Weather Company Data | Marine - Gridded (Tiler) & Polygonal (Featurizer)

Domain Portfolio: Forecast | Domain: Weather Imagery | API Name: Marine - 7 Day - Gridded (Tiler) & Polygonal (Featurizer)

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

This API features marine forecast data from the Global Forecast System (GFS) forecast model produced by the National Centers for Environmental Prediction (NCEP). The API provides a total of 7 days worth of data, delivering 3-hour windows across a span of 7 days. The data is contained in a ¼ degree resolution grid *(~27.5 km)*, with a new set of forecasts generated every 6 hours (00z, 06z, 12z, 18z).

The 'Tiler', and 'Featurizer' products support data visualization and analytics.
- Tiler provides gridded raster data, typically in tiles of 256x256 pixels at various levels of detail; a client-side SDK can use this data to create weather image tiles
- Featurizer provides geometric vector data, either a line or a polygon, indicating where meteorological values cross a particular threshold; this data can facilitate statistical analysis
- Tiler also provides the ability to get point data, for applicable layer, from the gridded raster data, represented as a geojson feature collection. This point data is a calculated value from grid values
- For additional details about Tiler and Featurizer please see the Weather Company Data | Common Usage Guide - Data Visualization - Weather Imagery:
    - https://ibm.co/DVWCUG

Using the Tiler and Featurizer products require a multi-step workflow to retrieve the necessary data for the specific product data request. Steps 2a, and 2b are dependent on which type you are requesting (i.e. Tiler Data or Featurizer Tile. Steps 2a, 2b, and step 3 require the **'rt'** parameter values as input into the **'t'** parameter for the subsequent request (v2/tiler/data, v2/featurizer/tile, and v2/tiler/point).
- **Step 1:** Get Tiler Info - Provides current dimensions **'t'** and **'rt'** parameter values on one or more products.
- **Step 2a:** Get Tiler Data - Provides tiles of meteorological data from one or more products.
- **Step 2b:** Get Featurizer Tile - Provides a polygon or line indicating when a product's data has crossed a given threshold, in web-mercator projection.
- **Step 3:** Get Point Data from a grid - Retrieves a geoJson Feature Collection which is a calculated value of meteorological data for one or more specific locations

URL Construction

Step 1: Get Tiler Info
Tiler Info: Required Parameters: products, apiKey=**yourApiKey || Optional Parameters:** meta=true   https://api.weather.com/v2/tiler/info?products=**<productNumber>:<variableID>**&**apiKey=yourApiKey**
The [**v2/tiler/info?**] request response provides the **'t'** parameter value required as input for the subsequent [**v2/tiler/data?**] request as well as a subsequent [**v2/featurizer/tile?**] request.   If the product is an 'Observation/Current Condition' type then it will return a **'t'** parameter value; if the product is a 'Forecast' type then it will return both a **'t'** parameter value and **'rt'** parameter value.   • Note: some exceptions may apply to the use of the **'t'** parameter value and **'rt'** parameter values; please see product specific details for all product specific required and optional parameters.
https://api.weather.com/v2/tiler/info?products=150:Significantheightofcombinedwindwavesandswellsurface&meta=true&apiKey=yourApiKey

Step 2a: Get Tiler Data
Tiler Data - Forecast: **Required Parameters:** **products, rt, t, lod, x, y,** apiKey**=yourApiKey** https://api.weather.com/v2/tiler/data?products=**<productNumber>:<variableID>**&rt=**<rt>**&t=**<t>**&lod=**<lod>**&x=**<x>**&y=**<y>**&**apiKey=yourApiKey**
https://api.weather.com/v2/tiler/data?products=150:Significantheightofcombinedwindwavesandswellsurface&rt=**1474375500000**&t=**1474400700000**&lod=2&x=0&y=0&apiKey=yourApiKey
Step 2b: Get Featurizer Tile
Featurizer Tile - Forecast: **Required Parameters:** **product, rt, t, lod, x, y,** apiKey**=yourApiKey** || **Optional Parameters:** threshold https://api.weather.com/v2/featurizer/tile?product=**<productNumber>:<variableID>**&rt=**<rt>**&t=**<t>**&lod=**<lod>**&x=**<x>**&y=**<y>**&**apiKey=yourApiKey**
https://api.weather.com/v2/featurizer/tile?product=150:Significantheightofcombinedwindwavesandswellsurface&rt=**1474375500000**&t=**1474400700000**&lod=2&x=0&y=0&threshold=0&apiKey=yourApiKey
Featurizer Feature (Native Resolution) - Forecast: **Required Parameters:** **product, rt, t,** apiKey**=yourApiKey** || **Optional Parameters:** threshold https://api.weather.com/v2featurizer/feature?product=**<productNumber>:<variableID>**&rt=**<rt>**&t=**<t>**&**apiKey=yourApiKey**
https://api.weather.com/v2/featurizer/feature?product=150:Significantheightofcombinedwindwavesandswellsurface&rt=**1474375500000**&t=**1474400700000**&threshold=0&apiKey=yourApiKey
Step 3: Get Point Data
Point Data - Forecast: **Required Parameters:** **product, <dimensions>,lon,lat,method,format,** apiKey**=yourApiKey** https://api.weather.com/v2/tiler/point?products=**<productNumber>:<variableID>**&rt=**<rt>**&t=**<t>**&lon=**<lon>**&lat=**<lat>**&method=nearest&format=geojson&**apiKey=yourApiKey**
https://api.weather.com/v2/tiler/point?products=150:Significantheightofcombinedwindwavesandswellsurface&rt=**1451606401000**&t=**1451606400000**&lon=-74.0&lat=40.7&method=nearest&format=geojson&**apiKey=yourApiKey**

