                    precis implementation report
            draft-nemoto-precis-framework-implement-report-01

Abstract

   This document reports implementation experience of precis framework
   [I-D.ietf-precis-framework], for SASLprepbis
   [I-D.ietf-precis-saslprepbis], Nickname [I-D.ietf-precis-nickname]
   and XMPPbis [I-D.ietf-xmpp-6122bis], and findings from the
   experience.
   And this document further discusses considerations to implement
   precis framework.

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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   material or to cite them other than as "work in progress."

   This Internet-Draft will expire on August 29, 2013.

1. Introduction

   This document is a report of implementation experience to evaluate
   whether precis framework for each protocol can implement.

   Some applications of IDNA2008 [RFC5890] [RFC5891] [RFC5892] [RFC5893]
   [RFC5894] are expected to modified to precis framework. This
   document reports to examine whether a implementation based on
   IDNA2008 has useful processes and needs modifications for precis
   framework.

   In this document, two implementations based on precis framework are
   described. The one is to evaluate the feasibility of implementation
   for precis framework. This implementation is modified an application
   of IDNA2008 to provide useful features such as normalization and
   mappings for precis framework and some protocols. The other is
   empirically to calculate precis' derived property value and to
   generate idnabis-tables.xml is a like table based on precis framework
   by using Unicode properties files.

   And also some applications are expected to support some protocols.
   If one precis framework implementation is for one protocol, there may
   be duplications of processes in multiprotocols-adaptive applications.
   To eliminate the waste of duplications and to be adapted flexibly for
   multiprotocols, this document reports summary of common features with
   and different individual features from precis framework's
   recommendation in each protocol.

[2](). Experience

[2.1](). Purposes

Purposes of the implementations are following;

o To evaluate whether precis framework can implement.

o To examine whether applications based on IDNA2008 has useful
   features and needs modifications for precis framework
   implementations.

o To evaluate whether precis framework implementations for some
   protocols have common features with and different individual
   features from precis framework's recommendation.

[2.2](). Implementations

In this document, two implementations based on precis are described.
these implementations follow implementations of IDNA2008
[[I-D.nemoto-idna2008-implementation-report]()].

The one is modified application of IDNA2008 for precis framework.
The base application provides APIs for handling internationalized
domain names. This implementation is for providing mapping
SASLprepbis, Nickname and XMPPbis defined and strings validity check.
The implementation is to evaluate whether SASLprepbis as one of
precis framework's property can be implemented and to find out
whether applications based on IDNA2008 has useful features and needs
modifications for precis framework implementations.

The implementation can import tables of certain version of Unicode
properties and corresponding derived property value table for precis
is the same format as idnabis-tables.xml for codepoint validation.

The other is empirically to calculate precis' derived property value
and to generate idnabis-tables.xml is a like table based on precis
framework by using Unicode properties files.

[3](). Findings

Findings from implementation experience are following.

o SASLprepbis, Nickname and XMPPbis as one of precis framework's
   property can implement individually.

o Applications based on IDNA2008 has useful processes are following.

   * Some mapping features
      Ex. Casemapping, nfc, width mapping, delimiter mapping

   * Strings validity checking processes
      Ex. For derived property value (As necessary, the file
      describing derived property value table for precis should be
      generated.)
      Ex. For byte length

o Applications based on IDNA2008 needs modifications for precis
   implementations are following.

   * Mappings depend on each protocols defined mapping table.
      Ex. Specilal mapping (Mapping to SPACE, Mapping to Nothitng)

   * Checking whether strings are precis NameClass, FreeClass or
      SubClass processes

4. Summary of implementation results

   This section summarizes different protocol individual features from
   and common features with precis framework's recommendation. And this
   section lists useful processes from an application based on IDNA2008.

4.1. Individual features for SASLprepbis

   o In passwords, non ASCII space characters are mapped to SPACE(U+
      0020)

4.2. Individual features for Nickname

   o NFKC

   o Non ASCII space characters from "N" category MUST be mapped to
      SPACE(U+0020)

   o Leading and trailing whitespace MUST be removed

   o Interior sequences of more than one ASCII space character MUST be
      mapped to a single ASCII space character

4.3. Individual features for XMPPbis

   o Width mapping

4.4. Common features with precis framework's recommendation

   o NFC

   o Casemapping

   o Additional mapping

   o Bidi Rule

4.5. Useful processes from an IDNA2008 application

   o NFC, NFKC

   o Casemapping

   o Width mapping

   o Delimiter mapping

   o Language based local mapping

   o Bidi Rule

   o Strings validity checking

5. **Further Discussion**

   In this document, some applications are expected to use some
   protocols and one precis framework implementation shuold be adapted
   for multiprotocols. From this point, this section further discusses
   open issues to implement precis framework.

   o If one implementation supports precis NameClass and FreeClass, it
      is necessary to be able to express these in one derived properties
      table to eliminate the waste of duplications. And it's necessary
      to define a format of a precis' derived properties table.

   o From Section 4, each protocol has some similar individual
      features(Ex: mapping to SPASE, mapping to nothitng, delimiter
      mapping). It's necessary to generalize these features and prepare
      some generalized features to be adapted flexibly for
      multiprotocols. Followings are generalized features for precis
      framework implementation.

      * Mapping from one character to other character or nothitng

      * Mapping from sequence that is more than one character to one
         character

      * Removing leading and trailing whitespace

      * Disallowing additional prohibited characters that each protocol
         defines as SubClass of precis framework individually

6. IANA Considerations

   TBD.

7. Security Considerations

   TBD.

8. Acknowledgment

   TBD.

9. Normative references

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   [I-D.nemoto-idna2008-implementation-report]
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               Nicknames", draft-ietf-precis-nickname-05 (work in
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November 2012.

Appendix A. Change Log

A.1. Changes since -00

o Modify document structure for developers of an application of
   precis framework.

o Modify the Section 2 "Experience".

o Modify the Section 3 "Findings".

o Add the Section 4 "Summary of implementation results".

o Add the Section 5 "Further Discussion".

o Add the Appendix A "Change Log".

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