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SEO agency australia

SEO-friendly URLs

SEO-friendly URLs

search console"Search console tools provide insights into how search engines index and rank a website. Best SEO Agency Sydney Australia.

SEO agency australia - Backlinks

1. Backlinks
2. Google PageSpeed Insights
3. On-page SEO factors

By using search console data, businesses can identify technical issues, track keyword performance, and make informed decisions to improve their optimization strategies."

search engine algorithm"A search engine algorithm determines how content is ranked in search results. Best SEO Sydney Agency. Understanding these algorithms and staying updated on changes allows SEO professionals to adjust strategies, maintain strong rankings, and continue driving targeted traffic to their websites."

Search engine optimisation consultants"Experienced search engine optimisation consultants help businesses refine their online strategies to achieve higher search rankings. By analyzing data, identifying growth opportunities, and implementing best practices, these consultants provide actionable insights that improve website performance, increase traffic, and generate more leads."

SEO-friendly URLs —

- SEO-friendly URLs
- SEO-friendly URLs
- SEO-optimized headers
- SERP feature keywords
- SERP features
- service keywords
- site speed optimization

Search engine optimisation strategy"A well-planned search engine optimisation strategy involves setting clear goals, identifying target keywords, optimizing on-page elements, and building quality backlinks. By continuously analyzing performance and adjusting tactics, businesses can achieve

sustained growth, higher search rankings, and increased organic traffic."

Search engine optimisation Sydney"Search engine optimisation in Sydney focuses on improving website visibility, enhancing user experience, and driving organic traffic. Best Search Engine Optimisation Services. By leveraging local knowledge, industry expertise, and proven techniques, Sydney-based SEO professionals help businesses achieve long-term success in the digital marketplace."

Search engine optimisation Sydney"Search engine optimisation in Sydney focuses on improving website visibility, enhancing user experience, and driving organic traffic.

SEO agency australia - Backlinks

- Google SEO best practices
- Google My Business

By leveraging local knowledge, industry expertise, and proven techniques, Sydney-based SEO professionals help businesses achieve long-term success in the digital marketplace."

SEO-optimized headers

search engine optimization services"Search engine optimization services include the strategies, techniques, and activities performed by experts to improve a websites visibility in search engine results. By focusing on both on-page and off-page factors, these services help businesses attract more organic traffic, enhance their rankings, and achieve their online marketing goals."

search engine results pages (SERPs)"SERPs are the pages displayed by search engines in response to a query. By optimizing for relevant keywords and focusing on content quality, businesses can increase their visibility on SERPs, attract more clicks, and achieve higher rankings."

search engine visibility"Search engine visibility measures how prominently a website appears in search results. SEO Audit . By improving visibility through keyword optimization, content quality, and technical enhancements, businesses can attract more visitors and strengthen their online presence."

HOW SEARCH ENGINE MARKETING HELPS BUSINESS GROW OVER TIME

SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQUARE,
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339





SERP feature keywords

search intent keywords"Search intent keywords align with the purpose behind a users query. By targeting these keywords, you ensure that your content meets the users needs and improves engagement and conversions."

search intent optimization"Search intent optimization ensures that content aligns with the specific needs and goals of users.

SEO agency australia - Google My Business

- Search traffic growth
- Search result relevance

By understanding and addressing different types of intentsuch as informational, navigational, and transactionalbusinesses can create content that resonates with their audience and improves rankings."

search phrase variationsSearch phrase variations are different ways users phrase similar queries. Optimizing for multiple variations increases your reach and helps ensure that your content resonates with a broader audience.

SERP features

search query analysis"Search query analysis examines the specific phrases users type into search engines. By understanding these queries, you can create more targeted content and improve search performance."

search query intent"Search query intent refers to the reason behind a users search. By understanding and addressing different intentssuch as informational, navigational, or transactionalbusinesses can create content that better meets user needs, improving rankings and engagement."

search query variationsSearch query variations are different ways users phrase the same idea. Optimizing for these variations broadens your reach and ensures that your content appeals to a diverse audience.

KEY ADVANTAGES LOCAL SEO





SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQUARE,
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339

CONTENT MARKETING
TYPES FOR SMALL BUSINESS
AND BRAND BUILDING

service keywords

search visibility tracking"Search visibility tracking monitors a websites overall presence in search results. By measuring the percentage of total available clicks a site receives, businesses can gauge their SEO performance, identify trends, and make data-driven decisions to improve rankings."

search volumeSearch volume indicates how often a particular keyword is searched within a given time frame. Understanding this metric helps prioritize keywords that can drive substantial traffic to your site.

search volume analysisSearch volume analysis examines how often specific keywords are searched. Understanding search volume helps prioritize high-value terms that can drive the most traffic to your site.

site speed optimization

seasonal keywordsSeasonal keywords trend higher during specific times of the year. Identifying and optimizing for these terms allows you to capture relevant traffic during peak periods.

seed keywordsSeed keywords are the starting points for any keyword research process. They are the core terms related to your niche that help uncover a broader list of related keywords.

semantic keywords"Semantic keywords are related phrases that help search engines understand the context of your content. Including these terms improves relevance, broadens your reach, and enhances search rankings."



SYDNEY WEBSITE DESIGN AGENCY
SUITE 87, LEVEL 33, AUSTRALIA SQ
265 GEORGE ST, SYDNEY NSW 2000
PHONE: 1300 684 339

**SEO SERVICES EXPERT'S MAIN
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About World Wide Web

This article is about the global system of pages accessed via HTTP. For the worldwide computer network, see [Internet](#). For the web browser, see [WorldWideWeb](#).

"WWW" and "The Web" redirect here. For other uses, see [WWW \(disambiguation\)](#) and [The Web \(disambiguation\)](#).

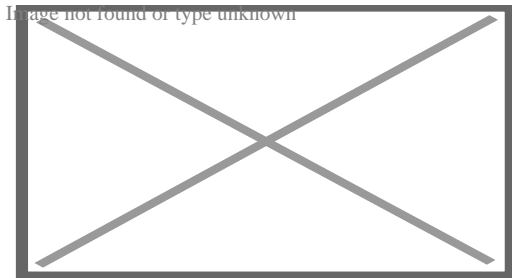
World Wide Web

Abbreviation WWW

Year started 1989; 36 years ago by [Tim Berners-Lee](#)

Organization

- [CERN](#) (1989–1994)
- [W3C](#) (1994–current)



A [web page](#) from [Wikipedia](#) displayed in [Google Chrome](#)

The **World Wide Web** (**WWW** or simply **the Web**) is an [information system](#) that enables [content](#) sharing over the [Internet](#) through user-friendly ways meant to appeal to users beyond [IT](#) specialists and hobbyists.^[1] It allows documents and other [web resources](#) to be accessed over the Internet according to specific rules of the [Hypertext Transfer Protocol](#) (HTTP).^[2]

The Web was invented by English computer scientist [Tim Berners-Lee](#) while at [CERN](#) in 1989 and opened to the public in 1993. It was conceived as a "universal linked information system".^{[3][4][5]} Documents and other media content are made available to the network through [web servers](#) and can be accessed by programs such as [web browsers](#). Servers and resources on the World Wide Web are identified and located through character strings called [uniform resource locators](#) (URLs).

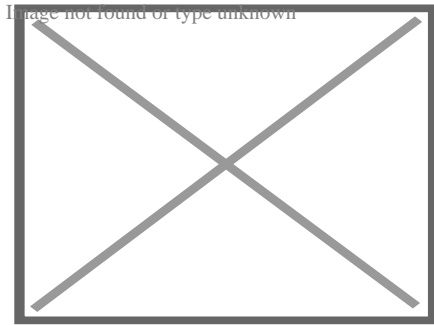
The original and still very common document type is a [web page](#) formatted in [Hypertext Markup Language](#) (HTML). This markup language supports [plain text](#), [images](#), embedded [video](#) and [audio](#) contents, and [scripts](#) (short programs) that implement complex user interaction. The HTML language also supports [hyperlinks](#) (embedded URLs) which provide immediate access to other web resources. [Web navigation](#), or web surfing, is the common practice of following such hyperlinks across multiple websites. [Web applications](#) are web pages that function as [application software](#). The information in the Web is transferred across the Internet using HTTP. Multiple web resources with a common theme and usually a common [domain name](#) make up a [website](#). A single web server may provide multiple websites, while some websites, especially the most popular ones, may be provided by multiple servers. Website content is provided by a myriad of companies, organizations, government agencies, and [individual users](#); and comprises an enormous amount of educational, entertainment, commercial, and government information.

The Web has become the world's dominant [information systems platform](#).^{[6][7][8][9]} It is the primary tool that billions of people worldwide use to interact with the Internet.^[2]

History

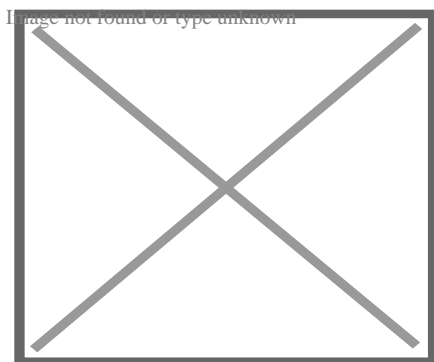
[\[edit\]](#)

Main article: [History of the World Wide Web](#)



This [NeXT Computer](#) was used by [Sir Tim Berners-Lee](#) at [CERN](#) and became the world's first [Web server](#).

The Web was invented by English computer scientist [Tim Berners-Lee](#) while working at [CERN](#).^{[10][11]} He was motivated by the problem of storing, updating, and finding documents and data files in that large and constantly changing organization, as well as distributing them to collaborators outside CERN. In his design, Berners-Lee dismissed the common [tree structure](#) approach, used for instance in the existing CERNDoc documentation system and in the [Unix filesystem](#), as well as approaches that relied in tagging files with [keywords](#), as in the VAX/NOTES system. Instead he adopted concepts he had put into practice with his private [ENQUIRE](#) system (1980) built at CERN. When he became aware of [Ted Nelson's](#) [hypertext](#) model (1965), in which documents can be linked in unconstrained ways through [hyperlinks](#) associated with "hot spots" embedded in the text, it helped to confirm the validity of his concept.^{[12][13]}



The historic World Wide Web logo, designed by [Robert Cailliau](#). Currently, there is no widely accepted logo in use for the WWW.

