

Self Hosting: Is it the future?

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Will the continuous fall in pricing of reliable bandwidth and computing equipment, along with the parallel explosion of 'user-generated content', augur a transition towards 'self-hosting'?

The World Wide Web comprises of a large number of Web-servers that are used to host websites / web applications / web services (collectively 'Resources') which can be accessed from all computers connected to the Internet. The common way to access Resources on Web-servers is to enter their Unique Resource Locators (URLs) in an Internet Browser which implements protocols such as the HTTP, FTP, etc. Each Web-Server has a unique address (the Internet Protocol Address or the 'IP Address') which is a part of the URL and is therefore used to divert URL Resource requests to the particular Web-server. (Note: Its more common to use Domain names mapped to IP Addresses rather than the IP Address itself).

Traditionally, hosting companies and ISPs have provided facilities, equipment and software that allow individuals and entities to host their websites and web-services with them. Continuous availability, high bandwidth, large storage space and reliable equipment traditionally made hosting with ISPs an attractive option.

The evolution of infrastructure and technologies however raises the question whether we are at stage where one can directly web-host from any internet connected device including PCs and even PDAs - we call this 'self-hosting'. The voluminous growth in the quantum of user-generated content and Web 2.0 makes self-hosting attractive. Firstly, user content is never required to be stored on third party servers, and secondly, there is no need for repeated uploads to third-party servers.

Improvement of Retail Infrastructure

Retail internet connections have rapidly become faster and uptime is high. Broadband connections routinely deliver 1Mbps rates both ways, and provide uptimes in excess of 99%. Similarly, Personal Computers today are more powerful and reliable than the 'Server' machines of barely a few years ago. For many applications that are non-

mission critical, the uptime and reliability of home equipment is adequate to actually host websites and web services thereby making a case for self-hosting.

Apart from the infrastructure improvements mentioned above, which have more or less tilted the balance towards self-hosting, three other barriers traditionally dissuaded individuals and small entities from hosting off their home / office PCs.

