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**The 'javascript' resource identifier scheme  
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Abstract

This memo defines syntax and semantics of the 'javascript' resource identifier scheme, enabling applications to specify script code in contexts where resource identifiers are expected.

## 1. Introduction

The 'javascript' resource identifier scheme allows to encode script code in a resource identifier in a way similar to the 'data' scheme, but with extended semantics. This document defines the scheme and two operations that describe how existing implementations handle it.

The first operation, content retrieval, defines which script code a given 'javascript' resource identifier represents. This operation is fully defined in this document and some applications, such as implementations of the Virtual Reality Modeling Language, might take advantage of only this operation.

The second operation, in-context evaluation, is often implemented by web browser applications, and provides a means to run custom script code when the resource identifier is dereferenced. As an example, consider a HTML document containing a hyperlink like:

```
<a href='javascript:doSomething()>...</a>
```

In typical implementations, when the user activates the hyperlink, the web browser will pass control to the doSomething() function, and if the function returns something, render the result in place of the current document.

Some semantics of this operation are out of scope of this document. As an example, in the example above, if the doSomething() function returns a string object, the implementation would lack clues, like an Internet media type, how to process it; it could interpret it as script, style sheet, HTML document, resource identifier, or any other type of resource, as appropriate for the context.

In order not to limit the applicability of this scheme for certain applications, this document just describes this operation in terms of an abstract model; it is expected that, where needed, other specifications define the semantics in more detail using this model.

## 2. Terminology and Conformance

Resource identifiers, including percent-encoding and requirements for IRIs, are defined in STD 66, [RFC3986] and [RFC3987]. Source text and the media type application/javascript are defined in [RFC4329], the 'data' scheme in [RFC2397], and UTF-8, including the term byte order mark, in STD 63, [RFC3629].

An application that generates resource identifiers conforms to this specification if and only if, given a valid application/javascript



entity, it generates only 'javascript' resource identifiers that conform to this specification.

An application that dereferences 'javascript' resource identifiers conforms to this specification if and only if it implements the content retrieval operation as defined in this specification.

A resource identifier conforms to this specification if and only if it is a valid IRI and application of the content retrieval operation yields a valid application/javascript entity without generating any error. Use of a byte order mark and literal use of the character "/" should be avoided.

A resource identifier is said to have one or more encoding errors when applying the content retrieval operation to it results in one or more errors. Resource identifiers with encoding errors do not conform to this specification.

For resource identifiers with encoding errors the considerations for handling encoding errors in application/javascript entities apply.

The algorithms defined in this document are considered equivalent to any and all algorithms that map the same input to the same results.

### **3. Operations**

This section defines two operations that can be applied to resource identifiers that conform to this specification. Other operations may be defined in other specifications.

#### **3.1. Content retrieval**

This operation retrieves the source text that is included in the scheme-specific part of a given 'javascript' resource identifier.

1. Represent the scheme-specific part as sequence of octets in the UTF-8 character encoding.
2. Replace any percent-encoded octet by its corresponding octet.
3. If the sequence starts with the sequence 0xEF 0xBB 0xBF, discard this sequence.
4. Decode the octet sequence using the UTF-8 character encoding and transform the result into source text.



### **3.2. In-context evaluation**

This operation defines a model under which applications may evaluate the source text included in a given 'javascript' resource identifier.

1. Retrieve the source text using the content retrieval operation.
2. Determine a dereference context for further processing.
3. Evaluate the source text in this context and memorize the result as dereference by-product.
4. Process the dereference by-product as appropriate for the dereference context.

## **4. Interoperability Considerations**

A common error in 'javascript' resource identifiers is incorrect use of fragment identifiers as in `<javascript:_scrollTo('#example')>`, and some applications might have to recover from such errors. Designers of protocol elements that accept resource identifiers as defined in this document should consider this case and, where compatibility is a concern, define a pre-processing step that percent-encodes all '#' characters before the content of the protocol element is processed as 'javascript' resource identifier.

Authors should be aware that use of 'javascript' resource identifiers may have implications for the interoperability, accessibility, or usability of their documents and applications. Applications may vary in whether and where they support it, and how they implement the in-context evaluation. As an example, a user may ask a web browser to open a 'javascript' hyperlink included in a HTML document in a new browser window; in this case the web browser might establish the dereference context such that references to variables and functions defined elsewhere in the HTML document can no longer be resolved.

## **5. Security Considerations**

For applications that rely only on the content retrieval operation as defined in this document, the security considerations are equivalent to those for 'data' resource identifiers and application/javascript as defined in their respective specifications. In-context evaluation may introduce additional security issues, but these depend on the dereference context and how the dereference by-product is processed which is not defined by this specification; security considerations



for this operation are consequently considered out of scope.

## **6. Internationalization Considerations**

None beyond those inherent to resource identifiers and entities of type application/javascript.

## **7. IANA Considerations**

This document registers the 'javascript' scheme as permanent scheme in the IANA Uniform Resource Identifier scheme registry per [BCP 115](#).

## **8. References**

### **8.1. Normative References**

- [RFC3629] Yergeau, F., "UTF-8, a transformation format of ISO 10646", STD 63, [RFC 3629](#), November 2003.
- [RFC3986] Berners-Lee, T., Fielding, R., and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", STD 66, [RFC 3986](#), January 2005.
- [RFC3987] Duerst, M. and M. Suignard, "Internationalized Resource Identifiers (IRIs)", [RFC 3987](#), January 2005.
- [RFC4329] Hoehrmann, B., "Scripting Media Types", [RFC 4329](#), April 2006.

### **8.2. Informative References**

- [RFC2397] Masinter, L., "The "data" URL scheme", [RFC 2397](#), August 1998.

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