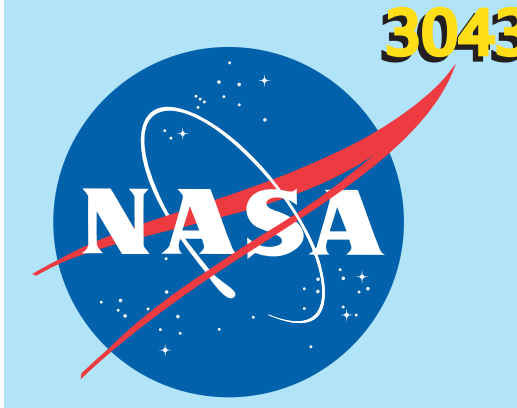


Recent Developments at the CDDIS

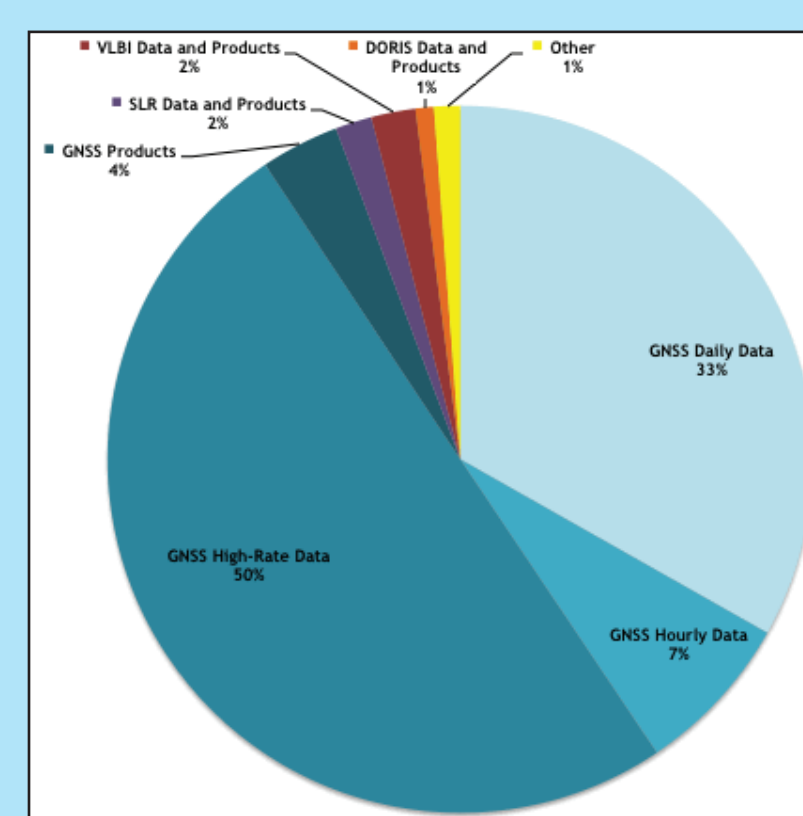


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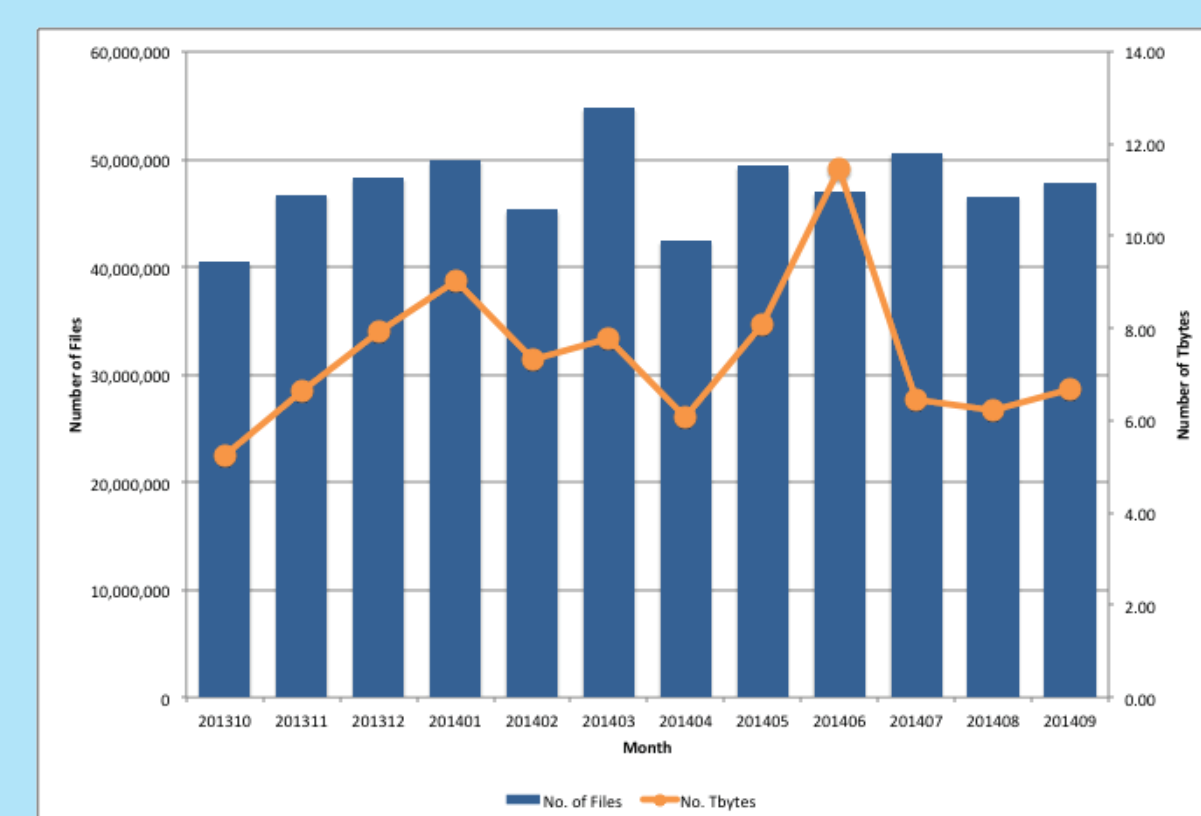
Abstract: The Crustal Dynamics Data Information System (CDDIS) supports data archiving and distribution activities for the space geodesy and geodynamics community. The main objectives of the system are to store space geodesy and geodynamics related data products in a central data bank, to maintain information about the archival of these data, and to disseminate these data and information in a timely manner to a global scientific research community. The archive consists of GNSS, laser ranging, VLBI, and DORIS data sets and products derived from these data. The CDDIS is one of NASA's Earth Observing System Data and Information System (EOSDIS) distributed data centers; EOSDIS data centers serve a diverse user community and are tasked to provide facilities to search and access science data and products. The CDDIS data system and its archive is a key component in several of the operational services within the International Association of Geodesy (IAG) and its project the Global Geodetic Observing System (GGOS), including the IGS, the International DORIS Service (IDS), the International Laser Ranging Service (ILRS), the International VLBI Service for Geodesy and Astrometry (IVS), and the International Earth Rotation Service (IERS). Several activities are nearing completion at the CDDIS to aid users in data discovery, both within the