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Service Change Notice 24-50 Updated
National Weather Service Headquarters Silver Spring MD
1230 PM EDT Mon Jun 3 2024

To: Subscribers:
 -NOAA Weather Wire Service
 -Emergency Managers Weather Information Network
 -NOAAPort
 Other NWS Partners, Users and Employees

From: George Jungbluth
 Director, Office of Dissemination

Subject: Updated: Migration of JSON and DWML Data Services to NWS's API
Application at api.weather.gov and Removal From forecast.weather.gov:
Effective TBD

Updated to delay the change until a date to be determined, to add context
for the decision by documenting deficiencies, and guidance for future
efforts.

Update:
The NWS is postponing the removal of the digitalDWML and digitalJSON
products from the Forecast application forecast.weather.gov until the API
application can be upgraded to include the requisite data in the same
formats. Users are encouraged to continue migration to the API for their
data pulls where possible, utilizing the updated documentation at
<https://www.weather.gov/documentation/services-web-api> to inform their
transition.

Please note that the digitalDWML and digitalJSON services currently reside
on a legacy system that will reach end-of-life at the end of June. The
effort to stand these services up on the new infrastructure is underway
and is expected to happen on or about the time the legacy system reaches
end-of-life. The long-term plan is to enable the API to fully support
existing Forecast customers' needs.

Effective at a date to be determined, the National Centers for
Environmental Prediction (NCEP) Central Operations (NCO) will terminate
the digitalDWML and digitalJSON data services on the Forecast application
at forecast.weather.gov. The majority of the same data is available in a
similar format from the NWS's Application Programming Interface (API)
application at api.weather.gov. In the event of a Critical Weather Day
(CWD) or an Enhanced Caution Event (ECE), any changes will proceed within
five (5) business days after expiration. Users can find CWD/ECE status at
the link below and should monitor the [weather.gov](https://www.weather.gov) website headline for
updated notifications.

<https://www.nco.ncep.noaa.gov/status/cwd/>

To better support the public, the NWS is committed to improving services across all of its domains. As part of this effort, the Office of Dissemination (DIS) is working with NCO to update dissemination applications for security, reliability and utility, and as well as minimize duplication of efforts across multiple platforms.

Weather.gov is moving to new, secure hosting infrastructure within the NWS Integrated Dissemination Program, requiring redevelopment of much of the base code. As this transition occurs, NWS will be discontinuing the DWML and JSON format forecast that is available via the Forecast application at forecast.weather.gov in favor of the same data also on the API application at api.weather.gov. The mechanism to retrieve it and the differences in output will require updates from users to enable a full switch between the two applications.

The full documentation for the NWS's API application at api.weather.gov is available here:

<https://www.weather.gov/documentation/services-web-api>

Details:

The forecast for a location is available via a single call to forecast.weather.gov using the latitude and longitude coordinates for that location, like so:

`https://forecast.weather.gov/MapClick.php?lat=$LAT&lon=$LON&FcstType=digital$FORMAT`

Where \$LAT is the latitude, \$LON is the longitude, and \$FORMAT is either DWML or JSON.

The API needs two calls to retrieve that same data if referenced to latitude and longitude. The first is to cross reference the latitude/longitude pair to a Weather Forecast Office (WFO) and gridpoint (X/Y coordinates):

`https://api.weather.gov/points/$LAT,$LON`

Where \$LAT is the latitude and \$LON is the longitude

The second call uses the WFO and gridpoint to then retrieve the data:

`https://api.weather.gov/gridpoints/$WFO/$gridX,$gridY/forecast/hourly`

Where \$WFO is the 3 letter identifier of the WFO for that location and \$gridX and \$gridY are the grid coordinates.

This process is detailed in the Examples tab of the API documentation site linked above.

The API application has many formats available, but by default will typically return either geoJSON or json-LD. Please see either the specification file at api.weather.gov/openapi.json or view the Specification tab at www.weather.gov/documentation/services-web-api for more information. NOTE: geoJSON and json-LD differ from the JSON output

by the Forecast application, so users will most likely need additional work to ingest.

In order to retrieve the data in DWML format, users will need to add an Accept header to the second API call, as shown in the Detailed Example below.

Detailed Example:

Here is the current link to retrieve the forecast in DWML format via the Forecast application for Kansas City's Downtown:

<https://forecast.weather.gov/MapClick.php?lat=39.2985&lon=-94.4597&FcstType=digitalDWML>

Here is the link for JSON output for the same location:

<https://forecast.weather.gov/MapClick.php?lat=39.2985&lon=-94.4597&FcstType=digitalJSON>

In advance of termination of the above forecast digitalDWML and digitalJSON, users should update their systems to use the following calls to the API for comparable data. The first call passes the latitude/longitude pair to the API to discover the WFO and gridpoint. Following the example of Kansas City's Downtown, users would first make this call to the API:

<https://api.weather.gov/points/39.2987,-94.4597>

Among other information, this will return the following Properties:

```
"gridId": "EAX",  
"gridX": 48,  
"gridY": 60,
```

These are then passed to the API to pull out the forecast data:

<https://api.weather.gov/gridpoints/EAX/48,60/forecast/hourly>

This will return the hourly forecast in GeoJSON format.

To retrieve the data in DWML format instead of the JSON forecast, users will add an Accept header with the value `application/vnd.noaa.dwml+xml` to the request. Users will need to consult the documentation for their program's HTTP library on how to add a request header.

Discussions about the API and its use can be found here:

<https://github.com/weather-gov/api/discussions>

Known Errors with the API:

DIS and NCO are aware of an issue where data retrieval from the API can fail, requiring a retry. Users should add error handling and a retry

process into their scripts, adding a delay between retries to avoid overloading the API service. The development and implementation groups are working to implement a code update to address this issue. Full resolution of these errors is expected by this fall.

Unavailable Data on the API in DWML format:

Data that is currently unavailable on the API in DWML but available on forecast.weather.gov is cloud cover, QPF (Quantitative Precipitation Forecast), and wind gusts. Other datasets are incorrectly categorized, such as hourly when they are actually 12hr output - see the updated documentation at <https://www.weather.gov/documentation/services-web-api> for a more detailed description.

For problems or operational issues with the Forecast or API applications, please contact:

NCEP Central Operations Tech Control
nco.ops@noaa.gov

For questions about the details of the termination in this notice, please contact:

NCEP Central Operations
Implementation and Data Services Branch, Onboarding Team
idp-feedback@noaa.gov

or

nws.webfeedback@noaa.gov

National Service Change Notices are online at:

<https://www.weather.gov/notification/>

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