

IANA Glossary

ENGLISH

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| A record | The representation of an IPv4 address in the DNS system. |
| AAAA record | The representation of an IPv6 address in the DNS system. |
| ACE | The ASCII-compatible Encoded |
| A-label | The ASCII-compatible encoded (ACE) representation of an internationalised domain name, i.e. how it is transmitted internally within the DNS protocol. A-labels always commence the with the prefix “xn--”. Contrast with U-label. |
| APIPA | A subcategory of private IP address. See Private IP Addresses. |
| AREG | A subset of IRIS for performing registration lookups on IP addresses. |
| .ARPA | Originally a reference to the US Government agency that managed some of the Internet’s initial development, now a top-level domain used solely for machine-readable use by computers for certain protocols — such as for reverse IP address lookups, and ENUM. The domain is not designed for general registrations. IANA manages .ARPA in conjunction with the Internet Architecture Board. |
| ASCII (American Standard Code for Information Interchange) | The standard for transmitting English (or “Latin”) letters over the Internet. DNS was originally limited to only Latin characters because it uses ASCII as its encoding format, although this has been expanded using Internationalised Domain Names for Applications. |
| ASCII-compatible encoding | see A-label. |

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| authoritative name server | a domain name server configured to host the official record of the contents of a DNS zone. Each domain name must have a set of these so computers on the Internet can find out the contents of that domain. The set of authoritative name servers for any given domain must be configured as NS records in the parent domain. |
| authority | see authoritative name server. |
| Automatic Private IP Addresses (APIPA) | A subcategory of private IP address that is automatically assigned, as per RFC 3927. See also Private IP addresses. |
| autonomous system number (AS number, ASN) | A number used by Internet routing protocols to uniquely identify the routing policy of a particular network operator. They can be considered to be similar to a 'postcode' used for physical mail. They are allocated to network operators via regional Internet registries. |
| bundle | see variant bundle. |
| caching name server | a domain name server that remembers the results of previous lookups in a cache to speed future lookups. Usually in combination with recursive name server functionality. |
| caching resolver | the combination of a recursive name server and a caching name server. |
| ccNSO | see Country-code Name Supporting Organisation. |
| ccTLD | see country-code top-level domain. |

chain of trust

A property of an Internet resource where the delegation of responsibility from one party to another can be verified because there is a chain of custody that can be cryptographically verified using electronic certificates. To verify this chain of trust, the chain must be valid and unbroken all the way from a known trust anchor to the resource in question.

Character

For the purposes of discussing IDNs, a "character" can best be seen as the basic graphic unit of a writing system, which is a script plus a set of rules determining how it is used for representing a specific language. However, domain labels do not convey any intrinsic information about the language with which they are intended to be associated, although they do reveal the script on which they are based. This language dependency can unfortunately not be eliminated by restricting the definition to script because in several cases (see examples below) languages that share the same script differ in the way they regard its individual elements. The term character can therefore not be defined independently of the context in which it is used.

In phonetically based writing systems, a character is typically a letter or represents a syllable, and in ideographic systems (or alternatively, pictographic or logographic systems) a character may represent a concept or word.

The following examples are intended to illustrate that the definition of a character is at least two-fold, one being a linguistic base unit and the other is the associated code point.

U-label 酒 : Jiu; the Chinese word for 'alcoholic beverage'; Unicode code point is U+9152 (also referred to as: CJK UNIFIED IDEOGRAPH-9152); A-label is xn—zz4

U-label 北京 : the Chinese word for 'Beijing', Unicode codepoints are U+5300 U+4EAC; A-label is xn—1lq90i

U-label 東京 : Japanese word for 'Tokyo', the Unicode code points are U+6771 U+4EAC; A-label is xn—1lqs71d

U-label ايكوم; Farsi acronym for ICOM, Unicode code points are U+0627 U+06CC U+0643 U+0648 U+0645; A-label is xn—mgb0dgl27d.

clandestine redelegation

The act of performing a redelegation by changing the practical details (i.e. the contact details and/or name server records) of a top-level domain subversively, rather than applying for a redelegation using proper procedure.