international space geodesy community and beyond. This poster will include background information about the system and its user communities, archive contents and updates, enhancements for data discovery, new system architecture, and future plans.

Introduction

- The Crustal Dynamics Data Information System (CDDIS) is NASA's active archive of space geodesy data, products, and information (GNSS, laser ranging, VLBI, and DORIS).
- The CDDIS is one of 12 NASA Earth Observation System Data Information System (EOSDIS) Distributed Active Archive Centers (DAACs).
- The largest CDDIS user community comes from the services within the International Association of Geodesy.
- The CDDIS archive is currently nearly 10 Tbytes in size; over 9 Tbytes of this archive, or 90%, is devoted to the storage of GNSS data and derived products.
- In 2013, the CDDIS became a regular member of the International Council for Science (ICSU) World Data System (WDS), an international organization that strives to enable open and long-term access to multidisciplinary scientific data, data services, products and information.
- Archive size: ~10Tb
- Ingest rate: ~8.25Gb (75K files)/day
- Distribution rate: ~150Gb (~1.4M files)/day
- Data (L1, L1B), products (L2) derived from these data, and information about data and products
- Multi-day, daily, hourly, sub-hourly submissions with varying latencies (minutes, hours, days)



GNSS data and product files constitute 90% of the CDDIS archive



Amount of data and derived products distributed by the CDDIS on a monthly basis for the last year.

