Director's Report

Unidata Policy Committee & Users Committee

Joint Meeting

27 October2011

Boulder, CO

Mohan Ramamurthy
Unidata Program Center
UCAR Community Programs
Boulder, CO

New Committee Members

Policy Committee:

- Bill Gallus, Iowa State University
- Dave Dempsey, San Francisco State University

Users Committee:

- Bart Geerts, University of Wyoming
- Gerry Creager, Texas A & M University
- Jennifer Collins, University of South Florida
- Marty Baxter, Central Michigan University

Welcome!

Departing Committee Members

- Brendon Hoch and Larry Oolman rotate-off from the Users Committee.
- Anton Kruger and Brian Colle are rotating off from the Policy Committee.

We thank all of them for their thoughtful insights and active participation through the years.
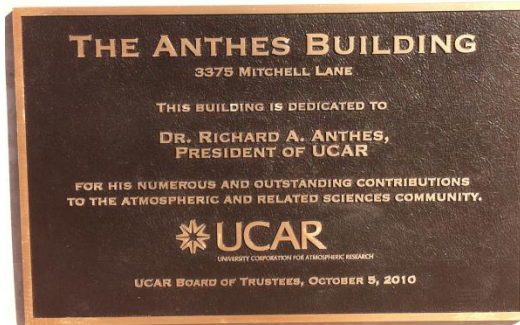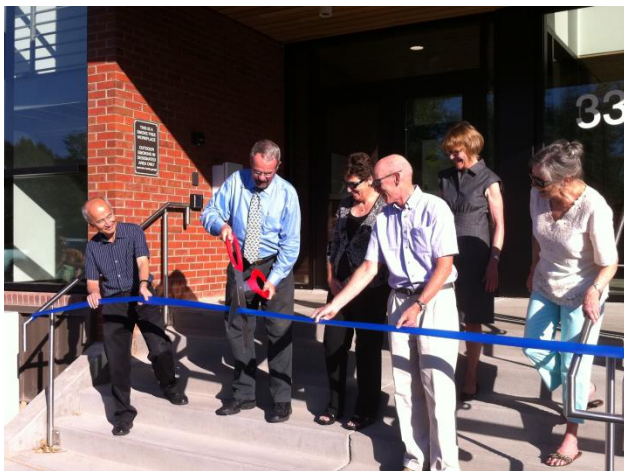
New UCAR President

- Dr. Thomas Bogdan named President of UCAR.

- Tom will take over the reigns on January 9, 2012.

- Tom is currently Director of NOAA Space Weather Prediction Center, and was previously a Senior Scientist at NCAR and director of ASP and SERE.

Move to the Anthes Building

All FL4 staff, including UPC staff, relocated to the Anthes Building on 15 August 2011.

THE ANTHES BUILDING
3375 MITCHELL LANE
THIS BUILDING IS DEDICATED TO
DR. RICHARD A. ANTHES,
PRESIDENT OF UCAR
FOR HIS NUMEROUS AND OUTSTANDING CONTRIBUTIONS
TO THE ATMOSPHERIC AND RELATED SCIENCES COMMUNITY.
UCAR
UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH
UCAR BOARD OF TRUSTEES, OCTOBER 5, 2010

- It was quite a disruption of schedules, but it didn't have an impact on the community.
- Our operational systems saw no disruption or data loss.

- Meanwhile, FL4 remodel work has begun.
- Like FLA, it will be another "green" building using energy from solar arrays and a geothermal system.
- Anticipated completion date: End of April, 2012

New Staff Member: Sean Arms

- Sean Arms joined the UPC software development team in late May.

- Sean comes to Unidata from the University of Oklahoma, where he completed his Bachelor's and Master's degrees, and will soon be defending his Ph. D. dissertation in Meteorology.

