Weather Company Data - Enhanced Current Conditions | Gridded & Polygonal Current Conditions - v2

Domain Portfolio: Weather Imagery | Domain: Current Conditions | API Name: Gridded & Polygonal Current Conditions - 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 '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
- 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. Both step 2a, and step 2b require the **'t'** parameter values as input into the **'t'** parameter for the subsequent request (v2/tiler/data, and v2/featurizer/tile).

- **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.

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=17:VAR00198FROM25501heightaboveground&meta=true&apiKey=yourApiKey
Step 2a: Get Tiler Data
Tiler Data - Observations: Required Parameters: products, t, lod, x, y, apiKey**=yourApiKey** https://api.weather.com/v2/tiler/data?products=**\<productNumber>:\<variableID>**&t=**\<t>**&lod=**\<lod>**&x=**\<x>**&y=**\<y>**&**apiKey=yourApiKey**
https://api.weather.com/v2/tiler/data?products=17:VAR00198FROM25501heightaboveground&t=**1474300200000**&lod=-1&x=0&y=0&apiKey=yourApiKey
Step 2b: Get Featurizer Tile

Featurizer Tile - Observations: **Required Parameters:** **product, t, lod, x, y,** apiKey**=yourApiKey** || **Optional Parameters:** threshold https://api.weather.com/v2/featurizer/tile?product=**<productNumber>:<variableID>**&t=**<t>**&lod=**<lod>**&x=**<x>**&y=**<y>**&**apiKey=yourApiKey**	
https://api.weather.com/v2/featurizer/tile?product=17:VAR00198FROM25501heightaboveground&t=**1474300200000**&lod=0&x=0&y=1&threshold=280&apiKey=yourApiKey	
Featurizer Feature (Native Resolution) - Observations: **Required Parameters:** **product, t,** apiKey**=yourApiKey** || **Optional Parameters:** threshold https://api.weather.com/v2/featurizer/feature?product=**<productNumber>:<variableID>**&t=**<t>**&**apiKey=yourApiKey**	
https://api.weather.com/v2/featurizer/feature?product=17:VAR00198FROM25501heightaboveground&t=**1474300200000**&threshold=280&apiKey=yourApiKey	

Product Elements & Definitions

Product Name	Product Number	Variable ID	Reasonable Threshold
gCOD 24-Hour Temperature Change	16	VAR00205FROM25501heightaboveground0MinuteDifferenceFromStart	5
Gridded Currents on Demand: Change in temperature in degrees Fahrenheit (°F) from the report produced 24 hours prior: 4-km resolution, refreshed every 15 minutes			
gCOD Feels-Like Temperature	17	VAR00198FROM25501heightaboveground	280
Gridded Currents on Demand: Current TWC-created "feels-like" temperature in kelvins (K), based on temperature, heat index, and wind chill: 4-km resolution, refreshed every 15 minutes			
gCOD 6-Hour Precipitation	22	VAR01231FROM25501surface0MinuteAccumulation	600
Gridded Currents on Demand: Total liquid precipitation in millimeters (mm) over the previous 6 hours: 4-km resolution, refreshed every 15 minutes			
gCOD 1-Hour Snowfall	23	VAR01240FROM25501surface0MinuteAccumulation	0.15
Gridded Currents on Demand: Total snowfall in meters (m) over the previous 1 hour: 4-km resolution, refreshed every 15 minutes			
gCOD 24-Hour Minimum Temperature	24	VAR00225FROM25501heightaboveground0MinuteMinimum	280
Gridded Currents on Demand: Minimum temperature in kelvins (k) over the last 24 hours: 4-km resolution, refreshed every 15 minutes			
gCOD 48-Hour Precipitation	25	VAR01233FROM25501surface0MinuteAccumulation	600
Gridded Currents on Demand: Total liquid precipitation in millimeters (mm) for the contiguous United States, over the previous 48 hours: 4-km resolution, refreshed every 15 minutes			
gCOD Dewpoint Temperature	26	Dewpointtemperatureheightaboveground	280
Gridded Currents on Demand: Current dewpoint temperature in kelvins (k): 4-km resolution, refreshed every 15 minutes			

