

What Does ICANN Do?

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To reach another person on the Internet you have to type an address into your computer - a name or a number. The address has to be unique so computers know where to find each other. ICANN (Internet Corporation for Assigned Names and Numbers) coordinates these unique identifiers across the world. Without that coordination we wouldn't have one global Internet.

ICANN (Internet Corporation for Assigned Names and Numbers) was formed in 1998. It is a not-for-profit partnership of people from all over the world dedicated to keeping the Internet secure, stable and interoperable. It promotes competition and develops policy on the Internet's unique identifiers.

ICANN (Internet Corporation for Assigned Names and Numbers) doesn't control content on the Internet. It cannot stop spam and it doesn't deal with access to the Internet. But through its coordination role of the Internet's naming system it does have an important impact on the expansion and evolution of the Internet.

What is the domain name system?

The domain name system, or DNS (Domain Name System), is a system designed to make the Internet accessible human beings. The main way computers that make up the Internet find one another is through a series of numbers, with each number (called an "IP (Intellectual Property; or Internet Protocol) address") correlating to a different device. However it is difficult for the human mind to remember long lists of numbers so the DNS (Domain Name System) uses letters rather than numbers, and then links a precise series of letters with a precise series of numbers.

The end result is that ICANN (Internet Corporation for Assigned Names and Numbers)'s website can be found at "icann.org" rather than "192.0.34.163" – which is how computers on the network know it. One advantage to this system – apart from making the network much easier to use for people – is that a particular domain name does not have to be tied to one particular computer because the link between a particular domain and a particular IP (Intellectual Property; or Internet Protocol) address can be changed quickly and easily. This change will then be recognised by the entire Internet within 48 hours thanks to the constantly updating DNS (Domain Name System) infrastructure. The result is an extremely flexible system.

A domain name itself comprises two elements: before and after "the dot". The part to the right of the dot, such as "com", "net", "org" and so on, is known as a "top-level domain" or TLD (Top Level Domain). One company in each case (called a registry), is in charge of all domains ending with that particular TLD (Top Level Domain) and has access to a full list of domains directly under that name, as well as the IP (Intellectual Property; or Internet Protocol)

addresses with which those names are associated. The part before the dot is the domain name that you register and which is then used to provide online systems such as websites, email and so on. These domains are sold by a large number of “registrars”, free to charge whatever they wish, although in each case they pay a set per-domain fee to the particular registry under whose name the domain is being registered.

ICANN (Internet Corporation for Assigned Names and Numbers) draws up contracts with each registry*. It also runs an accreditation system for registrars. It is these contracts that provide a consistent and stable environment for the domain name system, and hence the Internet.

In summary then, the DNS (Domain Name System) provides an addressing system for the Internet so people can find particular websites. It is also the basis for email and many other online uses.

What does ICANN (Internet Corporation for Assigned Names and Numbers) have to do with IP (Intellectual Property; or Internet Protocol) addresses?

ICANN (Internet Corporation for Assigned Names and Numbers) plays a similar administrative role with the IP (Intellectual Property; or Internet Protocol) addresses used by computers as it does with the domain names used by humans. In the same way that you cannot have two domain names the same (otherwise you never know where you would end up), for the same reason it is also not possible for there to be two IP (Intellectual Property; or Internet Protocol) addresses the same.

Again, ICANN (Internet Corporation for Assigned Names and Numbers) does not run the system, but it does help coordinate how IP (Intellectual Property; or Internet Protocol) addresses are supplied to avoid repetition or clashes.

ICANN (Internet Corporation for Assigned Names and Numbers) is also the central repository for IP (Intellectual Property; or Internet Protocol) addresses, from which ranges are supplied to regional registries who in turn distribute them to network providers.

What about root servers?

Root servers are a different case again. There are 13 root servers – or, more accurately, there are 13 IP (Intellectual Property; or Internet Protocol) addresses on the Internet where root servers can be found (the servers that have one of the 13 IP (Intellectual Property; or Internet Protocol) addresses can be in dozens of different physical locations).

These servers all store a copy of the same file which acts as the main index to the Internet’s address books. It lists the address for each top-level domain (.com, .de, etc) where that registry’s own address book can be found.

In reality, the root servers are consulted fairly infrequently (considering the size of the Internet) because once computers on the network know the address of a particular top-level domain they retain it, checking back only occasionally to make sure the address hasn’t changed. Nonetheless, the root servers remain vital for the Internet’s smooth functioning.

The operators of the root servers remain largely autonomous, but at the same time work with one another and with ICANN (Internet Corporation for Assigned Names and Numbers) to make sure the system stays up-to-date with the Internet’s advances and changes.

What is ICANN (Internet Corporation for Assigned Names and Numbers)’s role?

As mentioned earlier, ICANN (Internet Corporation for Assigned Names and Numbers)’s role is to oversee the huge and complex interconnected network of unique identifiers that allow computers on the Internet to find one another.

This is commonly termed “universal resolvability” and means that wherever you are on the network – and hence the world – that you receive the same predictable results when you access the network. Without this, you could end up with an Internet that worked entirely differently depending on your location on the globe.