Country-code top-level domain (ccTLD)

A class of top-level domains only assignable to represent countries listed in the ISO 3166-1 standard. At present these are two-letter codes like “.UK”, “.DE” etc., however in the future it is expected there will be non-Latin equivalents also available. Much of the policy-making for individual country-code top-level domains is vested with a local sponsoring organisation, as opposed to other top-level domains where ICANN sets the policy. It is a requirement that ccTLDs are operated within the country they are designated so appropriate local laws, governments etc. have a say in how the domain is run.

Country-code Name Supporting Organisation (ccNSO)

A component of ICANN’s policy development forums (a “constituency”) that is responsible for discussing and developing policy relating to how ccTLDs are delegated.

CRISP

see Cross-Registry Information Service Protocol.

Cross-Registry Information Service Protocol (CRISP)

The name of the working group at the IETF that developed the Internet Registry Information Service (IRIS), a next-generation WHOIS protocol replacement.

DCHK (A Domain Availability Check)

A subset of IRIS for performing checks on whether a domain name is available to register. It is more lightweight, and has less privacy implications, than DREG as it does not transmit registration data other than simple availability.

delegation

Any transfer of responsibility to another entity. In the domain name system, one name server can provide pointers to more useful name servers for a given request by returning NS records. On an administrative level, sub-domains are delegated to other entities. IANA also delegates IP address blocks to regional Internet registries.

DNS

See Domain Name System.

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| DNSSEC | A technology that can be added to the Domain Name System to verify the authenticity of its data. The works by adding verifiable chains of trust that can be validated to the domain name system. |
| DNS zone | a section of the Domain Name System name space. By default, the Root Zone contains all domain names, however in practice sections of this are delegated into smaller zones in a hierarchical fashion. For example, the “.COM” zone would refer to the portion of the DNS delegated that ends in “.COM”. |
| domain name | A unique identifier with a set of properties attached to it so that computers can perform conversions. A typical domain name is “icann.org”. Most commonly the property attached is an IP address, like “208.77.188.103”, so that computers can convert the domain name into an IP address. However the DNS is used for many other purposes. The domain name may also be a delegation, which transfers responsibility of all sub-domains within that domain to another entity. |
| domain name label | a constituent part of a domain name. The labels of domain names are connected by dots. For example, “www.iana.org” contains three labels — “www”, “iana” and “org”. For internationalised domain names, the labels may be referred to as A-labels and U-labels. |
| domain name registrar | An entity offering domain name registration services, as an agent between registrants and registries. Usually multiple registrars exist who compete with each other, and are accredited. For most generic top-level domains, domain name registrars are accredited by ICANN. |
| domain name registry | A registry tasked with managing the contents of a DNS zone, by giving registrations of sub-domains to registrants. |
| domain name server Domain Name System (DNS) | A general term for a system on the Internet that answers requests to convert The global hierarchical system of domain names. A global distributed database contains the information to perform the domain name |

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| Domain Name System Root | see Root Zone. |
| dot [string] | common way of referring to a specific top-level domain. For example “dot info” refers to the “INFO” top-level domain. Written in text as “.INFO”. |
| DREG | A subset of IRIS for performing registration lookups on domain names. |
| eIANA E.164 | see RZM Automation. see ENUM. |
| ENUM | A system of mapping telephone numbers (formally known as E.164 numbers after the telephone numbering standard) to Internet resources. |
| EPP Extensible Markup Language Extensible Provisioning Protocol (EPP) | see Extensible Provisioning Protocol. see XML. A protocol used for electronic communication between a registrar and a registry for provisioning domain names. |
| first come, first served (FCFS) fully-qualified domain name (FQDN) | The principle of allocation of most Internet resources. It means that that A complete domain name including all its components, i.e. “www.icann.org” as opposed to “www”. |
| GAC Principles | A document, formally known as the Principles for the Delegation and Administration of ccTLDs. This document was developed by the ICANN Governmental Advisory Committee and documents a set of principles agreed by governments on how ccTLDs should be delegated and run. It is one of a |
| generic top-level domains (gTLDs) | A class of top-level domains that are used for general purposes, where ICANN has a strong role in coordination (as opposed to country-code top-level domains, which are managed locally). For policy reasons, these are usually |
| glue record | An explicit notation of the IP address of a name server, placed in a zone outside of the zone that would ordinarily contain that information. This is required because in some circumstances it would be impossible to find the name server otherwise, such as when the name server is in-bailiwick. All name servers are in-bailiwick of the Root Zone, therefore glue records is required for all name servers listed there. Also referred to as just “glue”. |

