Cloud Ingest And Processing System

Automated and Reliable Processing System for GEO Satellite Data

Linux-based processing solution for GOES-16/17 satellite data

The Cloud Ingest and Processing System (CIPS) is an automated real-time product generation system for data from the NOAA GOES-16 and GOES-17 satellites. The CIPS ingests GOES data from the cloud and provides high-quality image, atmosphere, land, and ocean products from the ABI imaging sensor and GLM lightning detection sensor.

Features

- Automated and reliable ingest and processing of cloud-based GOES-16 and GOES-17 ABI and GLM products.
- Multiple cloud data providers are supported.
- Highly reliable 24x7x365 operation with no human intervention.
- Customized imagery in GeoTIFF, PNG, JPEG, and KML formats.
- User-configurable image sectors, map projections, and resolutions.
- Automated storm-centered images for named hurricanes/typhoons/tropical cyclones in the region.
- Prompt expert end-user support.
- Web Map Server compatible images.

Products

Sensor Products
Calibrated radiance and reflectance
Geolocation (latitude, longitude, …)
Sun/Sensor viewing geometry

Image Products
GeoTIFF, PNG, JPEG, KML with user-defined regions and map projections

Land Products
Wildfire Hotspot Detection
Land Surface Temperature
Vegetation Indices

Ocean Products
Sea Surface Temperature

Atmosphere Products
Clear Sky Mask
Cloud Top Phase
Cloud Top Height
Cloud Optical Depth
Aerosol Optical Depth
Volcanic Ash
Temperature Profiles
Water Vapor Profiles
Stability Indices
Total Column Water Vapor
Rainfall Rate
Lightning Detection

NOTE: GOES-17 and HIMAWARI-8 products are a subset of those shown above.

Specifications

Server Requirements

- Intel Xeon CPU at 2.90 GHz or higher, 256 GB RAM, 4 x 6TB SATA hard drives
- Dual Gigabit Ethernet ports
- Dual power supplies
- CentOS 7 64-bit Linux operating system
- Internet connection supporting download speeds of > 10.0 Megabits/sec

Supported Satellites and Sensors

- GOES-16 and 17 (ABI, GLM)
- HIMAWARI-8 (AHI)

Bundled Software Packages

- Community Satellite Processing Package GEO (CSPP GEO): AIT Framework, Geo2Grid, GEOCAT.

Product Formats

- Level 1B and Geophysical Products: netCDF.
- Image Products: GeoTIFF, PNG, JPEG, KML, WMS.
- Map Projections: Any map projection supported by PROJ4, including (but no limited to) WGS84 cylindrical equidistant, Orthographic, UTM, and Stereographic (contact us for a complete list).