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Internet-Draft   Ericsson
Intended status: Informational   September 29, 2015
Expires: April 1, 2016

                    CDNI Media Type Registration
                    draft-ietf-cdni-media-type-03

Abstract

   This document defines the standard media type used by the Content
   Delivery Network Interconnection (CDNI) protocol suite, including the
   registration procedure and recommended usage of the required payload-
   type parameter .

Status of This Memo

   This Internet-Draft is submitted in full conformance with the
   provisions of BCP 78 and BCP 79.

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   time. It is inappropriate to use Internet-Drafts as reference
   material or to cite them other than as "work in progress."

   This Internet-Draft will expire on April 1, 2016.

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1. Introduction and Scope

   The CDNI working group is developing a set of protocols to enable the
   interconnection of multiple CDNs, as discussed in [RFC6770]. The
   CDNI protocol suite consists of multiple HTTP-based interfaces, many
   of which transfer various JSON encoded payloads [RFC7159]. The main
   interfaces (i.e., CDNI Control interface, CDNI Footprint &
   Capabilities Advertisement interface, CDNI Request Routing
   Redirection interface, CDNI Metadata interface, and CDNI Logging
   interface) are described in [RFC7336]. It is desirable to be able to
   indicate the type of object carried in the HTTP entity-body without
   having to register separate media types for each CDNI object. To
   accomplish this aims, this document defines a single new media type
   for CDNI that includes a required payload-type parameter. A separate
   registry of CDNI payload-type parameters is also defined. CDNI
   protocol specifications may register interface-specific payload-
   types, specifying the payload encoding and parsing semantics for that
   message (e.g., JSON serialization for a CDNI metadata object). The
   same payload-type parameter may also be used as references for other
   purposes (e.g., referencing CDNI metadata objects from CDNI
   capability advertisement objects).

2. IANA Considerations

   This section contains the CDNI media type registration request for
   IANA, as well as the payload-type parameter registry definition for
   IANA.

2.1. CDNI Media Type

   Type name: application

   Subtype name: cdni

   Required parameters:

ptype

   The required parameter "ptype" describes the type of CDNI
   message contained in the message payload, as registered in the
   CDNI Payload Type Parameter Registry (Section 2.2) defined
   below.

Optional parameters: none

Encoding considerations:

   The CDNI protocol suite includes interfaces with JSON encoded
   messages which may be 8bit or binary, as well as generic logging
   information which may be 7bit or binary.

Security considerations:

   CDNI interfaces that return JSON encoded data may be
   (mis)interpreted if parsed by non-CDNI or non-compliant CDNI
   implementations. In addition, CDNI logging information is likely
   to transfer large amounts of data which may overload unexpecting
   clients. The individual CDNI interface specifications provide
   more detailed analysis of security and privacy concerns, and
   define the requirements for authentication, authorization,
   confidentiality, integrity, and privacy for each interface.

Interoperability considerations:

   The required ptype field is intended to fully describe the
   structure and parsing of CDNI messages, as enforced by the ptype
   registry designated expert.

Published specification: RFCthis

Applications that use this media type:

   CDNI is intended for use between interconnected CDNs for sharing
   configuration and logging data, as well as for issuing content
   management and redirection requests.

Fragment identifier considerations: N/A

Additional information: N/A

   Deprecated alias names for this type: N/A

   Magic number(s): N/A

File extension(s): N/A

Macintosh file type code(s): N/A

Person & email address to contact for further information:

Kevin Ma <kevin.j.ma@ericsson.com>

Intended usage: LIMITED USE

Restrictions on usage:

This media type is intended only for use in CDNI protocol message
exchanges.

Author: IETF CDNI working group

Change controller: IETF CDNI working group

Provisional registration: no

2.2. CDNI Payload Type Parameter Registry

The IANA is requested to create a new "CDNI Payload Type" registry.
The "CDNI Payload Type" namespace defines the valid values for the
required "ptype" parameter of the "application/cdni" media type. The
CDNI Payload Type is an ASCII string value, consisting of only
visible (printing) characters, but excluding equal signs (=), double
quotes ("), and semicolons (;), and not exceeding 256 characters in
length.

```
    ptype = 1*256(ptype-char)
    ptype-char = %x21 / %x23-3A / %x3C / %x3E-7E
      ; Includes ALPHA, DIGIT, and other printables
      ; Excludes equal signs (=), double quotes ("), semicolons (;)
```

Additions to the CDNI Payload Type namespace will conform to the
"Specification Required" policy as defined in [RFC5226]. The
designated expert will verify that new type definitions do not
duplicate existing type definitions (in name or functionality),
prevent gratuitous additions to the namespace, and prevent any
additions to the namespace which would impair the interoperability of
CDNI implementations. The designated expert will review the
specification, even if it is a Standards Track RFC, to verify that it
contains the following information:

o The review will verify that the specification contains a
   reasonably defined purpose for the new payload type, where the

purpose is related to an existing or proposed CDNI interface and
does not duplicate the functionality of any existing CDNI protocol
feature without specifying a rational reason (e.g., updating an
obsolete feature), a method for detecting and handling conflicts
(e.g., a versioning system with prioritization matrix), and a
suggested migration path (e.g., deprecation of the overlapped
feature, or justification for co-existence).

o The review will verify that the specification contains information
   as to which CDNI interface the new payload type pertains/affects.
   The payload type may be applicable to multiple CDNI interfaces,
   but the justification for the new payload type will include a
   reasonable relationship to at least one standards track CDNI
   interface.

o The review will verify that the specification contains sufficient
   detail about the data encoding (e.g., JSON serialization for new
   CDNI metadata or capability advertisement objects, or ABNF and
   description for new CDNI logging file formats) to allow senders
   and receivers of the new payload type to implement compliant and
   interoperable payload parsers.

The registry contains the Payload Type, and the specification
describing the Payload Type. The registry will initially be
unpopulated.

```
+--------------+---------------+
| Payload Type | Specification |
+--------------+---------------+
+--------------+---------------+
```

3. References

3.1. 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,
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[RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an
           IANA Considerations Section in RFCs", BCP 26, RFC 5226,
           DOI 10.17487/RFC5226, May 2008,
           <http://www.rfc-editor.org/info/rfc5226>.

3.2. Informative References

   [RFC6770] Bertrand, G., Ed., Stephan, E., Burbridge, T., Eardley,
              P., Ma, K., and G. Watson, "Use Cases for Content Delivery
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   [RFC7159] Bray, T., Ed., "The JavaScript Object Notation (JSON) Data
              Interchange Format", RFC 7159, DOI 10.17487/RFC7159, March
              2014, <http://www.rfc-editor.org/info/rfc7159>.

   [RFC7336] Peterson, L., Davie, B., and R. van Brandenburg, Ed.,
              "Framework for Content Distribution Network
              Interconnection (CDNI)", RFC 7336, DOI 10.17487/RFC7336,
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Appendix A. Acknowledgment

   This document is the culmination of the efforts of many in the CDNI
   working group, including (in alphabetical order): Francois Le
   Faucheur, Daryl Malas, Rob Murray, Ben Niven-Jenkins, Iuniana
   Oprescu, Jon Peterson, and Jan Seedorf.

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