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| hints file | A file stored in DNS software (i.e. recursive name servers) that tells it where the DNS root servers are located. Because the DNS is used to self-discover where its servers are located, this file is used to boot-strap the process when the DNS software knows nothing. |
| hostname | The name of a computer. Typically the left-most part of a fully-qualified |
| IAB | See Internet Architecture Board. |
| IANA | See Internet Assigned Numbers Authority. |
| IANA Considerations | A component of RFCs that refer to any work required by IANA to maintain registries for a specific protocol. |
| IANA Contract | The contract between ICANN and the US Government that governs how various IANA functions are performed. |
| IANA Staff | see Internet Assigned Numbers Authority. |
| ICANN | See Internet Corporation for Assigned Names and Numbers. |
| ICP-1 | A document written by IANA staff in 1999 describing how they manage top-level domains. Compare RFC 1591. |
| ICP-2 | A document describing how new regional Internet registries may be created. |
| ICP-3 | A document describing the requirement for a unique, authoritative DNS root zone. See also RFC 2826. |
| IDN | See Internationalised Domain Name. |
| IDNA | See Internationalised Domain Name. |
| IDN Table | A list of permissible Unicode code points allowed for registration in domain names by a registry. Usually, these are applied on a language or script basis. |
| IDN TLDs | Usually the short reference for internationalized top-level domains, thus allowing the entire domain name to be represented by local characters. |
| IDN SLDs or IDN 2LDs | Usually a reference for domain names with local characters at the second level, while the top level remains in ASCII-only characters. For example: [παράδειγμα .test] ("example.test" in Greek). |
| IDN Practices Repository | A repository on IANA's website where top-level domain registries contribute the IDN tables they use. This allows other registries to re-use the tables if they wish. |
| IESG | See Internet Engineering Steering Group. |

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| IETF | See Internet Engineering Task Force. |
| in-bailiwick | when a domain name is a sub-domain of another, used for identifying whether a glue record is required. For example, "iana.org" is in the bailiwick |
| infrastructure domain, infrastructure top-level domain | A term sometime used for ".ARPA" and its sub-domains, as it does not fit into the other categorisations of top-level domains. |
| internationalised domain name (IDN) | A domain name that uses characters outside the 37 characters allowed by the "LDH rule", using a system known as IDNA. This allows for domain names in non-Latin scripts, such as Arabic, Japanese or Cyrillic. |
| Internationalised Domain Names in Applications (IDNA) | The Internet standard defining the encoding of internationalised domain names. The "in Applications" is in reference to the way the standard works, as the conversion happens in application software rather than in the network, |
| Internet Architecture Board (IAB) | The oversight body of the IETF, responsible for overall strategic direction of |
| Internet Assigned Numbers | A department of ICANN tasked with providing various Internet coordination |
| Internet Coordination Policy (ICP) | A series of documents created by ICANN between 1999 and 2000 describing |
| Internet Engineering Steering Group (IESG) | The committee of area experts of the IETF's areas of work, that acts as its board of management. |
| Internet Engineering Task Force (IETF) | The key Internet standardisation forum. The standards developed within the IETF are published as RFCs. IANA's protocol parameter registries are closely aligned with the work of the IETF. |
| .INT | A top-level domain devoted solely to international treaty organisations that have independent legal personality. Such organisations are not governed by the laws of any specific country, rather by mutual agreement between |
| Internet Protocol (IP) | The fundamental protocol that is used to transmit information over the Internet. Data transmitted over the Internet is transmitted using the Internet Protocol, usually in conjunction with a more specialised protocol. Computers are uniquely identified on the Internet using an IP Address. |
| Internet Protocol address | see IP Address. |
| Internet Registry Information Service (IRIS) | A sophisticated protocol for looking up registration data. It is designed to supplant the WHOIS protocol, by offering many technological improvements |
| Internet Telephony Administrative Domain (ITAD) | A unique numbering system used by Telephone Routing over Internet Protocol (TRIP) to label phone services within an organisation. A company may apply for an ITAD number to use in numbering systems without |
| Interim Trust Anchor Repository (ITAR) | A proposed IANA service whereby the trust anchors for top-level domains can be listed separately from the DNS root zone. This is a temporary measure due |
| Internet standard | see protocol. |

