



APeX Summit 2026



State of Globus Compute

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Since last year (Aug, 2025)

- **v4 released** 🎉
 - (bumpy)
- **a year of evolution, fine-tuning, and structural work**
- **a core developer moved on**
 - (know an interested engineer? www.globus.org/jobs)





Released v4! 🎉

- **With ups**
 - Templates by default!
- **... and downs**
 - Designed with admins in mind
 - non-power users?! RTFM! 😬
- **Have now fine-tuned some of the interactions (e.g., environment variables)**





Fine-tunings of v4 (gce)

- v4.8 included a **gce** alias for **globus-compute-endpoint**
- (For GCS admins, now easily confused with **gcs**. 💪)

```
$ command -v globus-compute-endpoint  
/.../venv/bin/globus-compute-endpoint
```

```
$ command -v gce  
/.../venv/bin/gce
```





Fine-tunings of v4 (render-user-config)

- **render-user-config aids template development (v4.3)**
 - globus-compute.readthedocs.io/en/latest/endpoints/templates.html#testing-templates

```
$ gce render-user-config --template uep_template.yaml.j2 --user-options ./opts.json | head
> Rendered user config:

idle_heartbeats_soft: 10
idle_heartbeats_hard: 5760

engine:
  type: GlobusComputeEngine
  max_workers_per_node: 1
...
```



Fine-tunings of v4 (conditionally clears environment)



- **v4.5 learned to be judicious when clearing environment variables**
- **if **not** a power user, share with UEPs**
- **A further PATH-specific issue addressed in v4.8**





Fine-tunings of v4 (--detach)

- v4.6 learns --detach
- Immediately background the EP; returns control to the terminal
- This functionality was lost in v4 because admins were expected to run this via systemd
- Detaching not the default behavior, nor is it part of the configuration
- Now strictly a command line flag





Fine-tunings of v4 (error codes)

- Documented some of the opaque error codes when a UEP fails to start.

Possible user endpoint process exit codes		
Python <code>os</code> constant name	Integer value	Likely Reason
<code>os.EX_DATAERR</code>	65	Registration of the endpoint was blocked by the Compute API with an HTTP 400 (bad request), HTTP 422 (unprocessable entity) response; look to the logs for more information.
<code>os.EX_UNAVAILABLE</code>	69	Registration of the endpoint was blocked by the Compute API with an HTTP 404 (not found), HTTP 409 (conflict), or HTTP 422 (locked) response; look to the logs for more information.





Regular cadence

- **Dropped support for Python 3.9**
 - Python 3.10 EOL is October 2026!
- **Added support for Python 3.14**
- **Updating Parsl pin***
 - * stay tuned





Updates for (user) admin

- **Templates now have access to any environment variable, via `_GC.env`**
- **Templates now have**
 - `GC_USER_PYTHON_VERSION`
 - `GC_USER_SDK_VERSION`
- globus-compute.readthedocs.io/en/latest/endpoints/templates.html#reserved-variables





Problems now more prominent (Parsl version)

- **Parsl strict about version parity**
 - From learned history
 - And with good reason!
- **But overkill when all that changes is a comment!**
 - Admins can't confidently deploy an MEP ...
 - because a user requires a different Parsl version
- **Partially addressed (foot-gun style) in v4.16**
- **Longer form work (actively) ongoing within Parsl**





Problems now more prominent (Connectivity)

- **Compute (née funcX) built upon simple idea of small functions, originally “just” via a Jupyter Notebook**
- **Service implemented around that idea**
- **Long running UEPs?!**
 - Umm ... yeah.
 - AWS AMQP service reminding us to be robust
 - Users *correctly* use the tool how it should be used
 - (Fix drops this week, btw!)





What's upcoming on the docket?

- **Continued evolution of UX (c.f., detach, env vars)**
- **Upgrading the Compute WebApp experience**
 - Adding REST-only function submission routes
- **Architectural changes for better**
 - Connectivity
 - Resource awareness
 - Task management (manage, clear, restart, etc.)
 - UEP management





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Extended team

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- Ryan Chard
- Ben Clifford
- And *not* ironically, you!

