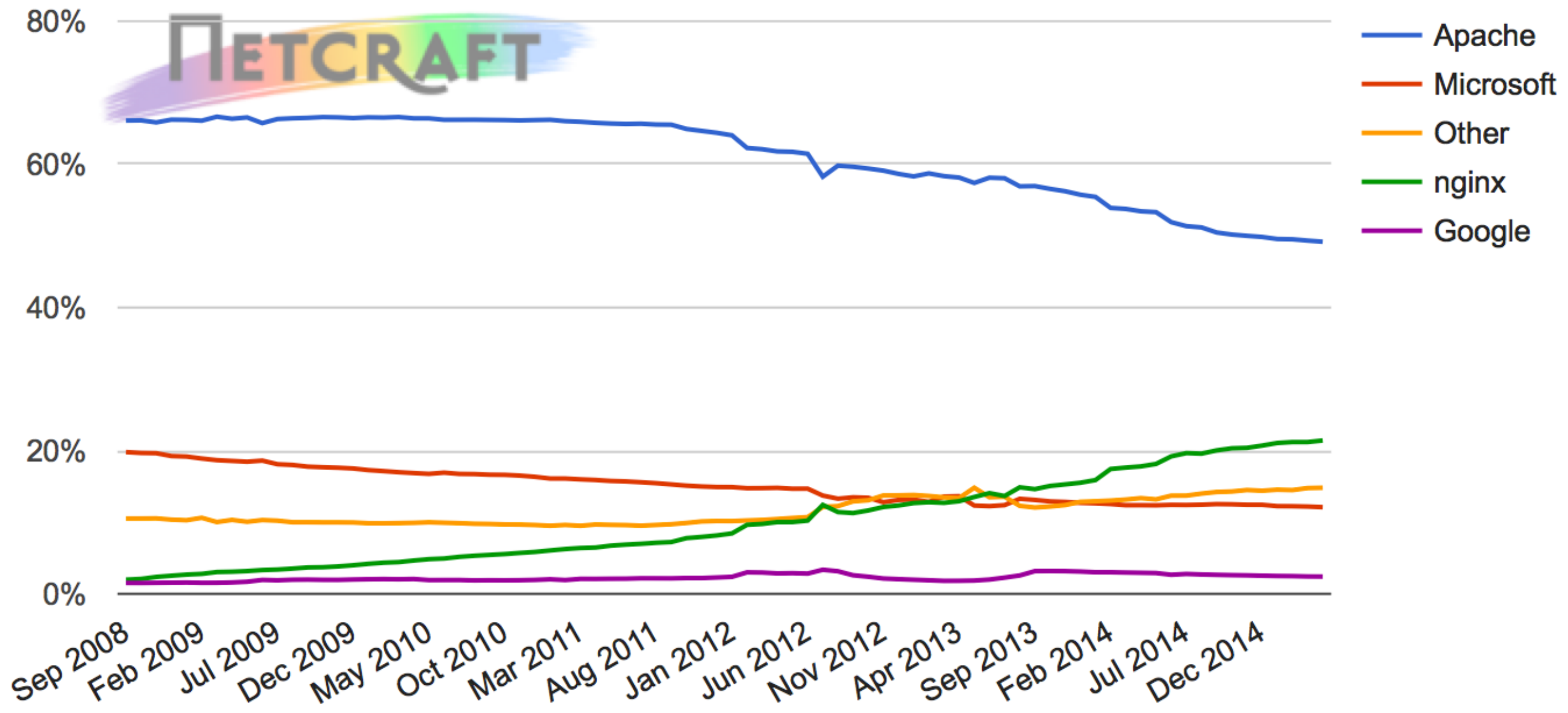# Nginx

Nginx

- Nginx as pronounced "engine x" is a web server

- It's a high concurrency, performance and low memory usage web server

- It can also act as a reverse proxy server for HTTP, HTTPS, SMTP, POP3, and IMAP protocols, as well as a load balancer and an HTTP cache

- Created by Igor Sysoev in 2002, Nginx runs on Unix, Linux, BSD variants, Mac OS X, Solaris, AIX, HP-UX, and Microsoft Windows