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| IP | see Internet Protocol. |
| IP address | A unique identifier for a device on the Internet. The identifier is used to accurately route Internet traffic to that device. IP addresses must be unique on the global Internet, although some are re-used within private networks using a system of private IP addresses and network address translation. |
| IP address block | A range of IP addresses that is assigned in a contiguous block. Usually the size of the range is described as the number of binary “bits” masked by the allocation. For example a “slash 24” or “/24” refers to a block of 256 IP |
| IP address Space | The entire range of conceivable IP addresses. Managed by IANA, and generally delegated in blocks to Regional Internet Registries. |
| IPv4 | Internet Protocol version 4. Refers to the version of Internet protocol that supports 32-bit IP addresses. This allows for approximately 4 billion unique IP |
| IPv6 | Internet Protocol version 6. Refers to the version of Internet protocol that supports 128-bit IP addresses. This protocol is not yet widely deployed, but allows for orders-of-magnitude more IP addresses than the more common IPv4 protocol. |
| IRIS | See Internet Registry Information Service |
| ISO | International Organisation for Standardisation. An international organisation comprised mostly of national standardisation agencies. |
| ISO 3166 | A suite of international standards for labelling countries, territories, sub- |
| ISO 3166-1 | A part of the ISO 3166 suite of standards describing two and three letters codes that represent countries. The two letter codes in ISO 3166-1 are used to determine the domains used for country-code top-level domains. |
| ISO 3166 Maintenance Agency (ISO 3166/MA) | The agency of ISO tasked with maintaining the ISO 3166 standard. It is responsible for any updates, for example, when a country is created or ceases |
| ITAD | See Internet Telephony Administrative Domain. |
| ITAR | See Interim Trust Anchor Repository. |
| Jon Postel | see Postel, Jon. |
| label | see domain name label. |
| language table | see IDN table. |
| Letters-Digits-Hyphen (LDH) | The set of permissible characters in a domain label, when applying hostname rules. |

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| local Internet community | The community of Internet users within a country who benefit from the country's top-level domain. Country-code top-level domains are delegated to sponsoring organisations to operate domains in the best interests of this community, particularly by implementing policies the community has developed. |
| MIME type (Multipurpose Internet Mail Extensions) | A formalised text string that identifies the type of a file that is included in the headers of an email or web transmission. IANA maintains the registry of MIME types. |
| name server | See domain name server. |
| NAT | see Network Address Translation. |
| network address translation (NAT) | A system of using private IP addresses within an internal network (such as within a home, and office, or even within an ISP), and then having those numbers converted into a real IP address when Internet traffic leaves that network using a specialised router. This is commonly used within homes, for example, so that users do not have to apply for an extra IP address each time they connect a device to the network. It is very similar to using "extension |
| NS record | a type of record in a DNS zone that signifies part of that zone is delegated to a different set of authoritative name servers. Operators of domain names must have their authoritative name servers correctly listed in the parent domain. |
| number resources | Used to describe the hierarchically assigned number resources used for Internet routing, namely IP addresses and autonomous system numbers. These are usually distributed through regional Internet registries. |
| object identifier | see Private Enterprise Number. |
| OID | object identifier. See Private Enterprise Number. |
| parent domain | the domain above a domain in the DNS hierarchy. For all top-level domains, the Root Zone is the parent domain. The Root Zone has no |
| PDP | See Policy Development Process. |
| PEN | see Private Enterprise Number. |
| Policy Development Process (PDP) | The formal policy creation process employed by ICANN by a number of its constituencies. |
| port number | A number used for identifying the type of Internet traffic being transmitted between two computers over the Internet. For example, the web uses port |

