

# ANALYSIS AND IMPLEMENTATION OF WHOIS DOMAIN LOOKUP

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**ABSTRACT** – Every year, millions of individuals, businesses, organizations and governments register domain names. Each one must provide identifying and contact information which may include: name, address, email, phone number, and administrative and technical contacts. This information is often referred to as “WHOIS data.” But the WHOIS service is not a single, centrally-operated database. Instead, the data is managed by independent entities known as “registrars” and “registries.” Any entity that wants to become a registrar must earn ICANN accreditation. Similarly, registries are under contract with ICANN to operate a generic top level domain, such as .COM, .ORG, or one of the new ones that may soon be under operation.

**Keywords:** XAMPP,HTML,DNRD,DNS,WWW, Gtld.

## 1. INTRODUCTION

**WHOIS** (pronounced as the phrase who is) is a query and response protocol that is widely used for querying databases that store the registered users or assignees of an Internet resource, such as a domain name, an IP address block, or an autonomous system, but is also used for a wider range of other information. The protocol stores and delivers database content in a human-readable format. The WHOIS protocol is documented in RFC 3912.

The Whois an easy-to-use tool for checking the availability of a domain name. If the domain name is available, you can register it through a registrar. If the domain name is already taken, you can see who has registered it. The Affirmation of Commitments requires ICANN to "implement measures to maintain timely, unrestricted and public access to accurate and complete WHOIS information" The WHOIS service is a free, publicly available directory containing the contact and technical information of registered domain name holders (referred to as "registrants"). Anyone who needs to know who is behind a website domain name can make a request for that information via WHOIS. The data is collected and made available by registrars and registries under the terms of their agreements with ICANN.

WHOIS is not a single, centrally managed database. Rather, registration data is held in disparate locations and administered by multiple registries and registrars. They set their own conventions for WHOIS service, consistent with the minimum requirements established in their ICANN contracts.

The term "WHOIS" refers to protocols, services, and data types associated with Internet naming and numbering resources beyond domain names, such as Internet Protocol (IP) addresses, and Autonomous System Numbers (ASNs). The WHOIS service includes WHOIS clients, WHOIS servers, WHOIS data stores, and WHOIS data (domain name registration records). Essentially, WHOIS can refer to any of the following:

The information that is collected at the time of registration of a domain name or IP numbering resource and subsequently made available via the WHOIS Service, and potentially updated throughout the life of the resource;

The WHOIS Services that provide public access to domain name registration information typically via applications that implement the WHOIS protocol or a web-based interface.

### 1.1 Domain Name Registration Data (DNRD)

refers to the information that registrants provide when registering a domain name and that registrars or registries collect. Some of this information is made available to the public. For interactions between ICANN accredited Generic Top Level Domain (gTLD) registrars and registrants, the data elements are specified in the current registry agreement and Registrar Accreditation Agreement. For country code Top Level Domains (ccTLDs), the operators of these TLDs implement local policy regarding the request and display of registration information.

### 1.2 Domain Name Registration Data Access PROTOCOL (DNRD-AP)

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refers to the elements of a (standard) communications exchange—queries and responses—that make access to registration data possible. For example, the WHOIS protocol (RFC 3912) and Hypertext Transfer Protocol (HTTP) (RFC 2616 and its updates) are commonly used to provide public access to DNRD.

### 1.3 DOMAIN NAME REGISTRATION DATA DIRECTORY SERVICE (DNRD-DS)

refers to the service(s) offered by registries and registrars to provide access to (potentially a subset of) the DNRD

### 1.4 BASICS OF WHOIS

As many consumers use search engines to find information on the Internet, they may not be aware of the term “WHOIS” to use in a search engine. Even when “WHOIS” is applied to a search engine, all sorts of responses appear. Learn more about the Basics of WHOIS.

### 1.5 PERFORMING WHOIS LOOKUPS

ICANN has committed to making WHOIS look-ups as easy as possible. To perform a search, users only need to go to <http://whois.icann.org>, enter a domain, and click "Lookup."

### 1.6 XAMPP

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing and deployment purposes. Everything needed to set up a web server – server application (Apache), database (MariaDB), and scripting language (PHP) – is included. These ambiguities inherent in the WHOIS label complicate efforts to shape the evolution of meta-data for Internet naming and numbering. To address this, ICANN has developed more terminology for gTLDs, including, included in an extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server extremely easy as well.