- Sean is well known to the UPC staff and many of you; he served as the first student representative to the Unidata Users committee until 2010.
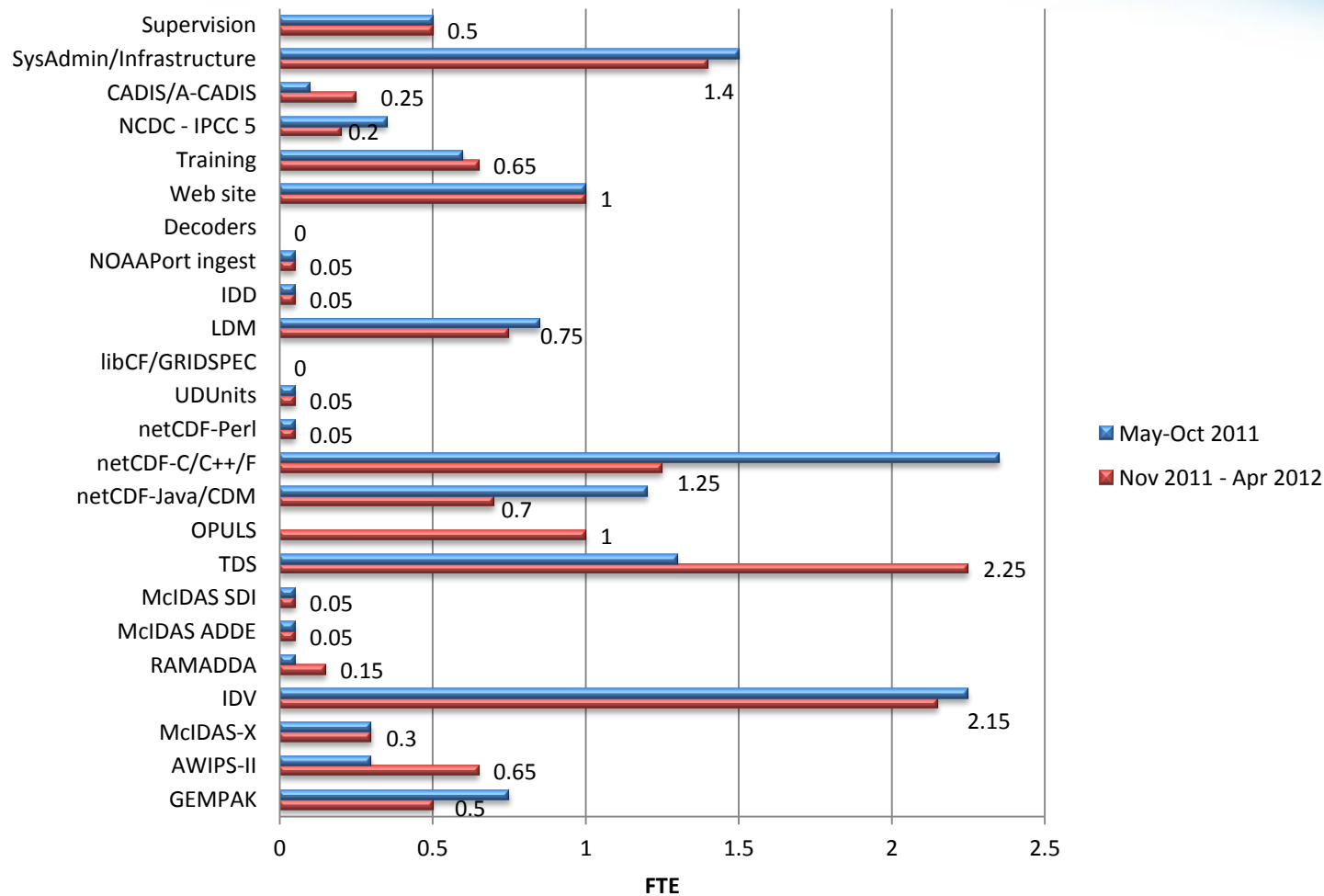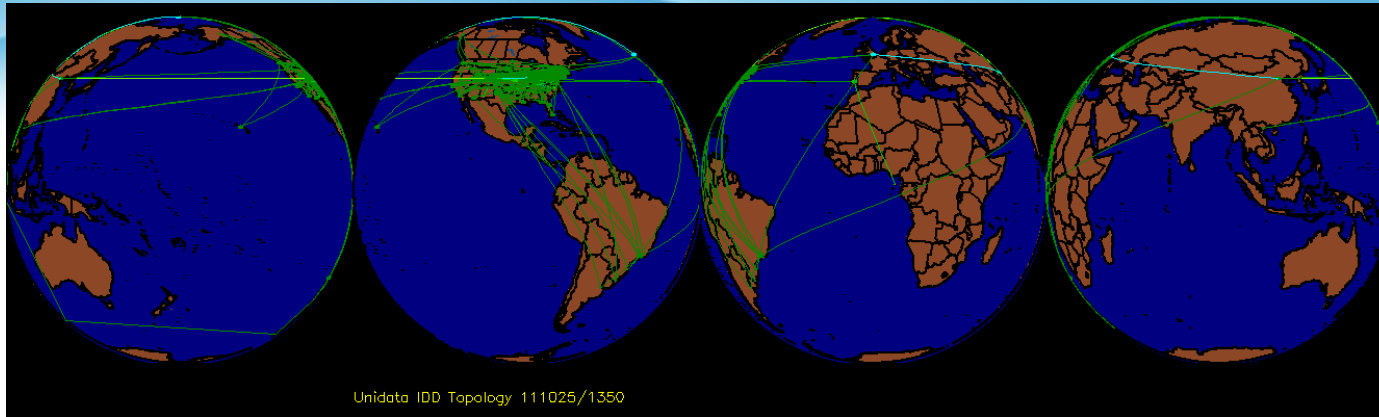
Staffing Changes

- Ed Hartnett is leaving Unidata at the end of October to take a position at the Laboratory for Atmospheric and Space Physics at the University of Colorado.

