

**IDN developments at IRNIC  
.ir ccTLD  
<http://www.nic.ir>**



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Global Symposium on Promoting the  
Multilingual Internet @ Geneva/Switzerland

nic@ir



**Special thanks to :**

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**Dr. Siavash Shahshahani  
Mr. Roozbeh Pournader  
&  
Technical Team@IRNIC**



# IDN in IRNIC

1. **6 month testbed period started 26 Feb. 2005**
2. **First Sunrise Period of 60 days: Limited to the registration of officially registered names by public or private institutions**
3. **Second Sunrise Period of 30 days: Limited to participants in the Trial Period : they could register up to 20 domains including at most 5 from those they registered in Trial Period**

# Testbed Report

## List of 15 TLDs in the Trial Period and the number of registrations

ایران "Iran" = 3134

آموزشی "Educational" = 241

پزشکی "Medical" = 160

تفریحی "Entertainment" = 164

دینی "Religious" = 105

دولتی "Governmental" = 180

رسا "ISP" = 176

سازمان "Organization" = 256

شخصی "Individual" = 400

شرکت "Company" = 628

علمی "Academic" = 216

فرهنگی "Cultural" = 210

فروشگاه "Shop" = 268

نشریه "Publication" = 209

ورزشی "Sport" = 155

6502=SUM

A decorative graphic consisting of overlapping colored squares (yellow, red, blue) and a black crosshair.

# Statistics

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- First sunrise period : 32 (!)
- Second Sunrise Period : 22 (!!)
- Open Registration : 1984
- Total up to 5 May 2006 : 2038

A decorative graphic consisting of overlapping colored squares (yellow, red, blue) and a black crosshair, located to the left of the title.

# Registration software

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- Software developed at IRNIC
- Registration is in IDN
- Persian IDN is based on Persian (Farsi) script, a variant of Arabic alphabet
- To avoid confusion with Arabic and other Arabic-based scripts and combat phishing attempts, a bundle system is used



# Label Processing

- Checking the format and characters against character table
- Normalizing the domain into Standard Persian label
- Removing ZWJ and NZWJ characters
- Generating the exact IMAGE of the registered domain to make the applicant aware of the domain actually being registered
- If the applicant trying to register **کلمه‌ای.ایران** with ARABIC YEH, the generated image will be **کلمه‌ای.ایران** which is the domain in normalized format ( PERSIAN YEH )

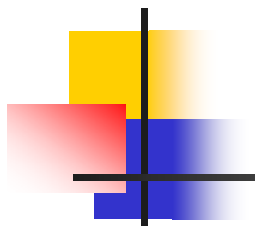


# Label Processing

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- Upon confirmation, the domain and all its punycode variants are registered as a bundle
- The normalized label and its exact punycode are the primary keys in the database

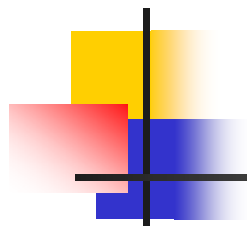




Simple label  
کلمه‌ای

Unicode Bundle  
کلمه‌ای، کلمه‌ای، کلمه‌ای، کلمه‌ای،  
کلمه‌ای، کلمه‌ای

Punycode Bundle  
xn--mgb1ddi10c2gjk  
xn--mgb9cdekt30j  
xn--4-ymc0gek99c0h  
xn--4-ymc7fefmx  
xn--mgb1ddi0m8p7h  
xn--mgb9cdekt5p



Unicode Bundle  
کلمه‌های، کلمه‌ای، کلمه‌ای،  
کلمه‌ای، کلمه‌ای، کلمه‌ای

X

Top level  
ایران. "PERSIAN YEH"  
ایران. "ARABIC YEH"

=

12 records should be written to  
the zone file to support all  
variants



# Helping IDN Customers

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- It was evident during the Trial Period that we could not expect the average IDN applicant/user to be familiar with concepts such as normalized label, simple label, UNICODE label, punycode label, ...
- Sending an email containing complete details of configuration and zone template of the BIND DNS server for the entire bundle
- Web interface was developed to assist in this procedure <http://idn.nic.ir/bind/>
- Holding public courses about configuring and hosting IDN domains.
- Going to develop packages and plug-ins for IDN hosting.

