



NCDC Site Presentation

HPSS User Forum

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Who We Are



- The National Climatic Data Center (NCDC) is the steward of the Nation's in-situ and satellite data and information.
- Collocated with the U.S. Air Force and Navy Climatology offices.
- The three agencies fulfill much of the Nation's climatological requirements.



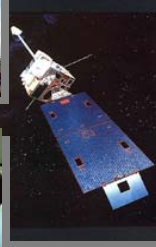
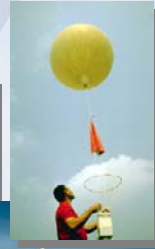
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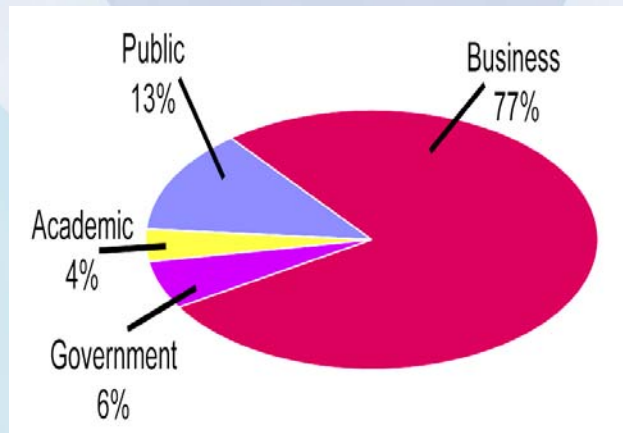


Data Sources

- Forecast Warning Analysis
- NWS COOP Observers
- Hourly Airways
- NCEP Charts
- Ship Reports
- Rocketsondes
- Storm Data
- Next Generation Weather Radar (NEXRAD)
- Satellite
- Aircraft
- Profiler
- Automated Surface Observation System (ASOS)
- Climate Reference Network (CRN)



Who Uses the Data?





Applications of NCDC Data – By Industry Group



CONSULTING METEOROLOGIST *Provide testimony in court*



LEGAL *Certified evidence in court cases*



INSURANCE INDUSTRY *Rate determination & claims settlement*



INDIVIDUAL *Recreation, retirement, entertainment, vacations*



ENGINEERING *Provide guidance in the design and construction of facilities / infrastructure*



BUSINESS *Sales impact, site relocation, environmental impacts*



NOAA / GOVERNMENT *Research, investigations, legal claims, risk management, policy guidance / support*



RESEARCH *Environmental issues, science studies, weather, prediction*



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NCDC HPSS Architectural Components

- HPSS version 4.5
- AIX version 5.1
- Core Server IBM 6H0
 - 3 GB memory
 - 58 GB SFS DB (85% used)
- Mover (SP2 Nodes)
 - 2 Winterhawk II
 - 2 Silver Nodes
 - 1 6H1
- 1.4 TB disk cache



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Current Size

- Approaching 27 million files
- 375,000 directories
- 409 TB
- 572 LTO GEN1 tapes (4 drives)
- 128 LTO GEN2 tapes (3 drives)
- 6929 3590E 2x Length tapes (17 drives)

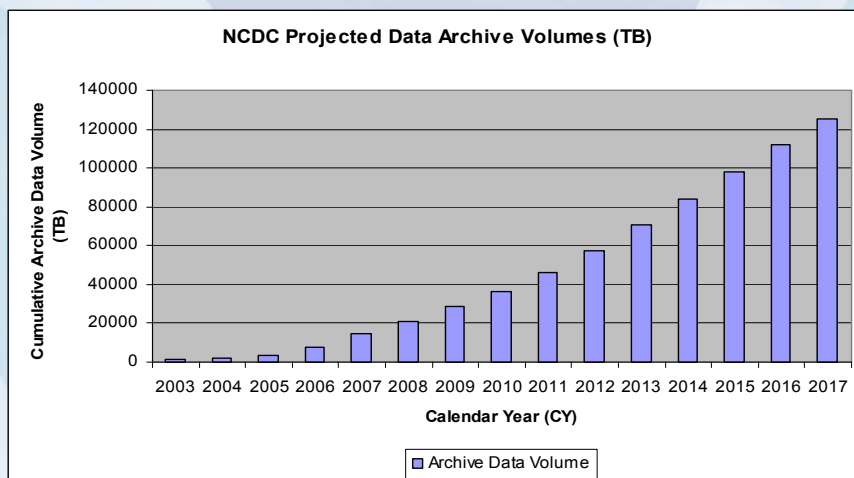
Problems

- Flakey fiber SAN disk controllers
 - Cache Memory dieing (Heat?)
 - Alive Controller not picking up slack fast enough
- Unexplained SFS crashes (still working on)
 - Memory leak
 - OFD not being freed up
 - Thousands of Active Transactions

Future Hardware

- More LTO GEN2
- Consolidate 3 3494 robots into 1
- 3592 technology
- FastT SAN disk
 - Fiber for Metadata
 - Serial ATA for disk cache
- Incorporate Linux Movers

NCDC Archive Volumes Radar, Satellite, In-SITU, etc.



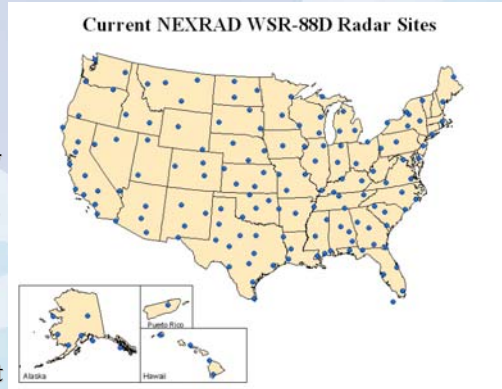


Current NCDC Radar Archive Remote Sensing Data

NCDC receives WSR-88D radar data & products from NWS, FAA & DOD

NCDC transitioned from receiving WSR- 88D data on hard media to real time electronic ingest for base data (Level II) & products (level III)

NCDC archive holds ~900TB of radar data and grows annually at a rate of 80TB (160TB with offsite backup)



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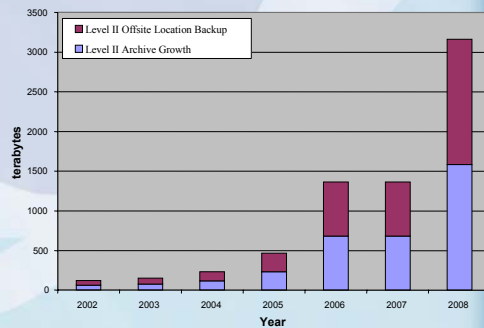
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Growth of NCDC Radar Archives

Higher resolution data, new products, and new data streams will increase the growth of the radar digital archive by as much 26 times

Within approximately five years, annual data receipt of 80TB will increase to as much as 1.6PB (or 3.2PB with backup)



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