BE(CSE-2 VII Semester)- FOSS

Unit-III: CASE STUDIES

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Unit-III Topics

- Apache
- BSD
- Linux
- Mozilla Firefox
- Wikipedia
- Git
- GNU CC
- LibreOffice

Questions

- What is Apache?

- Name some Web Servers?

- Why Apache has become so popular?

- Does Apache has other projects?

Some Web Servers

- Apache HTTP Server (Apace License 2.0)

- Apache Tomcat (Apache 2.0 License)

- Nginx (2-Clause BSD License)

- Microsoft IIS (part of Windows NT)

- LITESPEED – (non-free proprietary)

- LIGHTHTTPD (3-Clause BSD)

- Caddy (Apache 2.0 License)

- CERN httpd(CERN/WWW Consortium)-1990 -MIT License)

- H2O (written in C, MIT License)

- ...

Work flow of Apache Web Server

THE WORLD'S LARGEST OPEN SOURCE FOUNDATION
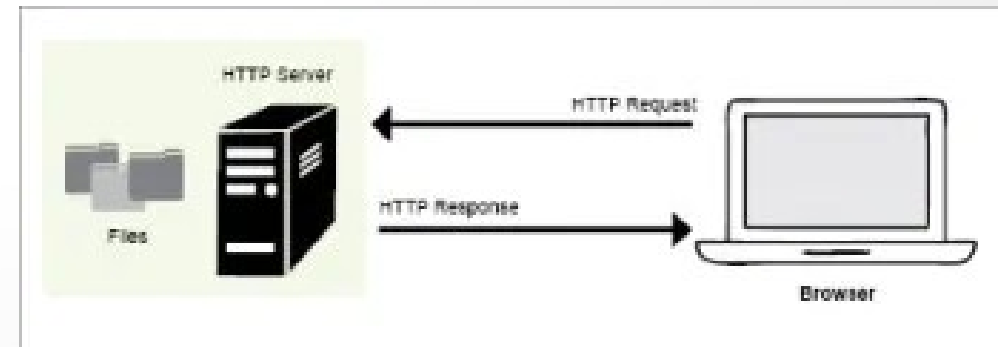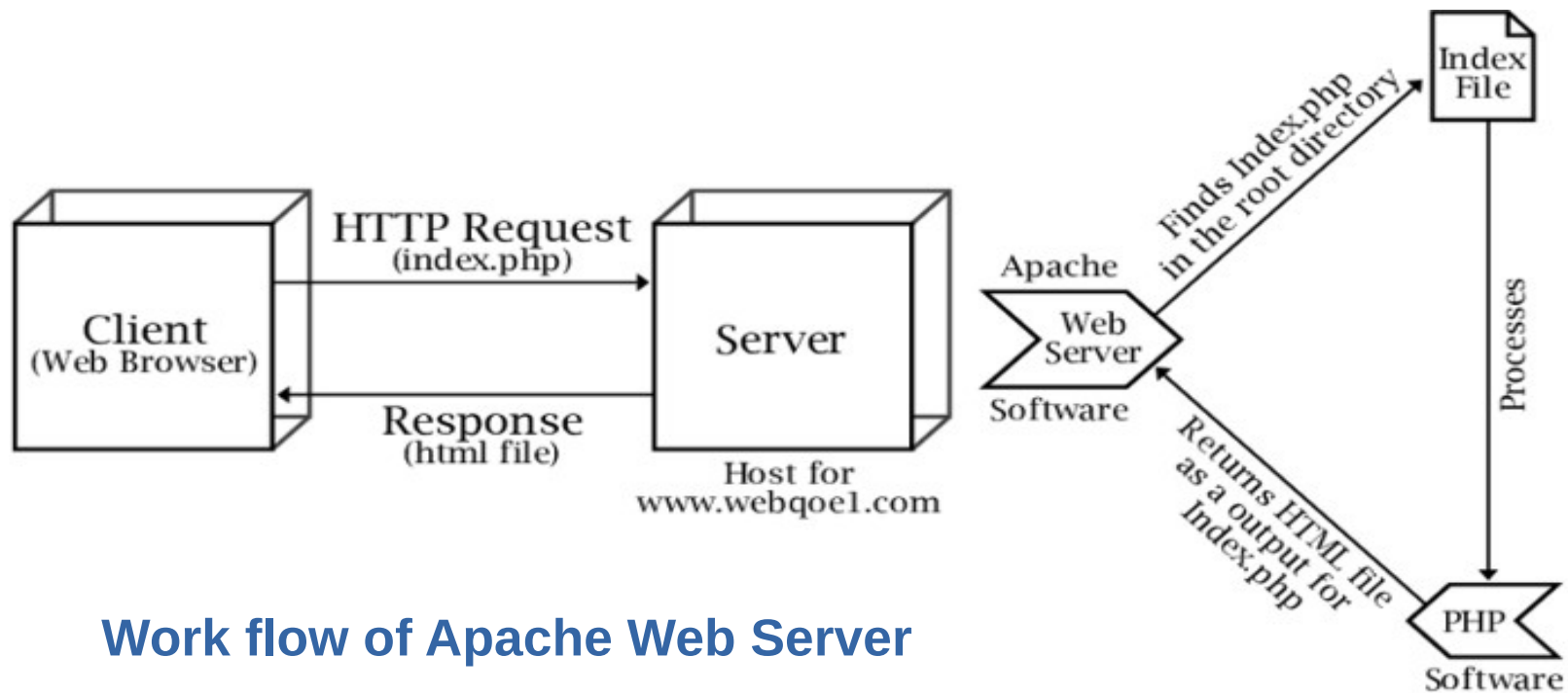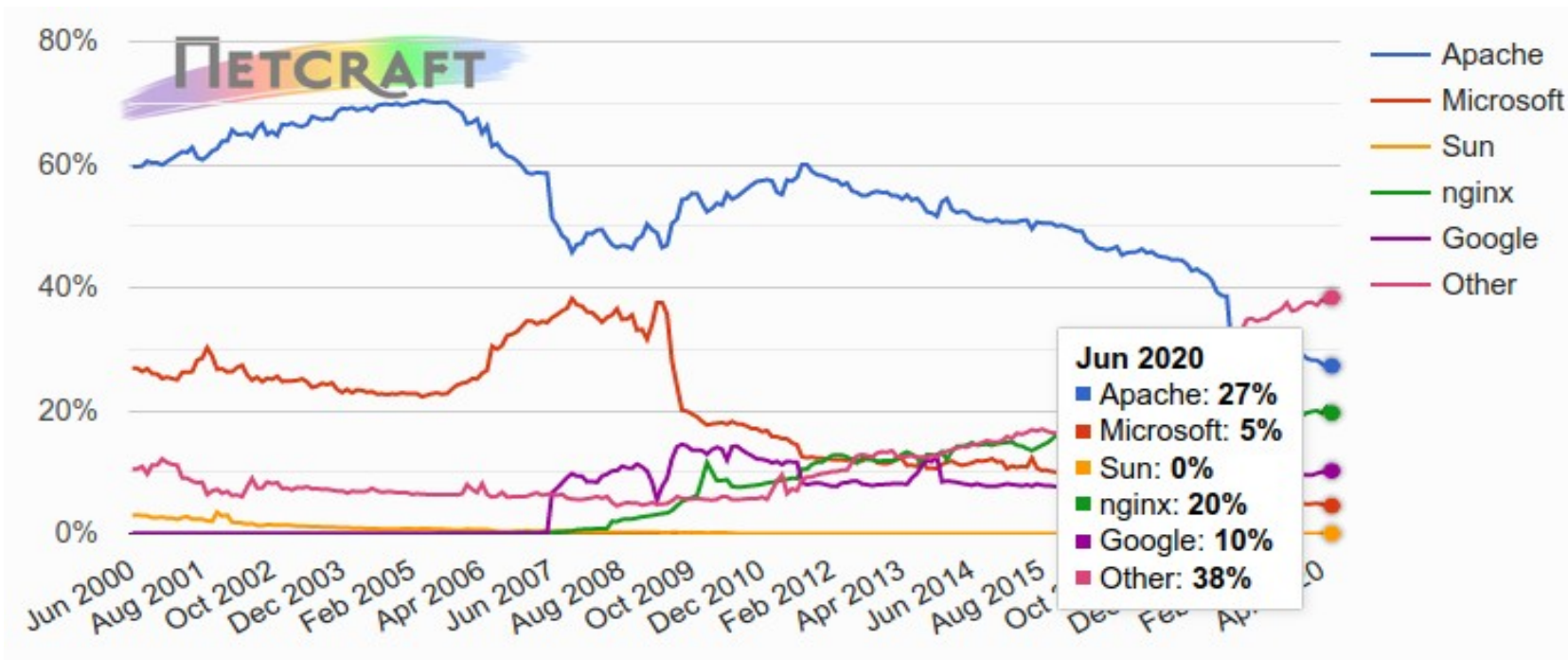
COMMUNITY-LED DEVELOPMENT "THE APACHE WAY"

- 227M+ lines of code in stewardship
- 4.2B+ lines of code changed
- 3.9M+ code commits
- 813 individual ASF Members
- 8,000+ Apache Committers
- 39,000+ code contributors
- 460,000+ people involved in our communities
- All volunteer community

- 350+ Projects and Initiatives
- 300+ Top-Level Projects
- 45 podlings in the Apache Incubator
- ~2 Petabytes source code downloads from Apache mirrors
- 24M+ emails across 1,400+ mailing lists
- Web requests received from every Internet-connected country on the planet
- 35M+ weekly page views across apache.org

$20B+ worth of Apache Open Source software products are made available to the public-at-large at 100% no cost, and benefit billions of users around the world.

http://www.apache.org/

Apache HTTP

- Is an open surce, cross-platform and most popular Web server software since 1996.

