Ultra-scales Visualization Climate Data Analysis Tools (UV-CDAT): Earth System Modeling: Advanced Scientific Visualization of Ultra-Large Climate Data Sets

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Analysis and Visualization Framework

Scientific Analysis and Visualization Infrastructure and Framework Presentation  •  June 27, 2012
Outline

Overview
  • Architecture
  • Complexity
  • Level of software builds and integration
  • Functionalities
  • Use Cases

Interaction
  • YouTube Video Tutorials ...
  • Live UV-CDAT Demonstration ...
  • Q & A
Ultra-scale Visualization Climate Data Analysis Tools (UV-CDAT) Architectural Layers
Ultra-large Climate Data Analysis and Visualization (UV-CDAT)

**Approach**
Integrates several existing, widely used open-source data analysis and visualization packages into seamless environment
- CDAT – Climate data analysis/viz
- VTK - Visualization Toolkit
- R – Statistical analysis
- VisTrails – Workflow Provenance
- VisIt, ParaView, DV3D – 3D Visualization

- Local and remote visualization and data access
- Comparative visualization and statistical analyses
- Robust tools for regridding, reprojection, and aggregation
- Support for unstructured grids and non-gridded observational data, including geospatial formats often used for observational data sets
- Workflow analysis and provenance management

**Highlights**
- Official Release of UV-CDAT version 1.0.1
- Website documentation and Video Tutorials
- Ultra-scale Reusable Analysis and Diagnostics Framework (U-ReAD)
- Ensemble Data analysis Environment (EDEN)
- LibCF Mosaic Grids and ESMF Regridding
- Climate Science R&D
Integrated UV-CDAT: Displaying CDAT, DV3D, ParaView, VisIt, and R

http://uvcdat.llnl.gov
Live UV-CDAT Demonstration
Use Cases for UV-CDAT
Official Release 1.0.1 Build and Installation

- **UV-CDAT Installation**
  - **Binaries** (Ubuntu, Fedora, Mac)
  - **Manual** (Linux, Mac)
  - **URL** (http://uvcdat.llnl.gov/install)