



IRNIC cc TLD Registry of Iran

IDN & DNS IRNIC, .ir ccTLD

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Development process

- Rules of IDN domains
- Label definition
- Phishing resolution
- Registration software



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Development Process

- Registration roadmap
- Setting up a discussion list for public
- Analyzing the registration activity and feedbacks
- Collecting statistics



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IDN rules

- Registration policy
 - Registration period
 - Domain contacts
 - ...
- WHOIS Policy
- Registration fee
- Dispute resolution
 - Dispute Resolution Policy
 - Dispute Resolution Provider
 - Dispute cases based on normalized domain



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WHOIS

- There are two methods to retrieve WHOIS information
 - Web Interface (Unicode, Punycode)
 - WHOIS Protocol (Punycode)
- Any variant of a domain can be queried



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IDN Label

- All letters should be in the character table
 - There is a language base repertoire
- Minimum label length is 2 characters
- Label must follow the IDNA
- Registrations are under ایران.(Iran)



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Phising resolution

- Resolved at the registry
- Variants of a label submitted automatically for the applicant during the registration
- The label and all its variants called Bundle
- Algorithm of generating the bundle is according to the table



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The Bundle

	Persian ک ی (ک پ)	Arabic ک ي (ک ي)
Persian ۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۰	ک ۴ ی	ک ۴ ي
Arabic-Indic ۱ ۲ ۳ ۴ ۵ ۶ ۷ ۸ ۹ ۰	ک ۴ ی	ک ۴ ي
European 1234567890	ک 4 ی	ک 4 ي



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Registration Software

- Registration is in Unicode
- Input label checks against the label policy
- Normalized version of the input label is shown to the applicant for registration
- All the variants of the label will be automatically registered with the same characteristics of the normalized label.



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Registration Roadmap

- 6 months test bed
 - 15 IDN TLDs defined and tested
- Two sunrise periods
- Open registration



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Resolving IDN domains

- IDN.ایران form of the domain can be resolved using specific resolvers
- IDN.ایران.ir can be resolved normally
- IDN zone delegation is done by setting NS records
 - up to 12 zones should be delegated including variants, IDN.IDN and IDN.IDN.ir



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DNAMES

- Aliased domains are not resolved exactly the same as their parents
 - The domain itself can't be resolved
- Unknown errors may occur while resolving a domain
 - This will happen more frequently for subdomains of a domain.



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DNAMES

- It may confuse users
 - They almost forget to configure applications
- More bandwidth is required for resolving DNAMES
- But
 - It helps to reduce the size of the zone file
 - It's easier to maintain



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Feed Back On IDN

- IDN domains are not popular
 - ASCII labels for email addresses and websites are more popular
 - In the same period the number of .ir ASCII registrations was 62 times.
 - IDNA function has not been implemented yet in standard version of some clients
 - Media Player!, telnet
 - DNS configuration for IDN domains seems hard specially when using bundles.
 - Translating the Unicode label to ASCII may not be a perfect solution, some protocol changes may need to be done.



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Feed Back on IDN

- BIDI problem
- Using search engines and following the links are more common
 - Typing a URL in the address bar is not frequent
- IRI standard has not been implemented yet
- No IDN.IDN implementation



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Helping Users

- On demand configuration generator for IDN domains
- Plug-in for hosting companies
- Online support for IDN applicants



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Promoting IDN

- One year registration of an .IR domain is free per IDN registration
- Register standardized transcription of IDN label in Latin script (ASCII) for the applicant
- Domain forwarding
 - Doing at DNS layer



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Domain forwarding

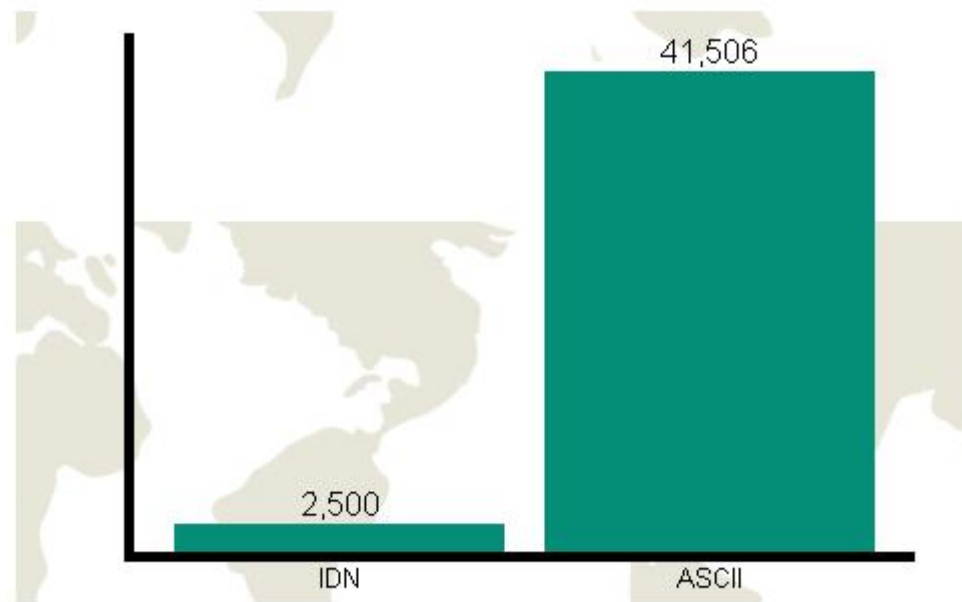
- Following RRs can be set for the domain
 - A , NS , CNAME , DNAME
- The RR assigns to the normalized domain
- All the variants will be setup automatically from normalized domain



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Statistics

- Registered IDN domains (Ignoring Bundle)





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Statistics

- Number of IDN domain (Including Bundle) : 4976
- Number of each Resource Records
 - CNAME : 26
 - DNAMES : 0
 - A : 12
 - NS : 2462



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- Questions ?

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