

WHO IS CENTR AND WHERE CAN YOU MEET US?

CENTR is the association for exchange, dialogue and innovation of country code top-level domain (ccTLD) registries in Europe, such as .ee for Estonia or .de for Germany. It has 54 full members, 9 associate members and 13 observers, including the European Commission. Its network covers the TLD registries of all country codes of the EU Member States (plus .eu), the European Free Trade Area (EFTA) countries and beyond. Together, they manage 50% of all country code domain name registrations worldwide, representing more than 73 million registrations.

CENTR organises around 16 stand-alone Working Group workshops per year and one annual gathering of all Working Groups (the “Jamboree”), focussing on aspects related to security, legal, technical and administrative/operational affairs, as well as research & development and communication. In addition, CENTR holds two general assemblies per year, one of which in Brussels.

External speakers are often invited to give updates on developments in their industry or policy field, to share their expertise and to bring new and challenging ideas to the ccTLD community.

OUTREACH & TRAININGS

The CENTR staff is actively involved in European and international meetings, including ICANN, EuroDIG and the Internet Governance Forum (IGF), among others.

CENTR provides trainings to EU policy-makers and other stakeholders on how the DNS works and how it interacts with other stakeholders in the internet ecosystem.

If you would like to learn more about CENTR, to meet with us or to request a training for yourself and/or your colleagues, you can reach us at:



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INDUSTRY TERMINOLOGY: A QUICK OVERVIEW

Registry vs. registrar vs. registrant: A domain name registry is the technical operator and manager of a top-level domain (e.g., .de, .eu, .com). They almost exclusively work with registrars to sell their domain names to the public. The registrant is the person or company that purchases, i.e. registers, the domain name. If the registrant makes changes to the domain, the registrar will pass on that information to the registry, which then updates its database.

Domain name vs. website: A domain name is not a website, but it can be its address. When you type a domain name into a browser or click on a link, the domain name is translated into an IP address, which helps your device find and access the website you are looking for. The owner’s server then sends you the site files, which let you see the web pages and their content. Domains or domain names do not hold any content; they are the “address” of the website. Note that domain names are used in several other ways than simply for naming websites, e.g. e-mail, security services, etc.

ccTLD vs. gTLD: A top-level domain (TLD) is the right-most label of a domain name (www.example.eu). Two-letter TLDs are referred to as country codes, as per the ISO-3166-1 list. TLDs with three or more characters are referred to as “generic” TLDs, or gTLDs (e.g., .org, .com, .name). Generally speaking, ccTLDs are governed by national law, while gTLDs operate under and need to comply with ICANN policies. To view a full list of all delegated TLDs, see IANA’s Root Zone Database: <https://www.iana.org/domains/root/db>



The association for exchange, dialogue and innovation
of country code domain registries in Europe

www.centr.org

WHAT IS A ccTLD REGISTRY AND WHAT DOES IT DO?

A country code top-level domain (ccTLD) registry operator **manages or administers** a country-specific top-level domain, such as .si or .eu. In Europe, registry operators vary considerably in business models, ownership and size. Most ccTLDs are not-for-profit: they are foundations, cooperatives, universities, research institutes or part of their government. They are funded through the proceeds from registrations, which are reinvested into maintaining their functioning, educational campaigns, research, etc.

ccTLDs set their own terms and conditions (T&C) specifying the duration of the registration period, the prices, terms of use, prohibited names, etc. ccTLDs are mainly governed by national law (there are only a few cases of ccTLD-specific laws). Some ccTLDs offer new products and services such as Anycast, back-end registry services, security monitoring and analysis, escrow services, etc.

THE TECHNICAL SIDE OF MANAGING OR ADMINISTERING A ccTLD

The registry operator provides domain name resolution services by running and maintaining the hardware, i.e. the **name server infrastructure**, which is needed to answer **queries** for its part of the hierarchy (its “domain”). It also provides **registration services** to registrars (and sometimes registrants). These services include operations on the **records** in that registry’s database, such as create or cancel a domain name, update of a name server, etc. A lot of resources go into maintaining the security of the network and processes (e.g., providing DNSSEC, ISO certification, etc.).

A ccTLD registry also manages the **zone file**, a subset of its database, which holds the domain names and their associated name server information. Information about the registrant and contacts for technical and administrative issues related to a domain name can be queried via **WHOIS**, a directory service maintained by the registry.

More information:

<https://www.centri.org/education/cctld-registry.html>

WHAT IS THE DNS AND HOW DOES IT WORK?

