Metadata API Service

AgWeatherNet

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http://weather.wsu.edu 509-786-9367 weather@wsu.edu

Contents

Metadata API Service

Server Information

Environment	Server
Test	http://weather.prosser.wsu.edu/webservice/metadata
Production	http://weather.wsu.edu/webservice/metadata

Description

Metadata API delivers current station metadata to authorized users identified by IP address. All parameters that are sent as filters will be applied, so if you don't get the data back you would expect, check your request.

Request Model

Parameter	Data Type	Required	Description
STATION_ID	Int	No	You may supply a single station id value if you would like metadata for a specific station.
INSTALLATION_DATE	Date	No	If supplied, only stations installed before the date will be returned. Dates should be in YYYYmmdd format.
STATE	Char(2)	No	If supplied, only stations that match the two character state abbreviation will be returned.
COUNTY	Char(20)	No	If supplied, only stations that match the county will be returned.
AT	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have an air temperature sensor (Y=Yes, N=No).
RH	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a relative humidity sensor (Y=Yes, N=No).
P	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a precipitation sensor (Y=Yes, N=No).
WS	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a wind speed sensor (Y=Yes, N=No).
WD	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a wind direction sensor (Y=Yes, N=No).
LW	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a leaf wetness sensor (Y=Yes, N=No).
SR	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a solar radiation sensor (Y=Yes, N=No).

ST2	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a soil temperature sensor at 2 inch depth (Y=Yes, N=No).
ST8	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a soil temperature sensor at 8 inch depth (Y=Yes, N=No).
SM8	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have a soil moisture sensor at 8 inch depth (Y=Yes, N=No).
MSLP	Char(1)	No	If supplied, valid values are "Y" or "N". Stations will be filtered on whether or not they have an air pressure sensor (Y=Yes, N=No).

Example Requests

A sample request to return metadata for all stations from the test environment would be:

http://weather.prosser.wsu.edu/webservice/metadata

A sample request to return metadata for all stations which have a soil moisture sensor at 8 inch depth from the test environment would be:

http://weather.prosser.wsu.edu/webservice/metadata/?SM8=Y

A sample request to return metadata for all stations which have a soil temperature sensor at 2 inch depth as well as an air pressure sensor would be:

http://weather.prosser.wsu.edu/webservice/metadata/?ST2=Y&MSLP=Y

Response Models

There are three possible response models.

Error Response

An invalid request will generate an error response:

Parameter	Data Type	Description
status	Int	Status of -1, indicating error
message	String	A message associated with the response.

Default Response

The default successful response is JSON encoded data defined by the following parameters.

Parameter	Data Type	Description
status	Int	Status of 1, indicating success
message	Array	An array of data with each entry representing a single station.

Message/Station Metadata

The message payload of a successful response is an array of station metadata with each record in teh array representing a single weather station and containing the metadata information for the station defined by the following parameters.

Parameter	Data Type	Description
STATE	Char(2)	The 2 letter abbreviation of the state (political entity) where the weather station resides.
COUNTY	Char(20)	The county (secondary political entity) where the the weather station resides.
CITY	Char(25)	The nearest identified population center to the station, if available. This may be null or an empty string.
ZIPCODE	Char(20)	The zip code where the weather station resides, if available. This may be null or an empty string.
LATITUDE_DEGREE	Float	The latitude of the physical location of the weather station, in degrees
LONGITUDE_DEGREE	Float	The longitude of the physical location of the weather station, in degrees.
ELEVATION_FEET	Int	The elevation compared to sea level of the base of the weather station.
INSTALLATION_DATE	Date	The installation date of the weather station. Data is available from the installation date through present. The installation date is returned in YYYY-mm-dd format.
STATION_ID	Int	The unique station identifier assigned by the AgWeatherNet program to the weather station.
STATION_NAME	Varchar(100)	The current common name of the weather station. This may change without notice and is intended as a friendly reference to the station.

