades Client
  - OpenSSL old: /C=DE/O=Pleiades/CN=Pleiades Client
  - AMS: CN=Pleiades Client,O=Pleiades,C=DE

Summary and Outlook

- Learned EGI dataflow
- Build test server for development
- Output plugin in development now
- Next: ATLAS accounting via Panda Pilots