- Developed & maintained by an open community of developers under ASF

- Works on a large number of platforms including *Linux, FreeBSD, Solaris, Windows, MacOS X, Novell Netware, OS/2* and so on any UNIX-like system)

- Includes modules ranging from *authentication schemes* to supporting *server-side programming languages* such as Perl, Python, TCL and PHP

Apache HTTP Server

Software

The Apache HTTP Server, colloquially called Apache, is a free and open-source cross-platform web server software, released under the terms of Apache License 2.0. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. Wikipedia

License: Apache License 2.0

Stable release: 2.4.46 (August 7, 2020; 24 days ago)

Developed by: Apache Software Foundation

Initial release date: April 1995

Operating system: Unix-like, Microsoft Windows

Written in: C, XML

Apache HTTP

- Popular authentication modules include *mod_access, mod_auth, mod_digest,* and *mod_auth_digest*, the successor to *mod_digest*

- Some other features include Secure Socket Layer (SSL) and Secure Transport Layer (TLS) support (*mod_ssl*), a proxy module (*mod_proxy*), a URL rewriting module (*mod_rewrite*), custom log files (*mod_log_config*), and filtering support (*mod_include* and *mod_ext_filter*)

- Popular compression methods on Apache include the external module, *mod_gzip*, helps to reduce the size of web pages over HTTP

- Apache logs can be analyzed through a web browser using free scripts such as AWStats/W3Perl or Visitors

- Virtual hosting allows one Apache installation to serve many different websites

Apache HTTP Features

- Loadable dynamic modules, handling of static files, index files, auto-indexing and content negotiation
- Multiple request processing (MPM) modes
- Highly salable (more than 10,000 simultaneous connections)
- Ipv6 and HTTP/2 support, TLS/SSL support
- Custom logging and rotation, IP address-based location, user and session tracking, concurrent connection limiting, CGI support, FTP and XML support
- Load balancing, Bandwidth throttling
- URL, header and content rewriting, fine-grained authentication and authorization access control
- Fault tolerance and fail-over handling, and multiple load mechanisms
- Latest version is Apache **2.4.46** (07-08-2020) and **Apache Tomcat is java implementation**

Apache Licenses and uses

- Versions and Licenses
  - Apache 1.1, by ASF in 2000
  - Re-licensed 2.0, in Jan 2002
  - OpenBSD did not like the 2.0; continued to use of pre-2.0 Apache versions and replaced it with Nginx and then replaced with OpenBSD httpd.

Versions of Apache HTTP Server

Version	Initial release	Latest release
1.3	1998-06-06[54]	2010-02-03 (1.3.42)[55]
2.0	2002-04-06[56]	2013-07-10 (2.0.65)[57]
2.2	2005-12-01[58]	2017-07-11 (2.2.34)[59]
2.4	2012-02-21[60]	2020-08-07 (2.4.46)[61]

- Uses
  - Most popular one, serves both static and dynamic web pages, cross-platforms
  - LAMP web server application supports multiple languages; useful for secured applications
  - One of the biggest website being run by Apache is Google's search engine front end (Google Web Server – GWS), Wikipedia projects including Wikipedia runs on Apache

Apache Software License, Version 1.0

- Apache 1.0 -1995-1999; 6 clauses (https://www.apache.org/licenses/LICENSE-1.0)

- Approved by ASF in Jan 2000, removed advertising material clause clauses; only 5 (https://www.apache.org/licenses/LICENSE-1.1)

- Apache 2. in Jan 2004; there are 9 clauses

  - 1. Definitions, 2. Grant of copyright license, 3. Grant of Patent License, 4. Redistribution, 5. Submission of Contribution, 6. Trademarks, 7. Disclaimer of Warranty, 8. Limitation of Liability, 9. Accepting Warranty or Additoinal Liability (https://www.apache.org/licenses/LICENSE-2.0)

History

- Originally based on NCSA HTTPd server (University of Illinois by by Robert **Mac Cool** and others – National Center for Supper Computing Applications)

- Robert joined with Apache project in mid 1994 along with others to improve the code base of NCSA overtaken the NCSA in 1996

- Apache played a key role in the in the initial growth of world wide web

- In 2009, Apache was the 1st web server software served more than 100 million websites

- Name: based on **existing code base** and a **series of software patches**, a pun on "**A PatChy**" server

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Live pages

- https://projects.apache.org/

- https://projects.apache.org/statistics.html

- https://projects.apache.org/timelines.html

- https://www.apache.org/licenses/LICENSE-2.0

References

- https://httpd.apache.org/

- https://www.opensourceforu.com/2020/02/the-top-10-open-source-web-servers-in-2019/