Derecho (NWSC-3) Status Update

April 5, NHUG Update

NCAR

Derecho Revised Schedule

Delivery Item	Original Contract	Schedule Change #3
TDS - E1000 (single rack)		7/7/2021
TDS Compute - Build Complete, SW Load Start	8/1/2021	4/04/2022
TDS Compute - Deliver to NWSC	8/1/2021	4/26/2022
Production System - Factory Trial (start)	8/15/2021	8/15/2022
Production System - Deliver to NWSC	**10/1/2021**	**8/30/2022**
Production System - Install & Testing Complete	11/12/2021	*09/19/2022*
Production System - Acceptance Testing Complete	12/21/2021	*12/28/2022*
Solution Acceptance	1/31/2022	*12/30/2022*

NCAR | UCAR

NWSC Module A Build-out and Fit-up Status

New 3MW Transformer - Contracting Team is pulling the 24.9kV cables in place - July '21

24" Mechanical Header Being Fitted & Welded

480v Distribution and Fuse Board Panel associated with Derecho Compute Nodes

Module A Capacity Augmented with
- 24" Mechanical Chilled Water Header
- 3MW Electrical Substation

Module A/B Fit-up preparations
- CRAC and CDU Mechanical Systems
- HPC and PFS Electrical Infrastructure

Work required 1 major and 3 minor outages, and was successfully completed with minimal disruption to the operational HPC systems housed in Module B

- Test Storage Installed
- Workload Management - PBS
- Cloud Bursting
- Operational Monitoring
- OaPM
- JupyterHub

NCAR
UCAR

Application Readiness Status

Identified User Groups	
CAM-Chem	MuRAM
CESM	MUSICA
CM1	NEMO ocean model
DART	Pangeo
EcoSLIM	ParFlow.CLM
FastEddy	QES-Fire
GeoCAT	Regional Climate Impacts (RISC)
LES	SIMA
Machine Learning	TIEGCM
Solar Modeling	WACCM
MPAS-A (CPU)	WRF-ARW
MPAS-A (GPU)	WRF-Hydro

A large outreach effort is underway to ensure NCAR applications are ready to take advantage Derecho on day one.

Focus on ensuring that modeling and development groups have resources they need to port and tune code for the new system.

- Effective utilization of the Cray Programming Environment
- Prioritizing access to test hardware as it becomes available
- Encouraging use of GPU computing and cultivating a GPU computing culture at NCAR, which has historically focused on traditional CPU based modeling.
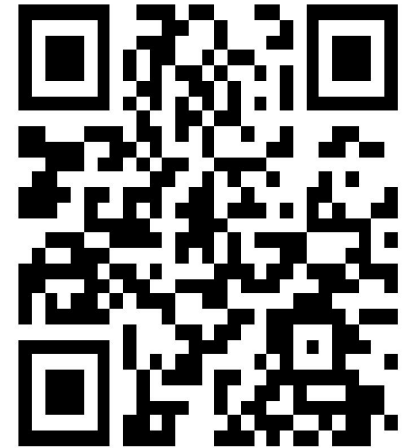
NCAR
UCAR

Stay connected with NHUG

wiki

Slack

Slido

NCAR
UCAR

- Storage test hardware delivered and installed.
- Compute test hardware (Gust) to be delivered end of April, 2022
- Delivery of the production system hardware expected in Q3 of this year.
- 95% of the work completed on Module A Augmentation.
- 95% of the facility fit-up work completed

NCAR
UCAR