

Getting "UA Ready" -Websites

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Introduction

People all over the world can use domain names in their native languages and scripts thanks to Internationalised Domain Names (IDNs). Characters from several scripts, including Arabic, Chinese, Cyrillic, and Devanagari, are used to create IDNs. These are used in accordance with the applicable IDN protocols and encoded according to the Unicode standard. Not all labels of a domain name may be internationalized. The user uses the IDN version, but the IDN is converted into ASCII for DNS resolution. The xn-prefix is added to identify an IDN.

Example: सीडैक.भारत is the IDN in Devanagiri script for cdac.in

Universal Acceptance (UA) encourages language variety and enables users to register domain names and create email addresses in their own/native languages or scripts. UA support internationalized identifiers, as well as new and long TLDs. **Internationalized identifiers** are Internationalized domain name (IDN) and Email Address Internationalization (EAI). UA supports longer-string TLDs (new generic top-level domains -new gTLDs). In the early days, TLDs were two or three characters long (.ca, .com). Recently, TLDs started to have longer strings and can have up to 63 octets.

Who intends for an IDN

A user hosting exclusively non-English language contents or Multi-lingual contents and wants to cater to that language-specific audience group will be greatly benefitted by IDN. Such users need to register a domain name in their required local/native language (non-English), which is supported through IDN. The IDN domains are encoded using a special encoding scheme called Punycode. The Punycode converts non-English characters (Unicode representation) to their equivalent characters in ASCII representation through encoding.

Creating an IDN for a website/portal

Case 1: Hosting a Multi-Lingual Website – If a user has 'English' Language Website and wants to serve the contents in other Indian language(s), then the follow steps below for a "UA Ready" Websites:

For example, to launch the "iiref.in" website in Hindi:



- 1. Convert or translate the contents of "iiref.in" website into Hindi (Devanagiri Script)
- 2. Register/Lease an IDN domain (in Hindi) आईआईआरईएफ.भारत from an authorized domain name registrar *(Example: https://godil.in/)*
- 3. Co-host the Hindi contents of "iiref.in" as "आईआईआरईएफ.भारत" at the same IP address as that of "iiref.in". This is referred to as virtual hosting and the procedure for the same is described in the next immediate section.
- 4. Provide navigational links in the Webpages for switching the language from 'English' to 'Hindi' in the pages served from "iiref.in"

and from 'Hindi' to 'English' in the pages served from "आईआईआरईएफ.भारत"

5. Content Update: It is important for the administrators to update both the English and IDN contents of the Website simultaneously.

The above approach can be extended to incorporate more languages.

Case 2: Hosting a single non-English language Website: The following steps could be followed for getting "UA Ready" Websites:

For example, to launch a website in Tamil, "ஐஐஆர்இஎப்.இந்தியா":

- 1. Register/Lease an IDN domain (in Tamil) ஐஐஆர்இஎப்.இந்தியா from an authorized domain name registrar (Example: https://godil.in/)
- 2. Host the Tamil language contents " ஐஐஆர்இஎப்.இந்தியா" with an IP address obtained from the ISP/Hosting Service provider.



Procedure to be followed for Virtual Hosting

Operating Environment:

- 1. OS: Ubuntu 22.04 LTS
- 2. Web Server: Apache 2
- 3. Certificate Generator: Certbot
- 4. Domain: आईआईआरईएफ.भारत
- 5. Punycode of the domain: xn--m1baagbb3c2opb.xn--h2brj9c

The process to add a virtual host:

Create a directory for the domain and change the permission
\$ sudo mkdir /var/www/iiref

2. * Go to the Apache configuration directory and add a virtual host for
your domain using the punycode of the domain
\$ sudo cd /etc/apache2/sites-available/
<u>\$ sudo nano iiref.conf</u>
VirtualHost *:80>
ServerName xnm1baagbb3c2opb.xnh2brj9c
ServerAdmin admin@iiref.in
DocumentRoot /var/www/iiref
ErrorLog \${APACHE_LOG_DIR}/error.log
CustomLog \${APACHE_LOG_DIR}/access.log combined
3. Enable the new VirtualHost
\$ sudo a2ensite iiref
4. Check if the configurations are correct
\$ sudo apache2ctl configtest
5. Reload the web server
\$ sudo systemctl reload apache2
6. Create a temporary file for your website
<u>\$ nano /var/www/iiref/index.html</u>
Antml>
<pre>> <head></head></pre>
<meta charset="utf-8"/>
<pre>//head></pre>
<body>स्वागत</body>
<mark></mark>
7. [Optional] Install Cerbot for generating TLS certificate
\$ sudo snap installclassic certbot1
<pre>\$ sudo In -s /snap/bin/certbot /usr/bin/certbot</pre>
8. Generate and install the certificate in Apache automatically
\$ sudo certbotapache
9. Access the website through the URL in a browser
https://आईआईआरईएफ.भारत
For any other operating system, locate 'httpd.conf' file in Apache 'conf'
directory and add the virtual host at the end of the file.