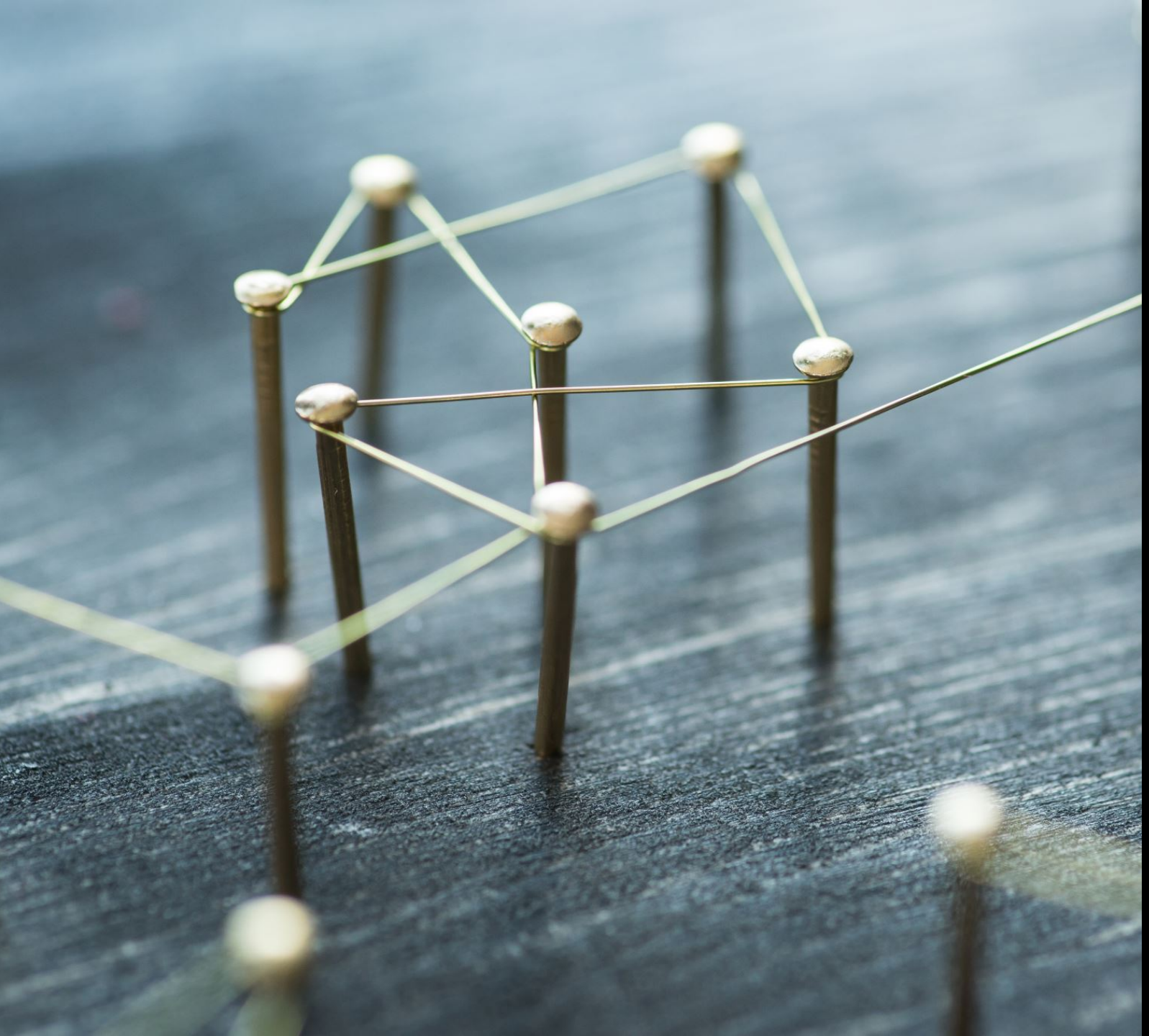

KF6012 *Web Application Integration*

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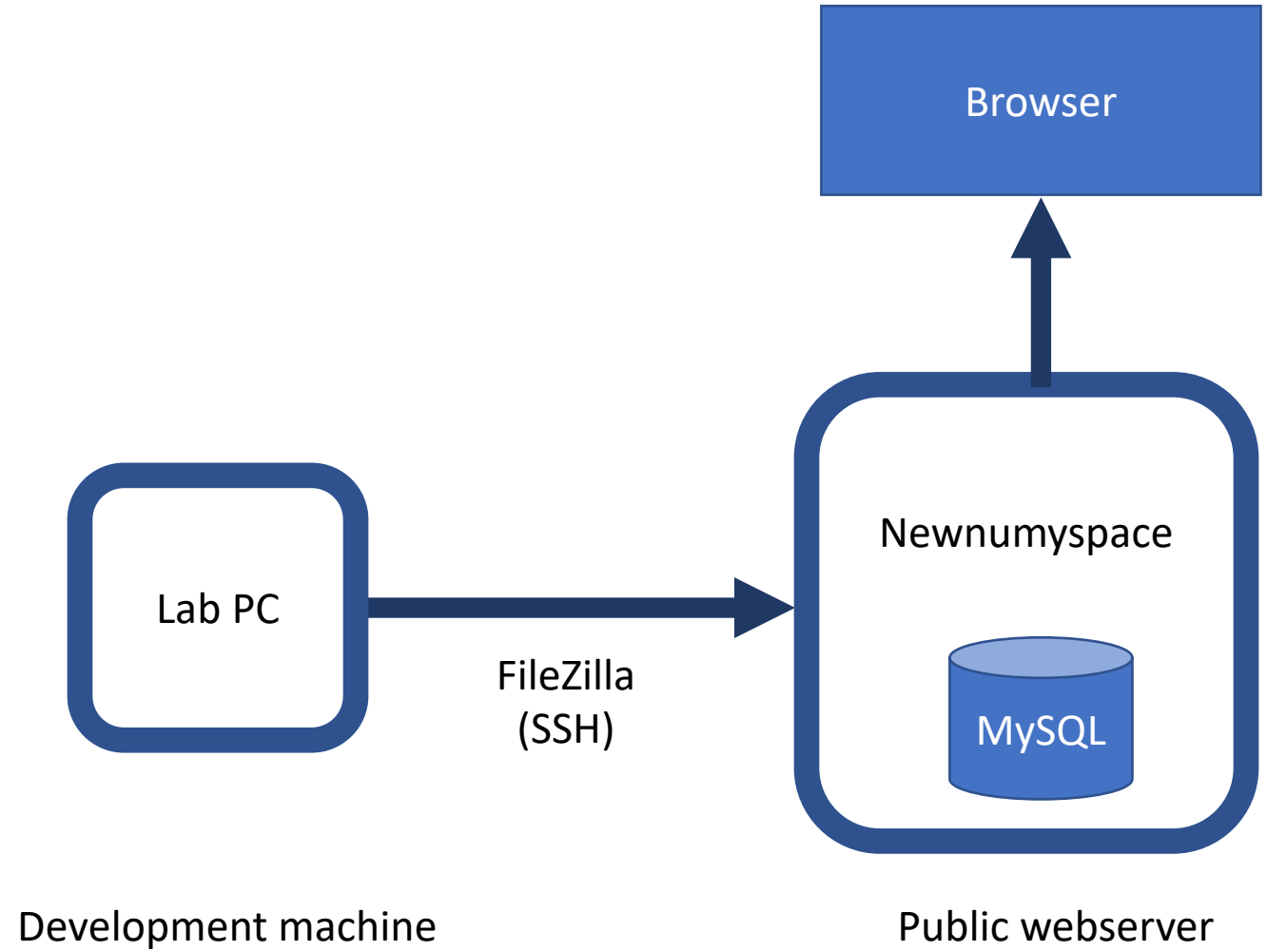
In this lecture

- We will discuss development environments and workflows
- Introduce XAMPP

Level 4/5 workflow



Our current workflow

- This is not a ‘professional’ workflow
  - No separation between software development and release
  - Development done with the ‘live’ database
  - Multiple projects and clutter on one server
  - No versioning or back ups
  - Very easy to break things!

