



# Spack Tutorial on AWS

Todd Gamblin, LLNL

Greg Becker, LLNL

Sean Smith, AWS

Evan Bollig, AWS



# Meet the Presenters



**Todd Gamblin**

**Computer Scientist  
Lawrence Livermore  
National Laboratory**



**Greg Becker**

**Computer Scientist  
Lawrence  
Livermore  
National  
Laboratory**



**Sean Smith**

**HPC Solution  
Architect  
AWS**



**Evan Bollig**

**HPC Solution  
Architect  
AWS**

# HPC Cluster in 4 commands

```
$ spack install aws-parallelcluster
```

...

```
$ pcluster create mycluster
```

Status: CREATE\_COMPLETE

MasterServer: RUNNING

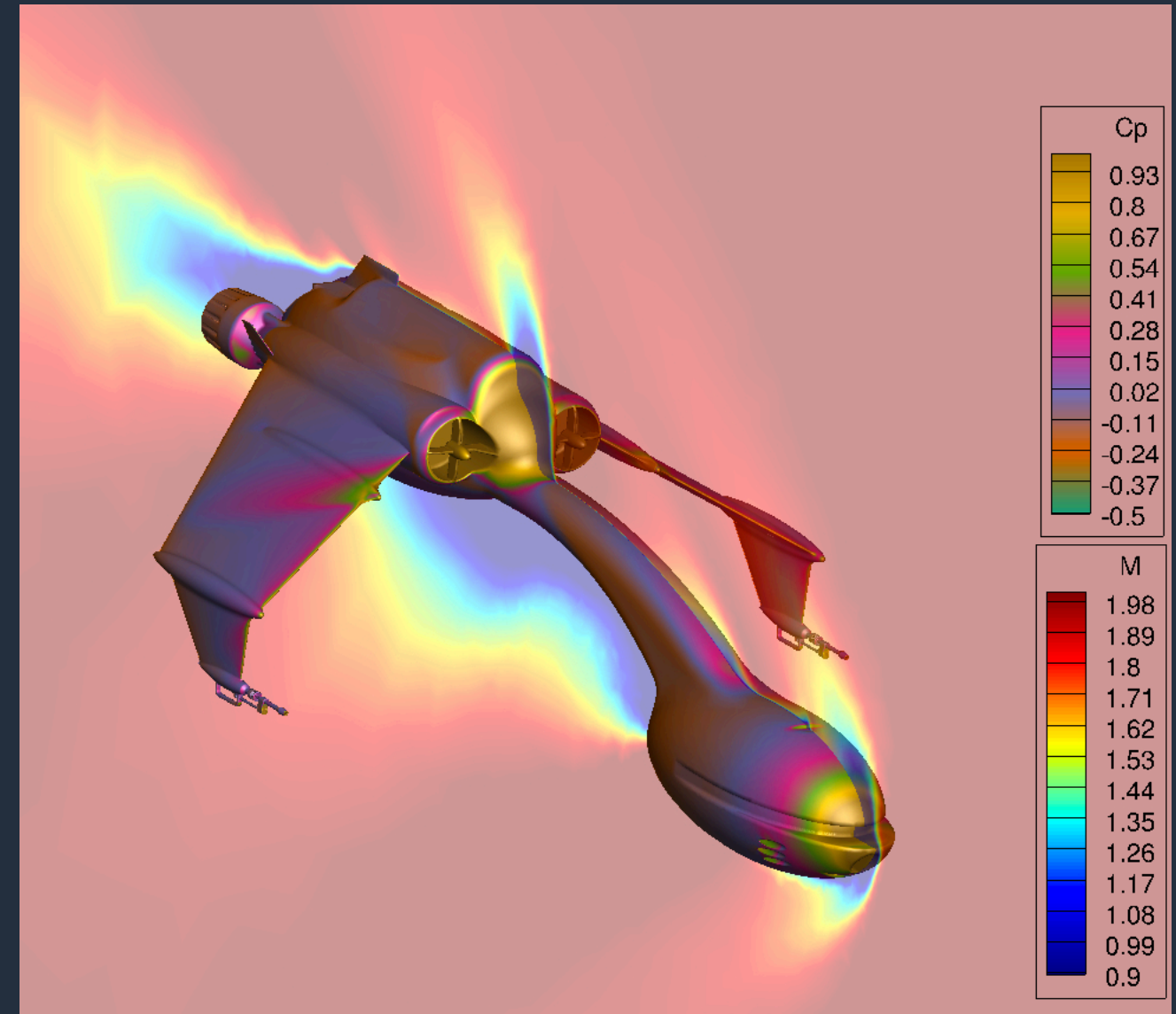
ClusterUser: ubuntu

MasterPrivateIP: 10.0.3.57

```
$ pcluster ssh mycluster
```

```
$ spack install openfoam
```

...



<https://aws.amazon.com/blogs/opensource/scale-hpc-workloads-elastic-fabric-adapter-and-aws-parallelcluster/>

# Infrastructure is code. Not a 5-yearly refresh

A screenshot of a terminal window with a dark background. The title bar at the top shows three colored window control buttons (red, yellow, green) on the left, followed by a home icon and the text 'bouffler — -bash — 80x24'. The terminal content shows 'Last login: Thu May 30 12:57:28 on ttys000' in orange text, followed by a prompt '(base) ~ [1] \$' in orange text with a green cursor block.

**Iteratively** decide on the best CPU, GPU, memory or I/O architecture for your workload

Test multiple options in **parallel** rather than sequentially

**Dispose** of what you don't need

Make **CI/CD** part of your HPC practice

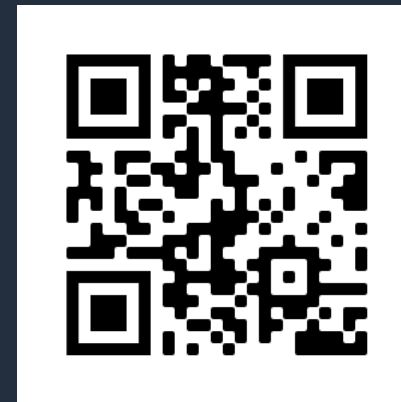
<https://www.hpcworkshops.com/03-hpc-aws-parallelcluster-workshop.html>



Join the slack channel:

#tutorial

<https://spackpm.herokuapp.com/>



# Recording



This session is being recorded.

During the Live Q&A if you wish to not be recorded, please ask questions via Chime chat or Slack chat.

# Day 1: Schedule

- Introductions
- AWS Console Access
- Cloud9 Instance creation
- Intro to Spack
- Basic Installation
- Configuration
- Creating your own packages

# Day 2: Schedule

- Spack environments  
(spack.yaml / spack.lock files)
- Spack stacks (Combinatorial environments)
- Modules
- Developer workflows
- Scripting Spack
- More ways to use Spack: CI, Containers & more



# AWS Setup

[spack-tutorial.workshop.aws](https://spack-tutorial.workshop.aws)

# Q&A

AWS Setup / Cloud9



# Thank you!

Please take the survey:

[https://amazonmr.au1.qualtrics.com/jfe/form/SV\\_5zM6OVnb1Pv5C4Z](https://amazonmr.au1.qualtrics.com/jfe/form/SV_5zM6OVnb1Pv5C4Z)

