NITE (NWP Information Technology Environment): an infrastructure to facilitate development of NCEP numerical models

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ABSTRACT

NOAA’s National Centers for Environmental Prediction (NCEP) runs a number of numerical weather prediction models to provide operational guidance to the its service centers and to the NWS field offices. This complex set of NWP tools needs to be maintained and improved over the years so that daring NOAA goals in raising forecast accuracy can be achieved. The topic of this presentation is a recommendation for the creation of a robust NWP Information Technology Environment (NITE) at NCEP to support and accelerate the development and improvement of modeling suites. The Developmental Testbed Center (DTC), in collaboration with the NOAA Environmental Modeling Center (EMC), has engaged large segments of the national and international NWP community to prepare a design recommendation for this system.

NITE has been designed to make model development by EMC staff and their collaborators more effective. It was not designed to work exclusively for a certain model or suite; instead it should transcend the current NWP suites and be applicable to the expected evolution of growth in NCEP systems. There are several elements in the NITE system, which can be shared and re-used by a variety of end-to-end modeling suites. These elements are: experiment database, data management, source code management, suite definition tools, scripts, workflow management, and documentation and training.

In this presentation, we will describe the approach taken and the resulting design recommendations, as well as possible next steps for making NITE a reality at NCEP.

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