gCOD Relative Humidity	27	Relativehumiditysurface	30
Gridded Currents on Demand: Current relative humidity expressed as a percentage, 0 to 100: 4-km resolution, refreshed every 15 minutes			
gCOD 3-Hour Pressure Change	29	VAR03230FROM25501surface0MinuteDifferenceFromStart	1000
Gridded Currents on Demand: Net change in pressure in pascals (Pa) over the previous 3 hours: 4-km resolution, refreshed every 15 minutes			
gCOD 24-Hour Snowfall	31	VAR01242FROM25501surface0MinuteAccumulation	0.6
Gridded Currents on Demand: Total snowfall in meters (m) over the previous 24 hours: 4-km resolution, refreshed every 15 minutes			
gCOD 1-Hour Precipitation	32	VAR01230FROM25501surface0MinuteAccumulation	150
Gridded Currents on Demand: Total liquid precipitation in millimeters (mm) over the previous 1 hour: 4-km resolution, refreshed every 15 minutes			
gCOD Sustained Wind Speed	33	Windspeedheightaboveground	9
Gridded Currents on Demand: Current sustained wind speed in meters per second (m/s): 4-km resolution, refreshed every 15 minutes			
gCOD UV Index	34	VAR0191200FROM25501heightaboveground	4
Gridded Currents on Demand: Current UV index measuring the current ultraviolet (UV) exposure, 4-km resolution, refreshed every 15 minutes			
gCOD 6-Hour Snowfall	36	VAR01241FROM25501surface0MinuteAccumulation	0.6
Gridded Currents on Demand: Total snowfall in meters (m) over the previous 6 hours: 4-km resolution, refreshed every 15 minutes			
gCOD Gust Wind Speed	40	Windspeedgustsurface	18
Gridded Currents on Demand: Current maximum (gust) wind speed in meters per second (m/s): 4-km resolution, refreshed every 15 minutes			
gCOD 24-Hour Precipitation	41	VAR01232FROM25501surface0MinuteAccumulation	600
Gridded Currents on Demand: Total liquid precipitation in millimeters (mm) over the previous 24 hours: 4-km resolution, refreshed every 15 minutes			
gCOD Temperature	43	Temperatureheightaboveground	280
Gridded Currents on Demand: Current temperature in kelvins (k): 4-km resolution, refreshed every 15 minutes			
Radar Reflectivity US *0.25-km Radar Reflectivity*	300	PrecipIntensity	25
Precipitation intensity as indicated by radar reflectivity (dbZ): 0.25-km resolution, refreshed every 5 minutes			

Radar Precipitation Type US *High Quality NOWRad Precipitation Type, Global Radar Tile 1*	1	Precipitationtypesurface	N/A
High Quality NOWRad data for precipitation type in Global Radar Tile 1, which includes most of North America and the Caribbean; the high-quality data is limited to areas covered by terrestrial radar networks: 1-km resolution, refreshed every 5 minutes; **the encoding for precipitation type is explained in the appendix below**			
Radar Reflectivity US *High Quality NOWRad Reflectivity, Global Radar Tile 1*	6	VAR01515FROM25011surface	25
High Quality NOWRad data for reflectivity (dBZ) in Global Radar Tile 1, which includes most of North America and the Caribbean; the high-quality data is limited to areas covered by terrestrial radar networks: 1-km resolution, refreshed every 5 minutes			
Radar Precipitation Type EU *High Quality NOWRad Precipitation Type, Global Radar Tile 2*	2	Precipitationtypesurface	N/A
High Quality NOWRad data for precipitation type in Global Radar Tile 2, which includes Europe and parts of the Middle East and Africa; the high-quality data is limited to areas covered by terrestrial radar networks: 1-km resolution, refreshed every 5 minutes; **the encoding for precipitation type is explained in the appendix below**			
Radar Reflectivity EU *High Quality NOWRad Reflectivity, Global Radar Tile 2*	7	VAR01515FROM25011surface	25
High Quality NOWRad data for reflectivity (dBZ) in Global Radar Tile 2, which includes Europe and parts of the Middle East and Africa; the high-quality data is limited to areas covered by terrestrial radar networks: 1-km resolution, refreshed every 5 minutes			
Radar Reflectivity Australia *Australia Radar Reflectivity*	10	AustraliaRadarMasterSector	25
Radar data for reflectivity (dBZ) in Australia: 5-km resolution, refreshed every 15 minutes; **Requires Attribution:** "Australian Bureau of Meteorology" brand/trademark logo and web link: www.bom.gov.au			
Global Satellite	satellite	satellite	150
Global composite satellite imagery, relaying information through longwave infrared (traditional infrared) channel 10.8 µm: 4-km resolution, refreshed every 15 minutes, subject to availability from the source satellites			
Satellite Infrared US *Longwave Infrared, Global Satellite Tile 2*	161	IR108	150
Satellite imagery for Global Satellite Tile 2, which includes most of North America including the contiguous United States (CONUS), relaying information through longwave infrared (traditional infrared) channel 10.8 µm: 4-km resolution, refreshed every 30 minutes, subject to availability from the source satellite			
Satellite Visible US *Visible Spectrum, Global Satellite Tile 2*	181	VS065	120
Satellite imagery for Global Satellite Tile 2, which includes most of North America including the contiguous United States (CONUS), relaying information through visible-spectrum channel 0.65 µm: 4-km resolution, refreshed every 30 minutes, subject to availability from the source satellite			