The domain name system (DNS) is mostly known for associating names with IP addresses, as humans can more easily **remember** names than numbers. The DNS is **flexible** and not linked to a device or location: a domain name stays the same, even if the underlying IP address changes. The DNS has a lot of built-in redundancy to ensure **reliability**: if a server is not reachable, it can rely on multiple others that store the same data.

For applications to work and/or communicate with each other via internet protocols, domain names need to be translated into IP addresses. This process is set off by a **query**, which is launched when a user wants to send an e-mail or access a website.

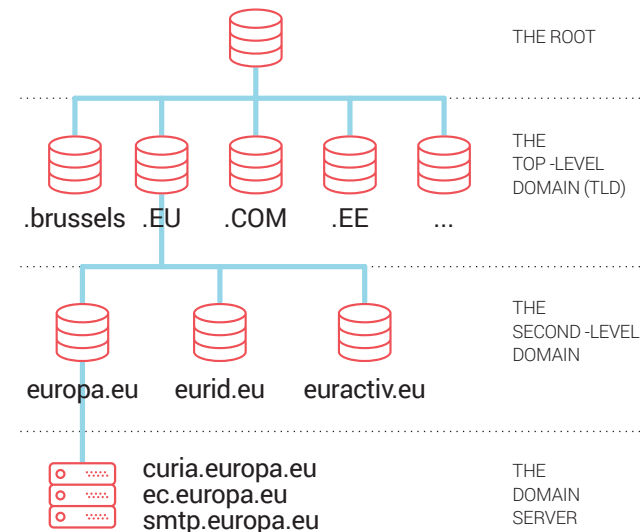
HOW DOES A QUERY WORK?

The DNS is a hierarchically organised system, where different organisations exert control over their particular *domain* at different points in the process of the query. The root zone database is managed by IANA (a subsidiary of ICANN), hundreds of root servers are managed by 12 organisations, for example RIPE NCC and Netnod in Europe, the TLD name servers are managed by ccTLD or gTLD registry operators, and anything below that either by web hosting companies or DNS operators on behalf of the registrants or the registrants themselves.

Once you type a domain name into the browser, the computer will ask a **DNS resolver** (typically run by your ISP) for the domain name’s IP address, e.g., `www.example.eu`. The **resolver** starts by asking “at the top”, i.e. the **root name server**, for the IP address of the **DNS (registry) server** (to find the TLD `.eu`). The DNS resolver then asks that DNS registry server for the IP address of the **DNS server** (to find the second-level domain, `example.eu`). With this information, the DNS resolver can finally ask the IP address for `www.example.eu`, passes it back to the browser, which then contacts the website host using the IP address. HTTP traffic begins: you can see the web pages and their content.

More information:

<https://www.centri.org/education/the-dns.html>



WHAT POLICY AREAS ARE IMPORTANT TO ccTLD REGISTRIES?

Whereas ccTLD registry operators are mainly governed by national law, several EU-level policies impact their daily operations, related to, e.g., security, data protection, privacy and consumer protection. CENTR and its members are committed to an open, reliable, and robust internet infrastructure embedded in a sound and balanced internet ecosystem. This is laid down in our policy objectives:

1. **Sustain the diversity of the DNS ecosystem:** The DNS ecosystem consists of many actors, big and small, which are represented on different “layers” of the internet. What we “see” in web browsers is only a fraction of it, and usually it is content. However, not all actors are involved in the production, dissemination or availability of content. Some, including ccTLD registries, operate the underlying infrastructure and processes that pave the way for content to become accessible. Vague definitions, an unclear scope or burdensome requirements bear the risk of overreach, collateral damage, or unwanted market consolidation. In some cases, they can infringe on fundamental rights of both users and businesses.
2. **Maintain a level-playing field among all the actors in the DNS:** For competition to remain open and fair, it is important that all actors which operate or provide services within the EU, or which handle EU data, are subject to the same rules and conditions. It is also crucial that European policy or standardisation efforts do not duplicate or contradict efforts at international level.
3. **Have policy-makers adhere to the principles of subsidiarity and proportionality:** ccTLD registries are strongly rooted in and guided by their local internet community, including government. Shifting regulation to a level that does not take into account these local links threatens to break these ties. Most ccTLD registries have successfully managed and operated their TLD for decades, thanks to their constant efforts to keep their systems and networks secure and reliable, and their policies and actions transparent.

More information:

<https://www.centri.org/policy/eu-policy.html>