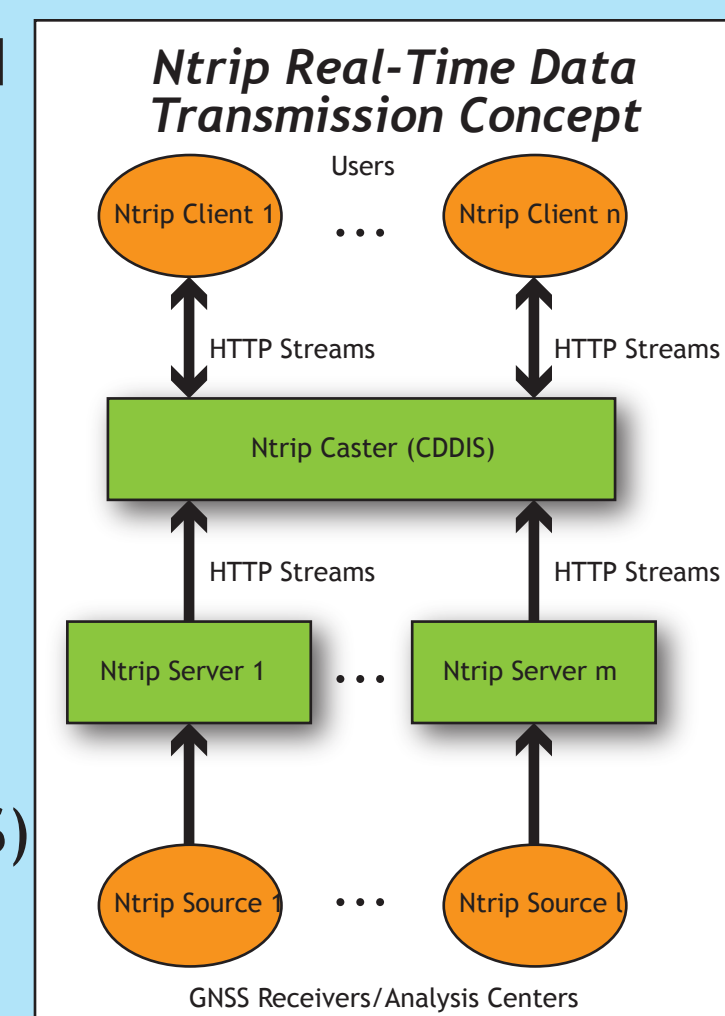
Website Improvements

- The CDDIS website has been redesigned and incorporates improved navigation.
- The design, development, and implementation process included a content review and update.
- The new website features access to the Site Log Viewer application, a map selection tool, and the CDDIS data discovery application.
- The new CDDIS website was made operational in March 2014.
- The CDDIS archive is now accessible through http as well as ftp.
- This new archive access method provides flexibility for the user community.



Real-Time Activities

- In support of the IGS Real-Time Service (RTS), the CDDIS has installed a real-time caster using the open source Ntrip (Networked Transport of RTCM via Internet Protocol) software on an available, dedicated server (called a caster) for receiving and serving real-time GNSS data and product streams.
- System disseminates differential correction data or other kinds of GNSS streaming data to stationary or mobile users over the Internet.
- Mobile users obtain corrections/data from reference stations in real-time to improve positioning.
- Real-time products include: data streams from a global network of high-quality GNSS receivers, GNSS satellite orbits, satellite clock solutions, and ionosphere information
- Products enable real-time precise point positioning at global scales used in scientific research and hazard detection applications.
- CDDIS real-time activities require user authentication which will be handled through a NASA GSFC User Registration System (URS)
- CDDIS has begun the process to capture incoming streams for generation and comparison of high-rate data files.
- Testing continues on the CDDIS caster installation and the NTRIP user registration module



Future Developments

System Upgrades:

- CDDIS is in the process of procuring a hardware refresh
- System will be located within EOSDIS infrastructure, which will provide for expanded bandwidth and increased redundancy
- Some changes in authentication of incoming data will be required; we will keep the user community informed
- Operations on new system expected in early 2015

More Information/Feedback:

- Data and products are acquired as part of NASA's Earth Science Data Systems and archived and distributed by the Crustal Dynamics Data Information System (CDDIS):
C. Noll, The Crustal Dynamics Data Information System: A resource to support scientific analysis using space geodesy, Advances in Space Research, Volume 45, Issue 12, 15 June 2010, Pages 1421-1440, ISSN 0273-1177, DOI: 10.1016/j.asr.2010.01.018.
- The staff welcomes feedback on the CDDIS and in particular the ideas expressed in this poster; contact Carey Noll (Carey.Noll@nasa.gov).

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