How is ICANN (Internet Corporation for Assigned Names and Numbers) structured?

ICANN (Internet Corporation for Assigned Names and Numbers) is made up of a number of different groups, each of which represent a different interest on the Internet and all of which contribute to any final decisions that ICANN

(Internet Corporation for Assigned Names and Numbers)'s makes.

There are three “supporting organisations” that represent:

- The organisations that deal with IP (Intellectual Property; or Internet Protocol) addresses
- The organisations that deal with domain names
- The managers of country code top-level domains (a special exception as explained at the bottom).

Then there are four “advisory committees” that provide ICANN (Internet Corporation for Assigned Names and Numbers) with advice and recommendations. These represent:

- Governments and international treaty organisations
- Root server operators
- Those concerned with the Internet's security
- The “at large” community, meaning average Internet users.

And finally, there is a Technical Liaison Group, which works with the organisations that devise the basic protocols for Internet technologies.

ICANN (Internet Corporation for Assigned Names and Numbers)'s final decisions are made by a Board of Directors. The Board is made up of 21 members: 15 of which have voting rights and six are non-voting liaisons. The majority of the voting members (eight of them) are chosen by an independent Nominating Committee and the remainder are nominated members from supporting organisations.

ICANN (Internet Corporation for Assigned Names and Numbers) then has a President and CEO who is also a Board member and who directs the work of ICANN (Internet Corporation for Assigned Names and Numbers) staff, who are based across the globe and help co-ordinate, manage and finally implement all the different discussions and decisions made by the supporting organisations and advisory committees. An ICANN (Internet Corporation for Assigned Names and Numbers) Ombudsman acts as an independent reviewer of the work of the ICANN (Internet Corporation for Assigned Names and Numbers) staff and Board.

How does ICANN (Internet Corporation for Assigned Names and Numbers) make decisions?

When it comes to making technical changes to the Internet, here is a simplified rundown of the process:

Any issue of concern or suggested changes to the existing network is typically raised within one of the supporting organisations (often following a report by one of the advisory committees), where it is discussed and a report produced which is then put out for public review. If the suggested changes impact on any other group within ICANN (Internet Corporation for Assigned Names and Numbers)'s system, that group also reviews the suggested changes and makes its views known. The result is then put out for public review a second time.

At the end of that process, the ICANN (Internet Corporation for Assigned Names and Numbers) Board is provided with a report outlining all the previous discussions and with a list of recommendations. The Board then discusses the matter and either approves the changes, approves some and rejects others, rejects all of them, or sends the issue back down to one of the supporting organisations to review, often with an explanation as to what the problems are that need to be resolved before it can be approved.

The process is then rerun until all the different parts of ICANN (Internet Corporation for Assigned Names and Numbers) can agree a compromise or the Board of Directors make a decision on a report it is presented with.

How is ICANN (Internet Corporation for Assigned Names and Numbers) held accountable?

ICANN (Internet Corporation for Assigned Names and Numbers) has external as well as internal accountabilities.

Externally, ICANN (Internet Corporation for Assigned Names and Numbers) is an organisation incorporated under the

law of the State of California in the United States. That means ICANN (Internet Corporation for Assigned Names and Numbers) must abide by the laws of the United States and can be called to account by the judicial system i.e. ICANN (Internet Corporation for Assigned Names and Numbers) can be taken to court.

ICANN (Internet Corporation for Assigned Names and Numbers) is also a non-profit public benefit corporation and its directors are legally responsible for upholding their duties under corporation law.

Internally, ICANN (Internet Corporation for Assigned Names and Numbers) is accountable to the community through

- Its bylaws
- The representative composition of the ICANN (Internet Corporation for Assigned Names and Numbers) Board from across the globe
- An independent Nominating Committee that selects a majority of the voting Board members
- Senior staff who must be elected annually by the Board
- Three different dispute resolution procedures (Board reconsideration committee; Independent Review Panel; Ombudsman)

The full range of ICANN (Internet Corporation for Assigned Names and Numbers)'s accountability and transparency frameworks and principles (</en/accountability/frameworks-principles/contents-overview.htm>) are available online.

* There is an important exception to this in the form of “country code top-level domains” (ccTLDs) such as .de for Germany or .uk for the United Kingdom. There are over 250 ccTLDs, some of which have a contract with ICANN (Internet Corporation for Assigned Names and Numbers); others of which have signed working agreements with ICANN (Internet Corporation for Assigned Names and Numbers); and some of which have yet to enter any formal agreement with ICANN (Internet Corporation for Assigned Names and Numbers). ICANN (Internet Corporation for Assigned Names and Numbers) however does carry out what is known as the “IANA (Internet Assigned Numbers Authority) function” in which every ccTLD (Country Code Top Level Domain)'s main address is listed so the rest of the Internet can find it. ICANN (Internet Corporation for Assigned Names and Numbers) is also in the position where it can add new TLDs to the wider system, as it did in 2000 and 2004 when seven and six new TLDs respectively were “added to the root”.

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Example: ccTLD