## 2. PREREQUISITES AND FEATURES

### 2.1 Prerequisites

XAMPP requires only one zip, tar, 7z, or exe file to be downloaded and run, and little or no configuration of the various components that make up the web server is required.

### 2.2 Features

XAMPP is regularly updated to incorporate the latest releases of Apache, MariaDB, PHP and Perl. It also comes with a number of other modules including OpenSSL, phpMyAdmin, MediaWiki, Joomla, WordPress and more. Self-contained, multiple instances of XAMPP can exist on a single computer, and any given instance can be copied from one computer to another. XAMPP is offered in both a full and a standard version (Smaller version).

### 2.3 Usage

Officially, XAMPP's designers intended it for use only as a development tool, to allow website designers and programmers to test their work on their own computers without any access to the Internet. To make this as easy as possible, many important security features are disabled by default. XAMPP has the ability to serve web pages on the World Wide Web. A special tool is provided to password-protect the most important parts of the package.

XAMPP also provides support for creating and manipulating databases in MariaDB and SQLite among others.

Once XAMPP is installed, it is possible to treat a localhost like a remote host by connecting using an FTP client. Using a program like FileZilla has many advantages when installing a content management system (CMS) like Joomla or WordPress. It is also possible to connect to localhost via FTP with an HTML editor.

WHOIS is the tool used to look up domain name registration details. These details contain information about the date the domain was registered, its expiration date, registrant information, nameservers, and the domain registrar. When a domain is registered, ICANN requires that this information is listed in a public database which can be viewed by anyone using the WHOIS protocol. There are many internet websites that you can use to view domain registrant information listed in this database.

### 2.4 Types

As of 2015, IANA distinguishes the following groups of top-level domains:

- infrastructure top-level domain (ARPA)
- generic top-level domains (gTLD)
- restricted generic top-level domains (grTLD)
- sponsored top-level domains (sTLD)
- country code top-level domains (ccTLD)
- test top-level domains (tTLD)

### 3. TECHNICAL OVERVIEW

#### 3.1 BIND

**BIND** is the most widely used Domain Name System (DNS) software on the Internet. On Unix-like operating systems it is the de facto standard.

The software was originally designed at the University of California Berkeley (UCB) in the early 1980s. The name originates as an acronym of Berkeley Internet Name Domain, reflecting the application's use within UCB. The software consists, most prominently, of the DNS server component, called named, a contracted form of name daemon. In addition the suite contains various administration tools, and a DNS resolver interface library. The latest version of BIND is BIND 9, first released in 2000.

Starting in 2009, the Internet Software Consortium (ISC) developed a new software suite, initially called BIND10. With release version 1.2.0 the project was renamed Bundy to terminate ISC involvement in the project.

#### 3.2 Base Support

While earlier versions of BIND offered no mechanism to store and retrieve zone data in anything other than flat text files, in 2007 BIND 9.4 DLZ provided a compile-time option for zone storage in a variety of database formats including LDAP, Berkeley DB, PostgreSQL, MySQL, and ODBC.

BIND 10 planned to make the data store modular, so that a variety of databases may be connected.

Understanding forwarders

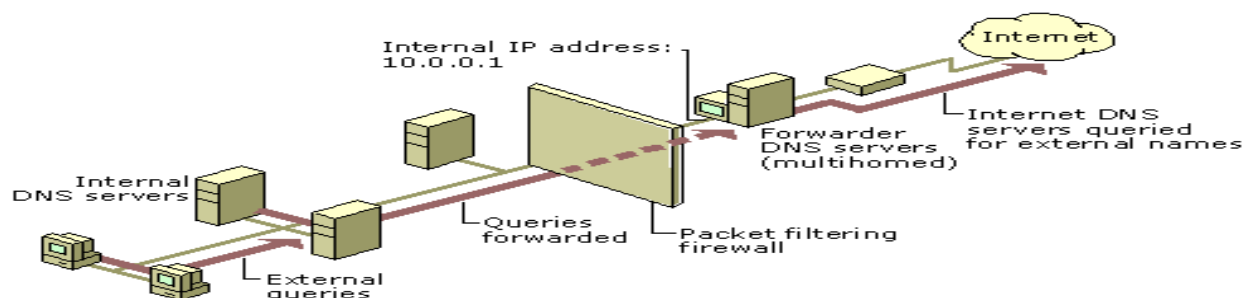
Updated: January 21, 2005

Applies To: Windows Server 2003, Windows Server 2003 R2, Windows Server 2003 with SP1, Windows Server 2003 with SP2

Understanding forwarders

A forwarder is a Domain Name System (DNS) server on a network used to forward DNS queries for external DNS names to DNS servers outside of that network. You can also forward queries according to specific domain names using conditional forwarders.

