IHESD

INTEGRATED HUMAN-EARTH SYSTEM DYNAMICS

Xanthos: Advancements

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On behalf of the GCAM team

Pacific Northwest NATIONAL LABORATORY

U.S. DEPARTMENT OF ENERGY BATTELLE

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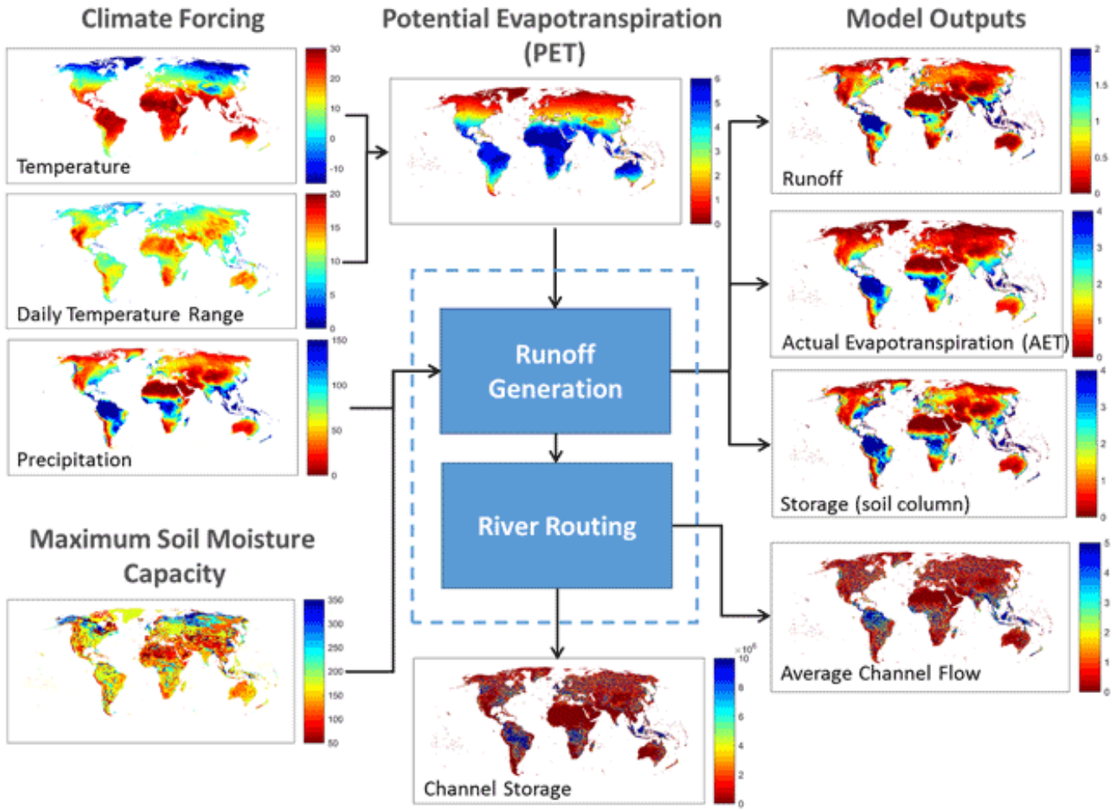
Xanthos: A global hydrologic model