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| Postel, Jon | The progenitor of IANA. A computer scientist responsible for IANA until 1998, initially individually and later with other IANA staff within the University of See GAC Principles. |
| Principles for the Delegation and Administration of ccTLDs private enterprise numbers (PENs) | A unique numbering system used by several different Internet protocols (such as SNMP and LDAP) that use Abstract Notation Syntax One (ASN.1). It can be |
| private IP addresses | A set of IP addresses only used within private networks, and therefore not reachable from the global Internet. Commonly used within home or office |
| protocol | Any form of inter-computer communication that has been standardised to ensure computers can communicate to one another. Internet protocols are |
| protocol assignments | The assignment of protocol parameters by IANA. |
| protocol parameters | Unique systems of numbering or encoding used by a protocols that must be consistently applied for the protocols to be interoperable. The global unique |
| protocol registry | An individual protocol parameter registry managed by IANA, usually tied to a specific Internet standard. |
| PTR record | The representation of a IP address to domain name mapping in the DNS system. |
| Punycode | Punycode is the LDH-compatible encoding algorithm described in Internet standard [RFC3492], and in use today. This is the method that is used to |
| recursive name server | A domain name server configured to perform DNS lookups on behalf of other computers. This is often configured at corporate network boundaries and ISPs |
| redelegation | The transfer of a delegation from one entity to another. Most commonly used to refer to the redelegation process used for top-level domains. |
| Redelegation process | A special type of root zone change where there is a significant change involving the transfer of operations of a top-level domain to a new entity. |
| Regional Internet Registry (RIR) | A registry responsible for allocation of IP address resources within a particular region. There are five RIRs, and within each region network operators apply to |
| registrant | The entity that has acquired the right to use an Internet resource. Usually this is via some form of revocable grant given by a registrar to list their |
| registrar | An entity that can act on requests from a registrant in making changes in a registry. Usually the registrar is the same entity that operates a registry, |
| registry | 1. The authoritative record of registrations for a particular set of data. Most often used to refer to domain name registry, but all protocol parameters that |
| registry operator | The entity that runs a registry. |
| (RFC) | see RFCs. |
| reverse IP | A method of translating an IP address into a domain name, so-called as it is the opposite of a typical lookup that converts a domain name to an IP |
| RFCs | A series of Internet engineering documents describing Internet standards, as well as discussion papers, informational memorandums and best practices. |
| RFC 812 | See WHOIS. |
| RFC 954 | See WHOIS. |
| RFC 1123 | see hostname. |
| RFC 1591 | A document written by IANA staff in 1994 describing how they manage top-level domains. The document is well-referenced as it describes some of the |
| RFC 1918 | See Private IP Addresses. |