- He is going back to his roots to pursue interests in Space Physics-related work.
  - A new search for his replacement will begin soon.

- The search for a Software Engineer III is nearing completion. The final interviews were conducted last week.

- Another search is underway for a System Administrator. We have been short-handed in the desktop support area for several months and would like to get this position filled soon.

- A fourth search will begin sometime soon for another software engineer to work on the OPULS project, a joint project between Unidata and OPeNDAP that was recently funded by NOAA.

Allocation of Effort by Technical Staff

**Software Engineer FTE per Unidata Product
(current and anticipated for next 6 months)**

Product	May-Oct 2011	Nov 2011 - Apr 2012
Supervision	0.5	0.5
SysAdmin/Infrastructure	1.5	1.4
CADIS/A-CADIS	0.1	0.25
NCDC - IPCC 5	0.35	0.2
Training	0.6	0.65
Web site	1	1
Decoders	0	0
NOAAPort ingest	0.05	0.05
IDD	0.05	0.05
LDM	0.85	0.75
libCF/GRIDSPEC	0	0
UDUnits	0.05	0.05
netCDF-Perl	0.05	0.05
netCDF-C/C++/F	2.35	1.25
netCDF-Java/CDM	1.2	0.7
OPULS		1
TDS	1.3	2.25
McIDAS SDI	0.05	0.05
McIDAS ADDE	0.05	0.05
RAMADDA	0.05	0.15
IDV	2.25	2.15
McIDAS-X	0.3	0.3
AWIPS-II	0.3	0.65
GEMPAK	0.75	0.5

FTE

Real-time Data Flows
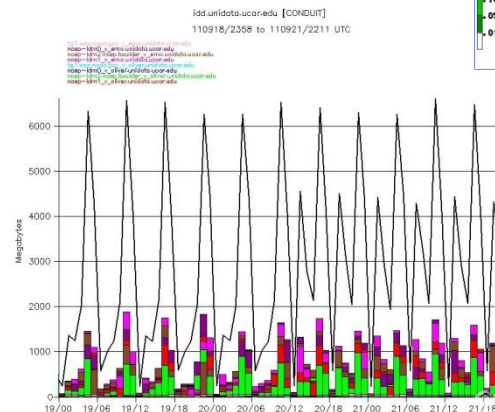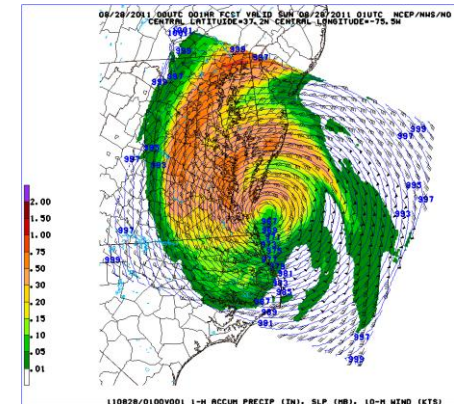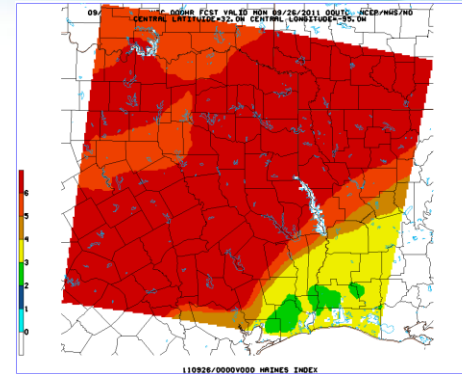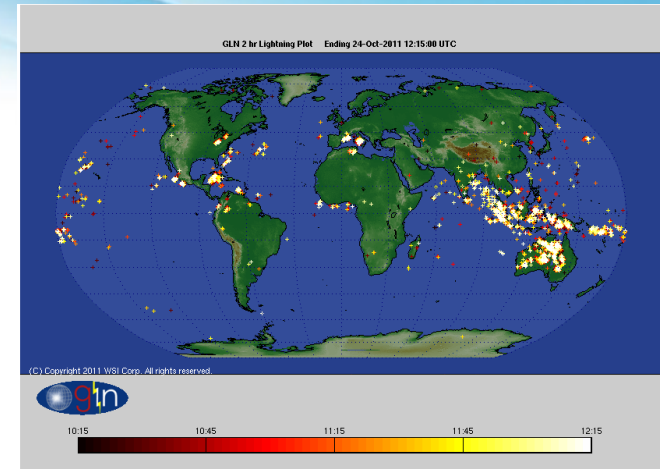

