Porting a prototype operational ocean prediction system to a cloud-computing infrastructure

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- NCSU tech spinoff founded in 2017
- Marine environment analytics, applications, and value-added product development
- A new SECOORA industry member
Objective and Approach

Objective

• A pilot project to explore the feasibility and cost-benefit of performing routine operational ocean predictions on Amazon web services’ (AWS) cloud computing infrastructure, where a large amount of ocean observations now reside.

• The project team, comprised of RPS/ASA, NOAA NOS water team, is working to port a prototype ocean prediction system to AWS.

Approach

• Collaborating with the cyber infrastructure team at RPS/ASA to explore the utility of AWS cloud-computing infrastructure in coastal ocean modeling.

• Documenting procedures and lessons learned in porting a prototype operational ocean prediction system to AWS cloud-computing infrastructure (ongoing).
Lessons learned and accomplishment

• A learning curve to climb to move from conventional computing clusters to the commercial cloud

• Built tools and software to successfully benchmark simulations on the AWS.

• Completed cost-analysis to find most cost-effective way to run simulations on AWS.
Impact

• The flexibility of commercial cloud is becoming a viable option for archiving and disseminating large volumes of data or executing model simulations

• A forward looking effort

• Building knowledge base and know-hows for the community