## The Next Step (Hopefully) Supporting IDN.IDN

- The Persian script is right-to-left and having a .ir on the right creates visual confusion and appearance of dns-hierarchy contradiction. For this reason we are firm supporters of IDN.IDN concept
- Ironically, in the case of our top level domain ایران (Iran in Arabic script), implementation of IDN.IDN would require the use of a bundle if our algorithm is followed. The bundle would contain

## The Next Step (Hopefully) Supporting IDN.IDN

- `<xn--mgba3a4f16a>` "ایران" with  
PERSIAN YEH "ی"
- `<xn--mgba3a4fra>` "ایران" with  
ARABIC YEH "ي"



# Example


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NIC - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

https://idn.nic.ir/handle/

Customize Links Free Hotmail gooya.com Windows Marketplace Windows Media Windows



IRNIC ccTLD Registry of Iran

Handle: (شناسه‌ی ثبت)

Password: (کلمه‌عبور)

Login

Request For a Handle درخواست برای شناسه ثبت

Done idn.nic.ir



# Example

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The screenshot shows a Mozilla Firefox browser window displaying the IRNIC ccTLD Registry of Iran website. The browser's address bar shows the URL: `http://idn.nic.ir/handle/frame.php?mytext=as50-irnic&err=12`. The page features a green header with the **nic@ir** logo and the text **IRNIC ccTLD Registry of Iran**. A navigation bar includes a search field with the text "Whois:", a "Go" button, and the handle "as50-irnic". The main content area displays "Active : as50-irnic" and a "Welcome To IRNIC ccTLD." message. A sidebar on the left contains a menu with the following items: My Profile, Register New Domain, Payment, Bind, Configuration, and Logout. The footer of the page contains the copyright notice: "Copyright © 2005 IRNIC ccTLD. All rights reserved." The browser's status bar at the bottom shows "Done".



# Example

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The screenshot shows a Mozilla Firefox browser window displaying the IRNIC ccTLD Registry of Iran website. The browser's address bar shows the URL: `http://idn.nic.ir/handle/frame.php?mytext=as50-irnic&err=12`. The page header includes the date "12:00 Tuesday 09 May 2006" and navigation links for "Home", "News", and "FAQ". The main content area features the "nic@ir" logo, a world map, and the text "IRNIC ccTLD Registry of Iran" with "Version 1.3" in the bottom right corner. A green navigation bar contains a "Whois:" search field and a "Go" button, followed by the text "Handle: as50-irnic + Register New Domain - STEP 1".

The main content area is divided into two sections. On the left, a sidebar titled "Active : as50-irnic" contains a menu with the following items: "My Profile", "Register New Domain", "Payment", "Bind", "Configuration", and "Logout". The "Register New Domain" item is highlighted. The main content area is titled "Step 1 : Enter Desired Domain :" and contains a form with the following fields and options:

- Domain Name :** A text input field containing the Persian text "کلمه ۴ی" (4-letter word).
- Top Level :** A radio button selection with "ایران .", which is selected.
- Buttons:** "اتصال مجازی" (Virtual Connection) and "فاصله مجازی" (Virtual Distance) buttons are located below the domain name field. "Exit" and "Next" buttons are located at the bottom right of the form.

A red asterisk (\*) is placed to the left of the "Top Level" field, and a red asterisk (\*) is placed to the left of the "در ابتدا و انتهای دامنه از فاصله و اتصال مجازی استفاده ننمایید." (Do not use virtual connection and distance in the beginning and end of the domain name.) note at the bottom right of the form.

The footer of the page contains the text: "Copyright © 2005 IRNIC ccTLD. All rights reserved." and a "Done" status bar is visible at the very bottom of the browser window.





# Example

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The screenshot shows the IRNIC ccTLD Registry of IRAN website in Mozilla Firefox. The browser address bar shows the URL: <http://idn.nic.ir/handle/frame.php?mytext=as50-irnic&err=12>. The page title is "IRNIC ccTLD Registry Of IRAN - Mozilla Firefox".

The main content area is titled "STEP 2 :". It features a table with the following columns: "Select", "Domain", "Status", and "Image (click to enlarge image view)". The table contains one row with the following data:

Select	Domain	Status	Image (click to enlarge image view)
<input checked="" type="radio"/>	کلمه‌ای ایران	Available.	کلمه‌ای ایران

Below the table, there are several form fields and buttons for registration details:

- Holder(Applicant) :
- Technical Handle :
- Billing Handle :
- Register For :  1 Year  5 Years
- Primary Name Server :
- Primary Name Server IP :
- Secondary Name Server :
- Secondary Name Server IP :

