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## The Link-Template HTTP Header Field draft-nottingham-link-template-02

### Abstract

This specification defines the Link-Template HTTP header field, providing a means for describing the structure of a link between two resources, so that new links can be generated.

### Note to Readers

The issues list can be found at <https://github.com/mnot/I-D/labels/link-template> .

The most recent (often, unpublished) draft is at <https://mnot.github.io/I-D/link-template/> .

Recent changes are listed at <https://github.com/mnot/I-D/commits/gh-pages/link-template> .

### Status of This Memo

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## [1.](#) Introduction

[RFC6570] defines a syntax for templates that, when expanded using a set of variables, results in a URI [[RFC3986](#)].

This specification defines a HTTP header field for conveying templates for links in the headers of a HTTP message. It is complimentary to the Link header field [[RFC5988](#)], which carries links directly.

### [1.1.](#) Notational 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 document uses the Augmented BNF defined in [[RFC7230](#)] to specify valid protocol elements. Additionally, it uses the modified "parameter" rule from [[RFC5987](#)], and the "URI-Template" rule from [[RFC6570](#)].

## [2.](#) The Link-Template Header Field

The Link-Template entity-header field provides a means for serialising one or more links into HTTP headers. It is semantically equivalent to the Link header field [RFC5988], except that it uses URI Templates [RFC6570] to convey the structure of links.

```
Link-Template = "Link-Template" ":" #linkt-value
linkt-value   = "<" URI-Template ">" *( ";" parameter )
```

For example:

```
Link-Template: </{username}>; rel="http://example.org/rel/user"
```

indicates that a resource with the relation type "http://example.org/rel/user" can be found by interpolating the "username" variable into the template given.

The target for the link (as defined by [RFC5988]) is the result of expanding the URI Template [RFC6570] (being converted to an absolute URI after expansion, if necessary).

The context, relation type and target attributes for the link are determined as defined for the Link header field in [RFC5988].

The parameters on a linkt-value have identical semantics to those of a Link header field [RFC5988]. This includes (but is not limited to) the use of the "rel" parameter to convey the relation type, the "anchor" parameter to modify the context IRI, and so on.

Likewise, the requirements for parameters on linkt-values are the same as those for a Link header field; in particular, the "rel" parameter MUST NOT appear more than once, and if it does, the linkt-value MUST be ignored by parsers.

This specification defines additional semantics for the "var-base" parameter on linkt-values; see below.

### [2.1.](#) The 'var-base' parameter

When a linkt-value has a 'var-base' parameter, its value conveys a URI-reference that is used as a base URI for the variable names in the URI template.

This mechanism allows template variables to be globally identified, rather than specific to the context of use. Dereferencing the URI for a particular variable might lead to more information about the syntax or semantics of that variable; specification of particular formats for this information is out of scope for this document.

To determine the URI for a given variable, the value given is used as a base URI in reference resolution (as specified in [RFC3986]). If the resulting URI is still relative, the context of the link is used as the base URI in a further resolution; see [RFC5988].

For example:

```
Link-Template: </widgets/{widget_id}>;  
              rel="http://example.org/rel/widget";  
              var-base="http://example.org/vars/"
```

indicates that a resource with the relation type "http://example.org/rel/widget" can be found by interpolating the "http://example.org/vars/widget\_id" variable into the template given.

If the current context of the message that the header appears within is "http://example.org/", the same information could be conveyed by this header field:

```
Link-Template: </widgets/{widget_id}>;  
              rel="http://example.org/rel/widget";  
              var-base="/vars/"
```

### [3.](#) Security Considerations

The security consideration for the Link header field in [RFC5988] and those for URI Templates [RFC6570] both apply.

### [4.](#) IANA Considerations

This specification enters the "Link-Template" into the registry of Permanent Message Header Field Names.

Header Field Name: Link-Template

Protocol: http  
Status:  
Reference: [this document]

## 5. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<http://www.rfc-editor.org/info/rfc2119>>.
- [RFC3986] Berners-Lee, T., Fielding, R., and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", STD 66, [RFC 3986](#), DOI 10.17487/RFC3986, January 2005, <<http://www.rfc-editor.org/info/rfc3986>>.

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- [RFC5987] Reschke, J., "Character Set and Language Encoding for Hypertext Transfer Protocol (HTTP) Header Field Parameters", [RFC 5987](#), DOI 10.17487/RFC5987, August 2010, <<http://www.rfc-editor.org/info/rfc5987>>.
- [RFC5988] Nottingham, M., "Web Linking", [RFC 5988](#), DOI 10.17487/RFC5988, October 2010, <<http://www.rfc-editor.org/info/rfc5988>>.
- [RFC6570] Gregorio, J., Fielding, R., Hadley, M., Nottingham, M., and D. Orchard, "URI Template", [RFC 6570](#), DOI 10.17487/RFC6570, March 2012, <<http://www.rfc-editor.org/info/rfc6570>>.
- [RFC7230] Fielding, R., Ed. and J. Reschke, Ed., "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", [RFC 7230](#), DOI 10.17487/RFC7230, June 2014, <<http://www.rfc-editor.org/info/rfc7230>>.

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