

Comprehensive Large Array-data Stewardship System (CLASS)

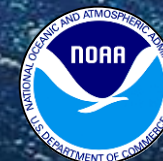
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CLASS Requirement

MISSION: CLASS provides long-term, secure storage of NOAA-approved data, information, and metadata to enable access to these holdings through both human and machine-to-machine interfaces

NOTE: CLASS is not intended to support near-real-time nor mission-critical product delivery.

CLASS Operational Nodes

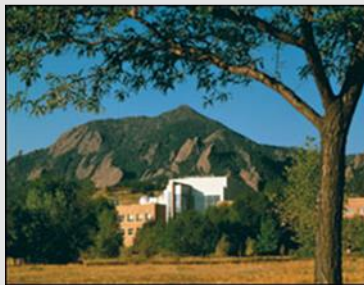
CLASS Maintains 3 Operational Nodes:

- Two Full Service Nodes (FSN)
 - ✓ Asheville, NC
 - ✓ Boulder, CO
- One Ingest Node (IN)
 - ✓ Suitland, MD



CLASS-Suitland (IN)

- Receipt node operations for ESPC and JPSS
- Dev, Integration and Test Environment



CLASS-Boulder (FSN)

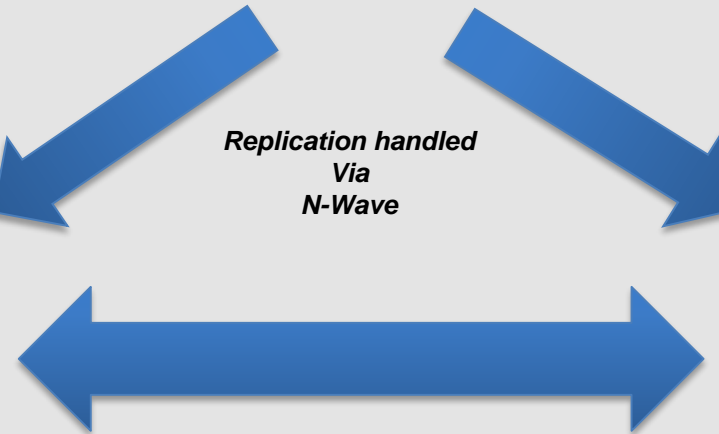
- Ingest and Replication
- Archival Storage
- Dissemination
- Help Desk



CLASS-Asheville (FSN)

- Ingest and Replication
- Archival Storage
- Dissemination
- Help Desk

Replication handled
Via
N-Wave



CLASS Operational Requirements/Capacities

Requirements:

Dissemination:

The System shall be capable of disseminating, on a daily basis, 600% of the daily ingested data volume

Order Fulfillment:

Subscriptions: 72 hours

Ad-Hoc: 5 days

Current Ingest Volume Requirement: ~14TB/day

Dissemination Volume Requirement: ~84TB/day

Capacities:

Nominal Ingest:

Satellite and Legacy data:	6 TB/Day
Common Submission (NCEI):	8 TB/Day
Total:	14 TB/Day

Archive Tape Storage:

CLASS-AVL:	20 PB
CLASS-BOU:	19 PB
Total:	39 PB

Dissemination Disk Cache:

CLASS-AVL:	2.0 PB
CLASS-BOU:	2.0 PB
Total:	4.0 PB

CLASS Holdings

As of July 7, 2017

Data Set Name	Group	Period of Record	Total Volume (TB)	% of Total
Suomi National Polar-orbiting Partnership	S-NPP	10/2011 to present	6,320.55	69.34%
Geostationary Operational Environmental Satellite	GOES	01/1979 to present	360.6	3.96%
Climate Forecast System - Reanalysis	CFS-R	01/1979 to 3/2011	289.69	3.18%
Advanced Very High Resolution Radiometer	AVHRR	10/1978 to present	131.43	1.44%
Infrared Atmospheric Sounding Interferometer	IASI	04/2007 to present	229.28	2.52%
Advanced Clear-Sky Products over Oceans	ACSPO	05/2008 to present	189.51	2.08%
Total			7,521.05	82.51%
Other campaigns			1,594.05	17.49%
Per Node Total			9,115.1	100.00%
Dual Node Total			18,230.2	200.00%

Operational Metrics

Total Holdings	223M Files	9 PetaBytes
Users	Registered: ~838	Subscriptions: ~238

	March		April		May	
	Files	Volume	Files	Volume	Files	Volume
Ingest	6,347,299	100.11 TB	6,571,509	92.24 TB	6,648,764	107.88 TB
Dissemination	21,645,446	500.49 TB	16,184,392	396.29 TB	16,105,552	416.94 TB
Ad-Hoc, M2M, Bulk	5,134,924	292.34 TB	3,706,619	218.79 TB	3,319,276	239.40 TB
Subscriptions	16,478,578	183.18TB	12,446,179	153.06 TB	12,753,384	153.28 TB
NPP FTP	31,944	24.97 TB	31,594	24.44 TB	32,892	24.26 TB



CLASS Access Services

Order types	Avg Time to Available	File Limit	
Subscription (Standing orders)	45m to hours	No limit	Disk Cache
NPP-FTP (Rolling ~60 days)	~60m	No limit	
Ad-Hoc (Historical/older data)	~24 hours	Up to 3,000 files	Tape
Bulk (Large/non-typical; Operator assisted)	24-48 hours	No limit	

Disk Cache delivery is at ingest before the data is written to tape. Quick, but limited to recent data.

Tape delivery times vary depending on the data.

GOES-16 Access

NPP-FTP: CLASS provides a rolling window (~60 days)
Anonymous FTP access to aggregated NPP data.

Should CLASS make GOES-16 data available in a similar rolling window?

CLASS Web Portal

CLASS Website

- Provides access to CLASS information holdings
- Requires registration to order data

www.class.noaa.gov

The screenshot shows the NOAA CLASS web portal. At the top, there is a navigation bar with links for NOAA HOME, WEATHER, OCEANS, FISHERIES, CHARTING, SATELLITES, CLIMATE, RESEARCH, COASTS, and CAREERS. The NOAA logo is on the left, and the text 'NOAA COMPREHENSIVE LARGE ARRAY-DATA STEWARDSHIP SYSTEM (CLASS) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION' is on the right. Below the navigation bar, there are links for CLASS Home, Login, Register, Help, About CLASS, and RSS. A search bar is present with a 'GO' button. The main content area features a large satellite image of Earth with the CLASS logo overlaid. Below the image, there is a 'NEWS' section with three articles: 'Save the Date! (updated 06/12/2017)', 'VIIRS Active Fires Product (06/21/2017)', and 'Suomi NPP data access status (updated 01/11/2017)'. On the right side, there is a 'SEARCH FOR DATA' section with a list of data categories and a 'SEARCH COLLECTION METADATA' section at the bottom right. A left sidebar contains a menu with categories like 'Around CLASS', 'User Account', 'Advanced Options', 'Release Info', and 'Other Links'.