Parsl – 2024 Open Community Calls

ATTENDEES	Reid Mello Sophie Bui Ben Clifford Kevin Hunter Kesling Logan Ward Joshua Bryan Yadu Babuji Chris Janidlo	**DATE**	2/6/2024
		TIME	11 a.m. CST
		NEXT MEETING	2/20/24
MEETING PURPOSE	An open space to discuss topics surrounding activities such as user projects and needs, what's going on in the community, core development, code review, development infrastructure, software release, etc.		
IMPORTANT LINKS	Join Parsl-Project Slack: https://bit.ly/join-parsl-slack		

AGENDA ITEM	MEETING NOTES
Protecting HTEX Communications with CurveZMQ ● Lightning talk by Reid Mello from Globus ● 🎥Watch the talk on YouTube: https://www.youtube.com/watch?v=KoHvKnHTbWc Protecting HTEX Communication with CurveZMQ In this talk, Reid will discuss a recent contribution he made to Parsl that allows users to enable encryption for the `HighThroughputExecutor` by setting its `encrypted` initialization argument to `True`. Under the hood, we use CurveZMQ to encrypt all communication channels between the executor and related nodes." ● Slides: Protecting HTEX Communication ● Check out the PR: https://github.com/Parsl/parsl/pull/3030	**Brief Summary** ● **Securing HTEX Communication in Parsl** ○ Discusses a new implementation for protecting HTEX communication using zero MQ, an asynchronous messaging library with scalability benefits. ○ The current implementation has unencrypted communication channels, making it vulnerable to unauthorized connections, and deploying Parsl in a secure environment can help address this issue. ● **Secure Communications Using CurveZMQ** ○ Explains how CurveZMQ uses shared server and client certs for each run, with new certificates generated for each run. ○ Installing PyZMQ can result in performance degradation due to dependencies, and provides solutions such as installing via conda or building libsodium and libzmq separately.

• Documentation: https://parsl.readthedocs.io/en/stable/userguide/execution.html#encryption	

`scale_in`
• Lightning talk by Ben Clifford
• 🎥Watch the talk on YouTube: Scale_In
• Slides: scale_in
	Brief Summary
	• **Scaling Functionality in a Workflow System**
	  ○ Previous scaling method was inadequate, leading to unused batch jobs sitting idle for extended periods.
	
	• **Scaling Issues in HPC Systems**
	  ○ Users often neglect efficiency, leading to wasted resources.
	  ○ One of the main challenges in HPC is the lack of a safe place to run side code, leading to issues with resource allocation and batch systems.
	  ○ Highlights the hostility of HPC batch systems towards granular resource allocation, with policies structured around big MPI jobs and a fear of multiple small jobs asking for the same resources.
	  ○ Explains why the idea of scaling down resources in high-throughput clusters hasn't been pushed in years due to limitations in scaling block allocation.
	  ■ Block = Batch job on HPC system
	
	• **Scaling Issues in Parsl and Cultural Artefacts**
	  ○ Discusses block and scaling in HPC systems, highlighting cultural artifacts and abandoned contributions.
	  ○ Highlights bugs in Parsl's scaling feature that affect users even if they haven't turned it on, including a race condition that can hang the system
	
	• **Improving Slurm Job Scaling and Draining**
	  ○ Working on a project to prevent batch jobs from staying in the queue after they've been cancelled or killed.
	  ○ Discusses the ordering of blocks when scaling, with a want to scale in more recently submitted blocks before longer ones in the queue.
	  ○ Plans to address interchange blocking at scale by separating out scaled-down everything and method versus a scaled-down small number of blocks in a live system call.

Parsl Components for Maturity and Usage Assessment Announcement by Ben C. via #parsl-hackers	Ben C. added “Tutorials” and “Windows Support” as general features that don’t have designated tech sponsors. If you’re interested in becoming a technical sponsor for either of these features, please leave a comment on the GitHub issue here: https://github.com/Parsl/parsl/issues/2554
Parsl Tutorial on Binder was Broken https://mybinder.org/v2/gh/Parsl/parsl-tutorial/master Reported by Alex in #parsl-help >> #parsl-hackers	A user noticed that this tutorial was broken because it was using an outdated version of Parsl. The outdated version has been unpinned by Ben C., so the tutorial will run with whatever random latest Parsl is around ● No one is the set technical sponsor for this, so if someone in the community is willing to oversee this component, please let us know via Slack or leave a comment in our GitHub issue: https://github.com/Parsl/parsl/issues/2554
Sometimes Interchange will accept a hostname address, in violation of test expectations #3037 ● GitHub Issue: https://github.com/Parsl/parsl/issues/3037 ● Recently opened by Ben C.	This GitHub issue stemmed from a thread started by Ben C. in #parsl-hackers on Slack about a test on Perlmutter that isn’t passing…that’s meant to raise an exception at Interchange construction time because the address isn’t an IPv4 address.
Parsl Config to Load at Pytest Startup From Andrew R. via #parsl-hackers Andrew inquired about running unit tears for a Parsl-based library on GitHub actions and wants them to run as fast as possible.	● the local threads executor is probably going to be fastest -- eg `$ pytest parsl/tests/ --config parsl/tests/configs/local_threads.py` -- but it won't exercise a chunk of stuff like object serialization. ● using `parsl/tests/configs/htex_local.py` is going to get you a lot more coverage of stuff that moves tasks between nodes (primarily serialization) if you care about that sort of stuff
Slack Pro free trial ends on Feb. 24	The main thing that will change is the message archive time – it’ll only hold onto messages within a 90-day period. All messages beyond that period will be deleted. ● For any discussions surrounding open GitHub issues, please make sure your notes are migrated to the existing issue or create a new issue if necessary. ○ This is extremely helpful for tracking and documentation purposes
Users and Collaborators of Parsl ● Users and Collaborators webpage: https://parsl-project.org/projects.html ● Working Google Doc: Projects That Utilize Parsl	We would like to feature your organization/team/group/project that use Parsl – please share info about your work in our open Google Doc. We’re asking for the following info about your work: ● Group/Project Name

	• Website Link • Contact Person(s) • Domain/Discipline/Field • Short Project Description • How does it use Parsl?