

Web Solution Stacks

Web server software: LAMP, WAMP, MAMP

Lecture 2

Beyond Front-end: Web Stacks

- **Stack:** a set of software subsystems or components to build and/or run an application
- For web applications typical server stacks:
 - LAMP
 - WAMP
 - MAMP
 - ...and others
- Remember:
 - “Front end” = what you SEE on the web
 - “Back end” = what you DO on the web

The LAMP, WAMP or MAMP stack

- For Web Applications...
 - More than just HTTP
 - Databases and scripting languages
- *Software running on an Internet connected computer...*
 - Linux, Windows, Mac OS – the operating system
 - Apache – the web server software (responds to HTTP requests)
 - MySQL – the database (for structured data)
 - PHP – programming (actually, scripting) language

Typical Web Solution Stacks

- LAMP, MAMP and WAMP
- A computer running an operating system
 - Linux, Windows, Mac OS
 - A continuous connection to the internet (for production)
 - A web server software package
 - Apache
 - IIS (Microsoft's Internet Information Server)
 - Scripting software program
 - PHP, .net,
 - A database program
 - MySQL, SQL, Oracle
 - SQL example: `UPDATE users SET name = `ROBERT` WHERE ID = 1`

The Operating System

- Operating System
- File System
- System utilities
- Optional utilities

The Web Server Software

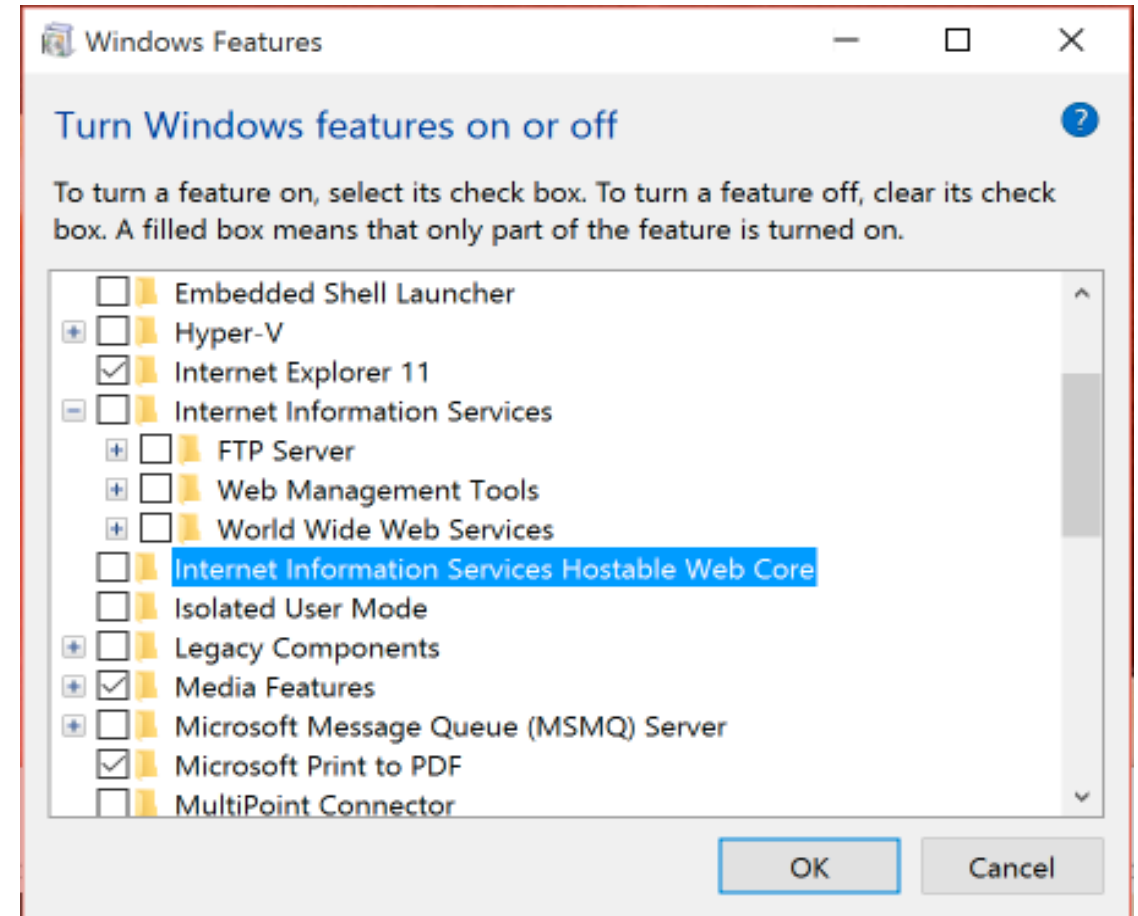
- First: **HTTPd** (Hypertext Transfer Protocol daemon)
 - Designates a local folder "web root"
 - Responds and replies to Hypertext Transfer Protocol (HTTP) requests
- Apache (www.apache.org)
- Microsoft's Internet Information Services (IIS)
- Nginx (pronounced engine-x)

Databases and Scripting

- Typical software for web applications:
 - Open source database software: MySQL
 - Open source scripting language: PHP
- MySQL
 - Relational Database Management System (RDBMS)
 - Uses Structured Query Language (SQL)
 - E.g. `UPDATE users SET name = 'Robert' WHERE id = 1`
- PHP
 - A scripting language that can be embedded in HTML documents
 - Executes code after an HTTP request is received and *before* the response is sent to the client
 - Works well with MySQL

Running your own local web solution stack

- You can manually Install:
 - Apache Web Server
<http://www.apache.org/>
 - PHP <http://www.php.net/>
 - MySQL <https://www.mysql.com/>
 - Optional (recommended): phpMyAdmin
<https://www.phpmyadmin.net/>
- Or Install a Package:
 - WAMP Server
<http://www.wampserver.com/en/>
 - MAMP Server
<https://www.mamp.info/en/>
- BTW - Windows comes with IIS and
Macs ~~come~~ (came) with Apache



Using “localhost” instead of the file system

- File system protocol:

file:///C:/Users/rober_000/www/index.html

- Hypertext Transfer Protocol (HTTP):

http://localhost/index.html

- Server-side capabilities (if you install them)
 - PHP
 - MySQL
- Keep files in the “web root” for the local web host to work
- *Where is the “web root”?*