The 'leaptofrogans' URI Scheme

Abstract

   This document describes the 'leaptofrogans' Uniform Resource
   Identifier (URI) scheme, which enables applications to launch Frogans
   Player on a given Frogans site. Frogans is a medium for publishing
   content and services on the Internet, defined as a generic software
   layer on the Internet. Frogans Player is software that enables end
   users to browse Frogans sites.

Status of This Memo

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1. Background Information

1.1. About Frogans

   Frogans is a medium for publishing content and services on the
   Internet. From its inception in 1999, the medium was designed as a
   generic software layer running on top of the original Internet
   infrastructure (i.e., the TCP and IP protocols and the Domain Name
   System (DNS)), alongside other existing layers such as E-mail or the
   World Wide Web.

   As a medium, Frogans is not meant for publishing Web sites, but
   Frogans sites, a kind of site founded upon a different format,
   enabling a different kind of communication between end users and
   publishers of content and services.

   Frogans is intended to be complementary to the World Wide Web; it is
   not intended to be a replacement. This is analogous to instant
   messaging, which was not intended to and did not replace E-mail.

   Compared to the World Wide Web, Frogans suggests publishing content
   and services that involve visual rather than text-based
   communication, focused content rather than long pages, and natural
   interaction rather than complex user interfaces. For further
   information on the reasons for introducing Frogans on the Internet,
   and for an in-depth discussion of the similarities and differences
   between Frogans sites and Web sites, see [FSDL], Section 1.4
   ("Frogans sites and Web sites").

   The technology making up the medium, i.e., the Frogans technology,
   includes multiple components such as:

   o An XML-based language, called Frogans Slide Description Language
      [FSDL], used to develop Frogans sites.

   o International identifiers, called Frogans addresses [IFAP], used
      to access Frogans sites. Each Frogans site has its own Frogans
      address.

   o Browsing software, called Frogans Player, enabling end users to
      browse Frogans sites. An end user opens a Frogans site by
      entering its Frogans address in Frogans Player.

   o A registry, called the Frogans Core Registry (FCR), that contains
      all Frogans addresses registered by Frogans site publishers. The
      registry operator, called the FCR Operator, ensures the resolution
      of Frogans addresses when end users enter them in Frogans Player.

1.2. About the OP3FT

   Created in 2012, the Organization for the Promotion, Protection, and
   Progress of Frogans Technology [OP3FT] is a dedicated, non-profit
   organization whose purpose is to hold, promote, protect, and ensure
   the progress of the Frogans technology, in the form of an open
   standard, available to all, free of charge.

   As part of its mission, the OP3FT develops and releases technical
   specifications, reference implementations (including Frogans Player),
   and various policies, which define the rights and responsibilities of
   all stakeholders involved in the technology worldwide.

2. The Need for a New URI Scheme and Its Purpose

   Generic software layers running on top of the original Internet
   infrastructure offer mechanisms that enable end users to easily go
   from one layer to another, in both directions. For example, end
   users can easily launch their usual Web browser on a given Web page
   from a message in their usual E-mail client; in the other direction,
   end users can easily launch their usual E-mail client with a given
   E-mail address from a Web page in their usual Web browser. This is
   commonly achieved using URIs [RFC3986].

   As regards Frogans as a medium, in the outgoing direction, FSDL
   enables Frogans site publishers to include way-out buttons in their
   Frogans sites. These buttons enable end users to launch their usual
   Web browser on a given Web page, or to launch their usual E-mail

client with a given E-mail address. This is achieved by associating
a URI with each of those way-out buttons (the scheme of the URI can
be any of 'http', 'https', or 'mailto').

Conversely, in the incoming direction, Web-site publishers should
have a means to include in their Web pages links that enable end
users to launch Frogans Player on a given Frogans site. Likewise,
people writing E-mail messages should have a means to include in
their messages links that enable recipients to launch Frogans Player
on a given Frogans site. More generally, any end-user application
should be able to launch Frogans Player on a given Frogans site.

To achieve this, a new URI scheme, containing a Frogans address, is
needed.

Given that Frogans, as a medium, does not enable deep linking for
Frogans sites, there is no need for additional information in the new
URI scheme other than the Frogans address.

The use of a media type as a means to include on a Web page a link
that enables end users to launch Frogans Player on a given Frogans
site was tested in 2006 with the registration of the
'vnd.frogans.ltf' media type with IANA [LTF]. But use of a media
type was determined to be unsatisfactory for several reasons. First,
for any such link included on a Web page, the author of the Web page
had to create and host a .ltf file on the Web server hosting that Web
page, which was cumbersome. Furthermore, prior to creating such
links, the author had to ask the server administrator to associate
the .ltf files with the 'vnd.frogans.ltf' media type on the server.
Alternatively, the author could create a link via a redirection
service that would generate a .ltf file on the fly while associating
it with the 'vnd.frogans.ltf' media type. But that alternative
raised privacy concerns and potentially added latency for end users.
Finally, on the Web browser side, it appeared that using a media type
from a Web page to launch another application did not always work,
especially on mobile devices.

3. Choice of the Scheme Name

   The name chosen for the new URI scheme is 'leaptofrogans'.

