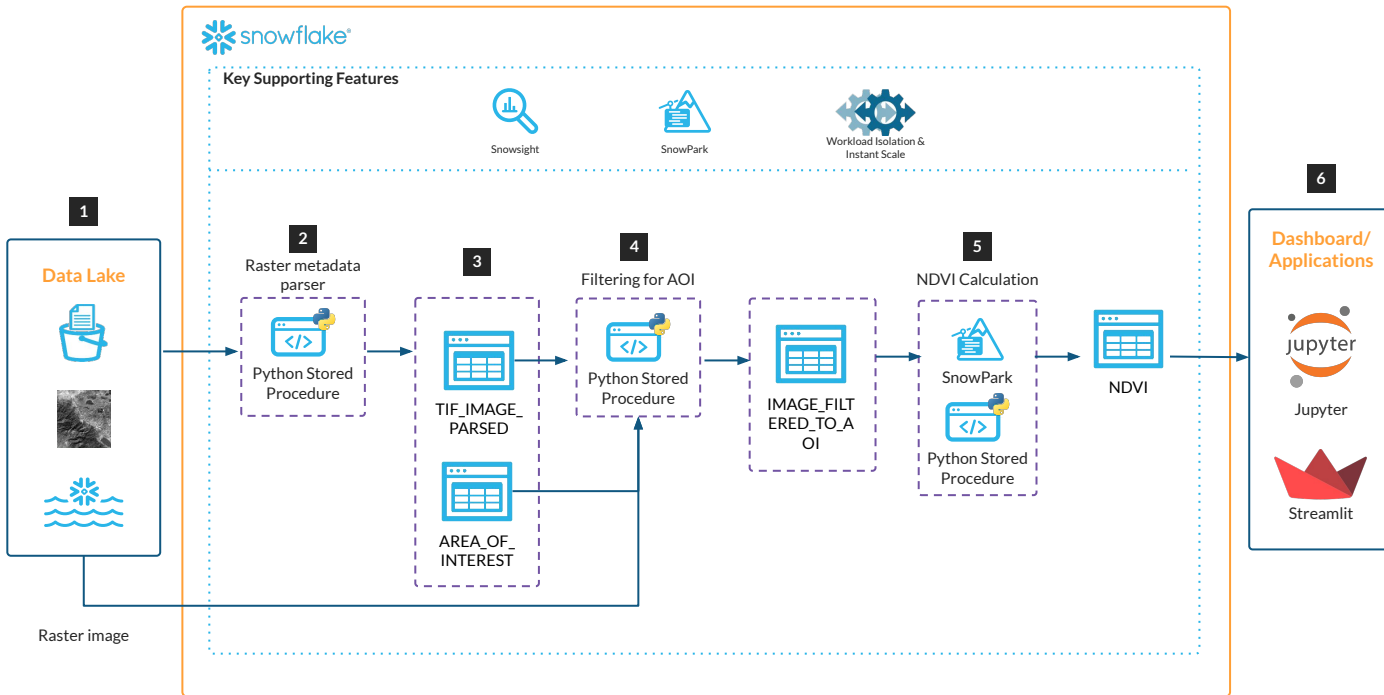


PROCESSING GEOSPATIAL RASTER TIF IMAGES

REFERENCE ARCHITECTURE



OBJECTIVE

Modern use cases like wind-turbine location monitoring requires processing satellite raster images. Snowpark (Python) and Dynamic File access facilitates Snowflake to parse and process these image files natively within the platform. In this demonstration, we showcase how to parse a Sentinel image and calculate Normalized Difference Vegetation Index (NDVI) within Snowflake

USE CASE FLOW

- 1 Sentinel satellite images are stored in external stages (Data Lake)
- 2 A Snowpark (Py) stored procedure parses these files and extracts the core metadata of the image such as CRS, bounding box, band etc..
- 3 The metadata is stored in TIF_IMAGE_PARSED table. Area of Interest (AOI) table contains the geometry polygon for the specific locations on which we want to calculate the NDVI
- 4 Filtering for AOI Snowpark stored procedure filters the raster data specific to the AOI polygon and stores them in the table IMAGE_FILTERED_TO_AOI
- 5 NDVI is calculated using the snowpark python stored procedure and the results are stored in NDVI table.
- 6 The calculated NDVI and the geospatial information can be visualized using Streamlit / Jupyter

RELATED CONTENT

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Quick Start: [Geospatial Analytics for Retail with Snowflake and CARTO](#)
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