CHAMELEON: A TESTBED FOR COMPUTER SCIENCE RESEARCH AND EDUCATION

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CHAMELEON IN A NUTSHELL

- **Balance: large-scale versus diverse hardware**
  - Large-scale: ~large homogenous partition (~20,000 cores), ~6 PB of storage distributed over 2 +1 sites (UC, TACC + Northwestern) connected with 100G network
  - Diverse: FPGAs, GPUs (from RTX to V100), ARMs, Atoms, Corsa switches – and more to come!

- **We like to change: a testbed that adapts itself to your experimental needs**
  - Deep reconfigurability (bare metal): power on/off, custom kernel boot, etc. vs KVM cloud
  - A library of images with support for CUDA, TensorFlow, and other commonly used tools
  - Support for advance reservations, orchestration, snapshotting, Jupyter, network features, etc.

- **Cloud++: leveraging mainstream cloud technologies**
  - Powered by OpenStack with bare metal reconfiguration (Ironic) + “special sauce”

- **We live to serve: open, production testbed for computer science research**
  - Started in 10/2014, available since 07/2015, recently renewed till 10/2024!
  - Currently 5,000+ users, 600+ projects, 100+ institutions, 300+ publications
CHAMELEON FOR REU

- Our mission is to support all types of systems research and education from beginner to advanced
- Excellent help desk support
- We will be happy to schedule webinars for your REU site
  - Topics could range from introduction, to special topics such as networking, or advanced topics such as packaging of experiments for reproducibility with Jupyter
  - Recordings of many topics are also available on our youtube channel
- Learning mainstream tools (OpenStack, Jupyter) as side-effect of usage
- Useful tool for now and later in the student’s research
We’re here to change – come and change with us!

www.chameleoncloud.org