Unidata IDD Topology 111025/1350

- ❖ About 500 machines at ~250 sites are running LDM-6 and reporting real time statistics. These numbers have not changed much in the past 3-4 years, but the volume data ingested keeps growing. Many organizations are using the LDM but not reporting stats.
- ❖ UPC's IDD Cluster relays data to about 650 downstream connections. Average data output/day: 5.7 TB or 525 Mbps! Peak rate exceeds 1.15 Gbps.
- ❖ Data input to the cluster has increased to ~7.76 GB/hr because of Super-resolution and Dual-polarization upgrades in NEXRAD.
- ❖ CONDUIT and WSR 88-D Level II remain the top two data streams based on volume.
- ❖ **The NOAAPort ingest and GRIBINSERT packages are now bundled with the LDM software as of LDM version 6.10**

Fire Weather Model Output

- NCEP began providing *Fire Weather* output from selected areas of the NAMmodel via Unidata's CONDUIT feed in September 2011.

- "Fire Weather model runs" are high resolution innermost "nests" of NCEP's parallel NAM12 model.
  - CONUS nests are 1.33 km
  - Alaska nests are 1.5 km
  - Forecast length: 36 hours

- As a result, CONDUIT volume increased by 800 Mbytes/hour

Lightning Data

- In April 2011, WSI Inc. and Unidata announced the availability of Global Lightning Network (GLN) data via the LDM. This is complementary to North American Precision Lightning Network data, also from WSI.

- Unidata and University of Albany continue to provide NLDN lightning data from Vaiala, Inc. 70+ universities are receiving this data.

- Earth Networks-WeatherBug contacted us and expressed interest in making their Total Lightning Network data available to the university community. We have provided information on how to set up the distribution and the desired data format, but haven't heard back yet.

GLN has over 25 users/ sites. In addition, there are at least 20 users who have accessed their dat archive.

Remote Data Access Volumes

Data Access Protocol	Data Volume (Yearly)
OPeNDAP	2.45 Tbytes
Web Coverage Service (WCS)	0.27 Tbytes
Web Map Service (WMS)	0.15 Tbytes
HTTP	3.52 Tbytes
NetCDF Subset Service	0.30 Tbytes
ADDE on Motherlode	14.4 Tbytes (estimate)
ADDE GOES-East	12.0 Tbytes (estimate)
ADDE GOES-West	9.60 Tbytes (estimate)
ADDE GOES-South	6.00 Tbytes (estimate)
TOTAL	**48.69 Tbytes**
IDD	**60.01 Tbytes (estimate)**
NOAAPort	16.00 Tbytes (estimate)

THREDDS

- THREDDS Steering Committee has been appointed and it "met" virtually last Friday. It was one of the recommendations from the Users Committee.

- Both the CDM (netCDF-Java) and the TDS had a few minor releases since the last meeting. TDS is currently at version 4.2.8 (stable release), and version 4.2.9 (unstable? beta?) release.
  - ncISO metadata services upgraded
  - New features to support the use of TDS by the Earth Systems Grid
  - Various bug fixes

- **CDM/TDS 4.3 development underway:**
  - OPeNDAP: support client side certificates. Support Groups with DAP 2 protocol (TDS).
  - Refactor of GRIB-2 and GRIB-1 IOSPs including table handling.
  - New code to handle GRIB collections can scale up to large collections of files, first application is NOMAD's CFSR dataset.
  - Improved calendar handling, e.g., 360-day years for climate data.
  - Synchronize CDM with CF 1.6 Discrete Sampling Features (station, profiler, aircraft track data e.g.). Add new services to TDS for these data types.
  - Refactor TDS catalog caching for Earth System Grid (ESG).
  - Improved integration with ncISO.

RAMADDA

• As we reported before, the RAMADDA project has migrated to [SourceForge](#), an open-source code repository.

• Jeff McWhirter, the primary developer of RAMADDA, is continuing to actively develop and advance RAMADDA. Recently, Don Murray has joined the RAMADDA development effort. Many of the enhancements to RAMADDA have been as a result of the UPC staff feedback.