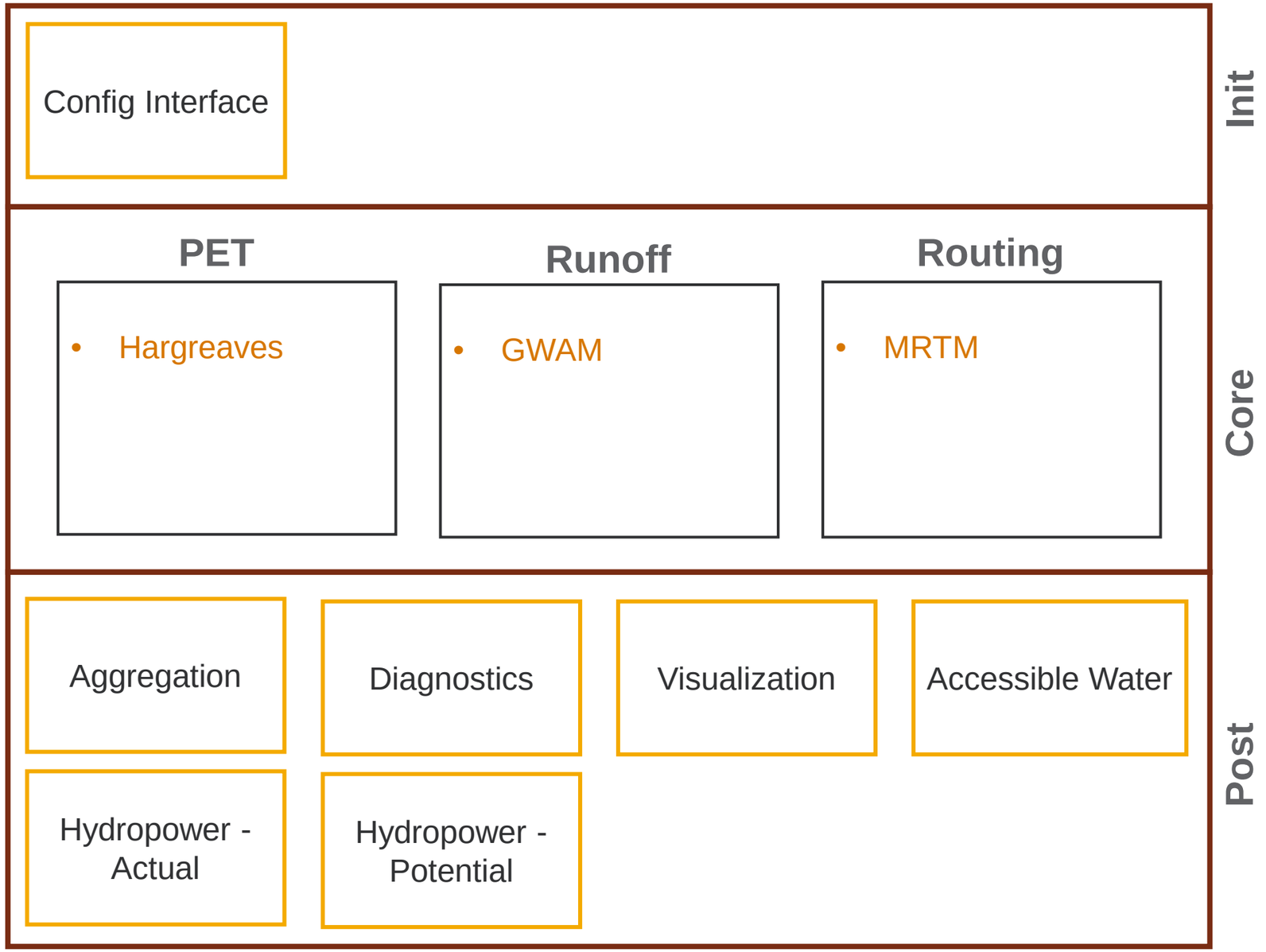
- Global hydrologic model built to quantify and analyze global water availability
- Monthly time-step
- 0.5 degree spatial resolution
- Provides water availability to GCAM
- Open-source, publicly available: https://github.com/jgcri/xanthos



