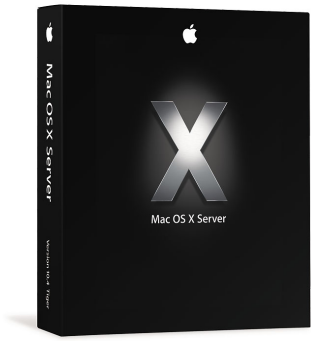


Web Hosting

Comprehensive, scalable solutions for hosting dynamic websites, secure web services, and enterprise applications.

Features

High-performance Apache web server
- Apache 1.3 and 2.0[1] with HTTP 1.1 support
- Support for virtual hosting, including multiple IP addresses and virtual domains
- Encrypted data transport with support for SSL and TLS protocols
- WebDAV support for collaborative content publishing

Dynamic content deployment
- Extensible Apache module architecture
- In-line HTML scripting using server-side includes (SSIs) and PHP
- Support for the UNIX CGI 1.1 standard and scripting using Perl, Ruby, and Python

Enterprise applications
- JBoss application server for deploying Enterprise Java Beans (EJBs)
- Apache Tomcat for hosting JavaServer Pages (JSPs) and Java Servlets
- Apache Axis for SOAP and WSDL Web Services
- MySQL version 4 included
- ODBC and JDBC database connectivity

Weblog services
- Blojsom-based server for web-based content publishing
- Content syndication using RSS, RSS2, and Atom
- Apple-designed templates and themes

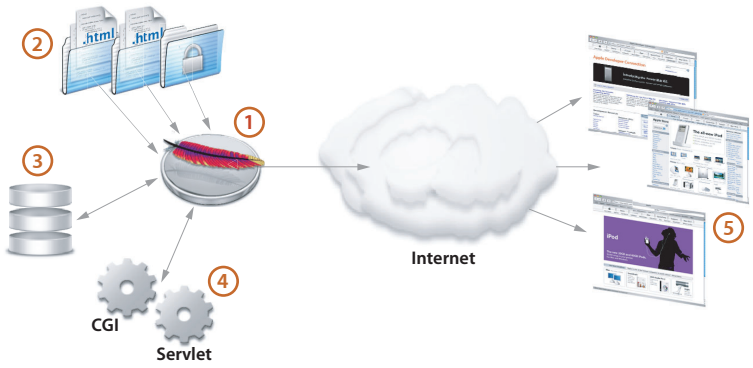
Security and authentication
- Public key infrastructure (PKI) for X.509 certificate-based authentication
- 128-bit strong cryptography worldwide
- Flexible security controls with realm-based user name and password authentication
- Open Directory integration for digest and single sign-on authentication

Technology Brief
Mac OS X Server: Web Hosting

Mac OS X Server combines the latest open source and standards-based Internet services in a complete, easy-to-use web hosting solution. At the core is Apache, the world's most popular web server. Performance optimized for Mac OS X Server, Apache provides fast, reliable web hosting and an extensible architecture for deploying enterprise Java applications and delivering dynamic content and sophisticated web services. Apple's innovative administrative tools make it possible for organizations of any size to host websites and deploy powerful web applications quickly, easily, and affordably.

Mac OS X Server takes the complexity out of configuring, hosting, and managing websites. An intuitive administrative interface makes it easy to get started with a static website, while providing advanced capabilities for professional webmasters responsible for deploying sophisticated services. Tools for serving dynamic content, CGI scripting, enterprise applications, database integration, and blog publishing and syndication are already built in, as is OpenSSL for encrypted data transport. Mac OS X Server combines all of these web technologies with innovative management tools for superior ease of use. Right out of the box, it's ready to host secure e-commerce sites, transaction-based intranet solutions, and robust web services.

Web Hosting at a Glance



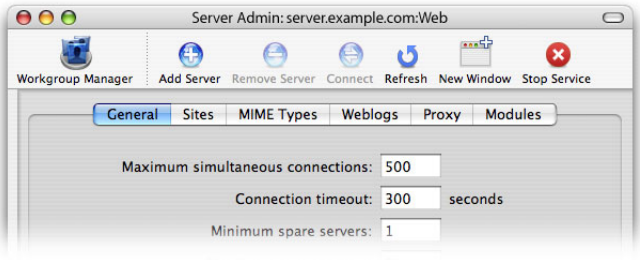
1. Provide reliable, high-performance web hosting with the built-in Apache web server.
2. Host multiple websites on a single server, using SSL and realm-based authentication to secure network transactions and control access to web content.
3. Link your site to a database using the included MySQL database; ODBC and JDBC database connectivity is also supported.
4. Generate dynamic server-side content with CGIs and Java Servlets.
5. Deliver web content and deploy enterprise Java applications to Internet clients with any standards-based browser.