• RAMADDA version 1.3 was released in September.

• Unidata will continue to participate in the RAMADDA project by assisting users in the Unidata community and providing training on its installation and use.
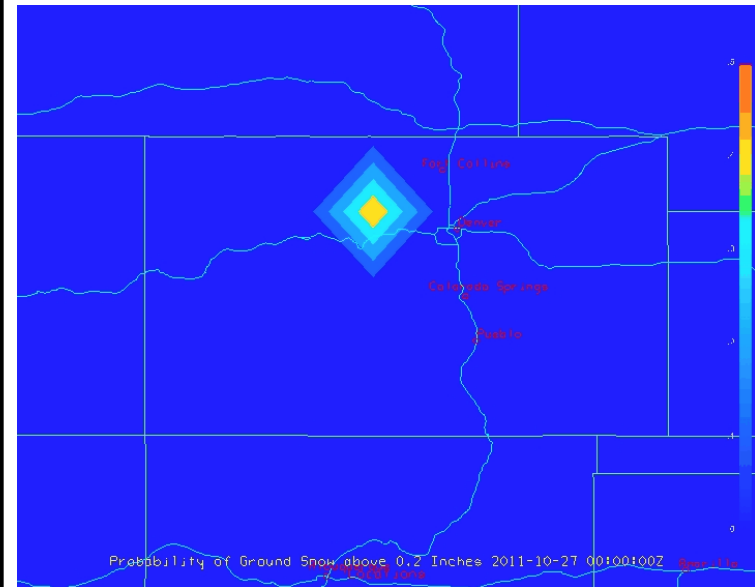
Integrated Data Viewer

❖ IDV version 3.0 was released in August. New features include:

- A new interface for memory allocation
- Greater support for ensemble model output (e.g., univariate probablities)
- Support for GEMPAK surface and upper air data
- Support for GRADS data
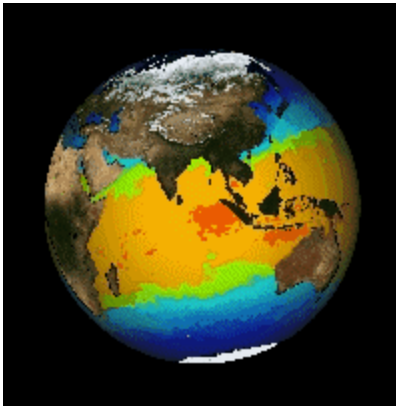- Hövmoller diagram capability

❖ Other activities

– Time matching of different fields and displays

– Having discussions with the VAPOR team to provide enhancements for WRF users

Probability of Ground Snow above 0.2 Inches 2011-10-27 00:00:00Z

UNIVERSITY OF TWENTE.

UCAR

unidata

ITC   Faculty of Geo-Information Science and Earth Observation

Study   Research   Services   Alumni   Library   Organisation

Home » Organisation » News and events » News » 2011 » September »

News

September

Open-source geo-spatial software initiative helps to produce global map of coral exposure to stress
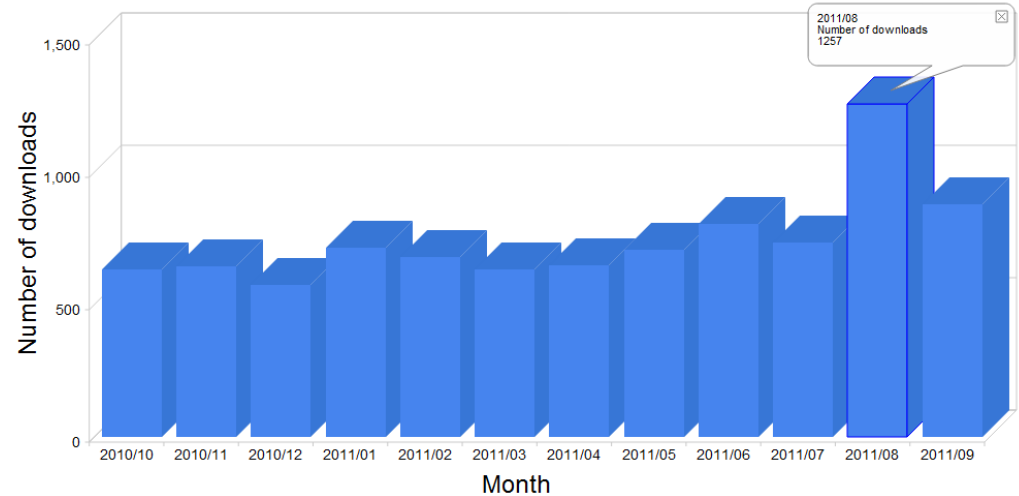
- [IDV animation](#)

"*The study is an excellent example of how decision makers are now trying to integrate oceanographic data (analysis and model output available in formats like netCDF) with ecological data (i.e. the GPS-based observations of coral health). They usually have to find ways to convert the oceanographic data into a compatible Geographic Information System (GIS) format so they can be used in their GIS tools (e.g. ArcGIS™ by ESRI®). However, current GIS tools do not handle the time varying, multidimensional datasets well and provide little support for time or spatial animation*.*" Hence they chose the IDV.

