Earthquakes - v2

Domain Portfolio: Weather Imagery | Domain: Natural Disasters | API Name: Earthquakes - v2

Standard HTTP Cache-Control headers are used to define caching length. The TTL value is provided in the HTTP Header as an absolute time value using the “Expires” parameter. Example: “Expires: Fri, 12 Jul 2013 12:00:00 GMT”.

Geography: Global **Attribution Required:** NO **Attribution Requirements:** N/A

Overview

The Feature Data Service (FDS) API provides geographic features for a number of products. The client can use these features to render a visual representation of data.

- FDS provides geometric vector data where each feature can be a set of points, a polygon or set of polygons, a linestring or set of linestrings, or any other valid GeoJSON type
- Each feature is described by a set of geographic coordinates and a set of properties.
- Each feature is uniquely identified by the *combination* of its product key, feature key and valid time; the valid time is used to assign the feature to a unique feature set.
- For additional details about FDS, please see the Weather Company Data | Data Visualization - Weather Imagery | Common Usage Guide

Using FDS products requires a multi-step workflow to retrieve the necessary data for the specific product data request. Step 2 requires the **‘time’** value parameter, found in the response from Step 1.

- **Step 1:** Get Product Info - Provides time-based labels for the feature sets that are currently available.
- **Step 2:** Get Features for a Single Tile - Provides all geographic features for a single tile, taken from a single feature set within a specific product.

URL Construction

Step 1: Get Product Info
Required Parameters: **productKey,** apiKey=**yourApiKey** || **Optional Parameters:** meta, max-times https://api.weather.com/v2/vector-api/products/**<productKey>**/info?**apiKey=yourApiKey**
The [**/products/{productKey}/info**] request provides the labels for the feature sets that are currently available. These labels are required as input for the subsequent [**/products/{productKey}/features**] request, and they are invoked in that request’s **‘time’** parameter.
https://api.weather.com/v2/vector-api/products/601/info?meta=true&max-times=12&apiKey=yourApiKey
Step 2: Get Features for a Single Tile
Required Parameters: **productKey, time, lod, x, y,** apiKey=**yourApiKey** || **Optional Parameters:** declutter, tile-size https://api.weather.com/v2/vector-api/products/**<productKey>**/features?time=**<time>**&lod=**<lod>**&x=**<x>**&y=**<y>**&**apiKey=yourApiKey**
The [**/products/{productKey}/features**] request provides a set of features for a single tile, from a particular feature set within a particular product. Each feature contains a small set of key metadata properties, including its ID and valid time, which are required as input for any subsequent [**/products/{productKey}/feature-details**] request, as the **‘feature-id’** and **‘valid-time’** parameters.
https://api.weather.com/v2/vector-api/products/601/features?time=1492016701805&lod=10&x=175&y=409&tile-size=256&apiKey=yourApiKey

Product Data Dictionary: 601 - Earthquakes

The provider of the earthquake data is the Comprehensive Earthquake Catalog (ComCat), a product of the Advanced National Seismic System (ANSS), which is part of the U.S. Geological Survey's Earthquake Hazards Program.

Each earthquake event is described in a GeoJSON object, where the latitude and longitude pinpoint the epicenter, which is located on the earth's surface. An earthquake begins to rupture at the hypocenter, located at the focal depth directly below the epicenter.

The JSON data includes the following fields:

Field *Found in the GeoJSON response, in each feature's **properties** field*	**Description**
depth	Focal depth of the earthquake event, in kilometers; more specifically, the hypocenter depth where the earthquake begins to rupture This is the least constrained parameter in the earthquake's location, in part because different seismic networks use different methods to locate earthquakes, and these methods may use different reference depths. Depending on the source network, the earthquake depth may be relative to the WGS84 geoid, mean sea level, or the average elevation of the seismic stations which provided arrival-time data for the earthquake's location. The earthquake depth may instead be a fixed value if the calculated depth is poorly constrained by available seismic data. For example, shallow earthquakes may be given a default depth of 33 km, or the default depth may only be 5 km or 10 km for quakes in mid-continental areas or on mid-ocean ridges.
mag	Official earthquake magnitude, as denoted by the U.S. Geological Survey This magnitude is a logarithmic measure of the earthquake's size at its source. With a unit increase in magnitude (ex. from 4.0 to 5.0), the seismic waves' amplitude increase by a factor of approximately 10, and (for many common magnitude types) the earthquake's average total energy increases by a factor of approximately 32.
magType	Magnitude type, denoting the method or algorithm used to calculate **mag**, the earthquake event's official magnitude • **mb:** Short-period body wave, based on P bodywaves' amplitude, as recorded on short period instruments • **mb_lg, mb_lg, MLg:** Short-period surface wave, the amplitude of the Lg surface waves as recorded on short-period instruments • **Me:** Energy, radiated seismic energy as estimated by the integration of digital waveforms • **Md, md:** Duration, shaking duration as measured by the time decay of the seismogram's amplitude • **Mi, Mwp:** Moment, based on an estimated moment calculated from the integral of the P wave's displacement, as recorded on broadband instruments • **ML, Ml, ml:** Local, the original magnitude calculation for local earthquakes, defined by Richter and Gutenberg in 1935, currently calculated from modern instruments with appropriate adjustments for the data • **Ms, Ms_20:** Twenty-second surface wave, based on the amplitude of Rayleigh surface waves measured at a period near 20 seconds.

	● **Mw, mw:** Moment, based on the scalar seismic-moment, as determined by a moment-tensor inversion; **Mw** and **mw** are generic indicators, with more specific types denoted as follows: ○ **Mwb, mwb:** long-period *body-waves* (P- and SH, approximately 10 to 100 s) ○ **Mwc, mwc:** *centroid* inversion, of intermediate- and long-period body- and surface waves ○ **Mwr, mwr**: complete waveforms at *regional* distances of less than approximates 13 degrees ○ **Mww, mww:** *W-phase*