Parsl at OLCF

Parsl & funcX Fest 2022

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Overview

We report three developments touching Parsl at ORNL / OLCF:

1. Parsl software deployment at Summit as a module
2. Using Parsl as a Workflow to bridge HPC and Quantum Systems
3. Development of a Parsl plugin to a distributed task orchestration system called Zambeze
Parsl is one of the top 5 Workflow Systems used on Summit

Parsl as a Software module on Summit

Installed using conda:

```
module load python/3.8-anaconda3
conda install -p /sw/summit/workflows/parsl/1.1.0 -c conda-forge parsl
```

Use as a module:

```
module load workflows
module load parsl
```
Parsl at OLCF: Docs and Dissemination

docs.olcf.gov/software/workflows/parsl.html

github.com/olcf/olcf-user-docs

vimeo.com/730109850
Parsl as a workflow tool to Bridge HPC and Quantum

1. Generate Inputs and Quantum Circuit
2. Auth-Key Submit to Quantum Resources
3. Compile Circuits, wait in queue, and execute
4. Return Results

Local Terminal → OLCF HPC → Remote Quantum Resources

Pic courtesy: Sam Bieberich
https://github.com/Sam-Bieberich/HPC-QC-Workflows
Zambeze Distributed Orchestration System

CENTRALIZED QUEUING SYSTEM AND DISTRIBUTED ORCHESTRATION

COMPUTING AT LARGE HPC ENVIRONMENT

FACILITY B

Parsl
Thank You! Questions?

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