

Internationalised Domain Names (IDNs)

Frequently Asked Questions - *To support the release of IDNs to the IE Namespace*



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General

What are IDNs?

At present, when registering a .ie domain, you can only apply for domains that include the following characters:

- Letters from the Roman Alphabet (A-Z),
- Digits, 0-9,
- Hyphens

These are the standardised characters.

However, with Internationalised Domain Names, you can apply for a domain which contains non-standardised characters (e.g. the fada used in the Irish language on vowels: á, ó, ú, é, í).

How do IDNs work?

In order to view an IDN website, your browser needs to convert these special characters into a language that it can understand.

This conversion is done using a code known as **Punycode**, which allows the browser to find the website you are looking for.

For example, if you wanted to go to the Internationalised Domain Name, éire.ie, this would be known as the “**Unicode**” version of that website.

Your browser will then need to convert this web address into the form it understands, Punycode.

In Punycode, éire.ie will display as: xn--ire-9la.ie

As you can see, the Punycode version isn't as easy to read and in the past, some browsers and email clients would display the Punycode version, rather than the easier-to-read, Unicode.

As IDN usage has increased, many well-known web browsers, along with a small number of email providers, have upgraded their systems to support the IDNs, and show the easier-to-read Unicode version.

If I already have registered a domain name, will I also be the registrant for the IDN version of that domain name?

If you already hold a .ie domain that reflects a word in the Irish language, e.g. failte.ie, but without the correct inclusion of the fada character (e.g. fáilte.ie), you will have a chance to apply for the correct fada inclusive version through a special phase called Landrush. This will ensure you can apply for the correct spelling IDN, before these domains are launched on general release.

IMPORTANT NOTE

Browsers and email clients listed below reflect those referenced in the 2014 and 2015 World Reports for IDNs.

Specific versions tested by the IEDR will be added to updated versions of this document in due course.

What browsers will support IDNs?

Most of the best known internet browsers provide some level of support for IDNs

The web browsers which provide this support are outlined in the World Report for Internationalised Domain Names 2014¹, and include:

- ✓ **Google Chrome**
- ✓ **Internet Explorer 11,**
- ✓ **Firefox,**
- ✓ **Opera,**
- ✓ **Safari**

Can I use IDNs for email?

Although web browsers have begun to provide increased support for IDNs, many email providers still struggle with their usage.

Most well-known email clients will not allow you to create an account which contains the internationalised characters², however, a number of these providers will support sending internationalised emails.

As such, we would recommend not using an email address with an IDN for the moment.

What e-mail providers support sending internationalised email?

The following e-mail providers support the sending of internationalised email:

- ✓ **Microsoft Outlook³,**
- ✓ **Gmail⁴**
- ✓ **Mozilla Thunderbird⁵,**
- ✓ **Apple Mail⁶**
- ✓ **Mail chimp⁷**

¹ World Report on Internationalised Domain Names 2014 (Section 5.6.1 – Table 6)

²World Report on Internationalised Domain Names (Section 5.5.2, table 5).

³ Microsoft Office Support - <https://support.office.com/en-ie/article/What-s-new-in-Outlook-2016-for-Windows-51c81e7a-de25-4a34-a7fe-bd79f8e48647>

⁴ <https://googleblog.blogspot.ie/2014/08/a-first-step-toward-more-global-email.html>

⁵ http://website-archive.mozilla.org/www.mozilla.org/thunderbird_releasenotes/en-US/thunderbird/24.0/releasenotes/

⁶ <https://www.nic.ch/reg/cm/wcm-page/faqs/idn.jsp?lid=en>

⁷ <http://kb.mailchimp.com/accounts/management/international-characters-in-mailchimp>

Why should I register an IDN?

With the introduction of IDNs to the .IE namespace, you will be able to apply for domains in the Irish language, which contain a fada on any vowels, for the first time.

What mobile browsers will support IDNs?

The World Reports on Internationalised Domain Names 2014⁸ confirms that: -

- Internet Explorer on Windows Phone,
- Chrome on iOS and Android, and
- Safari on iOS

all successfully display IDNs.

How can I apply for an IDN in Irish?

Internationalised domain names in Irish (as Gaeilge) aren't available just yet, but are expected to be released later in 2016.

Further information on their introduction will be released through online tech blogs, national press, and the IEDR website at <https://www.iedr.ie/internationalised-ie-domain-names/>

Can I apply for an IDN in Polish or Chinese?

Internationalised domain names in languages other than Irish aren't planned just yet, but this is under review.

Technical

A website is saying that the IDN is invalid, what's causing this?

Some websites claim that the specialised characters in IDNs are invalid. However, this is a bug or error in the design of the web page, and not the web browser.

What should I do if I cannot enter my IDN in a web page?

As mentioned above, all IDN exists in two forms, Unicode and Punycode.

When you enter a domain name to a browser, you will normally use the Unicode version, e.g. éire.ie.

The Punycode for an IDN will always start with the four characters "xn--" and is a 1:1 mapping of the domain name into the standardised characters, known as ASCII, American Standard Code for Information Interchange. This system is used in DNS.

For example, in Punycode, éire.ie will display as: xn--ire-9la.ie

⁸ World Report on Internationalised Domain Names (Section 5.6.2)

How do I convert between Punycode and Unicode versions?

The IEDR will make links to converter tools available on <https://www.iedr.ie/internationalised-ie-domain-names/> and we invite you to use them, in order to become more familiar with the Unicode and Punycode formats.

Security - What to be aware of?

What are Homograph / Spoofing Attacks ^{9,10}?

These instances occur where a party registers a domain name, which is similar in appearance to a popular website address, in order to appear as an affiliate of the popular website provider.

