Project Details

Name of project: Graphical Hazardous Weather Outlook Cloud Dissemination Test

Project lead and contact details: Derek DeRoche (derek.deroche@noaa.gov), Brian Miretzky (brian.miretzky@noaa.gov) and Gregory Schoor (gregory.m.schoor@noaa.gov)

Project partners and contact details: Selected National Weather Service (NWS) Weather Forecast offices (WFO) and the NWS Office of Dissemination. These partners would test the distribution of graphical hazardous weather outlook data to the cloud and usage of that data in dynamic web displays. While this would be tested internally it would hopefully eventually lead to lessons learned for the already existing experiment graphical hazardous weather outlook product that the NWS provides to the public and its partners.

Proposed start and end date: Nov. 15th- May 15th

Project Outline

Project description: The experimental graphical hazardous weather outlook product is a graphical display of the future hazards in effect due to weather and water for a specific area of the U.S. The display color codes elements by their level of hazard significance in a stoplight fashion (red, yellow, green). See https://www.weather.gov/erh/ghwo?wfo=okx for an example of this current product. Currently this data resides at a local NWS WFO and is processed there. Images are then sent to a physical server within the NWS secure environment for display on NWS webpages. This creates a few issues. One is that since each office does this separately there is no way to combine the data. Secondly the physical server is overburdened and could use relief. In order to alleviate these issues it is proposed to test sending the data and the images to a test cloud server for data processing and data storage.
It is not known how to properly estimate the cost as we would need assistance with what AWS setup to create. Somewhere on the order of 1TB of storage would be fine and then we would use AWS cloud tools to send and process the data.

Project technical & learning objectives: The objectives of this project are to observe the utility of dissemination to a cloud storage platform and the ability to process a significant amount of data from

many NWS WFOs. We would also learn how to best send, store and process the data in the cloud. Lastly, this would give us comparison between cloud and local storage costs.

Project significance & impact: If successful this could lead to a cloud hosting purchase from the NWS that alleviates physical server burdens in the NWS and would successfully show how to leverage the cloud for the processing of Big Data. It could help the NWS in more effectively disseminating and storing not only the graphical hazardous weather outlook product, but many others as well.

Description of key project steps and timeline: The first step would be to configure a cloud environment to have folders for each NWS WFO. Then enable the offices to send their data to the server. Once completed offices would begin to send their data to the cloud. National staff would then process the data into combined national images and web services. Timing to send to the cloud and processing time would all be tracked. Amount of storage space would also be tracked.

Outreach

What groups will be engaged in the project? Project Leads, Local IT staff and NWS Integrated Dissemination Program staff.

Description of *who* (agencies/individuals) should be aware of this project, i.e. potential outreach targets: No one else at this time.