Cylc / Rose Update

David Matthews (Met Office)

IS-ENES3 has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824084

Cylc 8 History

Original aims

- Python 2 -> 3
- GTK -> Web UI

Work started Dec 2018 (Melbourne workshop)

Taking a lot longer than we hoped 😢

- GA1 (March 2020): we were aiming to be production ready March 2021
- Impact of pandemic, resourcing, scope

BUT Cylc 8 has many more enhancements than originally planned 😀

Key Rose functionality moved to Cylc

New Cylc functionality to support

- Workflow installation & re-installation from source
- Platforms (login nodes, scheduler, filesystems)
  - Increases reliability and efficiency when working with multiple login nodes
- File installation on remote platforms
- Symlink support to allow workflow directories on different filesystems
  - e.g. data files vs log files
- Cleanup of workflow files
- https://cylc.github.io/cylc-admin/proposal-rose-suite-run.html

Replaces and enhances functionality previously provided by Rose

Provides unified way of working for all Cylc users

Handling of tasks and dependencies

Spawn on demand

- Much more efficient and scalable method for handling tasks
- https://cylc.github.io/cylc-admin/proposal-spawn-on-d.html

Optional outputs

- Modified graph syntax which allows Cylc to understand the intended paths for a workflow
  - e.g. a task failure doesn't necessarily block a workflow - it may have failure triggers which allow it to recover
- Allows Cylc to immediately flag failures which need intervention
- Gets rid of the requirement for suicide triggers 😐
- Unmodified Cylc 7 workflows still supported
- https://cylc.github.io/cylc-admin/proposal-new-output-syntax.html

Authorisation

Workflow owners will be able to grant controlled access to their workflows by other users, for example:

- Grant read-only for monitoring and support
- Grant full access for users permitted to control what is run under this account
  - Typically used where a team supports workflows running under a service account

Full logging of which user issued each command (improved accountability)

Jupyter Server

Cylc UI server converted to a Jupyter Server extension

- "Jupyter Server provides the backend for Jupyter web applications like Jupyter notebook, JupyterLab"
- Reduced complexity and maintenance
- Provides support for running standalone without JupyterHub
- Allows other extensions (e.g. JupyterLab) to run alongside the Cylc UI

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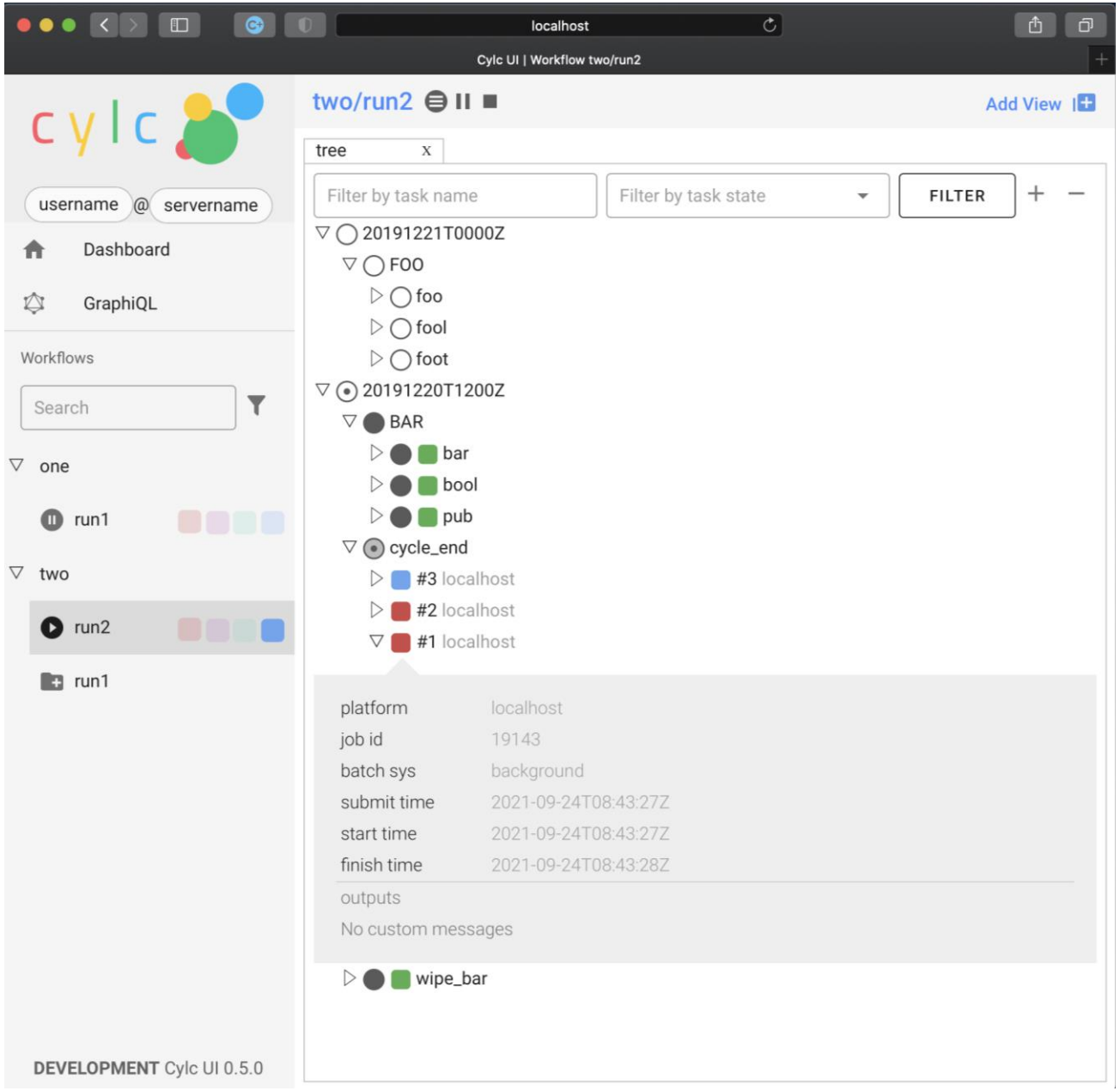
Web UI