Performance-Optimized Apache Web Server

Automatic web hosting
With Mac OS X Server, you can provide web hosting services for users throughout your organization automatically. Mac OS X clients can simply save HTML content to the Sites folder in their network home directory, and it's instantly available online. And since content is hosted on the server—rather than on users' computers—there's no need to reconfigure firewall settings or arrange static IP addresses for your network clients.

Mac OS X Server web technologies are based on the open source Apache web server, the most widely used HTTP server on the Internet. Apple has optimized Apache to include a front-end cache that improves performance of static HTML pages and images. Once accessed, the static content stays in the cache, enabling quick retrieval when it's requested subsequently. This means that your most-requested web pages are also the fastest to retrieve—maximizing the efficiency of your web server.

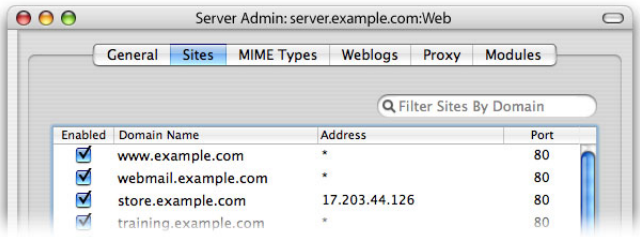
One-step website deployment
You don't need to be an experienced webmaster to set up websites and host them on Mac OS X Server. Apache is preconfigured with default settings, so deployment is as simple as selecting Start Service in the Server Admin utility. Any HTML content saved to the server's default web folder will be served over the Internet automatically.



Server Admin has a graphical interface that makes it easy to customize settings and implement advanced web hosting features. You can configure security options, define MIME types and content handlers, and turn on additional services, including WebDAV and webmail. The web server supports aliases for greater website flexibility, allowing you to move web pages without breaking links and create multiple URLs that refer to a single file. Server Admin also makes it easy to set up a proxy server for improving the efficiency and security of your organization's network.

Collaborative web publishing using WebDAV
Mac OS X Server includes support for Web-based Distributed Authoring and Versioning, or WebDAV. This enhancement to the HTTP protocol turns a website into a document database that enables collaborative creation, editing, and searching from remote locations—particularly useful for updating content on a website. WebDAV works with popular web publishing applications, including Adobe GoLive and Macromedia Dreamweaver, allowing web content creators on any Internet-connected computer to open files, make changes or additions, and save those revisions back to the web server—while it's still running.

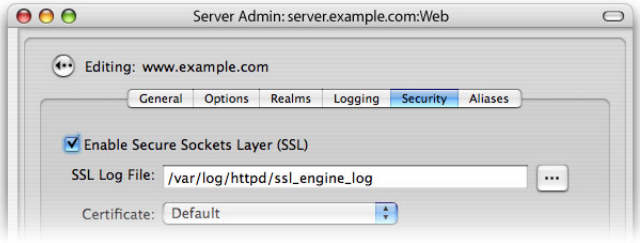
Hosting multiple websites
Support for virtual hosting in Mac OS X Server allows you host multiple websites on a single server. Depending on how you configure the server, each website can have a different domain name (using virtual domains) and even a different IP address. In addition, each website can be configured with unique security options and separate log files for tracking and reporting.



Security and Authentication

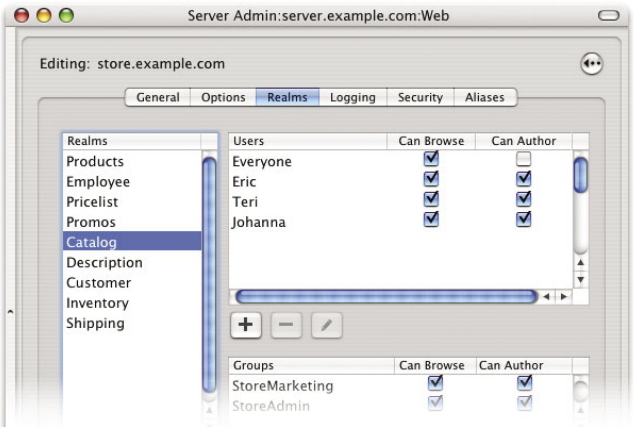
OpenSSL
OpenSSL is the open source cryptographic toolkit for implementing the Secure Sockets Layer (SSLv2 and SSLv3) and Transport Layer Security (TLSv1) protocols over TCP/IP networks. Using OpenSSL, Mac OS X Server supports X.509 digital certificates for client and server authentication. It also provides strong 128-bit encryption worldwide.

Mac OS X Server integrates OpenSSL with the Apache web server, providing support for strong 128-bit encryption and public key infrastructure (PKI) authentication using X.509 digital certificates. This high-grade security architecture protects credit card information and other confidential personal and business data transmitted during web transactions.