IDV Downloads and Usage

Month	Count	*5	10	20	30	
2011_10	581	28	9	3	0	
2011_09	13913	476	241	120	77	
2011_08	12340	459	247	124	72	
2011_07	11809	419	213	96	67	
2011_06	14654	470	251	127	88	
2011_05	15142	482	255	127	82	
2011_04	14609	487	265	116	71	
2011_03	14828	480	249	127	86	
2011_02	12272	474	245	101	63	
2011_01	12247	445	208	105	68	
2010_12	11018	394	198	102	58	
2010_11	14639	453	240	128	83	
2010_10	12531	391	224	121	79	
2010_09	14035	394	208	109	69	
2010_08	14415	368	189	94	65	
2010_07	14172	371	206	103	59	
2010_06	15207	410	212	103	54	
2010_05	12023	407	204	89	54	
2010_04	14746	459	241	118	80	
2010_03	14880	429	227	120	80	
2010_02	13641	389	191	106	61	
2010_01	13897	378	202	99	74	
2009_12	12971	399	189	89	60	
2009_11	13129	367	198	96	67	
2009_10	10705	337	177	91	57	
2009_09	13859	364	193	96	65	
2009_08	12185	331	160	81	53	
2009_07	10199	326	162	82	46	
2009_06	12986	357	195	98	65	
2009_05	11508	353	178	82	52	
2009_04	12573	379	199	101	70	
2009_03	12371	355	204	113	71	
2009_02	11114	325	187	99	59	
2009_01	9883	301	168	84	58	
2008_12	9448	262	147	96	59	
2008_11	12200	260	158	96	67	
2008_10	11449	248	153	87	61	

Monthly stats represented for idv download data
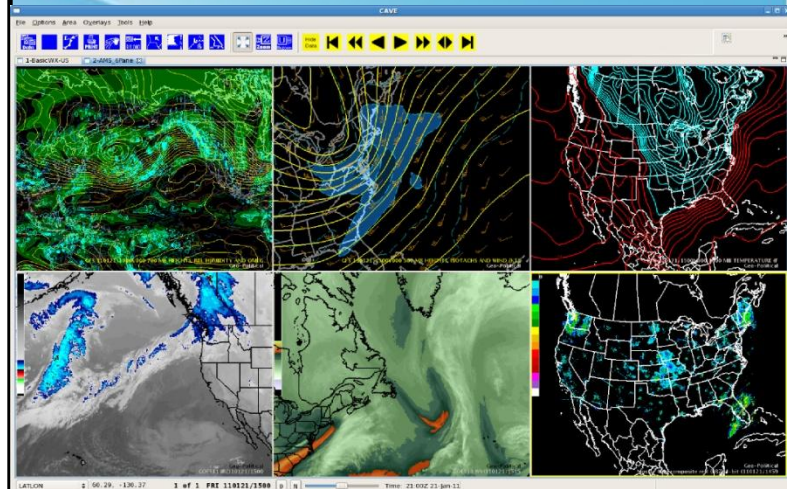Filter by Session (1 session = 30 minutes)

The number of IDV downloads (~10,000/year) and use remains high.
It remains Unidata's most downloaded analysis and visualization tool.

GEMPAK & McIDAS-X

- GEMPAK 6.4.0 released on October 17th. It now provides
  - support for NEXRAD Dual Polarization Level III products
  - 20 participants participated in the GEMPAK Training Workshop
  - GEMPAK RAMADDA Script Repository established where users can upload and share their scripts
  - GARP is bundled with the released package, but is not supported expressly. We are navigating the waters carefully.