The model was later popularized by [Apple's](#) [HyperCard](#) system. Unlike Hypercard, Berners-Lee's new system from the outset was meant to support links between multiple databases on independent computers, and to allow simultaneous access by many users from any computer on

the Internet. He also specified that the system should eventually handle other media besides text, such as graphics, speech, and video. Links could refer to mutable data files, or even fire up programs on their server computer. He also conceived "gateways" that would allow access through the new system to documents organized in other ways (such as traditional computer **file systems** or the **Usenet**). Finally, he insisted that the system should be decentralized, without any central control or coordination over the creation of links.^{[4][14][10][11]}

Berners-Lee submitted a proposal to CERN in May 1989, without giving the system a name.^[4] He got a working system implemented by the end of 1990, including a browser called **WorldWideWeb** (which became the name of the project and of the network) and **an HTTP server** running at CERN. As part of that development he defined the first version of the HTTP protocol, the basic URL syntax, and implicitly made HTML the primary document format.^[15] The technology was released outside CERN to other research institutions starting in January 1991, and then to the whole Internet on 23 August 1991. The Web was a success at CERN, and began to spread to other scientific and academic institutions. Within the next two years, **there were 50 websites created**.^{[16][17]}

CERN made the Web protocol and code available royalty free in 1993, enabling its widespread use.^{[18][19]} After the **NCSA** released the **Mosaic web browser** later that year, the Web's popularity grew rapidly as **thousands of websites** sprang up in less than a year.^{[20][21]} Mosaic was a graphical browser that could display inline images and submit **forms** that were processed by the **HTTPd server**.^{[22][23]} **Marc Andreessen** and **Jim Clark** founded **Netscape** the following year and released the **Navigator browser**, which introduced **Java** and **JavaScript** to the Web. It quickly became the dominant browser. Netscape **became a public company** in 1995 which triggered a frenzy for the Web and started the **dot-com bubble**.^[24] Microsoft responded by developing its own browser, **Internet Explorer**, starting the **browser wars**. By bundling it with Windows, it became the dominant browser for 14 years.^[25]

Berners-Lee founded the **World Wide Web Consortium** (W3C) which created **XML** in 1996 and recommended replacing HTML with stricter **XHTML**.^[26] In the meantime, developers began exploiting an IE feature called **XMLHttpRequest** to make **Ajax** applications and launched the **Web 2.0** revolution. **Mozilla**, **Opera**, and Apple rejected XHTML and created the **WHATWG** which developed **HTML5**.^[27] In 2009, the W3C conceded and abandoned XHTML.^[28] In 2019, it ceded control of the HTML specification to the WHATWG.^[29]

The World Wide Web has been central to the development of the **Information Age** and is the primary tool billions of people use to interact on the **Internet**.^{[30][31][32][9]}

Nomenclature

[\[edit\]](#)



This section **needs additional citations for verification**. Please help **improve this article** by **adding citations to reliable sources** in this section. Unsourced material may be challenged and removed. (August 2023) (*[Learn how and when to remove this message](#)*)

Tim Berners-Lee states that *World Wide Web* is officially spelled as three separate words, each capitalised, with no intervening hyphens.[33] Nonetheless, it is often called simply *the Web*, and also often *the web*; see [Capitalization of Internet](#) for details. In Mandarin Chinese, *World Wide Web* is commonly translated via a [phono-semantic matching](#) to *wàn wéi wǎng* (万维网), which satisfies *www* and literally means "10,000-dimensional net", a translation that reflects the design concept and proliferation of the World Wide Web.

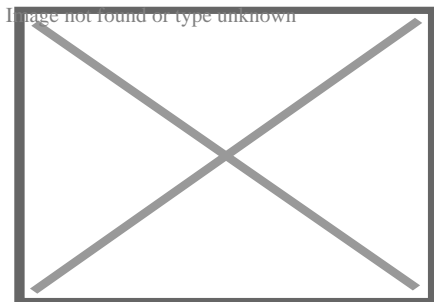
Use of the *www* prefix has been declining, especially when [web applications](#) sought to brand their domain names and make them easily pronounceable. As the [mobile Web](#) grew in popularity,[[citation needed](#)] services like [Gmail.com](#), [Outlook.com](#), [Myspace.com](#), [Facebook.com](#) and [Twitter.com](#) are most often mentioned without adding "*www.*" (or, indeed, ".com") to the domain.[34]

In English, *www* is usually read as *double-u double-u double-u*.[\[35\]](#) Some users pronounce it *dub-dub-dub*, particularly in New Zealand.[\[36\]](#) [Stephen Fry](#), in his "Podgrams" series of podcasts, pronounces it *wuh wuh wuh*.[\[37\]](#) The English writer [Douglas Adams](#) once quipped in *The Independent on Sunday* (1999): "The World Wide Web is the only thing I know of whose shortened form takes three times longer to say than what it's short for".[\[38\]](#)

Function

[[edit](#)]

Main articles: [HTTP](#) and [HTML](#)



The World Wide Web functions as an [application layer protocol](#) that is run "on top of" (figuratively) the Internet, helping to make it more functional. The advent of the [Mosaic](#) web browser helped to make the web much more usable, to include the display of images and moving images ([GIFs](#)).

The terms *Internet* and *World Wide Web* are often used without much distinction. However, the two terms do not mean the same thing. The Internet is a global system of [computer networks](#) interconnected through telecommunications and [optical networking](#). In contrast, the World Wide Web is a global collection of documents and other [resources](#), linked by hyperlinks and [URIs](#). Web resources are accessed using [HTTP](#) or [HTTPS](#), which are application-level Internet protocols that use the Internet transport protocols.[\[2\]](#)

Viewing a [web page](#) on the World Wide Web normally begins either by typing the [URL](#) of the page into a web browser or by following a hyperlink to that page or resource. The web browser

then initiates a series of background communication messages to fetch and display the requested page. In the 1990s, using a browser to view web pages—and to move from one web page to another through hyperlinks—came to be known as 'browsing,' 'web surfing' (after **channel surfing**), or 'navigating the Web'. Early studies of this new behaviour investigated user patterns in using web browsers. One study, for example, found five user patterns: exploratory surfing, window surfing, evolved surfing, bounded navigation and targeted navigation.[39]

The following example demonstrates the functioning of a web browser when accessing a page at the URL `http://example.org/home.html`. The browser resolves the server name of the URL (`example.org`) into an **Internet Protocol address** using the globally distributed **Domain Name System** (DNS). This lookup returns an IP address such as `203.0.113.4` or `2001:db8:2e::7334`. The browser then requests the resource by sending an **HTTP** request across the Internet to the computer at that address. It requests service from a specific TCP port number that is well known for the HTTP service so that the receiving host can distinguish an HTTP request from other network protocols it may be servicing. HTTP normally uses **port number 80** and for HTTPS it normally uses **port number 443**. The content of the HTTP request can be as simple as two lines of text:

```
GET /home.html HTTP/1.1
Host: example.org
```

The computer receiving the HTTP request delivers it to web server software listening for requests on port 80. If the web server can fulfil the request it sends an HTTP response back to the browser indicating success:

```
HTTP/1.1 200 OK
Content-Type: text/html; charset=UTF-8
```

followed by the content of the requested page. Hypertext Markup Language (**HTML**) for a basic web page might look like this:

```
<html>
  <head>
    <title>Example.org – The World Wide Web</title>
  </head>
  <body>
    <p>The World Wide Web, abbreviated as WWW and commonly known ...</p>
  </body>
</html>
```

The web browser **parses** the HTML and interprets the markup (<title>, <p> for paragraph, and such) that surrounds the words to format the text on the screen. Many web pages use HTML to reference the URLs of other resources such as images, other embedded media, **scripts** that affect page behaviour, and **Cascading Style Sheets** that affect page layout. The browser makes additional HTTP requests to the web server for these other **Internet media types**. As it receives their content from the web server, the browser progressively **renders** the page onto the screen as specified by its HTML and these additional resources.

HTML

[[edit](#)]

Main article: [HTML](#)

Hypertext Markup Language (HTML) is the standard **markup language** for creating **web pages** and **web applications**. With **Cascading Style Sheets** (CSS) and **JavaScript**, it forms a triad of **cornerstone** technologies for the World Wide Web.^[40]

Web browsers receive HTML documents from a **web server** or from local storage and **render** the documents into multimedia web pages. HTML describes the structure of a web page **semantically** and originally included cues for the appearance of the document.

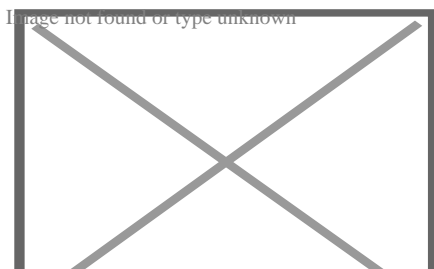
HTML elements are the building blocks of HTML pages. With HTML constructs, **images** and other objects such as **interactive forms** may be embedded into the rendered page. HTML provides a means to create **structured documents** by denoting structural **semantics** for text such as headings, paragraphs, lists, **links**, quotes and other items. HTML elements are delineated by *tags*, written using **angle brackets**. Tags such as and <input /> directly introduce content into the page. Other tags such as <p> surround and provide information about document text and may include other tags as sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

HTML can embed programs written in a **scripting language** such as **JavaScript**, which affects the behaviour and content of web pages. Inclusion of CSS defines the look and layout of content. The **World Wide Web Consortium** (W3C), maintainer of both the HTML and the CSS standards, has encouraged the use of CSS over explicit presentational HTML since 1997.^[41]

Linking

[[edit](#)]

Most web pages contain hyperlinks to other related pages and perhaps to downloadable files, source documents, definitions and other web resources. In the underlying HTML, a hyperlink looks like this: Example.org Homepage.



Graphic representation of a minute fraction of the WWW, demonstrating [hyperlinks](#)

Such a collection of useful, related resources, interconnected via hypertext links is dubbed a *web* of information. Publication on the Internet created what Tim Berners-Lee first called the *WorldWideWeb* (in its original [CamelCase](#), which was subsequently discarded) in November 1990.^[42]

The hyperlink structure of the web is described by the [webgraph](#): the nodes of the web graph correspond to the web pages (or URLs) the directed edges between them to the hyperlinks. Over time, many web resources pointed to by hyperlinks disappear, relocate, or are replaced with different content. This makes hyperlinks obsolete, a phenomenon referred to in some circles as link rot, and the hyperlinks affected by it are often called "[dead](#)" [links](#). The ephemeral nature of the Web has prompted many efforts to archive websites. The [Internet Archive](#), active since 1996, is the best known of such efforts.

WWW prefix

[\[edit\]](#)

Many hostnames used for the World Wide Web begin with *www* because of the long-standing practice of naming [Internet](#) hosts according to the services they provide. The [hostname](#) of a [web server](#) is often *www*, in the same way that it may be *ftp* for an [FTP server](#), and *news* or *nntp* for a [Usenet news server](#). These hostnames appear as Domain Name System (DNS) or [subdomain](#) names, as in *www.example.com*. The use of *www* is not required by any technical or policy standard and many websites do not use it; the first web server was *nxoc01.cern.ch*.^[43] According to Paolo Palazzi, who worked at CERN along with Tim Berners-Lee, the popular use of *www* as subdomain was accidental; the World Wide Web project page was intended to be published at *www.cern.ch* while *info.cern.ch* was intended to be the CERN home page; however the DNS records were never switched, and the practice of prepending *www* to an institution's website domain name was subsequently copied.^[44]^{[[better source needed](#)]} Many established websites still use the prefix, or they employ other subdomain names such as *www2*, *secure* or *en* for special purposes. Many such web servers are set up so that both the main domain name (e.g., *example.com*) and the *www* subdomain (e.g., *www.example.com*) refer to the same site; others require one form or the other, or they may map to different web sites. The use of a subdomain name is useful for [load balancing](#) incoming web traffic by creating a [CNAME record](#) that points to a cluster of web servers. Since, currently^{[[as of?](#)]}, only a subdomain can be used in a CNAME, the same result cannot be achieved by using the bare domain root.^[45]^{[[dubious](#) – [discuss](#)]}

When a user submits an incomplete domain name to a web browser in its address bar input field, some web browsers automatically try adding the prefix "www" to the beginning of it and possibly ".com", ".org" and ".net" at the end, depending on what might be missing. For example, entering "microsoft" may be transformed to *http://www.microsoft.com/* and "openoffice" to *http://www.openoffice.org*. This feature started appearing in early versions of [Firefox](#), when it still had the working title 'Firebird' in early 2003, from an earlier practice in browsers such as [Lynx](#).^[46]^{[[unreliable source?](#)]} It is reported that Microsoft was granted a US patent for the same idea in

2008, but only for mobile devices.^[47]

Scheme specifiers

[\[edit\]](#)

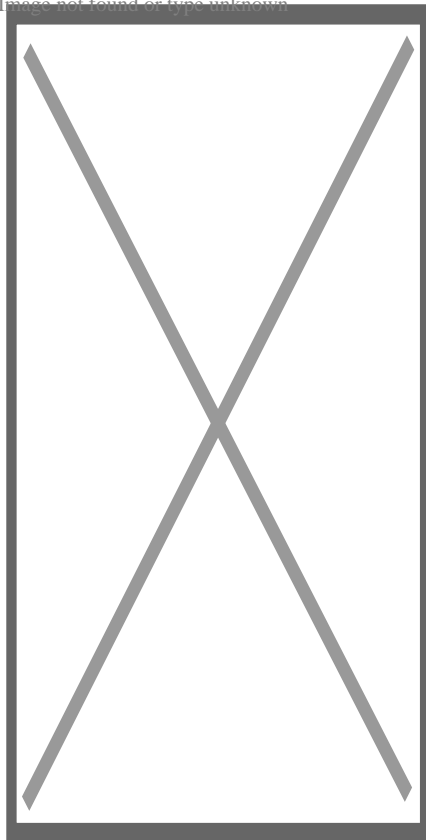
The scheme specifiers *http://* and *https://* at the start of a web **URI** refer to **Hypertext Transfer Protocol** or **HTTP Secure**, respectively. They specify the communication protocol to use for the request and response. The HTTP protocol is fundamental to the operation of the World Wide Web, and the added encryption layer in HTTPS is essential when browsers send or retrieve confidential data, such as passwords or banking information. Web browsers usually automatically prepend *http://* to user-entered URIs, if omitted.