Digital certificates issued by a trusted third-party Certifying Authority (CA) enable users' web browsers to authenticate your server using SSL for e-commerce or secure web transactions. CA companies, such as VeriSign, Entrust, and Thawte, provide independent verification of your company information and domain name, ensuring the identity of your online store or other secure website.

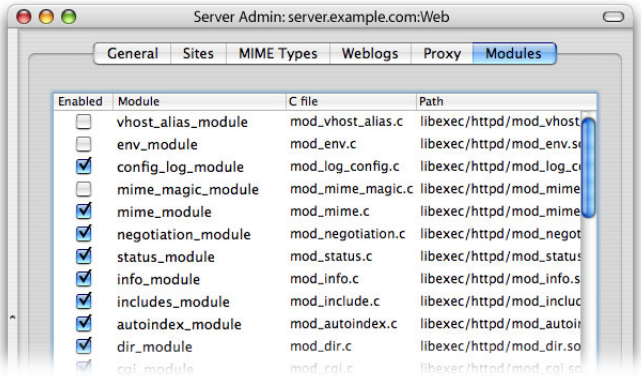
Flexible access controls with realms
Server Admin makes it easy to set up realms to require user authentication for areas of your website. Especially valuable for intranet sites and for collaborative publishing scenarios, realms allow you to secure specified web pages and manage browsing and authoring privileges on a per-user or per-group basis.



You can define realms for different groups that use your website, such as customers, partners, students, or departments, and specify access privileges to the appropriate pages for each group. You can also require user authentication to access any hosted page or folder with a specific string of characters in the URL. Mac OS X Server provides integration with Open Directory for digest and single sign-on authentication.

Hosting Dynamic Content

Apache is extremely flexible, so you can add dynamic content for a more interactive Internet solution. Dynamic content enables you to host stores, auctions, shared calendars, portal systems, polls, and other database-driven services. The robust server-side architecture in Apache supports dynamic content generated by server-side includes (SSIs), PHP, Apache modules, and custom CGIs—as well as by JavaServer Pages (JSPs) and Java Servlets. The Server Admin tool makes it easy to extend Apache functionality—simply click the checkbox to enable or disable each module.



Inline scripting

Server-side includes (SSIs) and PHP provide a simple way to add dynamic information to web pages. These inline scripting languages allow you to embed dynamic logic in your HTML code, rather than writing a separate program that generates HTML. SSIs are used to insert boilerplate or frequently updated content as a page is sent to the user—so you can make edits once and keep all your pages current. PHP is commonly used to extract information from a database and publish it dynamically on each request. You can also use inline scripts to vary web content based on the client's browser or operating system, providing more relevant information for a better user experience.

Common Gateway Interface (CGI) scripts

A Common Gateway Interface is a set of rules for sophisticated interactions between the web server and server-side applications. CGI scripts allow users, for example, to place a product order or respond to an information request. The CGI takes care of connecting to a database—validating, searching for, or storing information—and formatting the results as HTML code. Any piece of software can be a CGI program if it handles data input and output according to the CGI standard. Mac OS X Server includes Apache modules that support CGI applications written in Perl, Ruby, and Python, as well as in other common scripting languages.

JavaServer Pages and Java Servlets

Mac OS X Server features the open source Apache Tomcat and a robust Java virtual machine (JVM) to host dynamic websites using platform-independent Java code. Similar to PHP and SSIs, a JSP allows you to embed Java source code in an HTML page, providing a simple way to deliver dynamic server-side content. Analogous to CGIs, Java Servlets are server-side Java applications, often used for e-commerce or other database-driven solutions. Because they're written in Java, Servlets are portable across servers and operating systems. This makes it easy to integrate Mac OS X Server with web solutions you already have in place.

Apache modules
Open source and Apple-developed Apache modules extend the capabilities of your web server. More than 40 modules are provided with Mac OS X Server, including the following:

mod_dav. Provides class 1 and class 2 WebDAV functionality for creating, moving, copying, and deleting resources and collections on a remote web server.

mod_perl. Integrates the Perl programming language with web services and scripts.

mod_php4. Enables the use of PHP for writing dynamically generated web pages.

mod_ssl. Combines SSL and TSL support for hosting secure websites using HTTPS.

mod_auth_apple. Enables Open Directory to authenticate users from any defined LDAP directory server.

mod_macbinary_apple. Provides MacBinary encoding support for downloading older Mac files that contain resource forks.

mod_hfs_apple. Adds security for case-insensitive volumes such as HFS+.

apache_mod_bonjour. Registers individual users' sites to enable discovery using Bonjour.