McIDAS-X Addendum v2009h implements support for NEXRAD Level III dual polarization products as well.
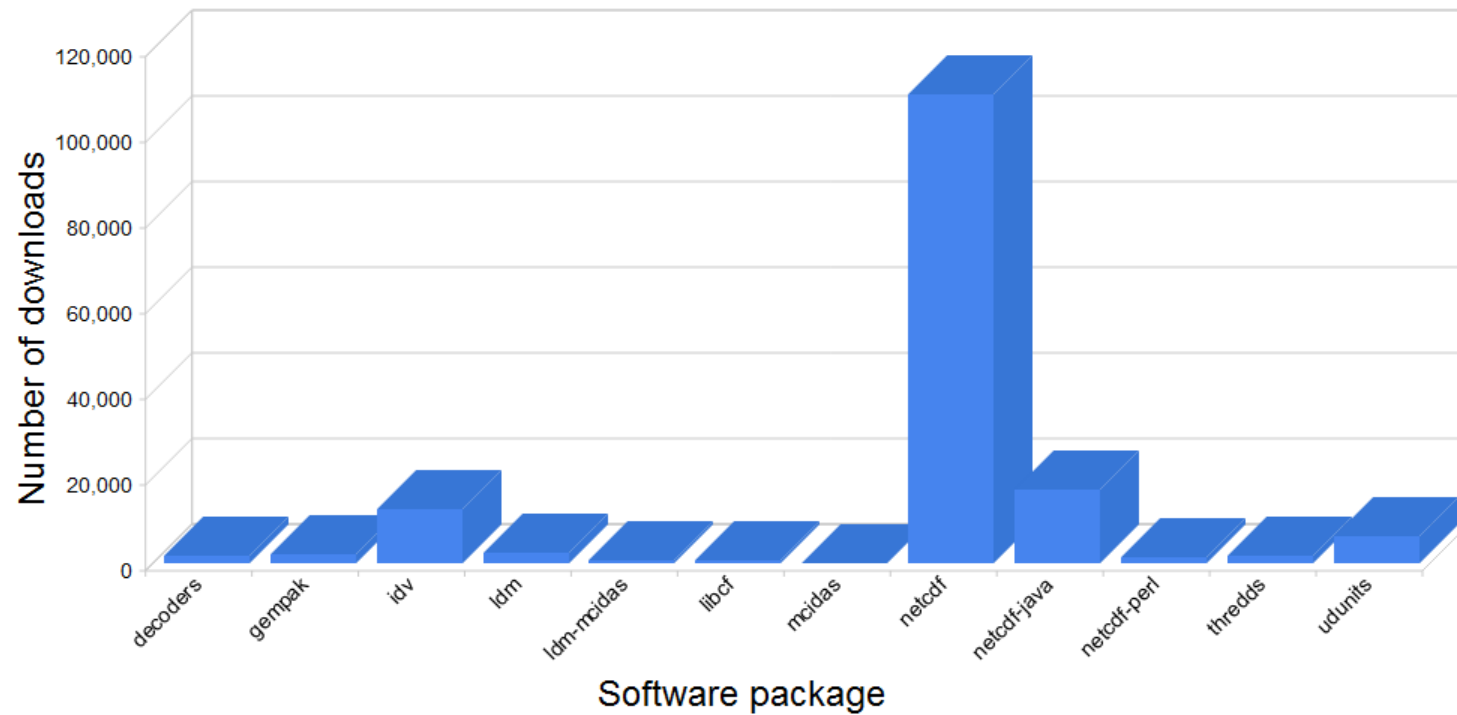
UPC AWIPS II Update

- Staff continuing to collaborate closely with NWS, NCEP and Raytheon. Changes that Raytheon made to the LDM to enable it to provide data to AWIPS-II were incorporated so that Unidata AWIPS-II users won't have to manage two different LDM-s.

- **The UPC is now receiving the complete source code of AWIPS2 releases from the NWS through a FOIA process.**

- **AWIPS II was demonstrated in a client-server mode during the GEMPAK training workshop last July, with users running the display software on their laptops. Results were very encouraging.**

- **The D2D application/UI seems farther ahead and working better than the National Center Perspective.**

- **The availability of 64-bit software looks promising and may happen sooner than previously believed.**

- **Two UPC staff will be attending AWIPS II training for forecasters, to be held at the NWS Training Center in Kansas City, KS.**

Software Download Metrics

Yearly total represented for all packages download data: Oct 1 2010 to Sep 30 2011

Collaborative and Open Software Development

- The netCDF C-based and THREDDS projects are now using Jira for tracking issues, planning releases, and making our development process more transparent to users.

- With Jira, progress on resolving issues and scheduling enhancements in future releases can be easily tracked by users, who can also add public comments on issues.

- Our goal is to use Jira in many of our packages.

- We are exploring the use of git (and git Hub) for collaborative software development. CDM/TDS 4.3 code is now under git on gitHub.

New Non-Core Funding

The UPC received funding for two collaborative proposals, and waiting for funds to be transferred for a third proposal.

