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Supported Projects: (ESGF, UV-CDAT, ACME, PCMDI)

Quarterly Report for April 1, 2016 – June 30, 2016

Quarter Accomplishments:

- UV-CDAT releases
  - 2.4.1 [April 2016]
    - This was our first attempt at a conda distribution (non official) it caught as wild fire and got a very enthusiastic response.
  - 2.6 [June 2016]
    - first official release through conda
    - cdscan can be imported, this means no need to call subprocess it is now usuable with mpi and inside pure script (mpi and subprocess do not play well together)
- Conda repo
  - I created a set of script to easily tag version and upload/remove for each package we maintain, with so many package editing each files by hand was really tedious and error prone.
  - I created a set of script to build uvcdat packages, this saves time
  - I implemented a mechanism for "featured build" i.e custom builds. UV-CDAT can be built with some special options turned on in some external non-python packages (i.e. openmpi needs a special build of hdf5, computer with no X system need to have the graphics built against the mesa libraries). Conda does not support this natively.
  - I devolped a custom version of VTK for our conda channel, the official ones does not have all the vtk bug fixes needed by uvcdat.
  - I trained local users in person and via mails on how to setup and use anaconda (see: https://github.com/UV-CDAT/uvcdat/wiki/Anaconda_Multi_Users)
  - I made sure pcmdi legacy and specialized software are now part of conda automatically and not as special builds(drs/ezget/lats). This saves me time becauseI don't need to do any special magic for our local users to have these features.
  - I demoed at our weekly meeting how all these new conda scripts work
  - Pyspharm conda build was from newer computer and wouldn't work on older computers. So we are now distributing one built from our RH6 server, it works everywhere.

- UV-CDAT
  - A potentially new isofill algorithm was discussed amond developpers and scientists.
  - I maintained the uvcdat wiki for release page (conda mainly)
  - I reviewed other developers pull requests on github
  - I helped document/reproduce VTK png leak issue

    - I made sure that animation colormaps are not lost any longer
    - log/linear interpolation can now accept axis keyword to specify which axis is the level one.
    - Initial meetings on vCDAT, a new backend to render UV-CDAT graphics directly via the browser.

- CWT
    - API 1.0 released
    - Knowledge transfer to Zeshawn for install
    - Helped Zeshawn with Ophidia integration, ophidian is a very powerful system developed in Europe for parallel processing of data. The biggest caveat is that it needs t re-ingest the data into their custom format, but we think that caching should minimize this issue
    - Brought Jason up to speed
    - Met with Sandro and his team when they came here, we got a path forward for them to use UV-CDAT rather than ncl for their graphics and to use the CWT API.
    - Got David Huard team from Canada's Ouranos project to jump on board of CWT team.
- PCMDI metrics
    - 1.0 [April 2016]
    - 1.1 [June 2016]
    - test suite uses conda -> travis
- Diagnostics
    - Test suite uses conda builds
    - Self contained
    - Pretty levels
    - Custom levels passed by user
    - Custom obs passed by user
    - No X version for super computer
    - Sbatch option for metadiags to run on Edison at NERSC
    - Marcia polar plots
    - Autot used for regions subsets
    - Helped Yuying
    - Helped Zeshawn with redesigned of unified diagnostics packages
- Deputy work
    - Decided on how to split team members among 3 deputies
    - Re-assessed team time charges
    - Interview with Jason Boutte

Next Quarter's Roadmap

- Python api for end user for CWT
- pydata conference submission
- uvcdat paper, maybe conda paper
- Conda nightly build

- Cwt python user api
- Patterns uvcdat
- 3.0 preparation
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Resources Required to Achieve Goals

- Need to discuss with community x,y,z capabilities before moving forward.