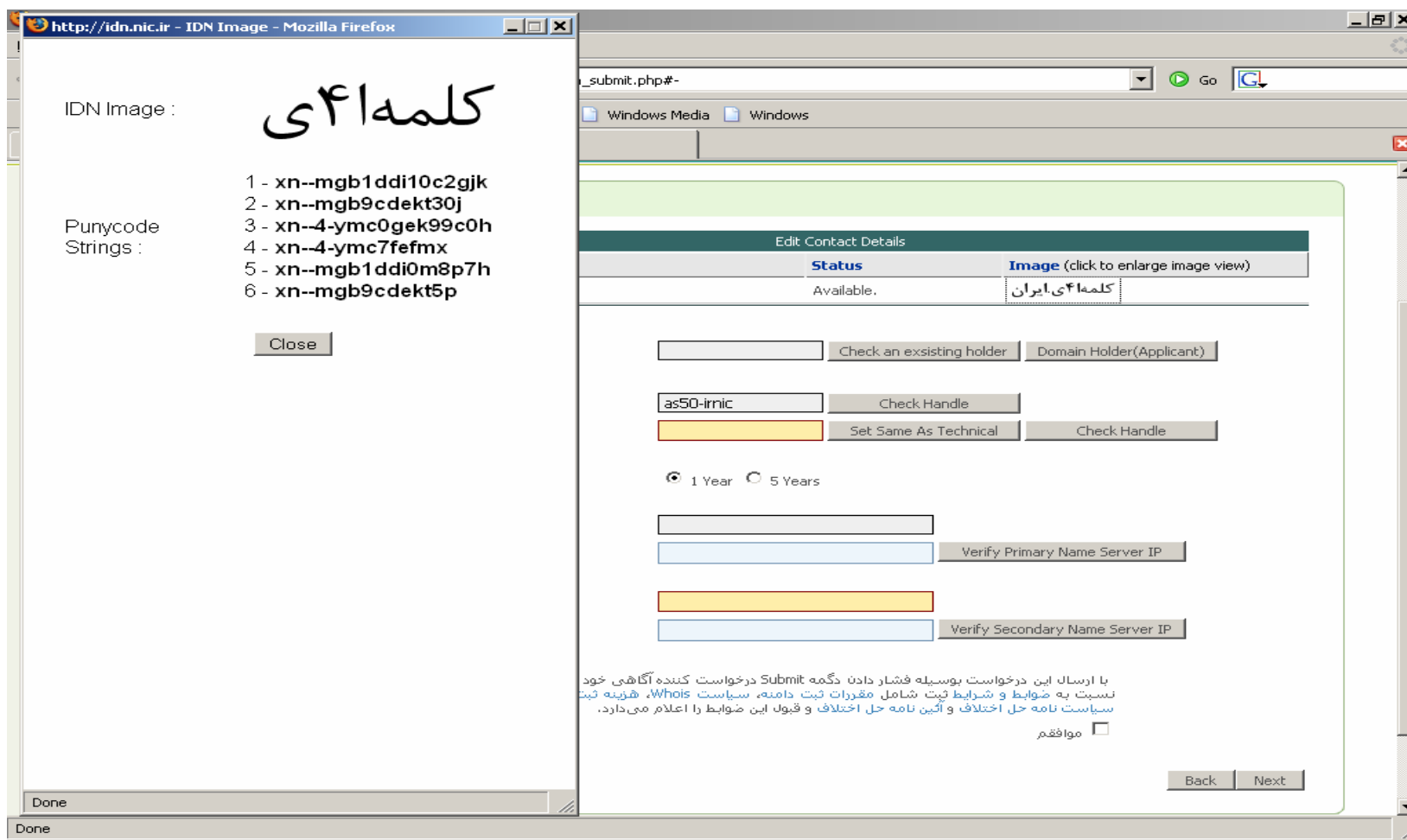
At the bottom of the form, there is a paragraph of text in Persian and a checkbox for "موافقم" (I agree).

با ارسال این درخواست بوسیله فشار دادن دکمه Submit درخواست کننده آگاهی خود را نسبت به ضوابط و شرایط ثبت شامل مقررات ثبت دامنه، سیاست Whois، هزینه ثبت، سیاست نامه حل اختلاف و آیین نامه حل اختلاف و قبول این ضوابط را اعلام می‌دارد.

موافقم

Buttons for "Back" and "Next" are located at the bottom right of the form.

# Example



http://idn.nic.ir - IDN Image - Mozilla Firefox

IDN Image : **کلمه ۴ی**

Punycode Strings :

- 1 - xn--mgb1ddi10c2gjk
- 2 - xn--mgb9cdekt30j
- 3 - xn--4-ymc0gek99c0h
- 4 - xn--4-ymc7fefmx
- 5 - xn--mgb1ddi0m8p7h
- 6 - xn--mgb9cdekt5p

Close

Done

http://idn.nic.ir/\_submit.php#-

Edit Contact Details

Status	Image (click to enlarge image view)
Available.	کلمه ۴ی ایران

Close Check an existing holder Domain Holder(Applicant)

as50-irnic Check Handle

Set Same As Technical Check Handle

1 Year  5 Years

Verify Primary Name Server IP

Verify Secondary Name Server IP

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موافقم

Back Next

Done

nic@ir

?

Visit :

<http://ثبتدامنه.ایران.ir>  
(<http://www.nic.ir>)

**Thank You**  
**Alireza Saleh**  
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