Web Server Trends

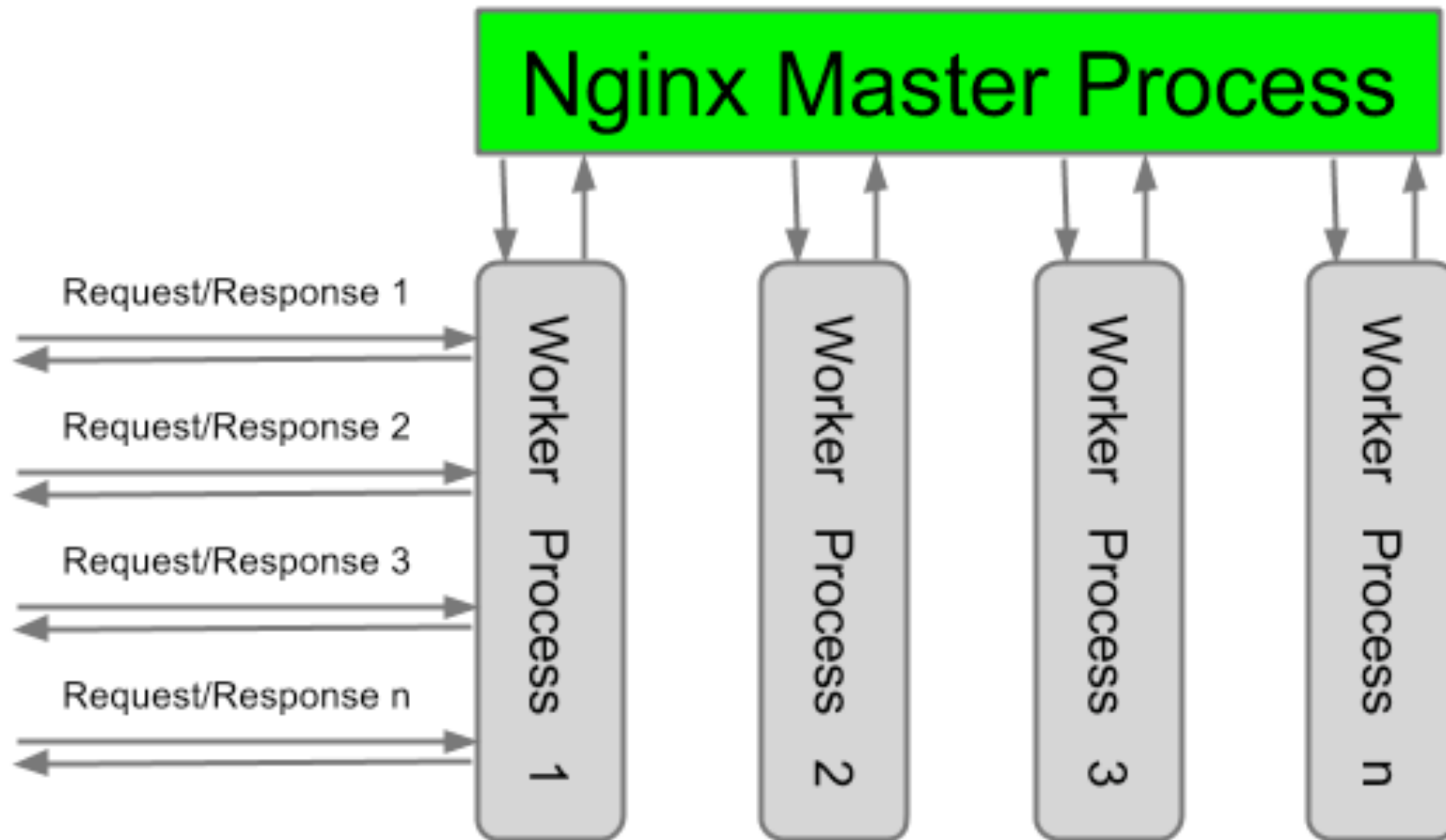Web server developers: Market share of the top million busiest sites

NETCRAFT

Legend:
- Apache
- Microsoft
- Other
- nginx
- Google

Nginx vs Apache

Wordpress 3.5

request/sec

Nginx Architecture

Single master process with "n" number of worker process

Nginx Master Process

Request/Response 1

Request/Response 2

Request/Response 3

Request/Response n

Worker Process 1

Worker Process 2

Worker Process 3

Worker Process n

Nginx vs Nginx+

Core Features	Open source Nginx	Nginx Plus
TCP load balancing	Optional, enabled at compile time	Built-in
Load-balancing methods	Round Robin, generic Hash, IP Hash, Least Connections	Round Robin, generic Hash, IP Hash, Least Connections, Least Time
PROXY_PROTOCOL support	Yes	Yes
SSL decryption and encryption	Yes	Yes