   This scheme name was chosen in compliance with [RFC7595], Section 3.8
   ("Scheme Name Considerations").

The following shorter names were discussed, but they were not chosen:

o 'ltf': this name, an acronym for "leap to Frogans", was considered
   insufficiently descriptive, especially for typical end users who
   have little technical knowledge.

o 'leapto': this name was considered overly general, and it is not
   specifically associated with Frogans.

o 'frogans': this name was rejected because it could create
   confusion between URIs based on this scheme and those Frogans
   addresses that start with "frogans".

4. Scheme Syntax

Frogans addresses [IFAP] are international identifiers made up of
Unicode characters. Thus, a method for encoding non-US-ASCII
characters is necessary when the new scheme is used as a URI. The
new scheme can also be useful as an IRI [RFC3987] in contexts where
IRIs are allowed.

4.1. URI Scheme

The syntax for the 'leaptofrogans' URI scheme is:

    leaptofrogans-uri = "leaptofrogans:" pct-encoded-frogans-address

where pct-encoded-frogans-address is a Frogans address compliant with
[IFAP] and whose Unicode characters are each encoded as follows:

o If the character is a US-ASCII character, do not replace it and
   skip to the next character. Note that according to [IFAP], the
   US-ASCII character cannot be the U+0025 PERCENT SIGN character.

o Otherwise, apply steps 1 through 3 below:

   1. Convert the character to a sequence of one or more octets
       using UTF-8 [UTF-8]

   2. Convert each octet to %HH, where HH is the hexadecimal
       notation of the octet value. Note that this is identical to
       the percent-encoding mechanism in Section 2.1 of [RFC3986].

   3. Replace the original character with the resulting character
       sequence (i.e., a sequence of %HH triplets).

Examples of 'leaptofrogans' URIs:

- if the Frogans address is the string of US-ASCII characters
  "Network-Name*Site-Name", the URI is as follows:

      leaptofrogans:Network-Name*Site-Name

- if the Frogans address is the string of Unicode characters U+7F51,
  U+7EDC, U+540D, U+002A, U+7AD9, U+540D (which is a Chinese
  translation of the Frogans address in the previous example), the
  URI is as follows:

      leaptofrogans:%E7%BD%91%E7%BB%9C%E5%90%8D*%E7%AB%99%E5%90%8D

4.2. IRI Usage and Encoding

The syntax for an IRI corresponding to the 'leaptofrogans' URI scheme
is:

      leaptofrogans-iri = "leaptofrogans:" frogans-address

where frogans-address is a Frogans address compliant with [IFAP] and
encoded in UTF-8 [UTF-8].

In contexts where both URIs and IRIs are allowed, end-user
applications can use either a URI or an IRI based on the
'leaptofrogans' URI scheme when launching Frogans Player on a given
Frogans site. This is because Frogans Player must interpret both
URIs and IRIs based on the 'leaptofrogans' URI scheme. If the U+0025
PERCENT SIGN character is found in the string, then the string will
be interpreted by Frogans Player as a URI; otherwise, it will be
interpreted as an IRI.

5. Trademarks

In order to enable all users worldwide to use the Frogans technology
in a clearly defined, secure, and perpetual environment, the OP3FT
Bylaws [BYLAWS] provide for the implementation of an intellectual
property policy.

In this context, the OP3FT is the holder of the "Frogans" trademark
that is registered in France, the United States, and other countries
around the world. The right to use the "Frogans" trademark in
references or as part of initiatives in connection with the Frogans
technology is granted in the OP3FT Trademark Usage Policy [OTUP].

6. IANA Considerations

   In accordance with the guidelines and registration procedures for new
   URI schemes [RFC7595], IANA has registered 'leaptofrogans' URI scheme
   as follows:

   Scheme name: 'leaptofrogans'

   Status: Permanent

   Scheme syntax: See Section 4 of RFC 8589.

   Scheme semantics: See Section 2 of RFC 8589.

   Encoding considerations: See Section 4 of RFC 8589.

   Applications/protocols that use this scheme name: Frogans Player as
      well as any end-user application (such as a Web browser or an
      E-mail client) wishing to launch Frogans Player on a given Frogans
      site.

   Interoperability considerations: There are no known interoperability
      concerns related to use of the 'leaptofrogans' URI scheme.

   Security considerations: See Section 7 of RFC 8589.

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   References: RFC 8589

7. Security Considerations

   The author of a Web page can create a link where the true nature of
   the URI is hidden in the link text that is visible to end users. The
   same applies for an E-mail message and other end-user applications.

   For URIs based on the 'leaptofrogans' URI scheme, the risk of
   confusion is mitigated because Frogans Player must always display the
   real Frogans address contained in the URI, and it must always require
   confirmation by the end user before opening the corresponding Frogans
   site.

   Also, an end-user application may provide a URI containing a Frogans
   address that is not valid. This does not represent a risk because,
   before asking for confirmation by the end user, Frogans Player must

always verify that the Frogans address contained in the URI is
compliant with [IFAP], and it must always raise an error if the
Frogans address is not compliant.

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8.1. Normative References

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