APEL and SSM Update

GridPP46, Ambleside - September 2021
Adrian Coveney

Outline

1. Grid Tools team updates

2. SSM AMS migration

   - SSM AMS migration

   - AMS vs Broker Network

   - The road to migration

3. New pub/sync test system

   - Old system

   - Planned system

Grid Tools team updates

- Joint team working on both APEL and GOCDB. Changes **bolded** below.
- Full-time:
  - Adrian Coveney – APEL lead
  - Greg Corbett – GOCDB lead
  - **Connor Pettitt** – developer
- Others:
  - Ian Neilson – 50% on GOCDB
  - **Rose Cooper** – cross-group role with some time on APEL/GOCDB
  - Recently ~**3 graduate trainees and apprentices** at any one time
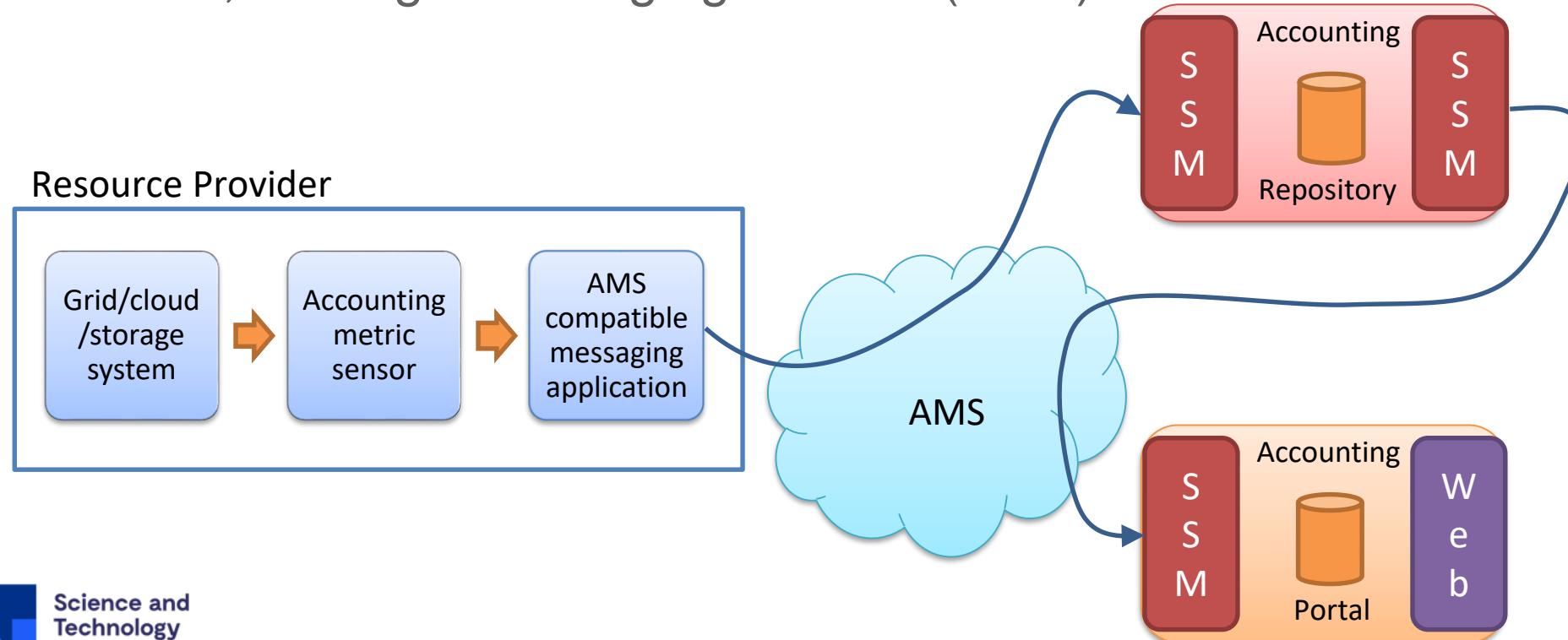
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SSM AMS migration

- The old EGI Message Broker Network needed retiring
- The EGI Messaging team developed a Google Pub/Sub-based replacement, the Argo Messaging Service (AMS)

AMS vs Broker Network

- AMS has the concept of "projects" which allows for more control by a service, like APEL, over its own topics/subscriptions/ACLs

- No longer a network of brokers, but in practice this simplifies things and makes the messaging more reliable

- RESTful API vs STOMP messaging

- Metrics about the messaging can be retrieved from the API allowing us to monitor the health of our messaging better

- Web portal for project admins in development (available on AMS devel)

- Message retention is 7 days with AMS vs 3 days

- ACLs update every hour with AMS vs 4 hourly

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The road to migration

- Messaging team produced a Python library to simplify integration

- SSM 2.4.0 added initial support for AMS

- Many iterations of SSM required as AMS library was steadily improved and we learned how to make the most of AMS

- Beyond the basic Pub/Sub messaging we requested some additions:

  - A token translation system so sites wouldn't need to handle tokens themselves and could continue to use certificates

  - ACLs on topics that would update automatically from GOCDB

New pub/sync test system

Old system

- Old pub/sync tests pushed via the message broker network (now retired)
  - Monitoring currently checks HTTP pub/sync pages
- Runs on old hosts that will need migrating
- Low maintainability
  - No changes made to system in a long time so no local knowledge
  - Not written in one of our usual languages
- Old tests have hardcoded absolute WARN and ERROR levels
  - Would make more sense to use percentage based sync checks

Planned system

- REST API for Monitoring to query
- HTTP pages for humans to view
- Some work completed
  - Can replicate grid basic publishing check (how long since last publish)
- Still to do
  - Percentage based sync checks
  - Cloud and storage checks
  - Per SubmitHost checks – very useful for problem solving. Currently do manually via SQL queries
  - Look at improving update frequency

Thank you