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Registering Internationalized Domain Names under .PL

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Abstract

This document describes rules of Internationalized Domain Name (IDN) registration under .PL - county code top level domain name (ccTLD). All the rules are based on the idea that the Registry registers the ACE (ASCII Compatible Encoding) label version of the IDN instead of IDN's Unicode form. This document also includes the list of accepted Unicode code points for IDN registration under ".PL" ccTLD.

1. Introduction

NASK is the .PL ccTLD registry with the liberal policy of the internationalized domain name registration. The policy of IDN registration presented in the following sections of this document is simple to deploy and do not require any changes to the current Registry routines.

2. Terminology

The key words "MUST", "SHALL", "REQUIRED", "SHOULD", "RECOMMENDED", and "MAY" in this document are to be interpreted as described in [BCP 14](#), [RFC 2119](#) [[10](#)].

Characters in the document are given as their Unicode code points on U+XXXX format (X is a hexadecimal digit).

"Registry" in this document is equivalent to PL ccTLD Registry "NASK".

"ACE label" and "ACE prefix" is defined in Section 2 of [[4](#)].

"NAMEPREP" is defined in [[1](#)], "PUNYCODE", "ToUnicode" and "ToASCII" is defined on [[3](#)].

3. Main concepts

The Policy of the IDN-registration under .PL is liberal and is based on the following concepts:

- NASK accepts only the proper ACE labels (according to [[3](#)], [[8](#)] and [[9](#)]) which begin with the "xn--" prefix and contain only ASCII characters,
- the received string after the ToUnicode operation (according to Section 4.2 of [[4](#)] and Section 6.2 of [[3](#)]) applied to the ACE label MUST only include code points [[5](#)] from one of the following sets:

a) Latin set:

U+002D	HYPHEN-MINUS
U+0030..U+0039	DIGIT ZERO .. DIGIT 9
U+0061..U+007A	LATIN SMALL LETTER A .. LATIN SMALL LETTER Z
U+00B7	MIDDLE DOT
U+00E0	LATIN SMALL LETTER A WITH GRAVE
U+00E1	LATIN SMALL LETTER A WITH ACUTE
U+00E2	LATIN SMALL LETTER A WITH CIRCUMFLEX
U+00E3	LATIN SMALL LETTER A WITH TILDE
U+00E4	LATIN SMALL LETTER A WITH DIAERESIS
U+00E5	LATIN SMALL LETTER A WITH RING ABOVE
U+00E6	LATIN SMALL LETTER AE
U+00E7	LATIN SMALL LETTER C WITH CEDILLA
U+00E8	LATIN SMALL LETTER E WITH GRAVE
U+00E9	LATIN SMALL LETTER E WITH ACUTE
U+00EA	LATIN SMALL LETTER E WITH CIRCUMFLEX
U+00EB	LATIN SMALL LETTER E WITH DIAERESIS
U+00EC	LATIN SMALL LETTER I WITH GRAVE