Li et al., 2017; Vernon et al. 2019

Xanthos v1

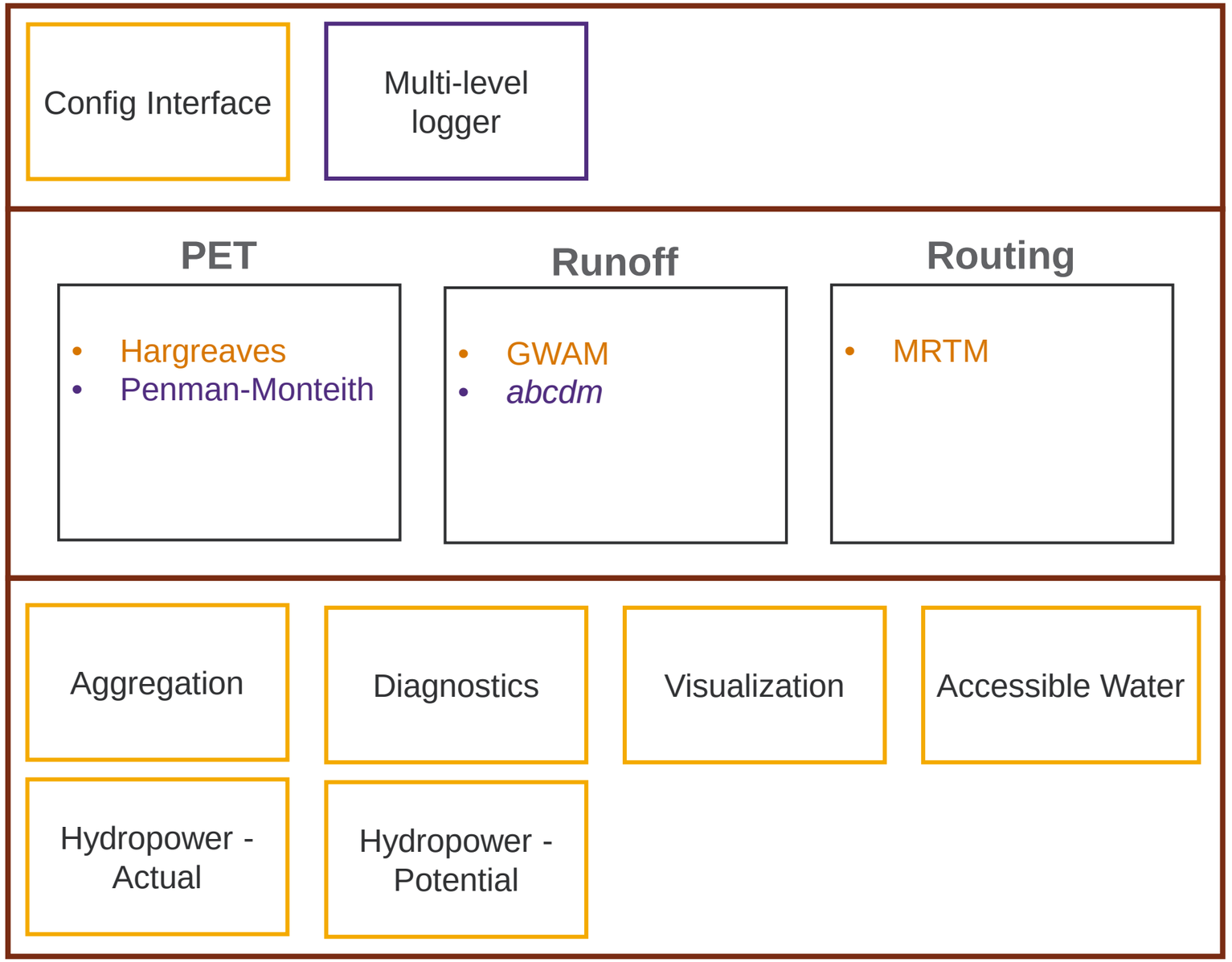
- Modular though not able to uncouple parts
- Included post-processing diagnostics and other capabilities