Pages

[\[edit\]](#)

Main article: **Web page**

Image not found or type unknown



A screenshot of the home page of Wikimedia Commons

A *web page* (also written as *webpage*) is a document that is suitable for the World Wide Web and **web browsers**. A web browser displays a web page on a **monitor** or **mobile device**.

The term *web page* usually refers to what is visible, but may also refer to the contents of the **computer file** itself, which is usually a **text file** containing **hypertext** written in **HTML** or a comparable **markup language**. Typical web pages provide **hypertext** for browsing to other web pages via **hyperlinks**, often referred to as *links*. Web browsers will frequently have to access multiple **web resource** elements, such as reading **style sheets**, **scripts**, and images, while presenting each web page.

On a network, a web browser can retrieve a web page from a remote **web server**. The web server may restrict access to a private network such as a corporate intranet. The web browser uses the **Hypertext Transfer Protocol** (HTTP) to make such requests to the **web server**.

A **static web page** is delivered exactly as stored, as **web content** in the web server's **file system**. In contrast, a **dynamic web page** is generated by a **web application**, usually driven by **server-side software**. Dynamic web pages are used when each user may require completely different information, for example, bank websites, web email etc.

Static page

[[edit](#)]

Main article: [Static web page](#)

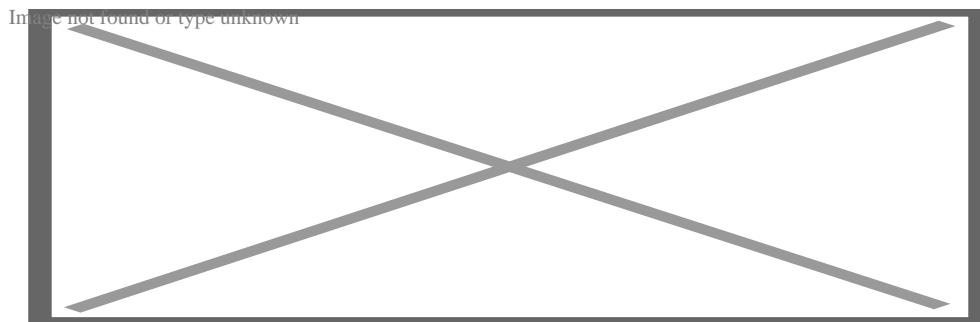
A *static web page* (sometimes called a *flat page/stationary page*) is a **web page** that is delivered to the user exactly as stored, in contrast to **dynamic web pages** which are generated by a **web application**.

Consequently, a static web page displays the same information for all users, from all contexts, subject to modern capabilities of a **web server** to **negotiate content-type** or language of the document where such versions are available and the server is configured to do so.

Dynamic pages

[[edit](#)]

Main articles: [Dynamic web page](#) and [Ajax \(programming\)](#)



Dynamic web page: example of server-side scripting ([PHP](#) and [MySQL](#))

A *server-side dynamic web page* is a **web page** whose construction is controlled by an **application server** processing server-side scripts. In server-side scripting, **parameters** determine how the assembly of every new web page proceeds, including the setting up of more client-side processing.

A *client-side dynamic web page* processes the web page using JavaScript running in the browser. JavaScript programs can interact with the document via **Document Object Model**, or DOM, to query page state and alter it. The same client-side techniques can then dynamically update or change the DOM in the same way.

A dynamic web page is then reloaded by the user or by a **computer program** to change some variable content. The updating information could come from the server, or from changes made to that page's DOM. This may or may not truncate the browsing history or create a saved version to go back to, but a *dynamic web page update* using **Ajax** technologies will neither create a page to go back to nor truncate the **web browsing history** forward of the displayed page. Using Ajax technologies the end **user** gets *one dynamic page* managed as a single page in the **web browser** while the actual **web content** rendered on that page can vary. The Ajax engine sits only on the browser requesting parts of its DOM, *the DOM*, for its client, from an application server.

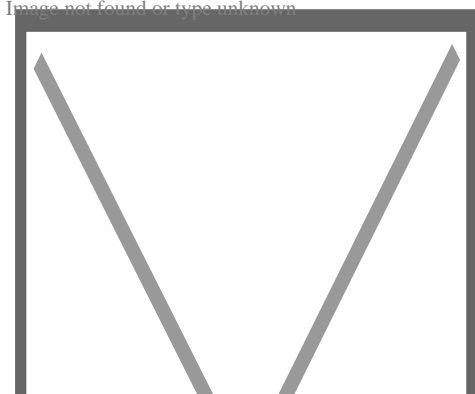
Dynamic HTML, or DHTML, is the umbrella term for technologies and methods used to create web pages that are not **static web pages**, though it has fallen out of common use since the popularization of **AJAX**, a term which is now itself rarely used.^[*citation needed*] Client-side-scripting, server-side scripting, or a combination of these make for the dynamic web experience in a browser.

JavaScript is a **scripting language** that was initially developed in 1995 by **Brendan Eich**, then of **Netscape**, for use within web pages.^[48] The standardised version is **ECMAScript**.^[48] To make web pages more interactive, some web applications also use JavaScript techniques such as **Ajax** (**asynchronous** JavaScript and **XML**). **Client-side script** is delivered with the page that can make additional HTTP requests to the server, either in response to user actions such as mouse movements or clicks, or based on elapsed time. The server's responses are used to modify the current page rather than creating a new page with each response, so the server needs only to provide limited, incremental information. Multiple Ajax requests can be handled at the same time, and users can interact with the page while data is retrieved. Web pages may also regularly **poll** the server to check whether new information is available.^[49]

Website

[**edit**]

Image not found or type unknown



The [usap.gov](https://www.usap.gov) website

Main article: [Website](#)

A *website*^[50] is a collection of related web resources including [web pages](#), [multimedia](#) content, typically identified with a common [domain name](#), and published on at least one [web server](#). Notable examples are [wikipedia.org](https://www.wikipedia.org), [google.com](https://www.google.com), and [amazon.com](https://www.amazon.com).

A website may be accessible via a public [Internet Protocol](#) (IP) network, such as the [Internet](#), or a private [local area network](#) (LAN), by referencing a [uniform resource locator](#) (URL) that identifies the site.

Websites can have many functions and can be used in various fashions; a website can be a [personal website](#), a corporate website for a company, a government website, an organization website, etc. Websites are typically dedicated to a particular topic or purpose, ranging from entertainment and [social networking](#) to providing news and education. All publicly accessible websites collectively constitute the World Wide Web, while private websites, such as a company's website for its employees, are typically a part of an [intranet](#).

Web pages, which are the building blocks of websites, are [documents](#), typically composed in [plain text](#) interspersed with [formatting instructions](#) of Hypertext Markup Language ([HTML](#), [XHTML](#)). They may incorporate elements from other websites with suitable [markup anchors](#). Web pages are accessed and transported with the [Hypertext Transfer Protocol](#) (HTTP), which may optionally employ encryption ([HTTP Secure](#), HTTPS) to provide security and privacy for the user. The user's application, often a [web browser](#), renders the page content according to its HTML markup instructions onto a [display terminal](#).

[Hyperlinking](#) between web pages conveys to the reader the [site structure](#) and guides the navigation of the site, which often starts with a [home page](#) containing a directory of the site [web content](#). Some websites require user registration or [subscription](#) to access content. Examples of [subscription websites](#) include many business sites, news websites, [academic journal](#) websites, gaming websites, file-sharing websites, [message boards](#), web-based [email](#), [social networking](#) websites, websites providing real-time price quotations for different types of markets, as well as sites providing various other services. [End users](#) can access websites on a range of devices, including [desktop](#) and [laptop computers](#), [tablet computers](#), [smartphones](#) and [smart TVs](#).

Browser

[[edit](#)]

Main article: [Web browser](#)

A *web browser* (commonly referred to as a *browser*) is a [software user agent](#) for accessing information on the World Wide Web. To connect to a website's [server](#) and display its pages, a user needs to have a web browser program. This is the program that the user runs to download, format, and display a web page on the user's computer.

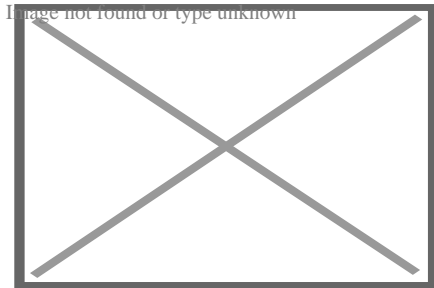
In addition to allowing users to find, display, and move between web pages, a web browser will usually have features like keeping bookmarks, recording history, managing cookies (see below), and home pages and may have facilities for recording passwords for logging into websites.

The most popular browsers are [Chrome](#), [Safari](#), [Edge](#), [Samsung Internet](#) and [Firefox](#).^[51]

Server

[\[edit\]](#)

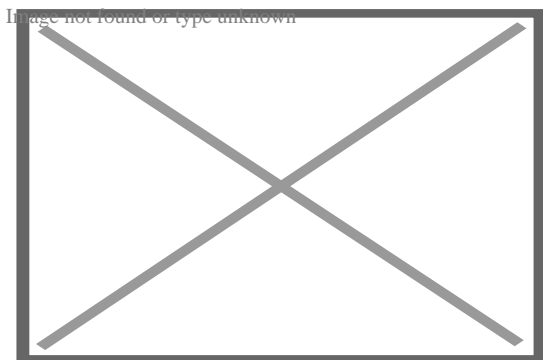
Main article: [Web server](#)



The inside and front of a [Dell PowerEdge](#) web server, a computer designed for [rack mounting](#)

A *Web server* is [server software](#), or hardware dedicated to running said software, that can satisfy World Wide Web client requests. A web server can, in general, contain one or more websites. A web server processes incoming network requests over [HTTP](#) and several other related protocols.

The primary function of a web server is to store, process and deliver [web pages](#) to [clients](#).^[52] The communication between client and server takes place using the [Hypertext Transfer Protocol \(HTTP\)](#). Pages delivered are most frequently [HTML documents](#), which may include [images](#), [style sheets](#) and [scripts](#) in addition to the text content.



Multiple web servers may be used for a high traffic website; here, [Dell](#) servers are installed together to be used for the [Wikimedia Foundation](#).

A [user agent](#), commonly a [web browser](#) or [web crawler](#), initiates communication by making a [request](#) for a specific resource using HTTP and the server responds with the content of that resource or an [error message](#) if unable to do so. The resource is typically a real file on the

server's **secondary storage**, but this is not necessarily the case and depends on how the webserver is **implemented**.

While the primary function is to serve content, full implementation of HTTP also includes ways of receiving content from clients. This feature is used for submitting **web forms**, including **uploading** of files.

