XEP-0511: Link Metadata

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Experimental	Standards Track	link-metadata

This specification describes how to attach metadata for links to a message.

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Contents

1 Introduction 1

2 Requirements 1

3 Use Cases 1

3.1 Injecting Metadata 1

4 Accessibility Considerations 2

5 Internationalization Considerations 2

6 Security Considerations 2

7 Privacy Considerations 3

8 IANA Considerations 3

9 XMPP Registrar Considerations 3

1 Introduction

It is common in many chat systems to show a ”link preview” or other metadata about IRIs in or related to a message. This metadata is commonly generated from the resource that can be retreived from the IRI, for example if it is an HTTPS URL there are three common ways to get this metadata:

1. Recipient retreives the URL on their device and extracts metadata according to their own algorithms
2. Intermediating server retreives the URL and injects metadata into the message
3. Sender retreives the URL and injects metadata into the message

The first option does not require specification and is entirely client-side by the recipient. This specification defines a format for injection in the other two cases.

2 Requirements

- Metadata should be able to describe any IRI

3 Use Cases

3.1 Injecting Metadata

When an entity wishes to add metadata describing an IRI to a message, they first must generate this metadata somehow. This is out of scope for this document. After this is done they append to the message stanza a child <Description> in namespace http://www.w3.org/1999/02/22-rdf-syntax-ns# which MUST have a namespaced attribute about **in the same namespace** (MUST have a specified namespace). The about attribute specifies what IRI this metadata is about.
Inside the <Description> element there may be any elements in any namespaces (RDF/XML[1]-compatible namespaces suggested), in order to allow for extensible metadata about this IRI. One very useful vocabulary for use in this context which SHOULD be supported is OpenGraph [2] which uses namespace https://ogp.me/ns#.

Listing 1: An example metadata about a webpage

```
<message to='romeo@montague.lit' type='chat'>
  <body>I wanted to mention https://the.link.example.com/what-was-
     linked-to</body>
```

[1] RDF/XML: https://www.w3.org/TR/rdf-syntax-grammar/
[2] OpenGraph: https://ogp.me/

```
  <rdf:Description xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-
      ns#" xmlns:og="https://ogp.me/ns#" xmlns:ogi="https://ogp.me/ns#
      image:" rdf:about="https://the.link.example.com/what-was-linked-
      to">
    <og:title>The Best Webpage</og:title>
    <og:description>This is a great webpage and you will really like
       it</og:description>
    <og:url>https://example.com/canonical-url/for/what-was-linked-to</
       og:url>
    <og:image>https://link.to.example.com/image.png</og:image>
    <og:image>cid:sha-256+
       e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855@bob
       .xmpp.org</og:image>
    <og:image>ni:///sha-256;47DEQpj8HBSa-_TImW-5
       JCeuQeRkm5NMpJWZG3hSuFU</og:image>
    <og:image>data:image/jpeg,...</og:image>
    <ogi:alt>Alt text for the social media image</ogi:alt>
    <og:video>https://videos.example.com/video-embed.html</og:video>
    <og:type>website</og:type>
    <og:site_name>Example Website</og:site_name>
  </rdf:Description>
</message>
```

4 Accessibility Considerations

Depends on the metadata, but in general all metadata should be considered to create a UX that is accesibile (eg: not showing only the image, using alt text if present, etc).

5 Internationalization Considerations

Metadata will often be in the same language as the resource being described. If metadata in multiple languages is available, and implemenation MAY inject both in separate <Description> with the same about and differing xml:lang.

6 Security Considerations

Resolving, fetching, or interpreting remote resources may be fraught with security issues. Care should be taken to fetch and interpret a limited amount of data in a safe and structured way if necessary to produce the metadata.
It is possible for senders to inject link metadata which does not really represent what is actually at the link. Care should be taken in UX, especially with untrusted contacts, not to

lead the user to a false sense of security.

7 Privacy Considerations

Fetching a remote resource may reveal interest on the part of an IP address, similar to clicking on a link. Recipients should not fetch remote resources of any kind without user intervention. Senders should be aware that generating this metadata may confer the same privacy result as opening the link they are sending.

8 IANA Considerations

None.

9 XMPP Registrar Considerations

None.