A DNS server on a network is designated as a forwarder by having the other DNS servers in the network forward the queries they cannot resolve locally to that DNS server. By using a forwarder, you can manage name resolution for names outside of your network, such as names on the Internet, and improve the efficiency of name resolution for the computers in your network. For more information about forwarders and conditional forwarders, see using forwarders.



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### Fig. 4.1 External Name Queries are Directed Using Forwarders

For more information about directing external queries, see directing queries through forwarders.

Without having a specific DNS server designated as a forwarder, all DNS servers can send queries outside of a network using their root hints. As a result, a lot of internal, and possibly critical, DNS information can be exposed on the Internet. In addition to this security and privacy issue, this method of resolution can result in a large volume of external traffic that is costly and inefficient for a network with a slow Internet connection or a company with high Internet service costs.

## RESULTS & OBSERVATIONS

XAMPP also provides support for creating and manipulating databases in MariaDB and SQLite among others. Once XAMPP is installed, it is possible to treat a localhost like a remote host by connecting using an FTP client. Using a program like FileZilla has many advantages when installing a content management system (CMS) like Joomla or WordPress. It is also possible to connect to localhost via FTP with an HTML editor.

### XAMPP DOMAIN LOOKUP PANEL

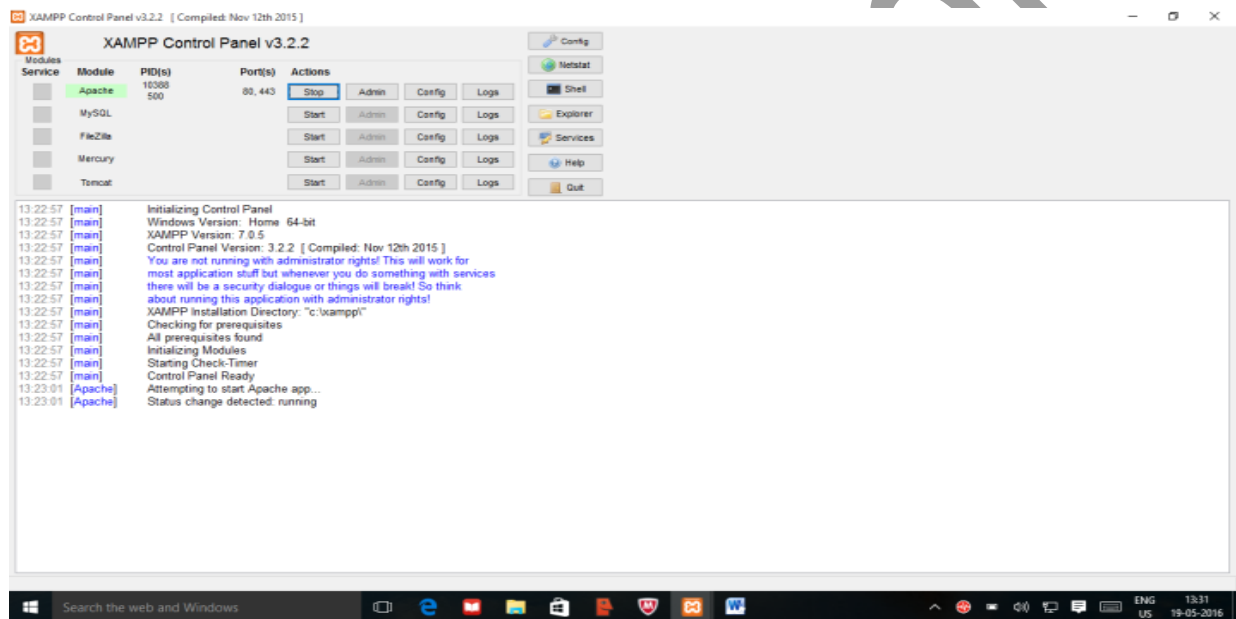


Fig. A Check the Domain Information

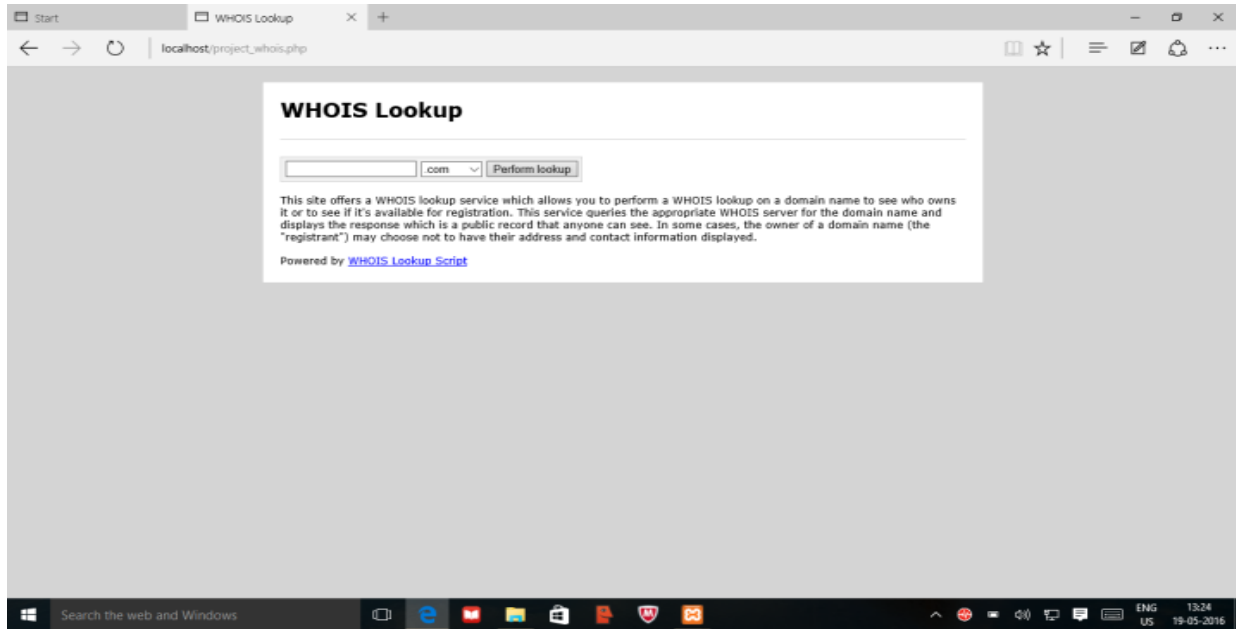


Fig. B Facebook Domain Lookup

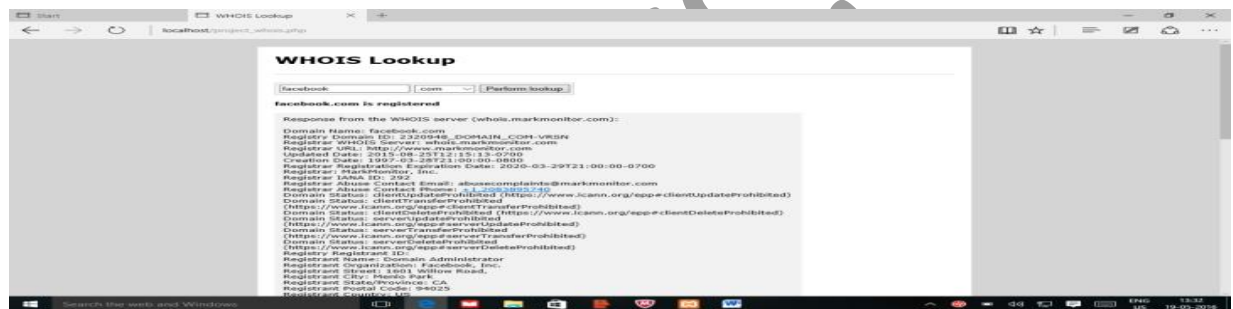