Many generic web servers also support **server-side scripting** using **Active Server Pages** (ASP), **PHP** (Hypertext Preprocessor), or other **scripting languages**. This means that the behaviour of the webserver can be scripted in separate files, while the actual server software remains unchanged. Usually, this function is used to generate HTML documents **dynamically** ("on-the-fly") as opposed to returning **static documents**. The former is primarily used for retrieving or modifying information from **databases**. The latter is typically much faster and more easily **cached** but cannot deliver **dynamic content**.

Web servers can also frequently be found **embedded** in devices such as **printers**, **routers**, **webcams** and serving only a **local network**. The web server may then be used as a part of a system for monitoring or administering the device in question. This usually means that no additional software has to be installed on the client computer since only a web browser is required (which now is included with most **operating systems**).

Optical Networking

[**edit**]

Optical networking is a sophisticated infrastructure that utilizes optical fiber to transmit data over long distances, connecting countries, cities, and even private residences. The technology uses optical microsystems like **tunable lasers**, filters, **attenuators**, switches, and wavelength-selective switches to manage and operate these networks.[53][54]

The large quantity of optical fiber installed throughout the world at the end of the twentieth century set the foundation of the Internet as it's used today. The information highway relies heavily on optical networking, a method of sending messages encoded in light to relay information in various telecommunication networks.[55]

The **Advanced Research Projects Agency Network** (ARPANET) was one of the first iterations of the Internet, created in collaboration with universities and researchers 1969.[56][57][58][59] However, access to the ARPANET was limited to researchers, and in 1985, the **National Science Foundation** founded the **National Science Foundation Network** (NSFNET), a program that provided supercomputer access to researchers.[59]

Limited public access to the Internet led to pressure from consumers and corporations to privatize the network. In 1993, the US passed the **National Information Infrastructure Act**, which dictated that the National Science Foundation must hand over control of the optical capabilities to commercial operators.[60][61]

The privatization of the Internet and the release of the World Wide Web to the public in 1993 led to an increased demand for Internet capabilities. This spurred developers to seek solutions to reduce the time and cost of laying new fiber and increase the amount of information that can be sent on a single fiber, in order to meet the growing needs of the public.[62][63][64][65]

In 1994, Pirelli S.p.A.'s optical components division introduced a wavelength-division multiplexing (WDM) system to meet growing demand for increased data transmission. This four-channel WDM technology allowed more information to be sent simultaneously over a single optical fiber, effectively boosting network capacity.[66][67]

Pirelli wasn't the only company that developed a WDM system; another company, the **Ciena Corporation** (Ciena), created its own technology to transmit data more efficiently. **David Huber**, an optical networking engineer and entrepreneur **Kevin Kimberlin** founded Ciena in 1992.[68][69][70] Drawing on laser technology from **Gordon Gould** and William Culver of **Optelecom, Inc.**, the company focused on utilizing optical amplifiers to transmit data via light.[71][72][73] Under chief executive officer Pat Nettles, Ciena developed a dual-stage optical amplifier for dense wavelength-division multiplexing (DWDM), patented in 1997 and deployed on the Sprint network in 1996.[74][75][76][77][78]

Cookie

[edit]

Main article: **HTTP cookie**

An *HTTP cookie* (also called *web cookie*, *Internet cookie*, *browser cookie*, or simply *cookie*) is a small piece of data sent from a website and stored on the user's computer by the user's **web browser** while the user is browsing. Cookies were designed to be a reliable mechanism for websites to remember **stateful** information (such as items added in the shopping cart in an online store) or to record the user's browsing activity (including clicking particular buttons, **logging in**, or recording which pages were visited in the past). They can also be used to remember arbitrary pieces of information that the user previously entered into form fields such as names, addresses, passwords, and credit card numbers.

Cookies perform essential functions in the modern web. Perhaps most importantly, *authentication cookies* are the most common method used by web servers to know whether the user is logged in or not, and which account they are logged in with. Without such a mechanism, the site would not know whether to send a page containing sensitive information or require the user to authenticate themselves by logging in. The security of an authentication cookie generally depends on the security of the issuing website and the user's **web browser**, and on whether the cookie data is encrypted. Security vulnerabilities may allow a cookie's data to be read by a **hacker**, used to gain access to user data, or used to gain access (with the user's credentials) to the website to which the cookie belongs (see **cross-site scripting** and **cross-site request forgery** for examples).[79]

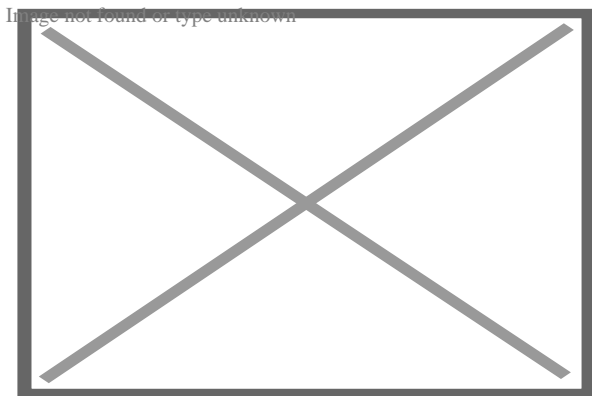
Tracking cookies, and especially third-party tracking cookies, are commonly used as ways to compile long-term records of individuals' browsing histories – a potential **privacy concern** that prompted European[80] and U.S. lawmakers to take action in 2011.[81][82] European law requires that all websites targeting **European Union** member states gain "informed consent" from users before storing non-essential cookies on their device.

Google **Project Zero** researcher Jann Horn describes ways cookies can be read by **intermediaries**, like **Wi-Fi** hotspot providers. When in such circumstances, he recommends using the browser in **private browsing** mode (widely known as **Incognito mode** in Google Chrome).[83]

Search engine

[**edit**]

Main article: **Search engine**



The results of a search for the term "lunar eclipse" in a web-based **image search** engine

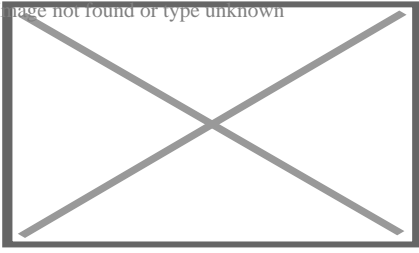
A *web search engine* or *Internet search engine* is a **software system** that is designed to carry out *web search* (*Internet search*), which means to search the World Wide Web in a systematic way for particular information specified in a **web search query**. The search results are generally presented in a line of results, often referred to as **search engine results pages** (SERPs). The information may be a mix of **web pages**, images, videos, infographics, articles, research papers, and other types of files. Some search engines also **mine data** available in **databases** or **open directories**. Unlike **web directories**, which are maintained only by human editors, search engines also maintain **real-time** information by running an **algorithm** on a **web crawler**. Internet content that is not capable of being searched by a web search engine is generally described as the **deep web**.

In 1990, **Archie**, the world's first search engine, was released. The technology was originally an index of **File Transfer Protocol** (FTP) sites, which was a method for moving files between a client and a server network.[84][85] This early search tool was superseded by more advanced engines like **Yahoo!** in 1995 and **Google** in 1998.[86][87]

Deep web

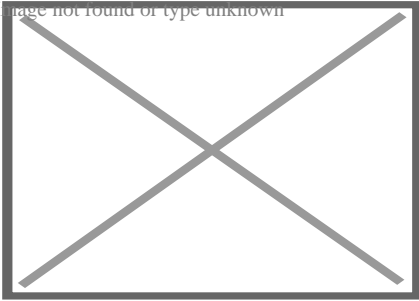
[\[edit\]](#)

Image not found or type unknown



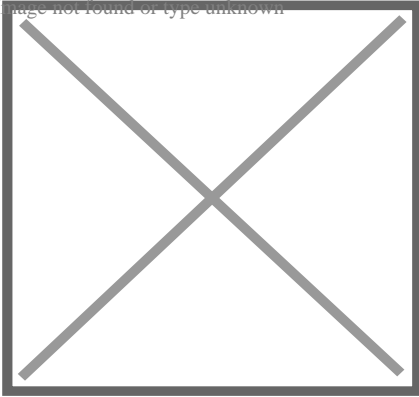
Deep web diagram

Image not found or type unknown



Deep web vs surface web

Image not found or type unknown



Surface Web & Deep Web

Main article: [Deep web](#)

The deep web,^[88] *invisible web*,^[89] or *hidden web*^[90] are parts of the World Wide Web whose contents are not **indexed** by standard **web search engines**. The opposite term to the deep web is the **surface web**, which is accessible to anyone using the Internet.^[91] Computer scientist Michael K. Bergman is credited with coining the term *deep web* in 2001 as a search indexing term.^[92]

The content of the deep web is hidden behind **HTTP** forms,^{[93][94]} and includes many very common uses such as **web mail**, **online banking**, and services that users must pay for, and which is protected by a **paywall**, such as **video on demand**, some online magazines and newspapers, among others.

The content of the deep web can be located and accessed by a direct **URL** or **IP address** and may require a password or other security access past the public website page.

Caching

[edit]

A **web cache** is a server computer located either on the public Internet or within an enterprise that stores recently accessed web pages to improve response time for users when the same content is requested within a certain time after the original request. Most web browsers also implement a **browser cache** by writing recently obtained data to a local data storage device. HTTP requests by a browser may ask only for data that has changed since the last access. Web pages and resources may contain expiration information to control caching to secure sensitive data, such as in **online banking**, or to facilitate frequently updated sites, such as news media. Even sites with highly dynamic content may permit basic resources to be refreshed only occasionally. Web site designers find it worthwhile to collate resources such as CSS data and JavaScript into a few site-wide files so that they can be cached efficiently. Enterprise **firewalls** often cache Web resources requested by one user for the benefit of many users. Some **search engines** store cached content of frequently accessed websites.

Security

[edit]

For **criminals**, the Web has become a venue to spread **malware** and engage in a range of **cybercrime**, including (but not limited to) **identity theft**, **fraud**, **espionage**, and **intelligence gathering**.^[95] Web-based **vulnerabilities** now outnumber traditional computer security concerns,^{[96][97]} and as measured by **Google**, about one in ten web pages may contain malicious code.^[98] Most web-based **attacks** take place on legitimate websites, and most, as measured by **Sophos**, are hosted in the United States, China and Russia.^[99] The most common of all malware **threats** is **SQL injection** attacks against websites.^[100] Through HTML and URIs, the Web was vulnerable to attacks like **cross-site scripting** (XSS) that came with the introduction of JavaScript^[101] and were exacerbated to some degree by **Web 2.0** and Ajax **web design** that favours the use of scripts.^[102] In one 2007 estimate, 70% of all websites are open to XSS attacks on their users.^[103] **Phishing** is another common threat to the Web. In February 2013, RSA (the security division of EMC) estimated the global losses from phishing at \$1.5 billion in 2012.^[104] Two of the well-known phishing methods are Covert Redirect and Open Redirect.

Proposed solutions vary. Large security companies like **McAfee** already design governance and compliance suites to meet post-9/11 regulations,^[105] and some, like **Finjan Holdings** have recommended active real-time inspection of programming code and all content regardless of its source.^[95] Some have argued that for enterprises to see Web security as a business opportunity rather than a **cost centre**,^[106] while others call for "ubiquitous, always-on **digital rights management**" enforced in the infrastructure to replace the hundreds of companies that secure data and networks.^[107] **Jonathan Zittrain** has said users sharing responsibility for computing safety is far preferable to locking down the Internet.^[108]

Privacy

[edit]

Main article: [Internet privacy](#)

Every time a client requests a web page, the server can identify the request's [IP address](#). Web servers usually log IP addresses in a [log file](#). Also, unless set not to do so, most web browsers record requested web pages in a viewable *history* feature, and usually [cache](#) much of the content locally. Unless the server-browser communication uses HTTPS encryption, web requests and responses travel in plain text across the Internet and can be viewed, recorded, and cached by intermediate systems. Another way to hide [personally identifiable information](#) is by using a [virtual private network](#). A VPN [encrypts](#) traffic between the client and VPN server, and masks the original IP address, lowering the chance of user identification.