U+00ED

LATIN SMALL LETTER I WITH ACUTE

U+00EE

LATIN SMALL LETTER I WITH CIRCUMFLEX

U+00EF

LATIN SMALL LETTER I WITH DIAERESIS

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U+00F0	LATIN SMALL LETTER ETH
U+00F1	LATIN SMALL LETTER N WITH TILDE
U+00F2	LATIN SMALL LETTER O WITH GRAVE
U+00F3	LATIN SMALL LETTER O WITH ACUTE
U+00F4	LATIN SMALL LETTER O WITH CIRCUMFLEX
U+00F5	LATIN SMALL LETTER O WITH TILDE
U+00F6	LATIN SMALL LETTER O WITH DIAERESIS
U+00F8	LATIN SMALL LETTER O WITH STROKE
U+00F9	LATIN SMALL LETTER U WITH GRAVE
U+00FA	LATIN SMALL LETTER U WITH ACUTE
U+00FB	LATIN SMALL LETTER U WITH CIRCUMFLEX
U+00FC	LATIN SMALL LETTER U WITH DIAERESIS
U+00FD	LATIN SMALL LETTER Y WITH ACUTE
U+00FE	LATIN SMALL LETTER THORN
U+00FF	LATIN SMALL LETTER Y WITH DIAERESIS
U+0101	LATIN SMALL LETTER A WITH MACRON
U+0103	LATIN SMALL LETTER A WITH BREVE
U+0105	LATIN SMALL LETTER A WITH OGONEK
U+0107	LATIN SMALL LETTER C WITH ACUTE
U+0109	LATIN SMALL LETTER C WITH CIRCUMFLEX
U+010B	LATIN SMALL LETTER C WITH DOT ABOVE
U+010D	LATIN SMALL LETTER C WITH CARON
U+010F	LATIN SMALL LETTER D WITH CARON
U+0111	LATIN SMALL LETTER D WITH STROKE
U+0113	LATIN SMALL LETTER E WITH MACRON
U+0115	LATIN SMALL LETTER E WITH BREVE
U+0117	LATIN SMALL LETTER E WITH DOT ABOVE
U+0119	LATIN SMALL LETTER E WITH OGONEK
U+011B	LATIN SMALL LETTER E WITH CARON
U+011D	LATIN SMALL LETTER G WITH CIRCUMFLEX
U+011F	LATIN SMALL LETTER G WITH BREVE
U+0121	LATIN SMALL LETTER G WITH DOT ABOVE
U+0123	LATIN SMALL LETTER G WITH CEDILLA
U+0125	LATIN SMALL LETTER H WITH CIRCUMFLEX
U+0127	LATIN SMALL LETTER H WITH STROKE
U+0129	LATIN SMALL LETTER I WITH TILDE
U+012B	LATIN SMALL LETTER I WITH MACRON
U+012D	LATIN SMALL LETTER I WITH BREVE
U+012F	LATIN SMALL LETTER I WITH OGONEK
U+0131	LATIN SMALL LETTER DOTLESS I
U+0135	LATIN SMALL LETTER J WITH CIRCUMFLEX
U+0137	LATIN SMALL LETTER K WITH CEDILLA
U+0138	LATIN SMALL LETTER KRA
U+013A	LATIN SMALL LETTER L WITH ACUTE
U+013C	LATIN SMALL LETTER L WITH CEDILLA
U+013E	LATIN SMALL LETTER L WITH CARON
U+0142	LATIN SMALL LETTER L WITH STROKE
U+0144	LATIN SMALL LETTER N WITH ACUTE

U+0146	LATIN SMALL LETTER N WITH CEDILLA
U+0148	LATIN SMALL LETTER N WITH CARON
U+014B	LATIN SMALL LETTER ENG
U+014D	LATIN SMALL LETTER O WITH MACRON

U+014F	LATIN SMALL LETTER O WITH BREVE
U+0151	LATIN SMALL LETTER O WITH DOUBLE ACUTE
U+0153	LATIN SMALL LIGATURE OE
U+0155	LATIN SMALL LETTER R WITH ACUTE
U+0157	LATIN SMALL LETTER R WITH CEDILLA
U+0159	LATIN SMALL LETTER R WITH CARON
U+015B	LATIN SMALL LETTER S WITH ACUTE
U+015D	LATIN SMALL LETTER S WITH CIRCUMFLEX
U+015F	LATIN SMALL LETTER S WITH CEDILLA
U+0161	LATIN SMALL LETTER S WITH CARON
U+0163	LATIN SMALL LETTER T WITH CEDILLA
U+0165	LATIN SMALL LETTER T WITH CARON
U+0167	LATIN SMALL LETTER T WITH STROKE
U+0169	LATIN SMALL LETTER U WITH TILDE
U+016B	LATIN SMALL LETTER U WITH MACRON
U+016D	LATIN SMALL LETTER U WITH BREVE
U+016F	LATIN SMALL LETTER U WITH RING ABOVE
U+0171	LATIN SMALL LETTER U WITH DOUBLE ACUTE
U+0173	LATIN SMALL LETTER U WITH OGONEK
U+0175	LATIN SMALL LETTER W WITH CIRCUMFLEX
U+0177	LATIN SMALL LETTER Y WITH CIRCUMFLEX
U+017A	LATIN SMALL LETTER Z WITH ACUTE
U+017C	LATIN SMALL LETTER Z WITH DOT ABOVE
U+017E	LATIN SMALL LETTER Z WITH CARON