Fig. C Check the Domain Information

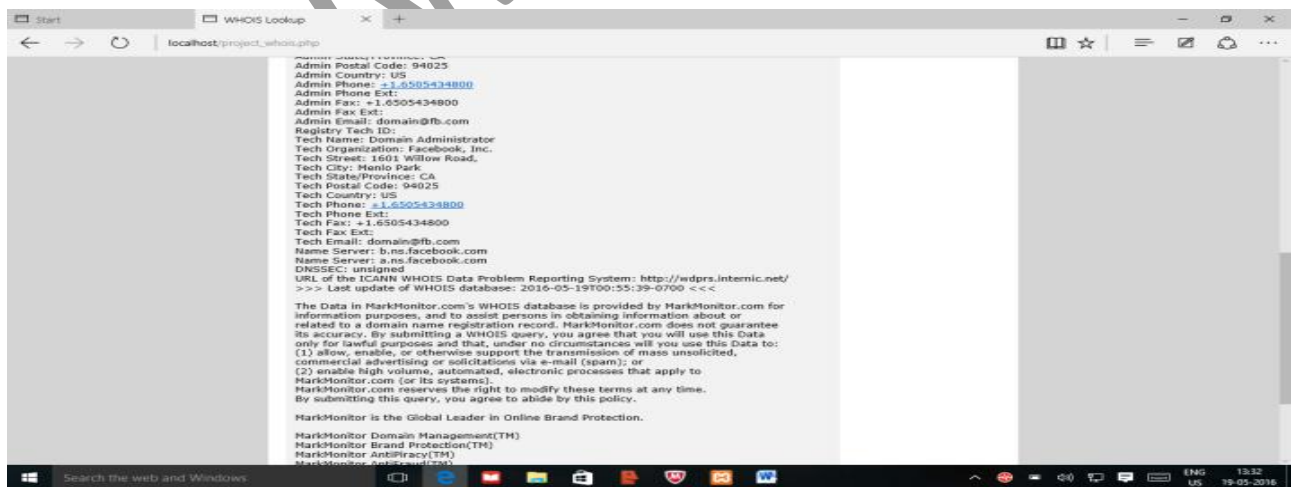


Fig. D Check the Domain Information



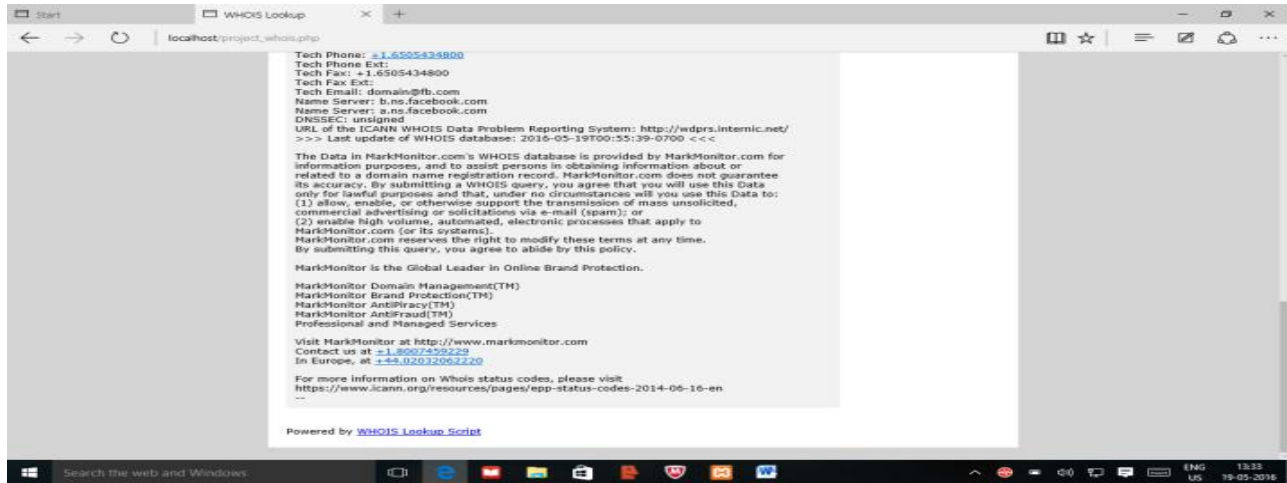


Fig. E Check the Domain Information

## CONCLUSION

In the present work, a deep detailed study of Domain Informain.EX: just like facebook domain and gmail domain information.

As a result of ICANN's generic top-level domain (gTLD) expansion, the risk of domain squatting has increased significantly. For example, based on current regulations, the registration of the gTLDs .olympics or .redcross is not allowed, however the registration of sites such as olympics.example or redcross.example is not controlled. Experts say that further restrictions are needed for second-level domains under the new gTLD .health, as well. For example, second-level domains under .tobacco.health or .diet.health can be easily misused by companies and therefore are a potential threat to Internet users.