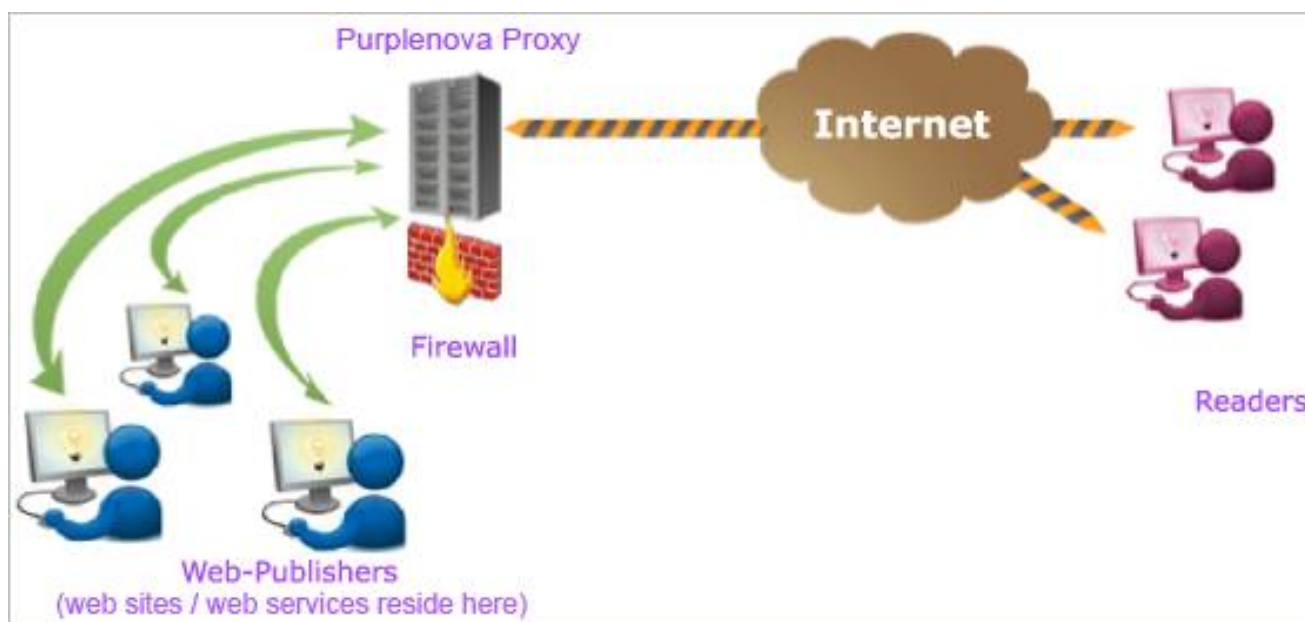
Internet Addresses

Individual PCs and Handheld computers usually do not have 'static' and 'real' IP Addresses. In many cases, IP address is dynamically assigned and therefore change every time the computer connects to the Internet. (This is known as Dynamic or non-static IP). Furthermore, in many cases, when these Devices are behind a NAT Router or Proxy or Firewall, they may have an internal IP address, and is therefore not a 'real' IP address at all. (Some readers may recall seeing 192.168.xxx.xxx as the IP Address of their PCs). These are private or internal IP addresses, and therefore cannot be used by external entities on the web to access these computers. A computer without a 'real' and 'static' IP address is incapable of web-hosting. (Popular solution to Dynamic DNS problem involves constant updation of Domain name entries against dynamic IP Addresses. But the speed of propagation across the internet is an issue, and it does not work behind NAT devices.)

Security

Another barrier to self-hosting is the sensitivity to issues around security and vulnerability of the computers. Home / Office PC owners are typically averse to hosting from their personal computers because this requires them to open ports on their machines. This can make them targets of malicious security attacks over the internet, and it calls for investment in security software that guard against viruses, spam and other malware.

Purplenova allows you to point domain names like www.yourname.com to your home or office PC, and securely host websites, webservice or files of any type from them.



Ease of Use

Lastly, maintaining and managing web-servers is viewed as a technical exercise by many lay-users, who therefore prefer to host with ISPs. It is these three issues that the Purplenova solution addresses.

Not only is the Purplenova software extremely simple to use, its users neither have to worry about IP Address issues, nor about security issues.

How Purplenova Works

Purplenova Software runs on the Publisher computer (one who wants to web-host files/ services / etc). The Publisher uses it to identify the resources which he wishes to host. In case of files and static web-pages, this is as simple as a drag and drop of the files / folder into the Purplenova window. The Purplenova software supports interface to other standard web servers such as Apache and IIS. A web-site / web service hosted using an IIS or an Apache can be identified for web-access via Purplenova by designating the computer name in case of a LAN or localhost along with the web-directory to be hosted.

Purplenova returns a URL for each hosted resource. Purplenova resolves relative links and also supports all elements of the HTTP 1.1 protocol. The URL itself can be based on a vanity domain name if so chosen by the Publisher.

In order to access the said resource, the reader enters the URL into a Browser as usual. All URL

requests generated by Purplenova are first routed through the Purplenova Proxy which resolves the URLs to identify the specific Publisher and then communicates with the Publisher computer to obtain the resource in response to that URL, finally forwarding it to the Browser which initiated the request.

Comparison with P2P networks

Peer-to-Peer networks are a popular way to exchange information over the Internet. There are several clear differences between P2P frameworks and the Purplenova offering. Firstly, both the Publisher and the Reader require common software in P2P, whereas Purplenova is only required to be installed with the Publisher (the reader only needs to have any standard browser no plugins). Purplenova supports full fledged hosting of websites and web services involving active scripts, PHP, Perl, etc, unlike P2P. Finally, because all traffic to Purplenova Publishers is firewalled, it protects the Publisher unlike in P2P, which puts a greater burden on the Publisher to ensure security by other means.

Summary

Technical innovation coupled with better and cheaper infrastructure now makes it feasible for individuals to directly web-host from PCs in their homes and offices. There are no limits to what or how much they can host. A greater adoption of technologies such as Purplenova would not only make available a much larger amount of content on the web, but also free it from limitations imposed by intermediaries.