Version 1

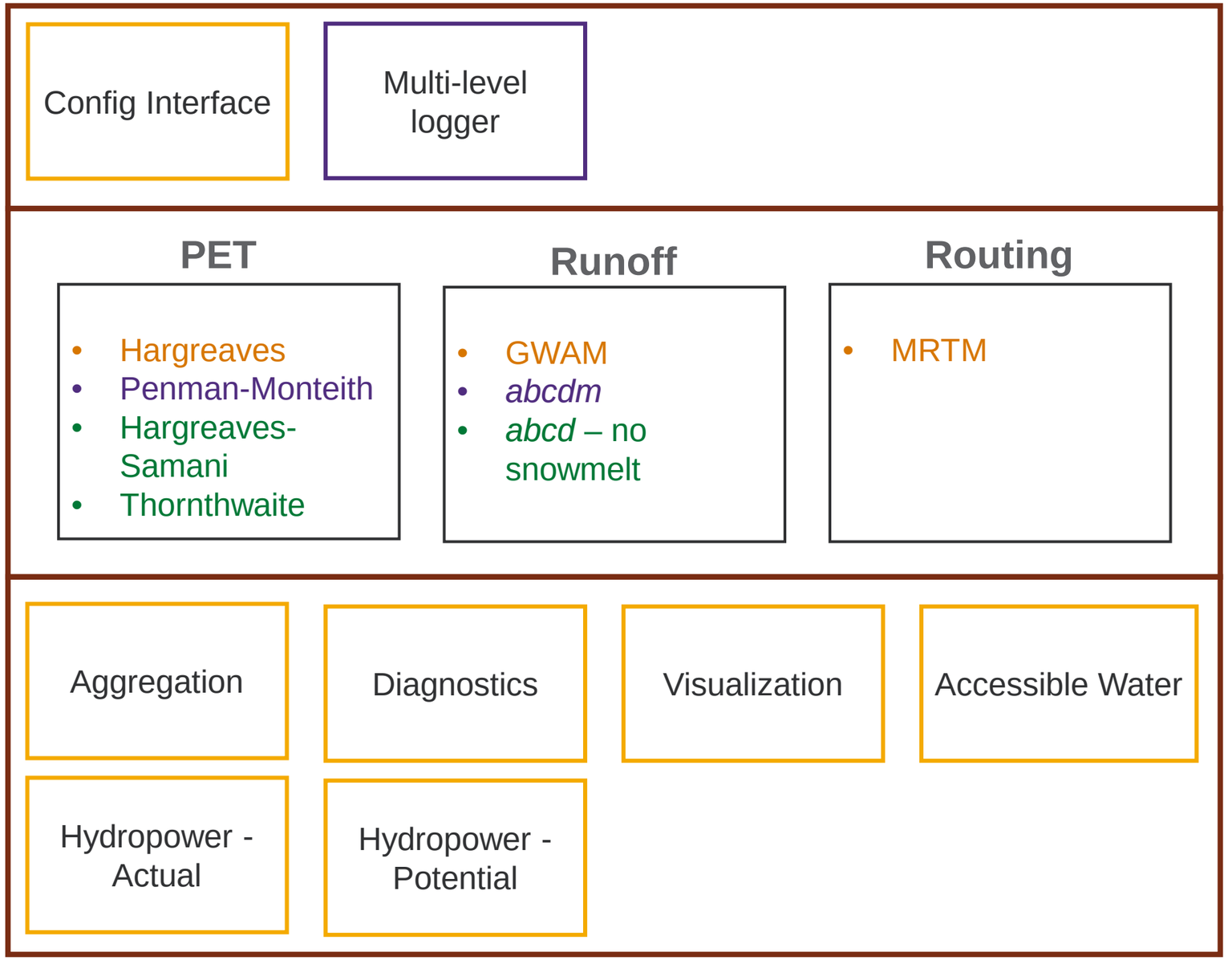
Xanthos v2.0

- Component-based framework
- Addition of multi-level logger and additional core components
- New default configuration
- New optimization module to calibrate `abcdm`