When a web page asks for, and the user supplies, personally identifiable information—such as their real name, address, e-mail address, etc. web-based entities can associate current web traffic with that individual. If the website uses [HTTP cookies](#), username, and password authentication, or other tracking techniques, it can relate other web visits, before and after, to the identifiable information provided. In this way, a web-based organization can develop and build a profile of the individual people who use its site or sites. It may be able to build a record for an individual that includes information about their leisure activities, their shopping interests, their profession, and other aspects of their [demographic profile](#). These profiles are of potential interest to marketers, advertisers, and others. Depending on the website's [terms and conditions](#) and the local laws that apply information from these profiles may be sold, shared, or passed to other organizations without the user being informed. For many ordinary people, this means little more than some unexpected emails in their inbox or some uncannily relevant advertising on a future web page. For others, it can mean that time spent indulging an unusual interest can result in a deluge of further targeted marketing that may be unwelcome. Law enforcement, counterterrorism, and espionage agencies can also identify, target, and track individuals based on their interests or proclivities on the Web.

[Social networking](#) sites usually try to get users to use their real names, interests, and locations, rather than pseudonyms, as their executives believe that this makes the social networking experience more engaging for users. On the other hand, uploaded photographs or unguarded statements can be identified to an individual, who may regret this exposure. Employers, schools, parents, and other relatives may be influenced by aspects of social networking profiles, such as text posts or digital photos, that the posting individual did not intend for these audiences. [Online bullies](#) may make use of personal information to harass or [stalk](#) users. Modern social networking websites allow fine-grained control of the privacy settings for each posting, but these can be complex and not easy to find or use, especially for beginners.^[109] Photographs and videos posted onto websites have caused particular problems, as they can add a person's face to an online profile. With modern and potential [facial recognition technology](#), it may then be possible to relate that face with other, previously anonymous, images, events, and scenarios that have been imaged elsewhere. Due to image caching, mirroring, and copying, it is difficult to remove an image from the World Wide Web.

Standards

[\[edit\]](#)

Main article: [Web standards](#)

Web standards include many interdependent standards and specifications, some of which govern aspects of the [Internet](#), not just the World Wide Web. Even when not web-focused, such standards directly or indirectly affect the development and administration of websites and [web services](#). Considerations include the [interoperability](#), [accessibility](#) and [usability](#) of web pages and web sites.

Web standards, in the broader sense, consist of the following:

- *Recommendations* published by the [World Wide Web Consortium](#) (W3C)[110]
- "Living Standard" made by the [Web Hypertext Application Technology Working Group](#) (WHATWG)
- *Request for Comments* (RFC) documents published by the [Internet Engineering Task Force](#) (IETF)[111]
- *Standards* published by the [International Organization for Standardization](#) (ISO)[112]
- *Standards* published by [Ecma International](#) (formerly ECMA)[113]
- *The Unicode Standard* and various *Unicode Technical Reports* (UTRs) published by the [Unicode Consortium](#)[114]
- Name and number registries maintained by the [Internet Assigned Numbers Authority](#) (IANA) [115]

Web standards are not fixed sets of rules but are constantly evolving sets of finalized technical specifications of web technologies.[116] Web standards are developed by [standards organizations](#)—groups of interested and often competing parties chartered with the task of standardization—not technologies developed and declared to be a standard by a single individual or company. It is crucial to distinguish those specifications that are under development from the ones that already reached the final development status (in the case of [W3C](#) specifications, the highest maturity level).

Accessibility

[[edit](#)]

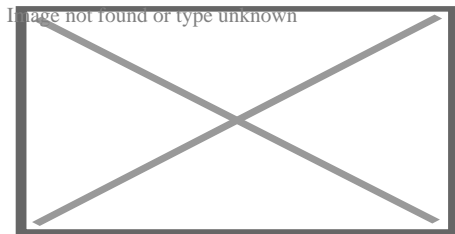
Main article: [Web accessibility](#)

There are methods for accessing the Web in alternative mediums and formats to facilitate use by individuals with [disabilities](#). These disabilities may be visual, auditory, physical, speech-related, cognitive, neurological, or some combination. Accessibility features also help people with temporary disabilities, like a broken arm, or ageing users as their abilities change.[117] The Web is receiving information as well as providing information and interacting with society. The World Wide Web Consortium claims that it is essential that the Web be accessible, so it can provide equal access and [equal opportunity](#) to people with disabilities.[118] Tim Berners-Lee once noted, "The power of the Web is in its universality. Access by everyone regardless of disability is an essential aspect." [117] Many countries regulate web accessibility as a requirement for websites.[119] International co-operation in the W3C [Web Accessibility Initiative](#) led to simple guidelines that web content authors as well as software developers can use to make the Web accessible to

persons who may or may not be using [assistive technology](#).^[117]^[120]

Internationalisation

[\[edit\]](#)



A global map of the [Web Index](#) for countries in 2014

The W3C [Internationalisation](#) Activity assures that web technology works in all languages, scripts, and cultures.^[121] Beginning in 2004 or 2005, [Unicode](#) gained ground and eventually in December 2007 surpassed both [ASCII](#) and Western European as the Web's most frequently used [character map](#).^[122] Originally [RFC 3986](#) allowed resources to be identified by [URI](#) in a subset of US-ASCII.

[RFC 3987](#) allows more characters—any character in the [Universal Character Set](#)—and now a resource can be identified by [IRI](#) in any language.^[123]

See also

[\[edit\]](#)

- [icon](#) [Engineering portal](#)
- [icon](#) [Internet portal](#)
- [icon](#) [World portal](#)

- [Decentralized web](#)
- [Electronic publishing](#)
- [Gopher \(protocol\)](#), an early alternative to the WWW
- [Internet metaphors](#)
- [Internet security](#)
- [Lists of websites](#)
- [Minitel](#), a predecessor of the WWW
- [Streaming media](#)
- [Web 1.0](#)
- [Web 2.0](#)
- [Web 3.0](#)
- [Web3](#)

- Web3D
- Web development tools
- Web literacy

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External links

[[edit](#)]



Wikimedia Commons has media related to **World Wide Web**.



Wikibooks has a book on the topic of: **Nets, Webs and the Information Infrastructure**

- **The first website**
- **Early archive of the first Web site**
- **Internet Statistics: Growth and Usage of the Web and the Internet**
- **Living Internet** A comprehensive history of the Internet, including the World Wide Web
- **World Wide Web Consortium (W3C)**
- **W3C Recommendations Reduce "World Wide Wait"**
- **World Wide Web Size** Daily estimated size of the World Wide Web
- **Antonio A. Casilli, Some Elements for a Sociology of Online Interactions**
- **The Erdős–Rényi Webgraph Server Archived** 1 March 2021 at the **Wayback Machine** offers weekly updated graph representation of a constantly increasing fraction of the WWW
- **The 25th Anniversary of the World Wide Web Archived** 11 July 2021 at the **Wayback Machine** is an animated video produced by **USAID** and **TechChange** which explores the role of the WWW in addressing extreme **poverty**
- **v**
- **t**

Telecommunications

History

- Beacon
- Broadcasting
- Cable protection system
- Cable TV
- Communications satellite
- Computer network
- Data compression
 - audio
 - DCT
 - image
 - video
- Digital media
 - Internet video
 - online video platform
 - social media
 - streaming
- Drums
- Edholm's law
- Electrical telegraph
- Fax
- Heliographs
- Hydraulic telegraph
- Information Age
- Information revolution
- Internet
- Mass media
- Mobile phone
 - Smartphone
- Optical telecommunication
- Optical telegraphy
- Pager
- Photophone
- Prepaid mobile phone
- Radio
- Radiotelephone
- Satellite communications
- Semaphore
 - Phryctoria
- Semiconductor
 - device
 - MOSFET
 - transistor
- Smoke signals
- Telecommunications history
- Telautograph
- Telegraphy
- Teleprinter (teletype)
- Telephone
- The Telephone Cases

Pioneers

- Nasir Ahmed
- Edwin Howard Armstrong
- Mohamed M. Atalla
- John Logie Baird
- Paul Baran
- John Bardeen
- Alexander Graham Bell
- Emile Berliner
- Tim Berners-Lee
- Francis Blake
- Jagadish Chandra Bose
- Charles Bourseul
- Walter Houser Brattain
- Vint Cerf
- Claude Chappe
- Yogen Dalal
- Donald Davies
- Daniel Davis Jr.
- Amos Dolbear
- Thomas Edison
- Philo Farnsworth
- Reginald Fessenden
- Lee de Forest
- Elisha Gray
- Oliver Heaviside
- Robert Hooke
- Erna Schneider Hoover
- Harold Hopkins
- Gardiner Greene Hubbard
- Bob Kahn
- Dawon Kahng
- Charles K. Kao
- Narinder Singh Kapany
- Hedy Lamarr
- Roberto Landell
- Innocenzo Manzetti
- Guglielmo Marconi
- Robert Metcalfe
- Antonio Meucci
- Samuel Morse
- Jun-ichi Nishizawa
- Charles Grafton Page
- Radia Perlman
- Alexander Stepanovich Popov
- Tivadar Puskás
- Johann Philipp Reis
- Claude Shannon
- Almon Brown Strowger
- Henry Sutton

Transmission media

- Coaxial cable
- Fiber-optic communication
 - optical fiber
- Free-space optical communication
- Molecular communication
- Radio waves
 - wireless
- Transmission line
 - telecommunication circuit

Network topology and switching

- Bandwidth
- Links
- Network switching
 - circuit
 - packet
- Nodes
 - terminal
- Telephone exchange

Multiplexing

- Space-division
- Frequency-division
- Time-division
- Polarization-division
- Orbital angular-momentum
- Code-division

Concepts

- Communication protocol
- Computer network
- Data transmission
- Store and forward
- Telecommunications equipment

Types of network





- Cellular network
- Ethernet
- ISDN
- LAN
- Mobile
- NGN
- Public Switched Telephone
- Radio
- Television
- Telex
- UUCP
- WAN
- Wireless network

Notable networks

- ARPANET
- BITNET
- CYCLADES
- FidoNet
- Internet
- Internet2
- JANET
- NPL network
- Toasternet
- Usenet

Locations

- Africa
- Americas
 - North
 - South
- Antarctica
- Asia
- Europe
- Oceania
- *Global telecommunications regulation bodies*

-  **Telecommunication portal**
-  **Category**
-  **Outline**
-  **Commons**

- **v**
- **t**
- **e**

Web syndication

History

Blogging

Podcasting

Vlogging

Web syndication technology

Types

- Art
- Bloggernacle
- Classical music
- Corporate
- Dream diary
- Edublog
- Electronic journal
- Fake
- Family
- Fashion
- Food
- Health
- Law
- Lifelog
- MP3
- News
- Photoblog
- Police
- Political
- Project
- Reverse
- Travel
- Warblog

Technology	General	<ul style="list-style-type: none"> ○ BitTorrent ○ Feed URI scheme
	Features	<ul style="list-style-type: none"> ○ Linkback ○ Permalink ○ Ping ○ Pingback ○ Reblogging ○ Refback ○ Rollback ○ Trackback
	Mechanism	<ul style="list-style-type: none"> ○ Thread ○ Geotagging ○ RSS enclosure ○ Synchronization
	Memetics	<ul style="list-style-type: none"> ○ Atom feed ○ Data feed ○ Photofeed ○ Product feed ○ RDF feed ○ Web feed
	RSS	<ul style="list-style-type: none"> ○ GeoRSS ○ MRSS ○ RSS TV
	Social	<ul style="list-style-type: none"> ○ Inter-process communication ○ Mashup ○ Referencing ○ RSS editor ○ RSS tracking ○ Streaming media
	Standard	<ul style="list-style-type: none"> ○ OPML ○ RSS Advisory Board ○ Usenet ○ World Wide Web ○ XBEL ○ XOXO