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| RFC 3912 | See WHOIS. |
| RFC 3927 | See Private IP Addresses. |
| RIR | see Regional Internet Registry. |
| root | the most central (or all-encompassing) authority of any naming or numbering system. Usually used to refer to the domain name system root (see Root |
| Root Servers | the authoritative name servers for the Root Zone. These are considered unlike regular name servers in part because they are generally the most critical and |
| Root Zone | The top of the domain name system hierarchy. The root zone contains all of the delegations for top-level domains, as well as the list of root servers, and is |
| Root Zone Management | The management of the DNS Root Zone by IANA. |
| RZM | see Root Zone Management. |
| RZM Automation | A project to automate many aspects of the Root Zone Management function within IANA. Based on a software tool originally called "eIANA". |
| Script | A script is a collection of symbols used for writing a language. There are three basic kinds of script. One is the alphabetic (e.g. Arabic, Cyrillic, Latin) and its individual elements are termed "letters". A second is ideographic (e.g. Chinese), the elements of which are "ideographs". The third is termed a syllabary (e.g. Hangul) and its individual elements represent syllables. The writing systems of most languages use only one script but there are exceptions such as, for example, Japanese that uses four different scripts, representing all three of the categories listed here. In order to be used in the computing environment, each element of a script needs to be numerically encoded. A collection of symbols numbered in this fashion is called a "character set". A character set may include more than one script (e.g. the "Universal Character Set", popularly known as Unicode), or it may be restricted to a single script (e.g. US-ASCII, which to be correct does not even cover the entire Latin script). A rigorous distinction must be made between scripts and character sets. |
| script table | see IDN table. |
| secure entry point (SEP) | synonym for trust anchor. |
| slash [number] | (e.g. /24) See IP address block. |
| sponsored top-level domain | a sub-classification of generic top-level domain, where there is a formal community of interest to domain is dedicated to serve. |
| sponsoring organisation | The entity acting as the trustee of a top-level domain on behalf of its designated community. Sponsoring organisations are not assigned ownership |
| STD 3 | see hostname. |
| sub-domain | A domain that resides within another domain. For example, "www.icann.org" is a sub-domain of "icann.org", and "icann.org" is a sub-domain of "org". Sub- |
| TLD | see top-level domain. |
| top-level domain (TLD) | The highest level of subdivisions with the domain name system. These domains, such as ".COM" and ".UK" are delegated from the DNS Root zone. |

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| TRIP number | see Internet Telephony Administrative Domain (ITAD). |
| trust anchor | A known good cryptographic certificate that can be used to validate a chain of trust. |
| trust anchor repository (TAR) | Any repository of public keys that can be used as trust anchors for validating chains of trust. See Interim Trust Anchor Repository (ITAR) for one such |
| trustee | An entity entrusted with the operations of an Internet resource for the benefit of the wider community. In IANA circles, usually in reference to the |
| U-label | The Unicode representation of an internationalised domain name, i.e. how it is shown to the end-user. Contrast with A-label. |
| Unicode | A standard describing a repertoire of characters used to represent most of the worlds languages in written form. The collection of scripts used to do this is |
| unsponsored top-level domain | a sub-classification of generic top-level domain, where there is no formal community of interest. |
| UTF-8 | A standard used for transmitting Unicode characters. |
| variant | In the context of internationalised domain names, an alternative domain name that can be registered, or mean the same thing, because some of its |
| variant bundle | A collection of multiple domain names that are grouped together because some of the characters are considered variants of the others. |
| variant table | A type of IDN table that describes the variants for a particular language or script. For example, a variant table may map Simplified Chinese characters to |
| WHOIS | A simple plain text-based protocol for looking up registration data within a registry. Typically used for domain name registries and IP address registries to |
| WHOIS database | Used to refer to parts of a registry's database that are made public using the WHOIS protocol, or via similar mechanisms using other protocols (such as |
| WHOIS gateway | An interface, usually a web-based form, that will perform a look-up to a WHOIS server. This allows one to find WHOIS information without needing a |
| WHOIS protocol | see WHOIS. |
| WHOIS server | A system running on port number 43 that accepts queries using the WHOIS protocol. |
| wire format | The format of data when it is transmitted over the Internet (i.e. "over the wire"). For example, an A-label is the wire format of an internationalised |
| xn- | see A-label. |
| XML | A machine-readable file format for storing structured data. Used to represent web pages (in a subset called HTML) etc. Used by IANA for storing protocol |