- OPeNDAP-Unidata Linked Servers (OPULS): Aligning, Linking & Integrating Open-Source Software for Web-Based Scientific Data Exchange.

- Dave Fulker, President of OPeNDAP, is the overall PI for this 3-year project, and Ethan Davis is the Unidata PI.

- The union of the capabilities provided by OPeNDAP and TDS has become increasingly important as basic infrastructure for data exchange.

- The NSF/OPP-funded next-generation Advanced CADIS system (ACADIS) is being designed to serve broader Arctic community needs, including projects funded under the Arctic Observing Network (AON), Arctic System Sciences (ARCSS), Arctic Natural Sciences (ANS), and the Arctic Social Sciences Program (ASSP).

- The focus is on improving access to and the usability of NSF Arctic data.

- ACADIS has now created a Data Management Plan Template to assist Arctic PIs in their proposals and projects.

Awarded NOAA/NOMADS grant for "Project to Improve Software Infrastructure in Support of the NOAA National Climate Model Portal (NCMP)". Waiting for funds to be transferred.

EarthCube

main   my page   members   groups   blogs   background reading   charrette

- The goal of EarthCube is to *"transform the conduct of research by supporting the development of community-guided cyberinfrastructure to integrate data and information for knowledge management across the Geosciences."*

- There is a great deal of interest in EC in the CI community. More than 110 white papers were submitted.

- There are over 500 people registered on the EC community site.

- Unidata staff are actively participating in EarthCube.

- The UPC staff submitted four white papers for the upcoming Charrette and contributed to or co-authored another five papers.

- Ben, Russ and I will be traveling to Washington DC to attend the Charrette, to be held Nov. 1-4.

Software Training Workshops

2011 Software Training Workshops
07 April 2011

Unidata Software Training Workshops to be held in July 2011

Here are the dates for the Unidata software training workshops this year. More information will be available soon on the Training Workshops page.

Workshop	Dates (July 2011)
GEMPAK	Mon 11, Tues 12, and Wed 13
LDM	Thurs 14 and Fri 15
IDV	Mon 18, Tues 19, and Wed 20
THREDDS	Thurs 21 and Fri 22
netCDF Basic	Mon 25
netCDF Advanced	Tues 26

Statistics from Workshop:

	GEMPAK	LDM	IDV	THREDDS	netCDF - beg	netCDF - Adv
Breakdown Per Class	20	18	18	22	26	24

UCAR/NCAR	13
Government	21
Educational Inst.	26
Research	1
Commercial	7
Other	1
Total number attendees	69

Breakdown by Country	
Canada	1
Costa Rica	1
Germany	1
Mexico	1
Spain	1
U.S.	64

OGC Technical Committee and GEOSS Meetings

- The week of September 19, Unidata hosted the meetings of the OGC Technical Committee and Global Earth Observation System of Systems (GEOSS) meetings.

- The participation (~360) at these meetings exceeded the previous record by nearly 50%!

- Lots of discussion on standards, conventions, interoperability, and collaborations.

Space Shuttle Program Commendation

They specifically thanked Tom Yoksas and Steve Emmerson for their assistance with McIDAS and AWIPS LDM implementation.

More Kudos

ESSAY

SPORE* SERIES WINNER

Making Earth Science Data Accessible and Usable in Education

The Earth Exploration Toolbook provides instructions on accessing and analyzing Earth science data to explore scientific concepts and issues.

Tamara Shapiro Ledley,[1]† LuAnn Dahlman,[2] Carla McAuliffe,[1] Nick Haddad,[1] Michael R. Taber,[3] Ben Domenico,[4] Susan Lynds,[5] Marian Grogan,[1]

- One of the publications from AccessData project was the winner of a AAAS *Science* Prize for Online Resources in Education (SPORE) last month. Essay title: "*Making Earth Science Data Accessible and Usable in Eduction*"

Strategic Planning

Unidata 2020:
Geoscience at the
Speed of Thought

Mission: *To advance the geosciences and promote effective education by providing innovative data services and tools.*

It is clear that we all are not on the same page yet and that there are differing views on what the plan should look like.

Vision

Mission

Objectives

Strategies

Tactics

Action Plans **and Measures**

Vision	Mission

Objectives	Strategies	Tactics	Plans

Objectives	Strategies	Tactics	Plans

State of the Program: A Snapshot

- Community relations : Green
- Data flows : Green
- Software development : Yellow
- Support : Green
- Collaborations : Green
- Staffing : Yellow
- Staff Morale : Yellow and improving
- Finances : Green
- Value of Unidata to the community : Priceless!

Questions?