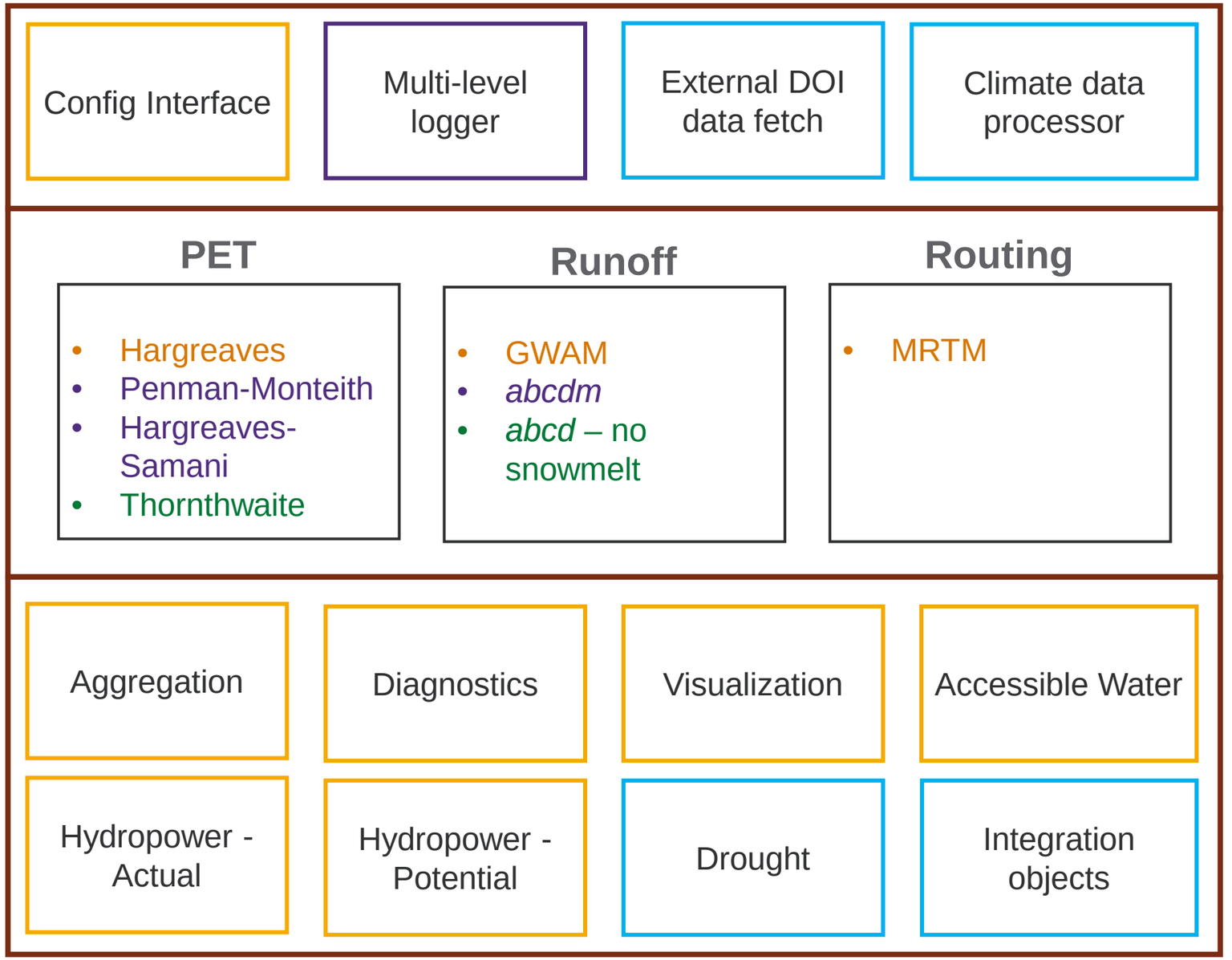
Xanthos v2.3

- Test test suite to promote stability – CI
- Addition of more core components
- Major performance improvements



Xanthos v2.4

- Faster install protocol and accompanying minted example datasets – setting the stage for FAIR and MSD-LIVE agreement
- Integration objects that allow in-memory transfer for use in Cassandra, etc.
- New drought module
- Module to process climate data from source



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Thank you

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