

READY Web API User Guide

23 AUG 2021

Change history

Version	Date	Description
0.0.1	Feb 26, 2021	Initial release
0.0.2	Aug 23, 2021	Add additional meteorological datasets beside GFS.

The READY Web API will provide a set of web accessible endpoints for automated programs to obtain READY products.

Access to the API requires a key issued at the time of registration. A key is unique to each user and it is used for authentication. There is a daily limit on the number of API calls each user can make. The limit is 250 calls per day (Eastern Time) and it may be changed without a prior notice to avoid system overload.

The base URL for a READY Web API is <https://apps.arl.noaa.gov/ready2>. The base URL is to be prepended to an endpoint described below. If the endpoint you will use is `/api/v1/sounding`, the full URL for the endpoint is <https://apps.arl.noaa.gov/ready2/api/v1/sounding>.

1. Sounding

Endpoint	POST <code>/api/v1/sounding</code>	
Authentication	required	Available to registered users.
Request format	json or xml	Use the "Content-Type" header with <code>application/json</code> or <code>application/xml</code> .
Response format	text/plain	Use the "Accept" header with <code>text/plain</code> . No other format is supported at this time.

Fields:

Name	Data Type	Description
meteorologicalData	string	Name of the meteorological data set. Must be GFS, GFS0p25, HRRR, NAM12, NAMHUS, NAMHAK, NAMHHI, or NAMCNEST. See Section A below for the description of these data sets.

latitude	number	Latitude of profile. Must be between -90 and 90 degrees.
longitude	number	Longitude of profile. Must be between -180 and 180 degrees.
elevation	number	Elevation of profile location if known for label. Elevation in meters. Use 0 if unknown.
fullSounding	boolean	Use true for full sounding or false for sounding up to 400 hPa.
startDate	date	Start year, month, and day. Must use the YYYY-MM-DD format.
startHour	integer	Start hour. Must be between 0 and 23.
duration	integer	The number of hours. Use 0 for the default value.
includeDiagnostics	boolean	true or false.

A sample request body file in XML (soundingRequest.xml):

```
<?xml version="1.0" encoding="UTF-8"?>
<soundingRequest>
  <meteorologicalData>GFS</meteorologicalData>
  <latitude>40.12</latitude>
  <longitude>-82.00</longitude>
  <elevation>0</elevation>
  <fullSounding>>false</fullSounding>
  <startDate>2020-10-28</startDate>
  <startHour>6</startHour>
  <duration>0</duration>
  <includeDiagnostics>>false</includeDiagnostics>
</soundingRequest>
```

The same request body file in JSON (soundingRequest.json):

```
{
  "meteorologicalData": "GFS",
  "latitude": 40.12,
  "longitude": -82.00,
  "elevation": 0,
  "fullSounding": false,
  "startDate": "2020-10-28",
  "startHour": 6,
  "duration": 0,
```

```
"includeDiagnostics": false  
}
```

A. Supported meteorology

The following meteorological data files are supported by the API.

Name	Description	Update frequency
GFS	1 degree, 384 h, 3 hourly, global, pressure; The long range model is included.	4 times a day
GFS0p25	0.25 degree, 84 h, 3 hourly, global, sigma-pressure hybrid	4 times a day
HRRR	3 km, 18 h, 1 hourly, CONUS, sigma	every hour
NAM12	12 km, 84 h, 3 hourly, CONUS, pressure	4 times a day
NAMHUS	12 km, 48 h, 1 hourly, CONUS, pressure-sigma hybrid	4 times a day
NAMHAK	12 km, 48 h, 1 hourly, Alaska, pressure-sigma hybrid	4 times a day
NAMHHI	2 km, 48 h, 1 hourly, Hawaii, pressure-sigma hybrid	4 times a day
NAMCNEST	3 km, 48 h, 1 hourly, CONUS, pressure-sigma hybrid	4 times a day