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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!

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