Satellite Infrared EU *Longwave Infrared, Global Satellite Tile 3*	162	IR108	150
Satellite imagery for Global Satellite Tile 3, which includes Europe, North Africa, and the Middle East, relaying information through longwave infrared (traditional infrared) channel 10.8 µm: 4-km resolution, refreshed every 30 minutes, subject to availability from the source satellite			
Satellite Visible EU *Visible Spectrum, Global Satellite Tile 3*	182	VS065	120
Satellite imagery for Global Satellite Tile 3, which includes Europe, North Africa, and the Middle East, relaying information through visible-spectrum channel 0.65 µm: 4-km resolution, refreshed every 30 minutes, subject to availability from the source satellite			
High Quality Precipitation Type, Global Radar Composite	radarPrecip	radarPrecip	N/A
High Quality NOWRad data for precipitation type from Global Radar Tiles; the high-quality data is limited to areas covered by terrestrial radar networks: 1-km resolution, refreshed every 5 minutes			
High Quality Reflectivity, Global Radar Composite	radarDbz	radarDbz	N/A
High Quality NOWRad data for reflectivity (dBZ) from Global Radar Tiles; the high-quality data is limited to areas covered by terrestrial radar networks: 1-km resolution, refreshed every 5 minutes			
High Coverage Reflectivity, Global Radar Composite	radarHcDbz	radarHcDbz	N/A
High Coverage NOWRad data for reflectivity (dBZ) from Global Radar Tiles; in order to include bodies of water, the high-coverage data is derived from the combination of terrestrial radar and modeled reflectivity: 1-km resolution, refreshed every 5 minutes			
gCOD 24-Hour Maximum Temperature	35	VAR00224FROM25501heightaboveground0MinuteMaximum	280
Gridded Currents on Demand: Maximum temperature in kelvins (K) over the last 24 hours: 4-km resolution, refreshed every 15 minutes			
gCOD Visibility from Surface	39	Visibilitysurface	2
Gridded Currents on Demand: Visibility from the surface, in meters (m): 4-km resolution, refreshed every 15 minutes			
gCOD Driving Difficulty Index	66	VAR0191215FROM25501surface	32
Gridded Currents on Demand: Current road conditions as measured by a calculated Driving Difficulty Index, where 0 is None / No Data, 1-4 is Windy, 16 is Foggy, 32-43 is Wet, 48-59 is Ponding, 64-75 is Snowy, and 80-91 is Icy; within each range of values, larger numbers indicate an increasing intensity for that particular condition: 4-km resolution, refreshed every 15 minutes			

Appendix: Radar Precipitation Type

For radar products that provide precipitation type, each pixel's data is encoded in a single byte, where each bit represents a different type of precipitation and that type is present when the bit's value is set to 1.

Bit	7	6	5	4	3	2	1	0
Value	*Reserved for Future Use*	*Reserved for Future Use*	Snow	*Reserved for Future Use*	Ice Pellets	Freezing Rain	Rain	Hail

Note that 0 is the **Least Significant Bit** within the byte.

This encoding scheme can support mixes different of different precipitation types, where multiple bits are set to 1 simultaneously, as shown in the examples below.

Decimal Encoding	Binary Encoding *Includes leading zeroes*	Bits Set *Bit 0 is the Least Significant Bit*	Precipitation Conditions
6	0000 0110	2, 1	Freezing Rain & Rain
14	0000 1110	3, 2, 1	Ice Pellets, Freezing Rain, & Rain