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[NGINX Instance Manager Capabilities.](#)

## nginx



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nginx [engine x] is an HTTP and reverse proxy server, a mail proxy server, and a generic TCP/UDP proxy server, originally written by [Igor Sysoev](#). For a long time, it has been running on many heavily loaded Russian sites including [Yandex](#), [Mail.Ru](#), [VK](#), and [Rambler](#). According to Netcraft, nginx served or proxied [23.06% busiest sites in March 2021](#). Here are some of the success stories: [Dropbox](#), [Netflix](#), [Wordpress.com](#), [FastMail.FM](#).

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Commercial support is available from [Nginx, Inc.](#)

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### Basic HTTP server features

- Serving static and [index](#) files, [autoindexing](#); [open file descriptor cache](#);
- [Accelerated reverse proxying with caching](#); [load balancing and fault tolerance](#);
- Accelerated support with caching of [FastCGI](#), [uwsgi](#), [SCGI](#), and [memcached](#) servers; [load balancing and fault tolerance](#);
- Modular architecture. Filters include [gziping](#), byte ranges, chunked responses, [XSLT](#), [SSI](#), and [image transformation](#) filter. Multiple SSI inclusions within a single page can be processed in parallel if they are handled by proxied or FastCGI/uwsgi/SCGI servers;
- [SSL and TLS SNI support](#);
- Support for [HTTP/2](#) with weighted and dependency-based prioritization.

### Other HTTP server features

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- Name-based and IP-based [virtual servers](#);
- [Keep-alive](#) and pipelined connections support;
- [Access log formats](#), [buffered log writing](#), [fast log rotation](#), and [syslog logging](#);
- 3xx-5xx error codes [redirection](#);
- The rewrite module: [URI changing using regular expressions](#);
- [Executing different functions](#) depending on the [client address](#);
- Access control based on [client IP address](#), [by password \(HTTP Basic authentication\)](#) and by the [result of subrequest](#);
- Validation of [HTTP referer](#);
- The [PUT](#), [DELETE](#), [MKCOL](#), [COPY](#), and [MOVE](#) methods;
- [FLV](#) and [MP4](#) streaming;
- [Response rate limiting](#);
- Limiting the number of simultaneous [connections](#) or [requests](#) coming from one address;
- [IP-based geolocation](#);
- [A/B testing](#);
- [Request mirroring](#);
- Embedded [Perl](#);
- [njs](#) scripting language.

### **Mail proxy server features**

- User redirection to [IMAP](#) or [POP3](#) server using an external HTTP [authentication](#) server;
- User authentication using an external HTTP [authentication](#) server and connection redirection to an internal [SMTP](#) server;
- Authentication methods:
  - [POP3](#): USER/PASS, APOP, AUTH LOGIN/PLAIN/CRAM-MD5;
  - [IMAP](#): LOGIN, AUTH LOGIN/PLAIN/CRAM-MD5;
  - [SMTP](#): AUTH LOGIN/PLAIN/CRAM-MD5;
- [SSL](#) support;
- [STARTTLS](#) and [STLS](#) support.

### **TCP/UDP proxy server features**

- [Generic proxying](#) of TCP and UDP;
- [SSL](#) and TLS [SNI](#) support for TCP;
- [Load balancing and fault tolerance](#);
- Access control based on [client address](#);
- Executing different functions depending on the [client address](#);

- Limiting the number of simultaneous [connections](#) coming from one address;
- [Access log formats](#), [buffered log writing](#), [fast log rotation](#), and [syslog logging](#);
- [IP-based geolocation](#);
- [A/B testing](#);
- [njs](#) scripting language.

### **Architecture and scalability**

- One master and several worker processes; worker processes run under an unprivileged user;
- [Flexible configuration](#);
- [Reconfiguration](#) and [upgrade of an executable](#) without interruption of the client servicing;
- [Support](#) for kqueue (FreeBSD 4.1+), epoll (Linux 2.6+), /dev/poll (Solaris 7 11/99+), event ports (Solaris 10), select, and poll;
- The support of the various kqueue features including EV\_CLEAR, EV\_DISABLE (to temporarily disable events), NOTE\_LOWAT, EV\_EOF, number of available data, error codes;
- The support of various epoll features including EPOLLRDHUP (Linux 2.6.17+, glibc 2.8+) and EPOLLEXCLUSIVE (Linux 4.5+, glibc 2.24+);
- sendfile (FreeBSD 3.1+, Linux 2.2+, macOS 10.5+), sendfile64 (Linux 2.4.21+), and sendfilev (Solaris 8 7/01+) support;
- [File AIO](#) (FreeBSD 4.3+, Linux 2.6.22+);
- [DIRECTIO](#) (FreeBSD 4.4+, Linux 2.4+, Solaris 2.6+, macOS);
- Accept-filters (FreeBSD 4.1+, NetBSD 5.0+) and TCP\_DEFER\_ACCEPT (Linux 2.4+) [support](#);
- 10,000 inactive HTTP keep-alive connections take about 2.5M memory;
- Data copy operations are kept to a minimum.

### **Tested OS and platforms**

- FreeBSD 3 — 12 / i386; FreeBSD 5 — 12 / amd64; FreeBSD 11 / ppc; FreeBSD 12 / ppc64;
- Linux 2.2 — 4 / i386; Linux 2.6 — 5 / amd64; Linux 3 — 4 / armv6l, armv7l, aarch64, ppc64le;
- Solaris 9 / i386, sun4u; Solaris 10 / i386, amd64, sun4v; Solaris 11 / x86;
- AIX 7.1 / powerpc;
- HP-UX 11.31 / ia64;

- macOS / ppc, i386, x86\_64;
- Windows XP, Windows Server 2003, Windows 7, Windows 10.