STATION_SPONSOR	Text	Acknowledgements of support or contributions to the location, installation or maintenance of a weather station.
AT_F	Char(1)	If the weather station has an air temperature sensor installed that reports in Degrees Fahrenheit, then the value will be Y. If no sensor is installed, then the value will be N.
RH_PCNT	Char(1)	If the weather station has a relative humidity sensor installed that reports in Percent, then the value will be Y. If no sensor is installed, then the value will be N.
P_INCHES	Char(1)	If the weather station has a precipitation sensor installed that reports in Inches, then the value will be Y. If no sensor is installed, then the value will be N.
WS_MPH	Char(1)	If the weather station has a wind speed sensor installed that reports in Miles Per Hour, then the value will be Y. If no sensor is installed, then the value will be N.
WD_DEGREE	Char(1)	If the weather station has a wind direction sensor installed that reports in Compass Degrees, then the value will be Y. If no sensor is installed, then the value will be N.
LW_UNITIY	Char(1)	If the weather station has a leaf wetness sensor installed that reports in Unity (values between 0 and 1, 0.4 considered wet), then the value will be Y. If no sensor is installed, then the value will be N.
SR_WM2	Char(1)	If the weather station has a solar radiation sensor installed that reports in Watts per Meter Squared, then the value will be Y. If no sensor is installed, then the value will be N.
ST2_F	Char(1)	If the weather station has a soil temperature sensor installed at a 2 inch depth that reports in Degrees Fahrenheit, then the value will be Y. If no sensor is installed, then the value will be N.
ST8_F	Char(1)	If the weather station has a soil temperature sensor installed at a 8 inch depth that reports in Degrees Fahrenheit, then the value will be Y. If no sensor is installed, then the value will be N.
STM8_PCNT	Char(1)	If the weather station has a soil moisture sensor installed at a 8 inch depth that reports in Percent Volumetric Water Content, then the value will be Y. If no sensor is installed, then the value will be N.
MSLP_HPA	Char(1)	If the weather station has a barometric pressure sensor installed that reports in HPA (hecto pascals), then the value will be Y. If no sensor is installed, then the value will be N.

Example Request/Response

A request to the test environment to find all stations in Benton County, Washington which were installed before 1991-05-01 and have an air pressure sensor:

http://weather.prosser.wsu.edu/webservice/metadata/?INSTALLATION_DATE=19910501&STATE=WA&COUNTY=Benton&MSLP=Y

JSON encoded results similar to the following:

{"status":1,"message":[{"STATE":"WA","COUNTY":"Benton","CITY":"","ZIPCODE":null,"LATITUDE_DEGREE":"45.93907","LONGITUDE_DEGREE":-119.48771,"ELEVATION_FEET":"424","INSTALLATION_DATE":"1990-05-11","STATION_ID":"100062","STATION_NAME":"Paterson","STATION_SPONSOR":"","AT_F":"Y","RH_PCNT":"Y","P_INCHES":"Y","WS_MPH":"Y","WD_DEGREE":"Y","LW_UNITY":"Y","SR_WM2":"Y","ST2_F":"N","ST8_F":"Y","SM8_PCNT":"N","MSLP_HPA":"Y"},{"STATE":"WA","COUNTY":"Benton","CITY":"Prosser","ZIPCODE":null,"LATITUDE_DEGREE":"46.25704","LONGITUDE_DEGREE":-119.74036,"ELEVATION_FEET":"868","INSTALLATION_DATE":"1989-03-28","STATION_ID":"300033","STATION_NAME":"WSU Prosser (WSU HQ)","STATION_SPONSOR":"","AT_F":"Y","RH_PCNT":"Y","P_INCHES":"Y","WS_MPH":"Y","WD_DEGREE":"Y","LW_UNITY":"Y","SR_WM2":"Y","ST2_F":"N","ST8_F":"Y","SM8_PCNT":"N","MSLP_HPA":"Y"}]}

PHP Metadata Retrieval Example:

A simple example in PHP to retrieve and echo results from the metadata service:

```
<?php
	$json = file_get_contents(
		"http://weather.prosser.wsu.edu/webservice/metadata/"
	);
	$jsonIterator = new RecursiveIteratorIterator(
		new RecursiveArrayIterator(json_decode($json, TRUE))
		, RecursiveIteratorIterator::SELF_FIRST
	);
	foreach ($jsonIterator as $key => $val) {
		if(is_array($val)) {
			echo "$key:\n";
		} else {
			echo "$key => $val\n";
		}
	}
?>
```