Product Elements & Definitions

Forecast *Marine forecast data from the Global Forecast System (GFS) forecast model produced by the National Centers for Environmental Prediction (NCEP), for 3-hour windows across a span of 7 days: ¼ degree resolution (~27.5 km), with a new set of forecasts generated every 6 hours (00z, 06z, 12z, 18z).*			
Variable Summary	**Product Number**	**Variable ID**	**Reasonable Threshold**
Significant height of combined wind waves and swell	150	Significantheightofcombinedwindwavesandswellsurface	Range: 0 to 12
Significant height of combined wind waves and swell at mean sea level: significant wave height, in meters (m), defined as 4 times the square root of the integral over all directions and all frequencies (up to infinity) of the two-dimensional wave spectrum			

Primary wave direction at surface	150	Primarywavedirectionsurface	Range: 0 to 360
Primary direction of waves at mean sea level: spectral mean direction, in degrees, over all frequencies and direction of the two-dimensional wave spectrum			
Primary wave mean period at surface	150	Primarywavemeanperiodsurface	Range: 0 to 30
Mean period of waves at mean sea level: spectral mean wave period, in seconds (s), obtained using the reciprocal integral moment of the frequency wave spectrum, which is obtained by integrating the two-dimensional wave spectrum over all directions, over all frequencies up to infinity			
Significant height of primary swell waves	150	Significantheightofswellwaves	Range: 0 to 12
Significant height of primary swell at mean sea level: significant height of total swell for the first most energetic partition of the swell spectrum, in meters (m), defined as 4 times the square root of the integral over all directions and all frequencies of the total swell spectrum, which is obtained by only considering the components of the two-dimensional wave spectrum that are not under the influence of the local wind			
Primary swell direction	150	Directionofswellwaves	Range: 0 to 360
Mean direction of primary swell at mean sea level: spectral mean direction for the first most energetic partition of the swell spectrum, in degrees, over all frequencies and direction of the total swell spectrum, which is obtained by only considering the components of the two-dimensional wave spectrum that are not under the influence of the local wind			
Primary swell mean period at surface	150	Meanperiodofswellwaves	Range: 0 to 15
Mean period of primary swell at mean sea level: spectral mean wave period for the first most energetic partition of the swell spectrum, in seconds (s), obtained using the reciprocal integral moment of the frequency wave spectrum, which is obtained by integrating the two-dimensional wave spectrum over all directions, over all frequencies up to infinity			
Significant height of primary wind waves at surface	150	Significantheightofwindwavessurface	Range: 0 to 12
Significant height of wind waves at mean sea level: significant height, in meters (m), defined as 4 times the square root of the integral over all directions and all frequencies of the wind waves spectrum, which is obtained by only considering the components of the two-dimensional wave spectrum that are still under the influence of the local wind			
Primary wind waves direction at surface	150	Directionofwindwavessurface	Range: 0 to 360
Mean direction of wind waves at mean sea level: spectral mean direction, in degrees, over all frequencies and direction of the wind waves spectrum, which is obtained by only considering the components of the two-dimensional wave spectrum that are still under the influence of the local wind			
Primary wind waves mean period at surface	150	Meanperiodofwindwavessurface	Range: 0 to 30
Mean period of wind waves at mean sea level: spectral mean wave period, in seconds (s), obtained using the reciprocal integral moment, over all frequencies up to infinity, of the wind waves spectrum, which is obtained by only considering the components of the two-dimensional wave spectrum that are still under the influence of the local wind			
Ten-meter wind direction	150	Winddirectionfromwhichblowingsurface	Range: 0 to 360
Ten-meter wind direction at specified height level above ground: ten-meter neutral wind direction, in degrees, as determined from the atmospheric surface stress; this measure is interpolated onto the wave model grid and only defined over the water bodies represented by the wave model			

Ten-meter wind speed at specified height level above ground	150	Windspeedsurface	Range: 0 to 60
Ten-meter wind speed at specified height level above ground: ten-meter neutral wind speed, in meters per second (m/s), as determined from the atmospheric surface stress, interpolated onto the wave model grid and only defined over the water bodies represented by the wave model			