Such actions are done in bad faith, usually for fraudulent purposes, and / or with the goal of taking business from, or using the good will of the well-known website.

This practise has been in use for many years prior to the release of IDNs, with nefarious parties registering domains that reflect misspellings of well-known, popular websites for similar purposes.

How can I stay safe online?

Some browsers will warn users of a potential issue like this by displaying the web address in the address bar in the Punycode form (xn--), rather than in the Unicode format.

If a website displays as Punycode (xn--), it doesn't necessarily mean that this is a suspicious site; however, it acts as a reminder to be **vigilant** before clicking on any links.

How do different browsers handle IDNs?

There is no one browser that will definitely display the Unicode form of an IDN, and most browsers review each IDN on a label by label basis.

Internet Explorer (IE) shows the address as Punycode, in certain circumstances, including if one of the following conditions is true:

- The domain name contains a character from a script that is not used for the languages included in the user's language preferences.

⁹ <https://www.icann.org/news/announcement-2005-02-23-en>

¹⁰ <https://www.w3.org/International/articles/idn-and-iri/>

- Any labels in the domain name comprise of characters from a mix of scripts, that do not appear together within a single language.
- Phishing protection has compared the domain with a reported site.

For example, when typing www.fáilte.ie into IE, as below:



The browser converts to the Punycode form, due to some of the conditions outlined above being met.



Chrome operates a blacklist of characters, and any IDN including these characters will not be displayed in the Unicode form. Chrome also has a configurable list in its settings that will allow you to set which languages should be acceptable in IDN form.

When testing how www.fáilte.ie would appear in this browser, the Unicode form displayed:



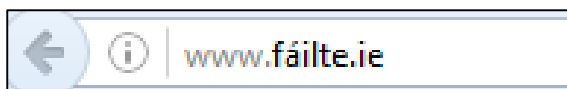
Firefox, for the most part, only displays domain names in Unicode for certain whitelisted top level domains.

Firefox selects Top Level Domains (TLDs) that have established policies on the domain names they *allow to be registered*, and then relies on the registration process to create safe IDNs.

You can find a [list of supported TLDs](#) on the Mozilla site. If an IDN is from a TLD that is not on the list, the web address may appear in Punycode form in the status and address bars. **However, this isn't always the case, as Firefox also decides whether to show the IDN URL on a label by label basis.**

Firefox also operates a blacklist of characters, and any IDN including these characters will not be displayed in the Unicode form.

When testing how www.fáilte.ie would appear in this browser, the Unicode form displayed.



Other Browsers

Opera works similarly to Firefox, as it works to only display domain names in Unicode for whitelisted TLDs. However, for TLDs that aren't whitelisted, Opera allows domains to use Latin characters with accents that support Western European languages.

Safari provides a user-editable list of scripts that are allowed to be displayed in domain names. If a character appears in a domain name and does not belong to a script in the list, the web address is displayed as Punycode.

If the whitelist is emptied, any non-ASCII character causes the address to be displayed as Punycode.

Where can I find out more about Internationalised Domain Names?

More detailed information relating to the usage and uptake of IDNs around the world is available in the World Reports on Internationalised Domain Names, which were published in 2014 and 2015 by:

The United Nations Educational, Scientific and Cultural Organisation, with the Support of Verisign and EURid CENTR, LACTLD, APTLD, AFTLD, amongst others.

The 2015 report is available [here](#).

The 2014 report is available [here](#).

Introducing Irish to your business

Whose using Irish?

The Central Statistics Office issued a report after the 2011 Census titled "[This is Ireland - Highlights from Census 2011, Part 1](#)", and noted that 1.77 million people in Ireland had declared their ability to speak the Irish language.

This figure represents a substantial proportion of the population that businesses can promote themselves to through the use of Irish.

Furthermore, the uniqueness and goodwill associated with using Irish was highlighted in a report by Dr Gearóid Trimble of Foras na Gaeilge, titled "The Value of Irish for

Commercial Businesses”. (<http://www.udaras.ie/wp-content/uploads/2012/10/The-Value-of-Irish-for-Commercial-Businesses.pdf>).

This report noted that the Irish language has “attracted significant attention among business circles, particularly as various market leaders have been able to effectively capitalise on its unique properties as a marketing tool....The Irish language holds a prized place in the psyche of the Irish consumer, irrespective of their own ability in the language, and marketers are now successfully harnessing the use of Irish as a means to enhance Irish brand-worthiness and build on the customer-relationship aspect”).

These factors are leading to a growing popularity amongst businesses to add the Irish language into their branding and operations, in order to raise brand awareness and benefit from the goodwill associated with the use of the Irish language.

There are also some 1,374 actively trading company names currently registered with the Company Registrations Office in Irish. (July 2016, Vision Net: <https://www.vision-net.ie/searchResults.jsp>).

[Need help adding Irish to your business?](#)

With the introduction of the fada character to the .ie namespace, and the goodwill associated with the use of the Irish language in marketing, there has never been a better time to introduce Irish to your business, as you can now accurately register your online Irish business or brand name.

[Foras na Gaeilge](#), the body responsible for the promotion of the Irish language throughout the whole island of Ireland offers a variety of supports to businesses interested in adding Irish to their operations.

They are strongly committed to supporting businesses with enhancing the uptake of the Irish language, and offer funding of up to €3,000 through their Business Support Scheme, “Gnó Means Business”, and also offer expert advice on how to encourage the usage of Irish within the private business sector.

Furthermore, they also make available information sheets, terminology handbooks, Irish and bilingual signs, as well as stationery, free of charge.

Further information on these services can be found [here](#).