b) Greek set:

U+002D	HYPHEN-MINUS
U+0030..U+0039	DIGIT ZERO .. DIGIT 9
U+0390	GREEK SMALL LETTER IOTA WITH DIALITYKA AND TONOS
U+03AC	GREEK SMALL LETTER ALPHA WITH TONOS
U+03AD	GREEK SMALL LETTER EPSILON WITH TONOS
U+03AE	GREEK SMALL LETTER ETA WITH TONOS
U+03AF	GREEK SMALL LETTER IOTA WITH TONOS
U+03B0	GREEK SMALL LETTER UPSILON WITH DIALITYKA AND TONOS
U+03B1	GREEK SMALL LETTER ALPHA
U+03B2	GREEK SMALL LETTER BETA
U+03B3	GREEK SMALL LETTER GAMMA
U+03B4	GREEK SMALL LETTER DELTA
U+03B5	GREEK SMALL LETTER EPSILON
U+03B6	GREEK SMALL LETTER ZETA
U+03B7	GREEK SMALL LETTER ETA
U+03B8	GREEK SMALL LETTER THETA
U+03B9	GREEK SMALL LETTER IOTA
U+03BA	GREEK SMALL LETTER KAPPA

U+03BB	GREEK SMALL LETTER LAMDA
U+03BC	GREEK SMALL LETTER MU
U+03BD	GREEK SMALL LETTER NU
U+03BE	GREEK SMALL LETTER XI

U+03BF	GREEK SMALL LETTER OMRICON
U+03C0	GREEK SMALL LETTER PI
U+03C1	GREEK SMALL LETTER RHO
U+03C2	GREEK SMALL LETTER FINAL SIGMA
U+03C3	GREEK SMALL LETTER SIGMA
U+03C4	GREEK SMALL LETTER TAU
U+03C5	GREEK SMALL LETTER UPSILON
U+03C6	GREEK SMALL LETTER PHI
U+03C7	GREEK SMALL LETTER CHI
U+03C8	GREEK SMALL LETTER PSI
U+03C9	GREEK SMALL LETTER OMEGA
U+03CA	GREEK SMALL LETTER IOTA WITH DIALYKTIKA
U+03CB	GREEK SMALL LETTER UPSILON WITH DIALYKTIKA
U+03CC	GREEK SMALL LETTER OMICRON WITH TONOS
U+03CD	GREEK SMALL LETTER UPSILON WITH TONOS
U+03CE	GREEK SMALL LETTER OMEGA WITH TONOS

c) Cyrillic set:

U+002D	HYPHEN-MINUS
U+0030..U+0039	DIGIT ZERO .. DIGIT 9
U+0430	CYRILLIC SMALL LETTER A
U+0431	CYRILLIC SMALL LETTER BE
U+0432	CYRILLIC SMALL LETTER VE
U+0433	CYRILLIC SMALL LETTER GHE
U+0434	CYRILLIC SMALL LETTER DE
U+0435	CYRILLIC SMALL LETTER IE
U+0436	CYRILLIC SMALL LETTER ZHE
U+0437	CYRILLIC SMALL LETTER ZE
U+0438	CYRILLIC SMALL LETTER I
U+0439	CYRILLIC SMALL LETTER SHORT I
U+043A	CYRILLIC SMALL LETTER KA
U+043B	CYRILLIC SMALL LETTER EL
U+043C	CYRILLIC SMALL LETTER EM
U+043D	CYRILLIC SMALL LETTER EN
U+043E	CYRILLIC SMALL LETTER O
U+043F	CYRILLIC SMALL LETTER PE
U+0440	CYRILLIC SMALL LETTER ER
U+0441	CYRILLIC SMALL LETTER ES
U+0442	CYRILLIC SMALL LETTER TE
U+0443	CYRILLIC SMALL LETTER U
U+0444	CYRILLIC SMALL LETTER EF
U+0445	CYRILLIC SMALL LETTER HA
U+0446	CYRILLIC SMALL LETTER TSE
U+0447	CYRILLIC SMALL LETTER CHE
U+0448	CYRILLIC SMALL LETTER SHA
U+0449	CYRILLIC SMALL LETTER SHCHA

U+044A	CYRILLIC SMALL LETTER HARD SIGN
U+044B	CYRILLIC SMALL LETTER YERU
U+044C	CYRILLIC SMALL LETTER SOFT SIGN
U+044D	CYRILLIC SMALL LETTER E

U+044E	CYRILLIC SMALL LETTER YU
U+044F	CYRILLIC SMALL LETTER YA
U+0450	CYRILLIC SMALL LETTER IE WITH GRAVE
U+0451	CYRILLIC SMALL LETTER IO
U+0452	CYRILLIC SMALL LETTER DJE
U+0453	CYRILLIC SMALL LETTER GJE
U+0454	CYRILLIC SMALL LETTER UKRAINIAN IE
U+0455	CYRILLIC SMALL LETTER DZE
U+0456	CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I
U+0457	CYRILLIC SMALL LETTER YI
U+0458	CYRILLIC SMALL LETTER JE
U+0459	CYRILLIC SMALL LETTER LJE
U+045A	CYRILLIC SMALL LETTER NJE
U+045B	CYRILLIC SMALL LETTER TSHE
U+045C	CYRILLIC SMALL LETTER KJE
U+045D	CYRILLIC SMALL LETTER I WITH GRAVE
U+045E	CYRILLIC SMALL LETTER SHORT U
U+045F	CYRILLIC SMALL LETTER DZHE
U+0491	CYRILLIC SMALL LETTER GHE WITH UPTURN
U+04C2	CYRILLIC SMALL LETTER ZHE WITH BREVE

d) Hebrew set:

U+002D	HYPHEN-MINUS
U+0030..U+0039	DIGIT ZERO .. DIGIT 9
U+05D0	HEBREW LETTER ALEF
U+05D1	HEBREW LETTER BET
U+05D2	HEBREW LETTER GIME
U+05D3	HEBREW LETTER DALET
U+05D4	HEBREW LETTER HE
U+05D5	HEBREW LETTER VAV
U+05D6	HEBREW LETTER ZAYIN
U+05D7	HEBREW LETTER HET
U+05D8	HEBREW LETTER TET
U+05D9	HEBREW LETTER YOD
U+05DA	HEBREW LETTER FINAL KAF
U+05DB	HEBREW LETTER KAF
U+05DC	HEBREW LETTER LAMED
U+05DD	HEBREW LETTER FINAL MEM
U+05DE	HEBREW LETTER MEM
U+05DF	HEBREW LETTER FINAL NUN
U+05E0	HEBREW LETTER NUN
U+05E1	HEBREW LETTER SAMEKH
U+05E2	HEBREW LETTER AYIN
U+05E3	HEBREW LETTER FINAL PE
U+05E4	HEBREW LETTER PE
U+05E5	HEBREW LETTER FINAL TSADI
U+05E6	HEBREW LETTER TSADI