Core Features	Open source Nginx	Nginx Plus
DNS configuration	Static (at configuration load)	Dynamic (DNS configuration can be regularly refreshed)
Dynamic load balancing configuration	No	Yes
Passive health checks	Yes	Yes
Application-aware health checks	No	Yes
Slow-Start for recovered servers	No	Yes
TCP load balancing metrics and health check data	No	Yes
Access Control Lists (ACLs)	Yes	Yes

Core Features	Open source Nginx	Nginx Plus
Access Control Lists (ACLs)	Yes	Yes
Bandwidth limiting	Yes	Yes
Client connection limits	Yes	Yes
Binding to a specific address	Yes	Yes
Server (upstream) connection limits	No	Yes

Nginx flavours

- When you install nginx by default it will install nginx-core "core version"

- It also has three more flavours:

  - nginx-light: "basic version"

  - nginx-full: "standard version"

  - nginx-extras: "extended version"

Nginx Core

- STANDARD HTTP MODULES: Core, Access, Auth Basic, Auto Index, Browser, Charset, Empty GIF, FastCGI, Geo, Gzip, Headers, Index, Limit Requests, Limit Zone, Log, Map, Memcached, Proxy, Referer, Rewrite, SCGI, Split Clients, SSI, Upstream, User ID, UWSGI

- OPTIONAL HTTP MODULES: Addition, Debug, GeoIP, Gzip Precompression, HTTP Sub, Image Filter, IPv6, Real IP, Spdy, SSL, Stub Status, Substitution, WebDAV, XSLT

- MAIL MODULES: Mail Core, IMAP, POP3, SMTP, SSL

Nginx Light

- STANDARD HTTP MODULES: Core, Access, Auth Basic, Auto Index, Charset, Empty GIF, FastCGI, Gzip, Headers, Index, Log, Map, Proxy, Rewrite, Upstream

- OPTIONAL HTTP MODULES: Auth Request, Debug, Gzip Precompression, IPv6, Real Ip, SSL, Stub Status

- THIRD PARTY MODULES: Echo

Nginx Full

- STANDARD HTTP MODULES: Core, Access, Auth Basic, Auto Index, Browser, Charset, Empty GIF, FastCGI, Geo, Gzip, Headers, Index, Limit Requests, Limit Zone, Log, Map, Memcached, Proxy, Referer, Rewrite, SCGI, Split Clients, SSI, Upstream, User ID, UWSGI

- OPTIONAL HTTP MODULES: Addition, Auth Request, Debug, GeoIP, Gzip Precompression, HTTP Sub, Image Filter, IPv6, Real IP, Spdy, SSL, Stub Status, Substitution, WebDAV, XSLT

- MAIL MODULES: Mail Core, IMAP, POP3, SMTP, SSL

- THIRD PARTY MODULES: Auth PAM, DAV Ext, Echo, HTTP Substitution Filter, Upstream Fair Queue

Nginx Extra

- STANDARD HTTP MODULES: Core, Access, Auth Basic, Auto Index, Browser, Charset, Empty GIF, FastCGI, Geo, Gzip, Headers, Index, Limit Requests, Limit Zone, Log, Map, Memcached, Proxy, Referer, Rewrite, SCGI, Split Clients, SSI, Upstream, User ID, UWSGI

- OPTIONAL HTTP MODULES: Addition, Auth Request, Debug, Embedded Perl, FLV, GeoIP, Gzip Precompression, Image Filter, IPv6, MP4, Random Index, Real IP, Secure Link, Spdy, SSL, Stub Status, Substitution, WebDAV, XSLT

- MAIL MODULES: Mail Core, IMAP, POP3, SMTP, SSL

- THIRD PARTY MODULES: Auth PAM, Chunkin, DAV Ext, Echo, Embedded Lua, Fancy Index, HttpHeadersMore, HTTP Substitution Filter, http push, Nginx Development Kit, Upload Progress, Upstream Fair Queue

Install Nginx

- Ubuntu - sudo apt-get install nginx

- CentOS - sudo yum install nginx

Nginx Configuration

- Sample nginx.conf - https://github.com/adithyakhamithkar/ansible/blob/master/roles/nginx/templates/nginx.j2

- Sample nginx virtual host - https://github.com/adithyakhamithkar/ansible/blob/master/roles/nginx/templates/virtualhost.j2

- Sample nginx reverse proxy - https://github.com/adithyakhamithkar/ansible/blob/master/roles/nginx-jenkins/templates/virtualhost_ssl_jenkins.j2