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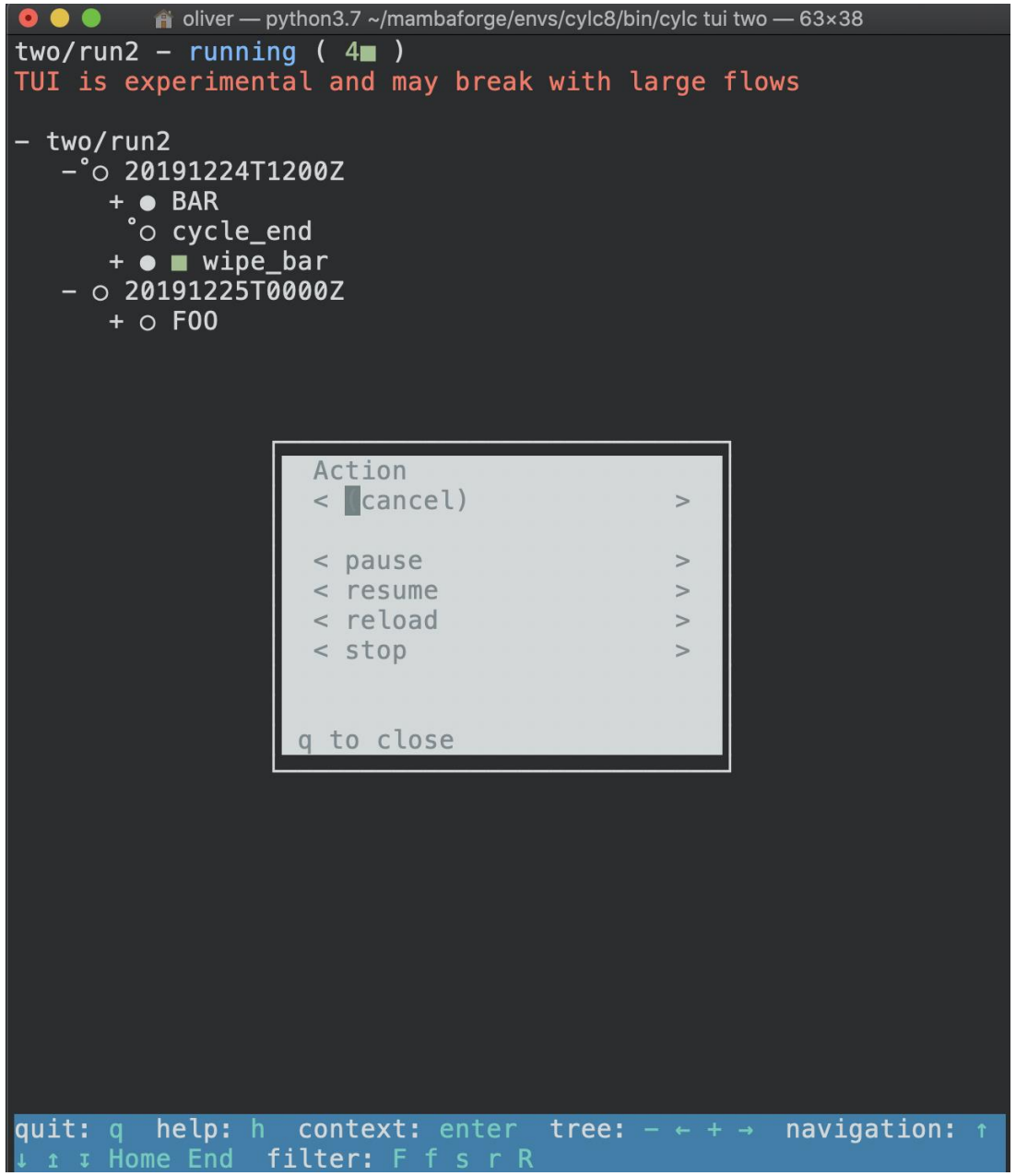
Terminal UI