- Audio podcast
- Enhanced podcast
- Mobilecast
- Narrowcasting
- Peercasting
- Screencast
- Slidecasting
- Videocast
- Webcomic
- Webtoon
- Web series

Form

- Anonymous blogging
- Collaborative blog
- Columnist
- Instant messaging
- Liveblogging
- Microblog
- Mobile blogging
- Spam blog
- Video blogging
- Motovlogging

Media

Alternative media

- Carnivals
- Fiction
- Journalism
 - Citizen
 - Database
- Online diary
- Search engines
- Sideblog
- Software
- Web directory

Micromedia

- Aggregation
 - News
 - Poll
 - Review
 - Search
 - Video
- Atom
- AtomPub
- Broadcatching
- Hashtag
- NewsML
 - 1
 - G2
- Social communication
- Social software
- Web Slice

Related

- Blogosphere
- Escribitionist
- Glossary of blogging
- Pay per click
- Posting style
- Slashdot effect
- Spam in blogs
- Uses of podcasting

- **v**
- **t**

Semantic Web

Background	<ul style="list-style-type: none">o Databaseso Hypertexto Interneto Ontologieso Semanticso Semantic networkso World Wide Web
Sub-topics	<ul style="list-style-type: none">o Dataspaceso Hyperdatao Linked datao Rule-based systems
Applications	<ul style="list-style-type: none">o Semantic analyticso Semantic brokero Semantic computingo Semantic mappero Semantic matchingo Semantic publishingo Semantic reasonero Semantic searcho Semantic service-oriented architectureo Semantic wikio Solid

Related topics

- Collective intelligence
- Description logic
- Folksonomy
- Geotagging
- Information architecture
- iXBRL
- Knowledge extraction
- Knowledge management
- Knowledge representation and reasoning
- Library 2.0
- Digital library
- Digital humanities
- Metadata
- References
- Topic map
- Web 2.0
- Web engineering
- Web Science Trust

Syntax and supporting technologies

- HTTP
- IRI
 - URI
- RDF
 - triples
 - RDF/XML
 - JSON-LD
 - Turtle
 - TriG
 - Notation3
 - N-Triples
 - TriX (no W3C standard)
- RRID
- SPARQL
- XML
- Semantic HTML

Schemas, ontologies and rules

- Common Logic
- OWL
- RDFS
- Rule Interchange Format
- Semantic Web Rule Language
- ALPS
- SHACL

Standards

Semantic annotation

- eRDF
- GRDDL
- Microdata
- Microformats
- RDFa
- SAWSDL
- Facebook Platform

Common vocabularies

- DOAP
- Dublin Core
- FOAF
- Schema.org
- SIOC
- SKOS

Microformat vocabularies

- hAtom
- hCalendar
- hCard
- hProduct
- hRecipe

Authority control databases Edit this at Wikidata

International

- [FAST](#)

National

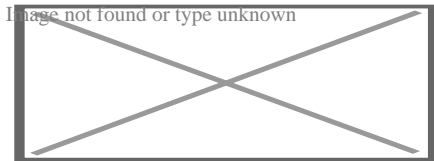
- [Germany](#)
- [United States](#)
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- [BnF data](#)
- [Czech Republic](#)
- [Spain](#)
- [Latvia](#)
- [Israel](#)

Other

- [NARA](#)

About Domain name

This article is about domain names in the Internet. For other uses, see [Domain \(disambiguation\)](#).



An annotated example of a domain name

In the [Internet](#), a **domain name** is a [string](#) that identifies a realm of administrative autonomy, authority or control. Domain names are often used to identify services provided through the Internet, such as [websites](#), [email](#) services and more. Domain names are used in various networking contexts and for application-specific naming and addressing purposes. In general, a domain name identifies a [network domain](#) or an [Internet Protocol](#) (IP) resource, such as a personal computer used to access the Internet, or a server computer.

Domain names are formed by the rules and procedures of the [Domain Name System](#) (DNS). Any name registered in the DNS is a domain name. Domain names are organized in subordinate levels ([subdomains](#)) of the [DNS root](#) domain, which is nameless. The first-level set of domain names are the [top-level domains](#) (TLDs), including the [generic top-level domains](#) (gTLDs), such as the prominent domains [com](#), [info](#), [net](#), [edu](#), and [org](#), and the [country code top-level domains](#) (ccTLDs). Below these top-level domains in the DNS hierarchy are the second-level and third-

level domain names that are typically open for reservation by end-users who wish to connect local area networks to the Internet, create other publicly accessible Internet resources or run websites, such as "wikipedia.org". The registration of a second- or third-level domain name is usually administered by a **domain name registrar** who sell its services to the public.

A **fully qualified domain name** (FQDN) is a domain name that is completely specified with all labels in the hierarchy of the DNS, having no parts omitted. Traditionally a FQDN ends in a dot (.) to denote the top of the DNS tree.^[1] Labels in the Domain Name System are **case-insensitive**, and may therefore be written in any desired capitalization method, but most commonly domain names are written in lowercase in technical contexts.^[2] A **hostname** is a domain name that has at least one associated **IP address**.

Purpose

[edit]

Domain names serve to identify Internet resources, such as computers, networks, and services, with a text-based label that is easier to memorize than the numerical addresses used in the Internet protocols. A domain name may represent entire collections of such resources or individual instances. Individual Internet host computers use domain names as host identifiers, also called **hostnames**. The term *hostname* is also used for the leaf labels in the domain name system, usually without further subordinate domain name space. Hostnames appear as a component in **Uniform Resource Locators** (URLs) for Internet resources such as **websites** (e.g., en.wikipedia.org).

Domain names are also used as simple identification labels to indicate ownership or control of a resource. Such examples are the realm identifiers used in the **Session Initiation Protocol** (SIP), the **Domain Keys** used to verify DNS domains in **e-mail** systems, and in many other **Uniform Resource Identifiers** (URIs).

An important function of domain names is to provide easily recognizable and memorable names to numerically **addressed** Internet resources. This abstraction allows any resource to be moved to a different physical location in the address topology of the network, globally or locally in an **intranet**. Such a move usually requires changing the IP address of a resource and the corresponding translation of this IP address to and from its domain name.

Domain names are used to establish a unique identity. Organizations can choose a domain name that corresponds to their name, helping Internet users to reach them easily.

A generic domain is a name that defines a general category, rather than a specific or personal instance, for example, the name of an industry, rather than a company name. Some examples of generic names are *books.com*, *music.com*, and *travel.info*. Companies have created brands based on generic names, and such generic domain names may be valuable.^[3]

Domain names are often simply referred to as *domains* and domain name registrants are frequently referred to as *domain owners*, although domain name registration with a registrar does

not confer any legal ownership of the domain name, only an exclusive right of use for a particular duration of time. The use of domain names in commerce may subject them to [trademark law](#).

History

[\[edit\]](#)

Main article: [List of the oldest currently registered Internet domain names](#)

The practice of using a simple memorable abstraction of a host's numerical address on a computer network dates back to the [ARPANET](#) era, before the advent of today's commercial Internet. In the early network, each computer on the network retrieved the hosts file (*host.txt*) from a computer at SRI (now [SRI International](#)),^[4]^[5] which mapped computer hostnames to numerical addresses. The rapid growth of the network made it impossible to maintain a centrally organized hostname registry and in 1983 the Domain Name System was introduced on the ARPANET and published by the [Internet Engineering Task Force](#) as RFC 882 and RFC 883.

The following table shows the first five [.com](#) domains with the dates of their registration:^[6]

Domain name Registration date

symbolics.com	15 March 1985
bbn.com	24 April 1985
think.com	24 May 1985
mcc.com	11 July 1985
dec.com	30 September 1985

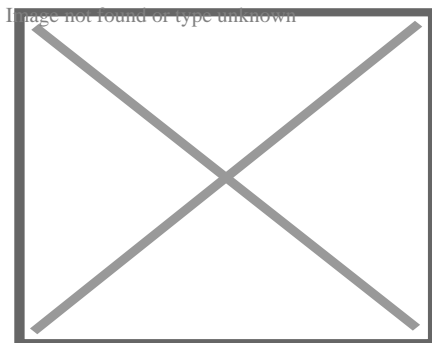
and the first five [.edu](#) domains:^[7]

Domain name Registration date

berkeley.edu	24 April 1985
cmu.edu	24 April 1985
purdue.edu	24 April 1985
rice.edu	24 April 1985
ucla.edu	24 April 1985

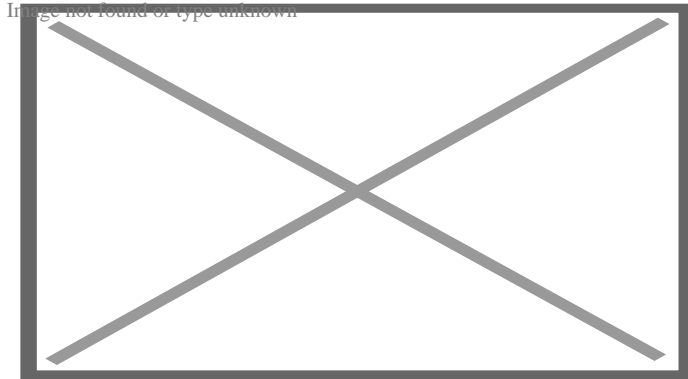
Domain name space

[\[edit\]](#)



The hierarchical domain name system, organized into zones, each served by domain name servers

Today, the **Internet Corporation for Assigned Names and Numbers** (ICANN) manages the top-level development and architecture of the Internet domain name space. It authorizes **domain name registrars**, through which domain names may be registered and reassigned.



The hierarchy of labels in a fully qualified domain name

The domain name space consists of a **tree** of domain names. Each node in the tree holds information associated with the domain name. The tree sub-divides into *zones* beginning at the **DNS root zone**.

Domain name syntax

[[edit](#)]

A domain name consists of one or more parts, technically called *labels*, that are conventionally concatenated, and delimited by dots, such as **example.com**.

- The right-most label conveys the **top-level domain**; for example, the domain name *www.example.com* belongs to the top-level domain *com*.
- The hierarchy of domains descends from the right to the left label in the name; each label to the left specifies a subdivision, or **subdomain** of the domain to the right. For example: the label *example* specifies a node *example.com* as a subdomain of the *com* domain, and *www* is a label to create *www.example.com*, a subdomain of *example.com*. Each label may contain from 1 to 63 **octets**. The empty label is reserved for the root node and when fully qualified is expressed as the empty label terminated by a **dot**. The full domain name may not exceed a total length of 253 ASCII characters in its textual representation.[8]
- A **hostname** is a domain name that has at least one associated IP address. For example, the domain names *www.example.com* and *example.com* are also hostnames, whereas the *com* domain is not. However, other top-level domains, particularly **country code top-level domains**, may indeed have an IP address, and if so, they are also hostnames.
- Hostnames impose restrictions on the characters allowed in the corresponding domain name. A valid hostname is also a valid domain name, but a valid domain name may not necessarily be valid as a hostname.

Top-level domains

[[edit](#)]

When the Domain Name System was devised in the 1980s, the domain name space was divided into two main groups of domains.[9] The **country code top-level domains** (ccTLD) were primarily based on the two-character territory codes of **ISO-3166** country abbreviations. In addition, a group of seven **generic top-level domains** (gTLD) was implemented which represented a set of categories of names and multi-organizations.[10] These were the domains **gov**, **edu**, **com**, **mil**, **org**, **net**, and **int**. These two types of **top-level domains** (TLDs) are the highest level of domain names of the Internet. Top-level domains form the **DNS root zone** of the hierarchical **Domain Name System**. Every domain name ends with a top-level domain label.

