Integrating NWP System Components Using Container Technology and Cloud Services

Kate Fossell[2,3], John Halley Gotway[1,3], Michelle Harrold[1,3], Mike Kavulich[1,3], Jamie Wolff[1,3]

National Center for Atmospheric Research, Boulder, CO

[1]Research Applications Laboratory

[2]Mesoscale and Microscale Meteorology Laboratory

[3]Developmental Testbed Center

Instructor introductions

- Kate Fossell (fossell@ucar.edu)

- John Halley Gotway (johnhg@ucar.edu)

- Michelle Harrold (harrold@ucar.edu)

- Mike Kavulich (kavulich@ucar.edu)

- Jamie Wolff (jwolff@ucar.edu)

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Class outline

✓ Instructor introductions

- Goals of short course

- Overview of technologies

  - Introduction to AWS syntax/environment

  - Introduction to Docker container syntax/environment

- Introduction to end-to-end NWP system components

- Case study and modifying for user-specific needs

- Hands on exercises throughout!

- Review/Questions

Goals for the short course

- Raise awareness about tools and facilities available to the community for testing and evaluating Numerical Weather Prediction (NWP) innovations
  - Discuss emerging set of software tools in reusable containers and cloud compute resources
  - Avoid hurdles of identifying significant compute resources and compiling complex codes
- Provide a general overview of the NWP system components currently available in software containers
  - WPS/WRF, GSI, UPP, NCL, MET, METviewer
- Conduct hands-on learning experience for running an integrated NWP system through specific usage examples with software containers "in the cloud"

Technologies used in this course

- Amazon Web Services (AWS)
  - Cloud computing service
- Docker containers
  - Self-contained system that includes everything necessary to run without requiring up-front setup
- Numerical Weather Prediction (NWP) components
  - Weather Research and Forecasting (WRF) based system including preprocessing, model, post-processing, verification, and visualization