- About WHOIS: What is WHOIS, historical context, and technical articles
- Policies: Current policies and obligations for Registrants, Registries and Registrars
- Get Involved: Mechanisms and background on how to get involved with groups that work on WHOIS policy development
- Improving WHOIS: Features to file complaints to ICANN on inaccuracies and services unavailable, as well as background on ICANN processes for handling complaints
- Knowledge Center: Centralized repository of WHOIS related content and Q/As
- Privacy Issues

## REFERENCES

- [1] Sanz, Marcos; Newton, Andrew; Daigle, Leslie (12 January 2005). "The Internet Registry Information Service (IRIS) Protocol". [gns0.icann.org](http://gns0.icann.org). Internet Corporation for Assigned Names and Numbers (ICANN) on 1 June 2015. Retrieved 1 June 2015. CRISPCrossRegistryInternetService Protocol.
- [2] "Crisp Status Pages". IETF Tools: CRISP WG Status Pages. IETF. Archived from the original on 1 June 2015. Retrieved 2 June 2015.
- [3] IESG Secretary (26 March 2009). "WG Action: Conclusion of Cross Registry Information Service Protocol (crisp)". IETF CRISP WG: Mail Archive. Archived from the original on 2 June 2015. Retrieved 2 June 2015. The Cross Registry Information Service Protocol (crisp) working group in the Applications Area has concluded.
- [4] Mevzek, Patrick (21 January 2009). "[CRISP] RFC 5144 up and running". IETF CRISP WG: Mail Archive. Archived from the original on 2 June 2015. Retrieved 2 June 2015
- [5] Sarah Stoll (30 May 2009). "Thick vs. Thin Whois for New gTLDs" (PDF). memorandum. ICANN. Retrieved 17 September 2011. Current gTLD registry agreements vary between thin and thick Whois outputs: com, net and jobs are thin; all other gTLD agreements – aero, asia, biz, cat, coop, info, mobi, museum, name, org, pro, tel, travel – are thick
- [6] Murphy, Cathy (2 October 2003). "CRISP (Cross-Registry Information Service Protocol) Working Group Meeting Minutes". Internet Engineering Task Force. Minneapolis, Minnesota USA: IETF. Archived from the original on 1 June 2015. Retrieved 1 June 2015. The CRISP (Cross-Registry Information Service Protocol).

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- [7] "Initial Report from the Expert Working Group on gTLD Directory Services: A Next Generation Registration Directory Service". whois.icann.org. ICANN. 24 June 2013. Retrieved 24 March 2015
- [8] "Final Report from the Expert Working Group on gTLD Directory Services: A Next-Generation Registration Directory Service (RDS)"
- [9] Bowman, Lisa (11 July 2001). "Whois at heart of congressional hearings". CNET. Archived from the original on 27 August 2005.
- [10] Bowman, Lisa (11 July 2001). "Whois at heart of congressional hearings". CNET. Archived from the original on 27 August 2005.
- [11] RFC 1035, Domain names--Implementation and specification, P. Mockapetris (Nov 1987)
- [12] McCullagh, Declan (2003-10-03). "VeriSign fends off critics at ICANN confab". CNET News.com. Retrieved 2007-09-22
- [13] Domain domination: The com TLD larger than all ccTLDs combined". Royal.pingdom.com. Retrieved 2012-07-2.
- [14] Jeftovic, Mark. "Whatever Happened to "Due Process" ?". Retrieved 27 November 2014
- [15] RFC 3467, Role of the Domain Name System (DNS), J.C. Klensin, J. Klensin (February 2003)
- [16] Declan McCullagh (18 November 2010). "Senate panel approves domain name seizure bill". CNET. Retrieved 2011-04-15
- [17] RFC 3467, Role of the Domain Name System (DNS), J.C. Klensin, J. Klensin (February 2003)
- [18] RFC 920, Domain Requirements, J. Postel, J. Reynolds, The Internet Society (October 1984.
- [19] CANN Board Approves Sweeping Overhaul of Top-level Domains, CircleID, 26 June 2008.
- [20] Cheshire, S. ,Krochmal M. &quot;RFC6761 - Special-Use Domain Names&quot;. Internet Engineering Task Force (IETF). Retrieved 3 May 2015.