A fully featured alternative to the Web UI



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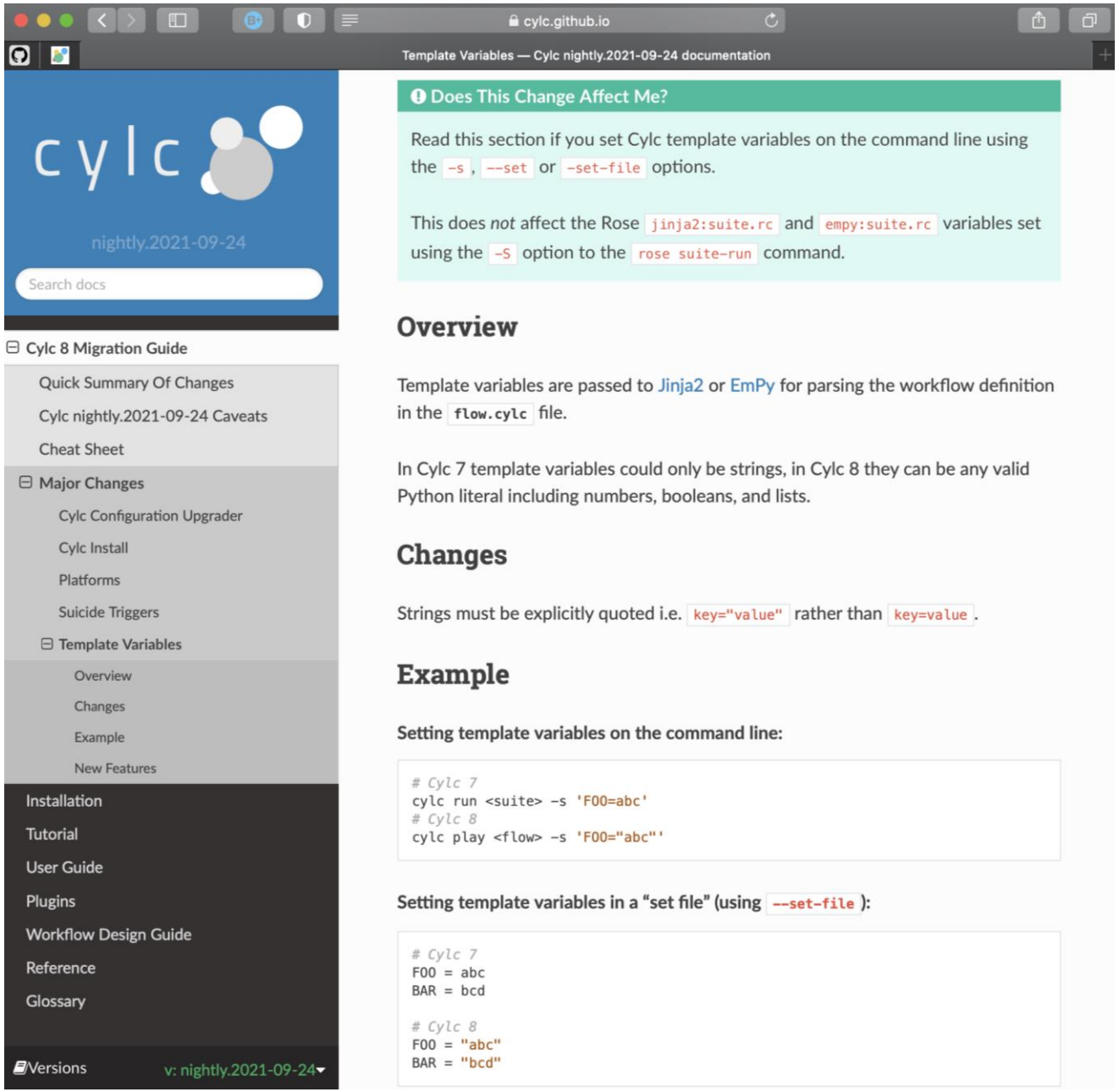
Documentation

