Science and Technology Facilities Council

Accounting for HEPscore: Technical changes and timeline

Adrian Coveney
GDB, 14 December 2022

Science and Technology Facilities Council

Outline

1. Changes overview
2. APEL client changes
3. BDII related changes
4. Normalised message changes
5. Heterogeneous benchmarks types
6. Timeline

Science and Technology Facilities Council

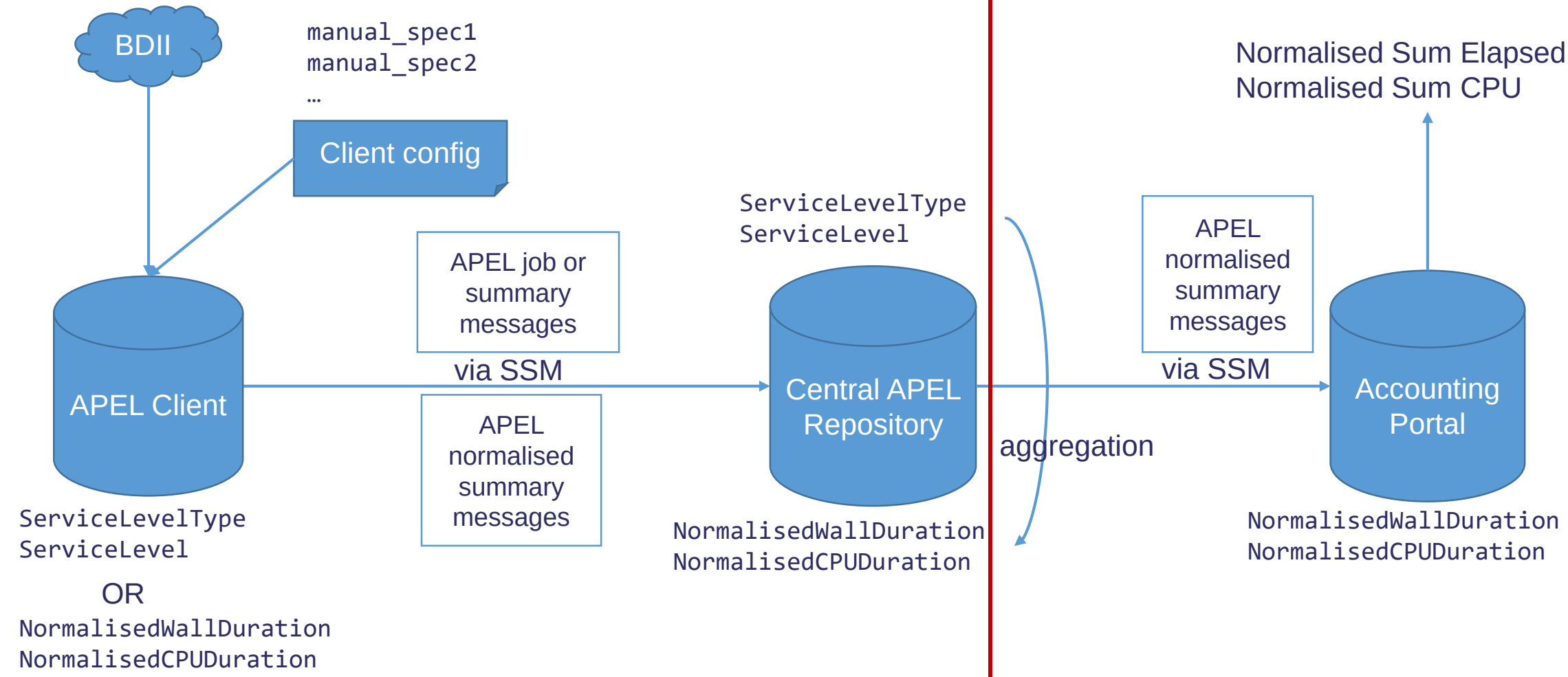
Changes overview

- APEL client
  - Support for retrieving benchmark type from BDII
  - Extend local benchmark setting to support HEPscore
- Messaging
  - New message format for normalised records to support specifying the type of benchmark used
  - Add support for HEPscore to other message formats (job and summary)
- APEL Repository (server)
  - Update schemas to record benchmark type for normalised records
  - Out of scope before April: including benchmark type info in data pushed to Portal

GLUE_CE_CAPABILITY
GLUE_HOST_BENCHMARK

Updated for April 2023

Updated post-April



Science and Technology Facilities Council

APEL client changes

- The APEL client supports setting benchmarks locally per CE rather than retrieving the scaling factor from BDII

- Currently only support values of **`HEPSPEC`** or **`Si2k`**

- This will be extended to HEPscore, e.g.:

```
manual_spec1 = grid10.uni.ac.uk:1234/grid10.uni.ac.uk-condor,HEPscore_23,10.0
manual_spec2 = grid22.uni.ac.uk:1234/grid22.uni.ac.uk-condor,HEPscore_23,15.0
manual_spec3...
```

Science and Technology Facilities Council

BDII related changes

- The APEL client can retrieve a CPU scaling reference in SI2k units (**`CPUScalingReferenceSI00`** under **`GlueCECapability`**) from a BDII and use that to normalise CPU and wall times but the published records then assume SI2k rather than HS06

- Propose to additionally parse the end of the **`Benchmark`** field under **`GlueCECapability`** to extract the *type* of benchmark used (while maintaining the definition of the SI00 fields) so the actual benchmark used can be tracked

Normalised message changes

- Normalised summaries
  - Renamed header
  - Accept a dictionary of benchmarks and normalised values

```
APEL-normalised-summary-message: v0.4
...[etc.]
WallDuration: 47248
CpuDuration: 46871
NormalisedWallDuration: {hepscore_23: 708720}
NormalisedCpuDuration: {hepscore_23: 703065}
%%
...[other records]
```

Heterogeneous benchmark types

- Accounting aggregates by CE (among other fields)
- While the numbers would work with heterogeneous benchmark *types* within a CE (HS06:HEPscore parity), the overall picture could be lost
- Therefore recommend separate CEs when adding new capacity benchmarked with HEPscore, at least when using the APEL client
- (3rd-party accounting systems may be able to produce accounting records for the same CE with different benchmark types, in which case, the above may not apply, as the record format does support that)

Timeline

- Testing with volunteer sites in mid-February
  - APEL client
  - ARC
  - HTCondorCE
  - Normalised record users (e.g. CERN, OSG)
- Deployment by April
- Subsequent developments after April

Thank you