During the growth of the Internet, it became desirable to create additional generic top-level domains. As of October 2009, 21 generic top-level domains and 250 two-letter country-code top-level domains existed.[11] In addition, the **ARPA** domain serves technical purposes in the infrastructure of the Domain Name System.

During the 32nd International Public ICANN Meeting in Paris in 2008,[12] ICANN started a new process of TLD naming policy to take a "significant step forward on the introduction of new generic top-level domains." This program envisions the availability of many new or already proposed domains, as well as a new application and implementation process.[13] Observers believed that the new rules could result in hundreds of new top-level domains to be registered.[14] In 2012, the program commenced, and received 1930 applications.[15] By 2016, the milestone of 1000 live gTLD was reached.

The **Internet Assigned Numbers Authority** (IANA) maintains an annotated list of top-level domains in the **DNS root zone** database.[16]

For special purposes, such as network testing, documentation, and other applications, IANA also reserves a set of special-use domain names.[17] This list contains domain names such as **example**, **local**, **localhost**, and **test**. Other top-level domain names containing trade marks are registered for corporate use. Cases include brands such as **BMW**, **Google**, and **Canon**. [18]

Second-level and lower level domains

[[edit](#)]

Below the top-level domains in the domain name hierarchy are the **second-level domain** (SLD) names. These are the names directly to the left of .com, .net, and the other top-level domains. As an example, in the domain *example.co.uk*, *co* is the second-level domain.

Next are third-level domains, which are written immediately to the left of a second-level domain. There can be fourth- and fifth-level domains, and so on, with virtually no limitation. Each label is separated by a **full stop** (dot). An example of an operational domain name with four levels of

domain labels is *sos.state.oh.us*. 'sos' is said to be a sub-domain of 'state.oh.us', and 'state' a sub-domain of 'oh.us', etc. In general, **subdomains** are domains subordinate to their parent domain. An example of very deep levels of subdomain ordering are the **IPv6** reverse resolution **DNS zones**, e.g., 1.0.ip6.arpa, which is the reverse DNS resolution domain name for the IP address of a **loopback** interface, or the **localhost** name.

Second-level (or lower-level, depending on the established parent hierarchy) domain names are often created based on the name of a company (e.g., *bbc.co.uk*), product or service (e.g. *hotmail.com*). Below these levels, the next domain name component has been used to designate a particular host server. Therefore, *ftp.example.com* might be an FTP server, *www.example.com* would be a **World Wide Web** server, and *mail.example.com* could be an email server, each intended to perform only the implied function. Modern technology allows multiple physical servers with either different (cf. **load balancing**) or even identical addresses (cf. **anycast**) to serve a single hostname or domain name, or multiple domain names to be served by a single computer. The latter is very popular in **Web hosting service** centers, where service providers host the websites of many organizations on just a few servers.

The hierarchical **DNS labels** or components of domain names are separated in a fully qualified name by the **full stop** (dot, .).

Internationalized domain names

[edit]

Main article: [Internationalized domain name](#)

The character set allowed in the Domain Name System is based on **ASCII** and does not allow the representation of names and words of many languages in their native scripts or alphabets. **ICANN** approved the **Internationalized domain name** (IDNA) system, which maps **Unicode** strings used in application user interfaces into the valid DNS character set by an encoding called **Punycode**. For example, københavn.eu is mapped to xn--kbenhavn-54a.eu. Many **registries** have adopted IDNA.

Domain name registration

[edit]

History

[edit]

The first commercial Internet domain name, in the TLD *com*, was registered on 15 March 1985 in the name **symbolics.com** by Symbolics Inc., a computer systems firm in Cambridge, Massachusetts.

By 1992, fewer than 15,000 *com* domains had been registered.

In the first quarter of 2015, 294 million domain names had been registered.[19] A large fraction of them are in the *com* TLD, which as of December 21, 2014, had 115.6 million domain names,[20] including 11.9 million online business and e-commerce sites, 4.3 million entertainment sites, 3.1 million finance related sites, and 1.8 million sports sites.[21] As of July 15, 2012, the *com* TLD had more registrations than all of the ccTLDs combined.[22]

As of December 31, 2023, 359.8 million domain names had been registered.[23]

Administration

[[edit](#)]

The right to use a domain name is delegated by **domain name registrars**, which are accredited by the **Internet Corporation for Assigned Names and Numbers** (ICANN), the organization charged with overseeing the name and number systems of the Internet. In addition to ICANN, each top-level domain (TLD) is maintained and serviced technically by an administrative organization operating a registry. A registry is responsible for maintaining the database of names registered within the TLD it administers. The registry receives registration information from each domain name registrar authorized to assign names in the corresponding TLD and publishes the information using a special service, the **WHOIS** protocol.

Registries and registrars usually charge an annual fee for the service of delegating a domain name to a user and providing a default set of name servers. Often, this transaction is termed a sale or lease of the domain name, and the registrant may sometimes be called an "owner", but no such legal relationship is actually associated with the transaction, only the exclusive right to use the domain name. More correctly, authorized users are known as "registrants" or as "domain holders".

ICANN publishes the complete list of TLD registries and domain name registrars. Registrant information associated with domain names is maintained in an online database accessible with the WHOIS protocol. For most of the 250 **country code top-level domains** (ccTLDs), the domain registries maintain the WHOIS (Registrant, name servers, expiration dates, etc.) information.

Some domain name registries, often called *network information centers* (NIC), also function as registrars to end-users. The major generic top-level domain registries, such as for the *com*, *net*, *org*, *info* domains and others, use a registry-registrar model consisting of hundreds of domain name registrars (see lists at ICANN[24] or VeriSign).[25] In this method of management, the registry only manages the domain name database and the relationship with the registrars. The *registrants* (users of a domain name) are customers of the registrar, in some cases through additional layers of resellers.

There are also a few other **alternative DNS root** providers that try to compete or complement ICANN's role of domain name administration, however, most of them failed to receive wide recognition, and thus domain names offered by those alternative roots cannot be used universally on most other internet-connecting machines without additional dedicated configurations.

Technical requirements and process

[edit]

In the process of registering a domain name and maintaining authority over the new name space created, registrars use several key pieces of information connected with a domain:

- *Administrative contact.* A registrant usually designates an administrative contact to manage the domain name. The administrative contact usually has the highest level of control over a domain. Management functions delegated to the administrative contacts may include management of all business information, such as name of record, postal address, and contact information of the official registrant of the domain and the obligation to conform to the requirements of the domain registry in order to retain the right to use a domain name. Furthermore, the administrative contact installs additional contact information for technical and billing functions.
- *Technical contact.* The technical contact manages the name servers of a domain name. The functions of a technical contact include assuring conformance of the configurations of the domain name with the requirements of the domain registry, maintaining the domain zone records, and providing continuous functionality of the name servers (that leads to the accessibility of the domain name).
- *Billing contact.* The party responsible for receiving billing invoices from the **domain name registrar** and paying applicable fees.
- *Name servers.* Most registrars provide two or more name servers as part of the registration service. However, a registrant may specify its own **authoritative name servers** to host a domain's resource records. The registrar's policies govern the number of servers and the type of server information required. Some providers require a hostname and the corresponding IP address or just the hostname, which must be resolvable either in the new domain, or exist elsewhere. Based on traditional requirements (RFC 1034), typically a minimum of two servers is required.

A domain name consists of one or more labels, each of which is formed from the set of ASCII letters, digits, and hyphens (a–z, A–Z, 0–9, -), but not starting or ending with a hyphen. The labels are case-insensitive; for example, 'label' is equivalent to 'Label' or 'LABEL'. In the textual representation of a domain name, the labels are separated by a **full stop** (period).

Business models

[edit]

Domain names are often seen in analogy to **real estate** in that domain names are foundations on which a website can be built, and the highest *quality* domain names, like sought-after real estate, tend to carry significant value, usually due to their online brand-building potential, use in advertising, **search engine optimization**, and many other criteria.

A few companies have offered low-cost, below-cost or even free domain registration with a variety of models adopted to recoup the costs to the provider. These usually require that domains be hosted on their website within a framework or portal that includes advertising wrapped around the domain holder's content, revenue from which allows the provider to recoup the costs. Domain registrations were free of charge when the DNS was new. A domain holder may provide an infinite number of **subdomains** in their domain. For example, the owner of *example.org* could provide subdomains such as *foo.example.org* and *foo.bar.example.org* to interested parties.

Many desirable domain names are already assigned and users must search for other acceptable names, using Web-based search features, or **WHOIS** and **dig** operating system tools. Many registrars have implemented **domain name suggestion** tools which search domain name databases and suggest available alternative domain names related to keywords provided by the user.

Resale of domain names

[[edit](#)]

Main article: [List of most expensive domain names](#)

The business of resale of registered domain names is known as the **domain aftermarket**. Various factors influence the perceived value or market value of a domain name. Most of the high-prize domain sales are carried out privately.^[26] Also, it is called confidential domain acquiring or anonymous domain acquiring.^[27]

Domain name confusion

[[edit](#)]

Intercapping is often used to emphasize the meaning of a domain name, because DNS names are not case-sensitive. Some names may be misinterpreted in certain uses of capitalization. For example: *Who Represents*, a database of artists and agents, chose *whorepresents.com*,^[28] which can be misread. In such situations, the proper meaning may be clarified by placement of hyphens when registering a domain name. For instance, **Experts Exchange**, a programmers' discussion site, used *expertsexchange.com*, but changed its domain name to *experts-exchange.com*.^[29]

Uses in website hosting

[[edit](#)]

The domain name is a component of a **uniform resource locator** (URL) used to access **websites**, for example:

- URL: `http://www.example.net/index.html`
- Top-level domain: `net`

- Second-level domain: example
- Hostname: www

A domain name may point to multiple **IP addresses** to provide server redundancy for the services offered, a feature that is used to manage the traffic of large, popular websites.

Web hosting services, on the other hand, run servers that are typically assigned only one or a few addresses while serving websites for many domains, a technique referred to as **virtual web hosting**. Such IP address overloading requires that each request identifies the domain name being referenced, for instance by using the **HTTP request header field** *Host:*, or **Server Name Indication**.

Abuse and regulation

[[edit](#)]

Critics often claim abuse of administrative power over domain names. Particularly noteworthy was the VeriSign **Site Finder** system which redirected all unregistered .com and .net domains to a VeriSign webpage. For example, at a public meeting with VeriSign to air technical concerns about **Site Finder**,^[30] numerous people, active in the **IETF** and other technical bodies, explained how they were surprised by VeriSign's changing the fundamental behavior of a major component of Internet infrastructure, not having obtained the customary consensus. Site Finder, at first, assumed every Internet query was for a website, and it monetized queries for incorrect domain names, taking the user to VeriSign's search site. Other applications, such as many implementations of email, treat a lack of response to a domain name query as an indication that the domain does not exist, and that the message can be treated as undeliverable. The original VeriSign implementation broke this assumption for mail, because it would always resolve an erroneous domain name to that of Site Finder. While VeriSign later changed Site Finder's behaviour with regard to email, there was still widespread protest about VeriSign's action being more in its financial interest than in the interest of the Internet infrastructure component for which VeriSign was the steward.