PHP modules
Modules built into Mac OS X Server extend the capabilities of PHP with a range of services, including ODBC database connectivity, CURL library connections, Web Distributed Data Exchange (WDDX), and XML-RPC Web Services. Additional modules provide integrated support for dynamic image creation using GD Library, reading EXIF metadata from digital cameras, and reading and writing compressed files using Zlib.

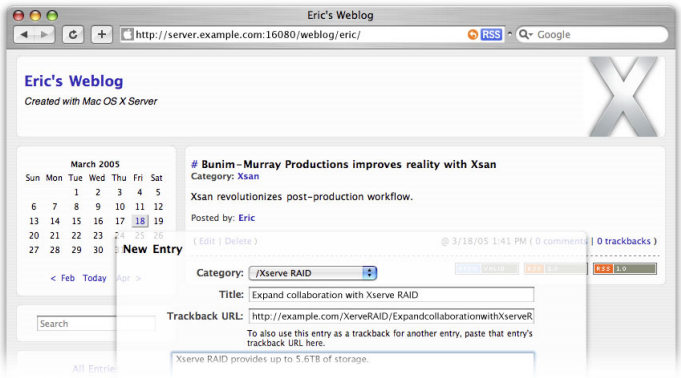
Database integration
The latest version of MySQL version 4, the popular open source SQL database, is preinstalled in Mac OS X Server—enabling you to link data in different tables or databases and store information for delivering dynamic web content. The built-in MySQL Manager utility provides a graphical user interface for getting started with MySQL. For organizations that already have a database infrastructure, the Apache web server supports connectivity to a wide range of third-party SQL, ODBC, and JDBC database solutions.

Enterprise Applications and Web Services

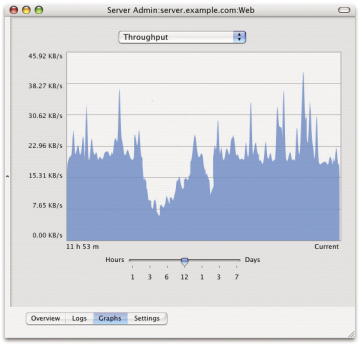
All of the components necessary to host high-performance J2EE-based applications—including JBoss, Apache Tomcat, and Apache Axis—are included with Mac OS X Server. Together they support enterprise-class application services such as Enterprise Java Beans (EJBs), Java Message Services (JMS), XML-based web services, and Java Database Connectivity (JDBC). With the inclusion of Apache Axis, Mac OS X Server supports SOAP, XML-RPC, and WSDL Web Services standards for exchanging data among distributed applications. Increasingly popular for business-to-business transactions, these transport protocols provide the integration essential in sophisticated, multi-tiered applications.

Weblog Services

With the emergence of weblogs, organizations now have a quick and easy way to share information. Weblog Server, included in Mac OS X Server v10.4, makes it simple to publish and syndicate these online journals using your browser. The predefined blog themes and calendar navigation provide an intuitive interface for managing blogs. The ability for both individual users and groups to publish and access weblogs on the network makes it the perfect collaboration tool—no technical expertise is required.



Weblogs can be published and syndicated using HTML, RSS, RSS2, RDF, and Atom protocols, allowing users to receive content in their desired format automatically. With Open Directory authentication and access controls, Weblog Server fits into any environment.



You can graph the volume of page requests and web server throughput and view real-time activity logs in Server Admin.

Remote Management and Monitoring

In addition to making it easy to set up your web server, Server Admin provides secure remote monitoring of your Apache server and website traffic.[2] Mac OS X Server supports the Common and Extended Log Formats, offering compatibility with third-party log analysis programs for creating statistical reports and detailed site usage analyses.

The full suite of Server Admin capabilities can also be accessed from the terminal using SSH—making setup and management easy for UNIX-savvy administrators who prefer a scriptable, command-line environment.

Apple Server Solutions

Web hosting services are among the powerful workgroup and Internet solutions built into Mac OS X Server, Apple's powerful UNIX-based server operating system. Combining the latest open source technologies with legendary Mac ease of use, Mac OS X Server unleashes the performance of Xserve G5, Apple's rack-optimized server hardware. With phenomenal processing power, massive storage capacity, high-bandwidth I/O, and built-in remote management tools, Xserve G5 running Mac OS X Server is an unparalleled server solution for businesses, schools, and research centers.

For More Information

For more information about Mac OS X Server, Xserve, and other Apple server solutions, visit www.apple.com/server.

[1]Apache versions 1.3 and 2.0 are installed in Mac OS X Server v10.4 and accessible from the command line; Server Admin provides a user interface for configuring and managing Apache 1.3. [2]Server Admin provides remote server administration from any Internet-connected Mac OS X v10.3 or later system.