

# Weather API Documentation

## Overview

The Weather API provides real-time weather data and forecasts for locations worldwide. Access current conditions, hourly forecasts, and 7-day predictions with a simple REST API.

## Base URL

`https://api.weatherservice.com/v2`

## Authentication

All requests require an API key passed in the header:

```
curl -H "X-API-Key: YOUR_API_KEY" https://api.weatherservice.com/v2/current
```

To get an API key, sign up at [developer.weatherservice.com](https://developer.weatherservice.com)

## Rate Limiting

Plan	Requests/Day	Burst Limit
Free	1,000	10/minute
Pro	10,000	100/minute
Enterprise	Unlimited	1000/minute

Rate limit information is included in response headers:

```
X-RateLimit-Limit: 1000
X-RateLimit-Remaining: 999
X-RateLimit-Reset: 1719432000
```

## Endpoints

### Current Weather

Get current weather conditions for a location.

**GET** `/current`

### Parameters

Parameter	Type	Required	Description
location	string	Yes*	City name, coordinates, or zip code
lat	float	Yes*	Latitude (-90 to 90)
lon	float	Yes*	Longitude (-180 to 180)
units	string	No	Temperature units: <b>metric</b> , <b>imperial</b> (default: <b>metric</b> )

\*Either location OR lat+lon required

### Example Request

```
# By city name
curl -H "X-API-Key: YOUR_API_KEY" \
  "https://api.weatherservice.com/v2/current?location=London"

# By coordinates
curl -H "X-API-Key: YOUR_API_KEY" \
  "https://api.weatherservice.com/v2/current?lat=51.5074&lon=-0.1278"
```

### Example Response

```
{
  "location": {
    "name": "London",
    "country": "UK",
    "lat": 51.5074,
    "lon": -0.1278,
    "timezone": "Europe/London"
  },
  "current": {
    "temp": 18.5,
    "feels_like": 17.2,
    "humidity": 72,
    "pressure": 1013,
    "visibility": 10000,
    "wind": {
      "speed": 5.2,
      "direction": 230,
      "gust": 8.1
    }
  },
  "weather": {
```

```

        "main": "Clouds",
        "description": "Partly cloudy",
        "icon": "02d"
    },
    "dt": 1719420845
}
}

```

## Weather Forecast

Get weather forecast for up to 7 days.

**GET** /forecast

### Parameters

Parameter	Type	Required	Description
location	string	Yes*	City name, coordinates, or zip code
lat	float	Yes*	Latitude
lon	float	Yes*	Longitude
days	integer	No	Number of days (1-7, default: 7)
units	string	No	Temperature units

### Example Request

```

curl -H "X-API-Key: YOUR_API_KEY" \
  "https://api.weatherservice.com/v2/forecast?location=London&days=3"

```

### Example Response

```

{
  "location": {
    "name": "London",
    "country": "UK",
    "lat": 51.5074,
    "lon": -0.1278
  },
  "forecast": [
    {
      "date": "2024-06-26",
      "temp": {
        "min": 14.2,
        "max": 22.8,
        "avg": 18.5
      },
      "humidity": 65,

```

```

        "wind": {
          "speed": 4.8,
          "direction": 220
        },
        "weather": {
          "main": "Clear",
          "description": "Sunny",
          "icon": "01d"
        },
        "precipitation": {
          "probability": 10,
          "amount": 0
        }
      },
      {
        "date": "2024-06-27",
        "temp": {
          "min": 15.1,
          "max": 21.3,
          "avg": 18.2
        },
        "humidity": 70,
        "wind": {
          "speed": 5.5,
          "direction": 240
        },
        "weather": {
          "main": "Rain",
          "description": "Light rain",
          "icon": "10d"
        },
        "precipitation": {
          "probability": 80,
          "amount": 2.5
        }
      }
    ]
  }
}

```

## Search Locations

Search for locations to get accurate coordinates.

**GET** /search

## Parameters

Parameter	Type	Required	Description
query	string	Yes	Search query
limit	integer	No	Max results (1-10, default: 5)

### Example Request

```
curl -H "X-API-Key: YOUR_API_KEY" \
  "https://api.weatherservice.com/v2/search?query=London"
```

### Example Response

```
{
  "results": [
    {
      "name": "London",
      "country": "United Kingdom",
      "state": "England",
      "lat": 51.5074,
      "lon": -0.1278
    },
    {
      "name": "London",
      "country": "Canada",
      "state": "Ontario",
      "lat": 42.9849,
      "lon": -81.2497
    }
  ]
}
```

### Error Handling

The API returns standard HTTP status codes and JSON error responses.

#### Error Response Format

```
{
  "error": {
    "code": "INVALID_API_KEY",
    "message": "The provided API key is invalid",
    "details": {
      "provided_key": "xxx...xxx"
    }
  }
}
```

## Common Error Codes

Code	HTTP Status	Description
INVALID_API_KEY	401	API key is missing or invalid
RATE_LIMIT_EXCEEDED	429	Too many requests
INVALID_LOCATION	400	Location not found or invalid
MISSING_PARAMETER	400	Required parameter missing
SERVER_ERROR	500	Internal server error

## Error Examples

*# Missing API key*

```
{
  "error": {
    "code": "INVALID_API_KEY",
    "message": "API key is required"
  }
}
```

*# Invalid location*

```
{
  "error": {
    "code": "INVALID_LOCATION",
    "message": "Could not find location: 'InvalidCity123'"
  }
}
```

## Support

- Documentation: [docs.weather.service.com](https://docs.weather.service.com)
- Status: [status.weather.service.com](https://status.weather.service.com)
- Support: [support@weather.service.com](mailto:support@weather.service.com)
- Community: [community.weather.service.com](https://community.weather.service.com)