Despite widespread criticism, VeriSign only reluctantly removed it after the **Internet Corporation for Assigned Names and Numbers** (ICANN) threatened to revoke its contract to administer the root name servers. ICANN published the extensive set of letters exchanged, committee reports, and ICANN decisions.^[31]

There is also significant disquiet regarding the United States Government's political influence over ICANN. This was a significant issue in the attempt to create a **.xxx top-level domain** and sparked greater interest in **alternative DNS roots** that would be beyond the control of any single country.^[32]

Additionally, there are numerous accusations of **domain name front running**, whereby registrars, when given whois queries, automatically register the domain name for themselves. Network Solutions has been accused of this.^[33]

Truth in Domain Names Act

[edit]

In the United States, the [Truth in Domain Names Act](#) of 2003, in combination with the [PROTECT Act of 2003](#), forbids the use of a misleading domain name with the intention of attracting Internet users into visiting [Internet pornography](#) sites.

The Truth in Domain Names Act follows the more general [Anticybersquatting Consumer Protection Act](#) passed in 1999 aimed at preventing [typosquatting](#) and deceptive use of names and trademarks in domain names.

Seizures


[edit]

In the early 21st century, the US Department of Justice (DOJ) pursued the [seizure](#) of domain names, based on the legal theory that domain names constitute property used to engage in criminal activity, and thus are subject to [forfeiture](#). For example, in the seizure of the domain name of a gambling website, the DOJ referenced [18 U.S.C. § 981](#) and [18 U.S.C. § 1955\(d\)](#).^{[34][1]} In 2013 the US government seized [Liberty Reserve](#), citing [18 U.S.C. § 982\(a\)\(1\)](#).^[35]


The U.S. Congress passed the [Combating Online Infringement and Counterfeits Act](#) in 2010. Consumer Electronics Association vice president Michael Petricone was worried that seizure was a *blunt instrument* that could harm legitimate businesses.^{[36][37]} After a joint operation on February 15, 2011, the DOJ and the Department of Homeland Security claimed to have seized ten domains of websites involved in advertising and distributing child pornography, but also mistakenly seized the domain name of a large DNS provider, temporarily replacing 84,000 websites with seizure notices.^[38]

In the [United Kingdom](#), the [Police Intellectual Property Crime Unit](#) (PIPCU) has been attempting to seize domain names from registrars without court orders.^[39]


- Seizure notices [absolute poker.com](#)

-  Image not found or type unknown

[absolute poker.com](#)
[channelsurfing.net](#)

-  Image not found or type unknown

[channelsurfing.net](#)
[libertyreserve.com](#)

-  Image not found or type unknown

Suspensions

[edit]

PIPCU and other UK law enforcement organisations make domain suspension requests to [Nominet](#) which they process on the basis of breach of terms and

[libertyreserve.com](#)

conditions. Around 16,000 domains are suspended annually, and about 80% of the requests originate from PIPCU.[40]

Property rights

[edit]

Because of the economic value it represents, the [European Court of Human Rights](#) has ruled that the exclusive right to a domain name is protected as property under article 1 of Protocol 1 to the [European Convention on Human Rights](#).[41]

IDN variants

[edit]

[ICANN](#) Business Constituency (BC) has spent decades trying to make IDN variants work at the second level, and in the last several years at the top level. Domain name variants are domain names recognized in different character encodings, like a single domain presented in [traditional Chinese](#) and [simplified Chinese](#). It is an [Internationalization and localization](#) problem. Under Domain Name Variants, the different encodings of the domain name (in simplified and traditional Chinese) would resolve to the same host.[42][43]

According to [John Levine](#), an expert on Internet related topics, "Unfortunately, variants don't work. The problem isn't putting them in the DNS, it's that once they're in the DNS, they don't work anywhere else." [42]

Fictitious domain name

[edit]

A *fictitious domain name* is a domain name used in a work of fiction or popular culture to refer to a domain that does not actually exist, often with invalid or unofficial [top-level domains](#) such as "[.web](#)", a usage exactly analogous to the dummy [555 telephone number prefix](#) used in film and other media. The canonical fictitious domain name is "[example.com](#)", specifically set aside by IANA in RFC 2606 for such use, along with the [.example](#) TLD.

Domain names used in works of fiction have often been registered in the DNS, either by their creators or by [cybersquatters](#) attempting to profit from it. This phenomenon prompted [NBC](#) to purchase the domain name [Hornymanatee.com](#) after talk-show host [Conan O'Brien](#) spoke the name while ad-libbing on [his show](#). O'Brien subsequently created a website based on the concept and used it as a [running gag](#) on the show.[44] Companies whose works have used fictitious domain names have also employed firms such as [MarkMonitor](#) to park fictional domain names in order to prevent misuse by third parties.[45]

Misspelled domain names

[edit]



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Misspelled domain names, also known as [typosquatting](#) or [URL hijacking](#), are domain names that are intentionally or unintentionally misspelled versions of popular or well-known domain names. The goal of misspelled domain names is to capitalize on internet users who accidentally type in a misspelled domain name, and are then redirected to a different website.

Misspelled domain names are often used for malicious purposes, such as [phishing](#) scams or distributing [malware](#). In some cases, the owners of misspelled domain names may also attempt to sell the domain names to the owners of the legitimate domain names, or to individuals or organizations who are interested in capitalizing on the traffic generated by internet users who accidentally type in the misspelled domain names.

To avoid being caught by a misspelled domain name, internet users should be careful to type in domain names correctly, and should avoid clicking on links that appear suspicious or unfamiliar. Additionally, individuals and organizations who own popular or well-known domain names should consider registering common misspellings of their domain names in order to prevent others from using them for malicious purposes.

Domain name spoofing

[edit]

The term **Domain name spoofing** (or simply though less accurately, **Domain spoofing**) is used generically to describe one or more of a class of [phishing](#) attacks that depend on falsifying or misrepresenting an internet domain name.^{[46][47]} These are designed to persuade unsuspecting users into visiting a web site other than that intended, or opening an email that is not in reality from the address shown (or apparently shown).^[48] Although website and email spoofing attacks are more widely known, any service that relies on [domain name resolution](#) may be compromised.

Types

[edit]

There are a number of better-known types of domain spoofing:

- [Typosquatting](#), also called "URL hijacking", a "sting site", or a "fake URL", is a form of [cybersquatting](#), and possibly [brandjacking](#) which relies on mistakes such as [typos](#) made by Internet users when inputting a [website address](#) into a [web browser](#) or composing an [email address](#). Should a user accidentally enter an incorrect domain name, they may be led to any URL (including an alternative website owned by a cybersquatter).^[49]

The typosquatter's **URL** will usually be one of five kinds, all *similar to* the victim site address:

- A common misspelling, or foreign language spelling, of the intended site
- A misspelling based on a typographical error
- A plural of a singular domain name
- A different **top-level domain**: (i.e. .com instead of .org)
- An abuse of the **Country Code Top-Level Domain** (ccTLD) (.cm, .co, or .om instead of .com)
- **IDN homograph attack**. This type of attack depends on registering a domain name that is similar to the 'target' domain, differing from it only because its spelling includes one or more characters that come from a different alphabet but look the same to the naked eye. For example, the **Cyrillic**, **Latin**, and **Greek** alphabets each have their own letter **A**, each of which has its own binary **code point**. **Turkish** has a **dotless letter i** (**Afâ€ŽA,A±**) that may not be perceived as different from the ASCII letter **i**. Most web browsers warn of 'mixed alphabet' domain names,^{[50][51][52][53]} Other services, such as email applications, may not provide the same protection. Reputable **top level domain** and **country code domain** registrars will not accept applications to register a deceptive name but this policy cannot be presumed to be infallible.
- **DNS spoofing** – Cyberattack using corrupt DNS data
- **Website spoofing** – Creating a website, as a hoax, with the intention of misleading readers
- **Email spoofing** – Creating email spam or phishing messages with a forged sender identity or address

Risk mitigation

[edit]

- **Domain Name System Security Extensions** – Suite of IETF specifications
- **Sender Policy Framework** – Simple email-validation system designed to detect email spoofing
- **DMARC** – System to prevent email fraud ("Domain-based Message Authentication, Reporting and Conformance")
- **DomainKeys Identified Mail** – Email authentication method designed to detect email spoofing
- **Public key certificate** – Electronic document used to prove the ownership of a public key (SSL certificate)

Legitimate technologies that may be subverted

[edit]

- **URL redirection** – Technique for making a Web page available under more than one URL address
- **Domain fronting** – Technique for Internet censorship circumvention

See also

[[edit](#)]

- [Domain hack](#)
- [Domain hijacking](#)
- [Domain name registrar](#)
- [Domain name speculation](#)
- [Domain name warehousing](#)
- [Domain registration](#)
- [Domain tasting](#)
- [Geodomain](#)
- [List of Internet top-level domains](#)
- [Reverse domain hijacking](#)
- [Reverse domain name notation](#)

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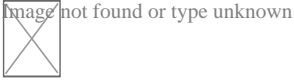
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- *(domain bias in web search)* a research by Microsoft
- *Top Level Domain Bias in Search Engine Indexing and Rankings*
- *Icann New gTLD Program Factsheet - October 2009 (PDF)*
- *IANA Two letter Country Code TLD*
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- *Internet Domain Names: Background and Policy Issues Congressional Research Service*
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- *RFC 1035*, Domain Names — Implementation and Specification, an Internet Protocol Standard
- *UDRP*, Uniform Domain-Name Dispute-Resolution Policy
- *Special use domain names*

- ***v***
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Website management

Concepts

Web hosting

- Clustered
- Peer-to-peer
- Self-hosting
- Virtual

Web analytics

- Click analytics
- Mobile web analytics
- Web tracking
 - Click tracking

- Overselling
- Web document
- Web content
- Web content lifecycle
- Web server
- Web cache
- Webmaster
- Website governance

Web hosting control panels (comparison)

- AlternC
- cPanel
- DirectAdmin
- Domain Technologie Control
- Froxlor
- i-MSCP
- InterWorx
- ISPConfig
- Ispmanager
- Kloxo
- Plesk
- Usermin
- Webmin

Top-level domain registries

- AFNIC
- auDA
- DNS Belgium
- CentralNic
- CIRA
- CNNIC
- CZ.NIC
- DENIC
- EURid
- Freenom
- GoDaddy
- Google Domains
- Identity Digital
- IPM
- JPRS
- KISA
- NIC México
- Nominet
- PIR
- Tucows
- Verisign

Domain name managers and registrars

- Bluehost
- Domainz
- DreamHost
- Dynadot
- Enom
- Epik
- Gandi
- GlowHost
- GMO Internet
- GoDaddy
- Google Domains
- Hover
- Infomaniak
- Jimdo
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- Namecheap
- Hostinger
- NameSilo
- NearlyFreeSpeech
- Network Solutions
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- Register.com
- Squarespace
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- Web.com
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A content agency in Sydney focuses on creating high-quality, SEO-optimized content that resonates with your target audience. Their services typically include blog writing, website copy, video production, and other forms of media designed to attract traffic and improve search rankings.

Why should I consider SEO packages in Australia?

SEO packages in Australia typically bundle essential optimization services such as keyword research, technical audits, content creation, and link building at a set price. They are designed to simplify the process, provide consistent results, and help businesses of all sizes improve their online visibility.

What is involved in SEO consulting?

SEO consulting involves analyzing a website's current performance, identifying areas for improvement, and recommending strategies to boost search rankings. Consultants provide insights on keyword selection, on-page and technical optimization, content development, and link-building tactics.

What are the benefits of working with an SEO consultant in Sydney?

An SEO consultant in Sydney can provide tailored advice and strategies that align with your business's goals and local market conditions. They bring expertise in keyword selection, content optimization, technical SEO, and performance monitoring, helping you achieve better search rankings and more organic traffic.

What role do SEO consultants play in a digital marketing strategy?

SEO consultants are responsible for improving your website's visibility and performance in search engines. By analyzing data, refining keyword strategies, and optimizing site elements, they enhance your overall digital marketing efforts, leading to more traffic, better user engagement, and higher conversions.

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