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JSON Pointer

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[Abstract](#)

JSON Pointer defines a syntax for identifying a specific value within a JSON document.

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[1. Introduction](#)

This specification defines JSON Pointer, a syntax for identifying a specific value within a [JSON](#) [RFC4627] text document. The syntax is intended to be expressed in a JSON string value or the URI fragment identifier of a resource that has a JSON representation.

[2. Conventions](#)

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

This specification expresses syntax rules using [ABNF](#) [RFC5234] (Augmented Backus-Naur Form) notation. Additionally, it uses the following rules from [URI syntax](#) [RFC3986]: "unreserved" and "pct-encoded".

[3. Syntax](#)

A JSON Pointer is a sequence of zero or more reference tokens, each prefixed by a "/" (%x2F) character. Each reference token is a sequence of unreserved and/or percent-encoded characters, per [\[RFC3986\]](#).

```
json-pointer = *( "/" reference-token )
reference-token = *( unreserved / pct-encoded )
```

Characters in reference tokens that are not unreserved SHOULD be percent-encoded, per [\[RFC3986\]](#), and MUST be so encoded as "%2F" if the character is "/" to avoid being interpreted as a reference token prefix.

It is an error condition if a JSON Pointer does not conform to this syntax.

[4. Evaluation](#)

Evaluation begins with a reference to the root value of a JSON text document, and completes with a reference to some value within the same

document. Each token in the JSON Pointer sequence is evaluated, changing the referenced value according to the following scheme: If the currently referenced value is a JSON object, the new referenced value is the object member with the name identified by the token. If the currently referenced value is a JSON array, the token MUST contain an unsigned base-10 integer value, and the new referenced value is the array element with the zero-based index identified by the token. If a reference token is being evaluated against a concrete JSON text document, the implementation MAY evaluate each token against a concrete value, and terminate evaluation with an error condition if a reference token fails to resolve to a concrete value. If a concrete JSON object contains a referenced member with a non-unique name, which of the matching members is resolved is undefined.

[5. Error Handling](#)

In the event of an error condition, evaluation of the JSON Pointer fails to complete.

[6. IANA Considerations](#)

This draft includes no request to IANA.

[7. Security Considerations](#)

A pointer is not guaranteed to resolve to a JSON value. Implementations of JSON Pointer should be aware of this and take appropriate precautions.

[8. References](#)

[RFC2119]	Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels" , BCP 14, RFC 2119, March 1997.
[RFC3986]	Berners-Lee, T., Fielding, R. and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax" , STD 66, RFC 3986, January 2005.
[RFC4627]	Crockford, D., " The application/json Media Type for JavaScript Object Notation (JSON) ", RFC 4627, July 2006.
[RFC5234]	Crocker, D. and P. Overell, " Augmented BNF for Syntax Specifications: ABNF ", STD 68, RFC 5234, January 2008.

[Appendix A. Examples](#)

The following examples illustrate the use of JSON pointers in URI fragments for a JSON text document located at `http://example.com/example.json`, with the following value:

```
{
  "foo": {
    "bar": [ "element0", "element1" ],
    "inner object": {
      "baz": "qux"
    }
  }
}
```

http://example.com/example.json#

Resolves to the object value at the root of the JSON text document.

http://example.com/example.json#/foo

Resolves to the object value of the "foo" member in the root object.

http://example.com/example.json#/foo/inner%20object

Resolves to the object value of the "inner object" member in the "foo" object value in the root object.

http://example.com/example.json#/foo/inner%20object/baz

Resolves to the string value "qux", which is the value of the "baz" member in the "inner object" member in the "foo" member in the root object.

http://example.com/example.json#/foo/bar/0

Resolves to the string value "element0", which is the first value in the "bar" array in the "foo" member in the root object.

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