



## Serving the Web for Free with Linux and Apache



Over the past two years the GIS industry has gone Internet mad. Vendors have been upgrading and releasing products with greater and greater functionality, implementing new technologies and data formats with increasing regularity. This has brought with it the need to support a wide variety of operating system and web server combinations. Whilst many users choose Microsoft Internet Information and Windows NT Servers, many people want cheaper or more robust solutions. Fortunately, they're in luck. One of the most popular combinations of web server and operating system being used on the Internet today is that of Apache with Linux, both of which are freely downloadable from the web and both of which provide a high quality/low cost solution for serving web pages to Internet or Intranet clients.

Linux has been heralded as the 'Microsoft Killer' for many years, and whilst it has yet to topple the Redmond giant, it has carved itself a niche on the desktops and servers of many Microphobes. While Linux is still not as slick as Microsoft when it comes to installation and support for the latest hardware, it has improved in leaps and bounds over recent years. Versions such as Red Hat Linux 6.2, which dominates the Linux market, come with sophisticated installation routines that can detect all the latest equipment, set up your network card and integrate itself into your network as easily as you can with Windows 2000. Extras and patches not present on the installation CD can be downloaded by logging on to the website, checking the packages you want and then just waiting for the 'done' message, very much like the Windows update site.

Whilst not divorced from the Unix command prompt, most of the tasks you need to complete for general day-to-day use can be completed using the standard GNOME desktop; tasks such as browsing the Web, using e-mail, playing mp3s. Free

development tools such as JBuilder from Inprise (Borland) can be downloaded, installed and used for robust Java development. StarOffice, free from Sun, can be used as your Microsoft Office replacement. On the server side, free databases such as MySQL and paid for products from Oracle and IBM can be used to provide data storage and management. Finally, Apache can be used to provide for web application provision.

Apache is a free web server that has been synonymous with the Linux operating system, but which runs just as well on all of the major operating systems (some may even say better). Released in

---

***Linux and Apache offer an attractive platform on which to run Internet mapping sites. While not as user-friendly as alternative commercial offerings, they provide all of the same features.***

---

December 1995, according to some sources it has become the most widely used web server on the Internet, with surveys such as that at Netcraft (<http://www.netcraft.com/survey/>) reportedly attributing over 60% of the world's web servers to Apache. Apache may not be the system of choice for the bigger operators, but its open source, collaborative nature, widespread availability and friendly price point have won it installations on a multitude of small and medium-size sites.

Microsoft's Internet Information Server (IIS) is next on the list of implemented web servers and again it is free, providing you have a copy of Windows NT or 2000 Server. This is where the similarity between IIS and Apache ends. Microsoft is beginning its dash into the new .NET age basing its technology on ASP+, COM+ and C#. Apache is firmly entrenched in

the Java world. Whilst not based on Java itself, web sites built on Apache can use Java Servlets (a Java program that can run on a web server) and Java Server Pages to serve up dynamic information to browsers. Many of the projects started by the Apache Foundation (<http://www.apache.org/>) to build upon the Apache Web Server are based around Java; from XML parsers to web-based groupware (Jetspeed). This has effectively transformed Apache from a standard web server into an application server.

While both Apache and Linux provide opportunities for building free web servers, there are many considerations other than cost when choosing an Internet map server. Data is probably the most expensive component of any Internet mapping site, especially when you factor in the cost of Internet licences. One of the hidden costs of Internet mapping systems is that of support. While Linux and Apache are free and perform as well as commercial products, there is little technical support other than that provided by the plethora of web sites. Installation and server management is as often performed at the command line. This means, as in the past with Unix, that you will probably require the services of a 'guru'. The good news is that both Apache and Linux have become firm favourites with computer science departments around the world, meaning that many new graduates will have Linux skills.

Linux and Apache offer an attractive platform on which to run Internet mapping sites. While not as user-friendly as alternative commercial offerings, they provide all of the same features. If you are willing to get 'under the hood' from time to time, or know somebody who will, then you should be very pleased with your 'free' web site. Many GIS Vendors are providing increasing support for Linux, or have Java products which will work with the system. As Linux becomes easier to user and more widely used on desktops as well as servers, then expect to see higher profile support from vendors, perhaps even an increase in 'free' GIS tools.

**Matt Toon is Internet Team Leader for ESRI (UK)**