                        GeoJSON Text Sequences
                     draft-ietf-geojson-text-sequence-04

Abstract

   This document defines a format for geographic data that can be parsed
   and produced incrementally.

Status of This Memo

   This Internet-Draft is submitted in full conformance with the
   provisions of BCP 78 and BCP 79.

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1. Introduction

   Large or never-ending sequences of values pose a problem for JSON
   that is well explained in the motivation for JSON Text Sequences
   [RFC7464]. GeoJSON [RFC7946] faces the same kind of problem:
   geographic datasets often run to the tens of thousands or millions of
   features. The problem is often amplified by the presence of large
   arrays of coordinates for each of the features.

   This document describes a specialization of JSON Text Sequences. A
   GeoJSON Text Sequence is a document of arbitrarily large size
   containing one or more GeoJSON objects, e.g., multiple GeoJSON texts
   that can be parsed and produced incrementally, and not only a single
   GeoJSON FeatureCollection, Feature, or Geometry.

   The advantage of using ASCII character RS "0x1e" to denote a text is
   that sequence producers and parsers need not enforce a canonical form
   of GeoJSON. Any valid GeoJSON, pretty-printed or compact, can be
   used in a GeoJSON text sequence. Additionally, GeoJSON text
   sequences inherit from the other [RFC7464] rules for consistent
   processing of sequences with potentially corrupted texts.

1.1. Requirements Language

   The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
   "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and
   "OPTIONAL" in this document are to be interpreted as described in
   [RFC2119].

2. GeoJSON Text Sequence Format

   Defined in prose, following [RFC7464]: a GeoJSON text sequence is any
   number of GeoJSON [RFC7946] texts, each encoded in UTF-8 [RFC3629],
   each preceded by one ASCII RS character, and each followed by a line
   feed (LF).

The GeoJSON Text Sequence Format conforms to all the rules of
[RFC7464] and adds the following constraint: each JSON text MUST
contain a single GeoJSON object as defined in [RFC7946].

Heterogeneous sequences containing a mix of GeoJSON Geometry,
Feature, and FeatureCollection objects are permitted. How producers
and parsers of GeoJSON text sequences communicate rules for allowed
GeoJSON types in exchanged sequences is not specified in this
document.

3. Security Considerations

GeoJSON text sequences have no security considerations beyond those
of JSON text sequences and the GeoJSON format.

4. Interoperability Considerations

A variety of parsers designed for newline-delimited sequences of
compact JSON text are deployed on the internet today. While there is
no canonical form for JSON texts, and pretty-printed and compact
forms are equally valid, GeoJSON text sequences containing compact
GeoJSON texts with no internal newlines are more interoperable with
existing non-standardized parsers.

In a distributed system where order and exactly-once delivery of
messages are difficult to achieve, GeoJSON text sequences that do not
rely on order of texts for extra semantics are more interoperable
than those that do.

5. IANA Considerations

The MIME media type for GeoJSON feature sequences is "application/
geo+json-seq". This uses the suffix established in
[I-D.wilde-json-seq-suffix].

Type name: application

Subtype name: geo+json-seq

Required parameters: n/a

Optional parameters: n/a

Encoding considerations: binary

Security considerations: See Section 3 above

Interoperability considerations: See Section 4 above

   Published specification: [[This document]]

   Applications that use this media type: No known applications
      currently use this media type. This media type is intended for
      GeoJSON applications currently using colloquial line-delimited
      variants of GeoJSON.

   Additional information:

      Magic number(s): n/a

      File extension(s): n/a

      Macintosh file type code: n/a

      Object Identifiers: n/a

   Person to contact for further information: Sean Gillies
      (sean.gillies@gmail.com)

   Intended usage: COMMON

   Restrictions on usage: none

6. References

6.1. Normative References

   [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate
              Requirement Levels", BCP 14, RFC 2119, March 1997.

   [RFC3629] Yergeau, F., "UTF-8, a transformation format of ISO
              10646", STD 63, RFC 3629, DOI 10.17487/RFC3629, November
              2003, <http://www.rfc-editor.org/info/rfc3629>.

   [RFC7464] Williams, N., "JavaScript Object Notation (JSON) Text
              Sequences", RFC 7464, DOI 10.17487/RFC7464, February 2015,
              <http://www.rfc-editor.org/info/rfc7464>.

   [RFC7946] Butler, H., Daly, M., Doyle, A., Gillies, S., Hagen, S.,
              and T. Schaub, "The GeoJSON Format", RFC 7946,
              DOI 10.17487/RFC7946, August 2016,
              <http://www.rfc-editor.org/info/rfc7946>.

6.2. **Informative References**

   [I-D.wilde-json-seq-suffix]
              Wilde, E., "A Media Type Structured Syntax Suffix for JSON
              Text Sequences", December 2016.

Author's Address

   S. Gillies
   Mapbox

   Email: sean.gillies@gmail.com
   URI: http://sgillies.net