U+05E7

HEBREW LETTER QOF

U+05E8

HEBREW LETTER RESH

U+05E9

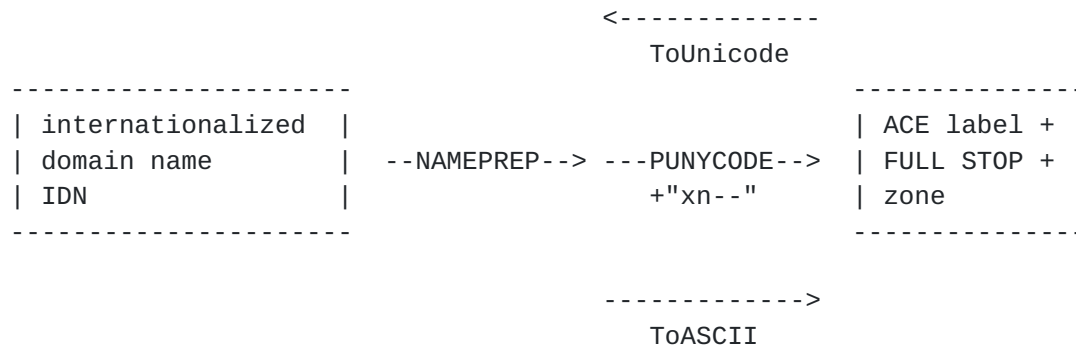
HEBREW LETTER SHIN

U+05EA

HEBREW LETTER TAV

- A combination of characters from different sets is not allowed.

The following pictogram presents the processing of an IDN into an ACE form acceptable by NASK for registration.



[4. The IDN influence on Registry](#)

Registry's IDN registration policy described in [Section 1](#) has no influence on Registry activities especially on invoking, whois and registration process. The Registry does not provide sunrise period for IDN registrations.

[4.1 The subject of the contract](#)

The subject of the contract between Registry and Registrant is the ACE version of the IDN domain name.

Registry stores ACE version in the zone files, whois and other internal databases. Registry MUST NOT store the IDN version of the domain name.

[4.2 Variant tables](#)

Registry does not implement variant tables and bundles (concept of variant tables and bundles is described in [\[6\]](#))

[4.3 Influence on EPP implementation.](#)

There is no influence on EPP implementation [\[7\]](#).

[4. The release dates](#)

- September 11th, 2003 - the release of Polish characters registration under .PL.
- October 6th, 2003 - the release of German characters.

c. October 20th, 2003 - the release of remaining characters
from Latin-1 Supplement and Latin Extended-A scripts.

d. November 3rd, 2003 - the release of Greek and Hebrew scripts.

e. February 26th, 2004 - the release of Cyrillic script.

5. Security considerations

This document do not raise new security issues itself. Security issues addressed in [1],[3], and [4] apply to the document.

6. Normative References

- [1] P. Hoffman, and M. Blanchet, "Nameprep: A Stringprep Profile for Internationalized Domain Names (IDN)", [RFC 3491](#), March 2003.
- [2] P. Hoffman, M. Blanchet, "Preparation of Internationalized Strings", [RFC 3454](#), December 2002.
- [3] A. Costello, "Punycode: A Bootstring encoding of Unicode for Internationalized Domain Names in Applications (IDNA)", [RFC 3492](#), March 2003.
- [4] P. Faltstrom, P. Hoffman, and A. Costello, "Internationalizing Domain Names in Applications (IDNA)", [RFC 3490](#), March 2003.
- [5] The Unicode Consortium, "The Unicode Standard", <http://www.unicode.org/unicode/standard/standard.html>
- [6] P. Hoffman, "A Method for Registering Internationalized Domain Names", Internet Draft, June 2003.
- [7] S. Hollenbeck, "Extensible Provisioning Protocol (EPP)", [RFC 3730](#), March 2004.
- [8] P. Mockapetris, "Domain Names - Concepts and Facilities", [RFC 1034](#), November 1987.
- [9] P. Mockapetris, "Domain Names - Implementation and Specification", [RFC-1035](#), November 1987.
- [10] S. Bradner, "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

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