Improved and updated but still more to do



Cylc 8 Timescales

April 2021: First beta release

Aiming for:

- Oct 2021: Cylc 8 release candidate (feature freeze)
  - heavy user testing
- Late 2021: Cylc 8.0 release

Priorities during 2022:

- Ensure Cylc 8 is ready for production use
  - all essential features complete and any critical bugs fixed
- Add other missing features (e.g. graph view, cylc review, edit run)
- Replace rose edit

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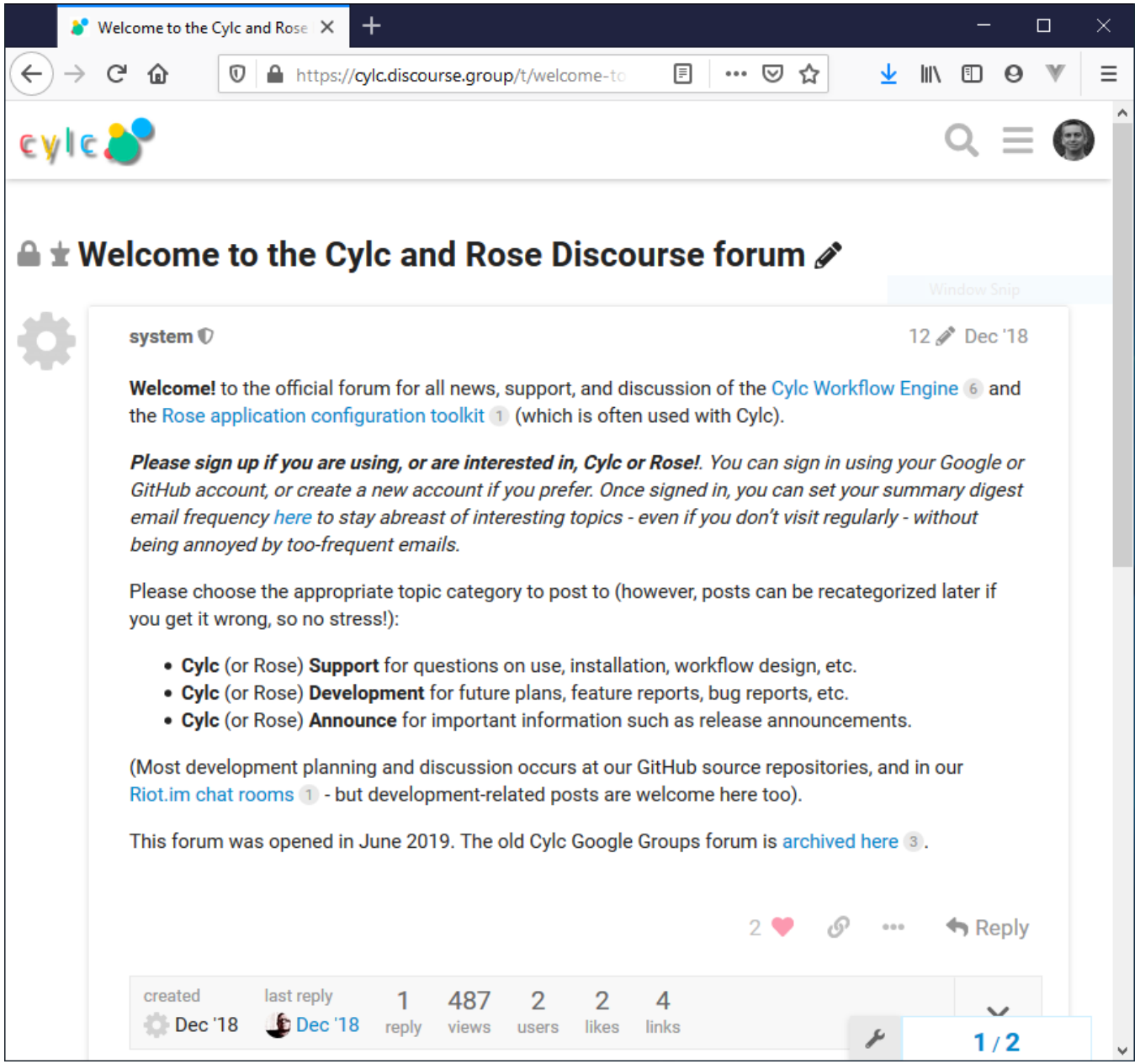
Discourse Forum

https://cylc.discourse.group/

Follow the latest Cylc 8 news

Get help

Ask questions



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INFRASTRUCTURE FOR THE EUROPEAN NETWORK FOR EARTH SYSTEM MODELLING

THE CONSORTIUM

Coordinated by **CNRS-IPSL**, the IS-ENES3 project gathers **22 partners** in **11 countries**

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