- We have deliberately kept the workflow simple at level 4 and 5

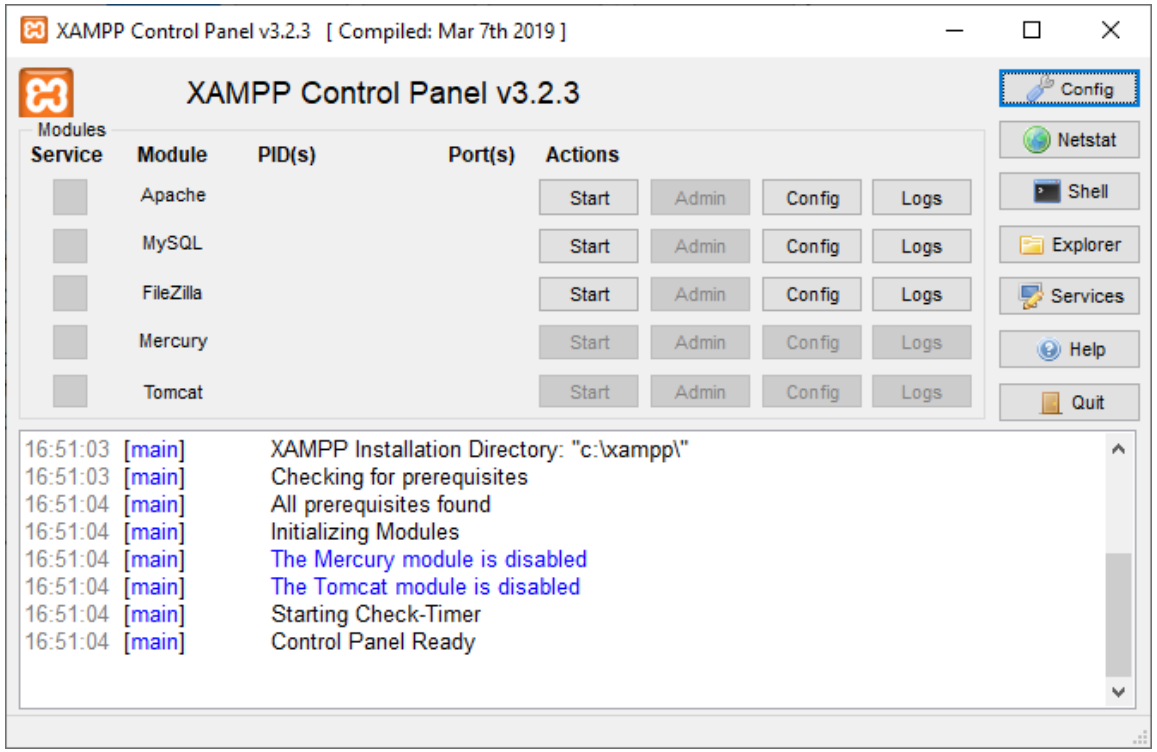
Professional workflows

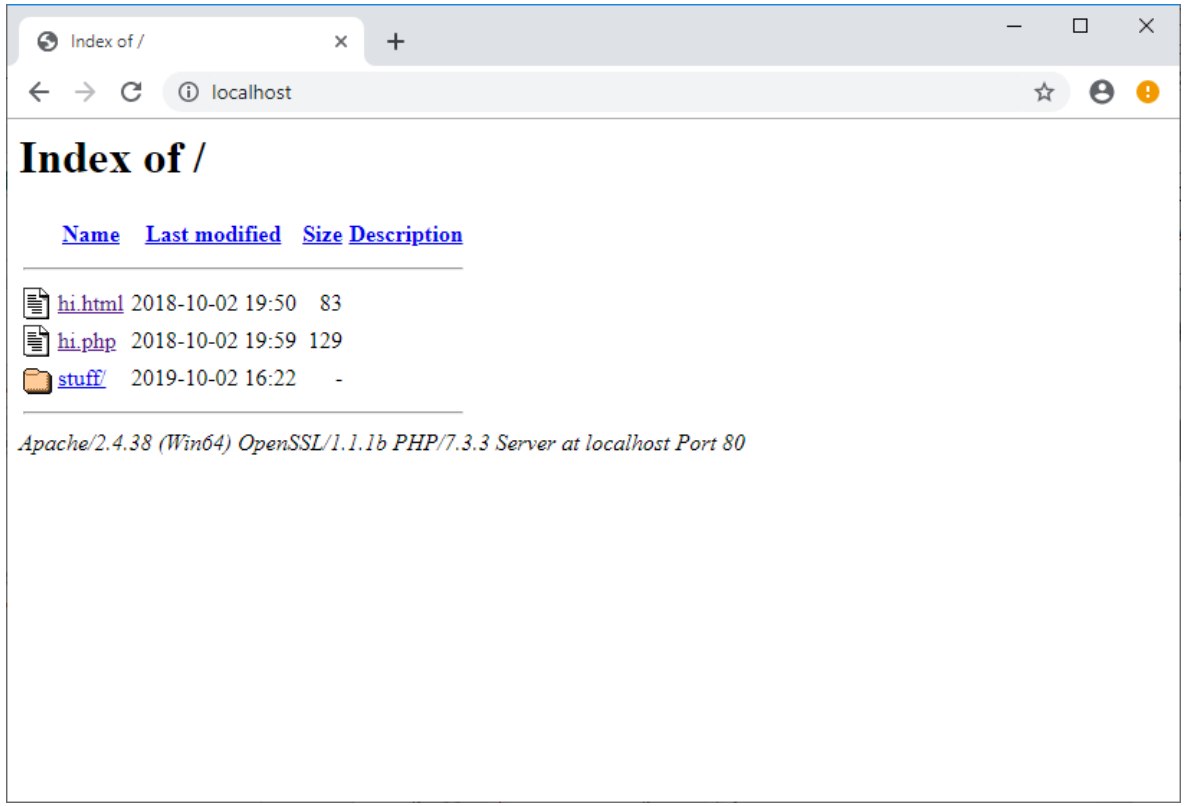
- Professional web development will often follow a “DTAP” approach
  - There will be a **development** environment
  - There will be a **testing** environment
  - There will be an **acceptance** stage
  - There will be a **production** server
- Version control systems (e.g. git) are usually used to connect these stages together.
- The middle section between development and production is also often known as “staging”
- For a one person team, there may be a simple division between a development environment on a computer, and a production server.
- For large teams and complex projects, often there is a more complex structure for managing development and strict access controls for the production system.

Creating a development environment

- Developers often use a development environment on their computer
- We *could* just open HTML and JavaScript locally on our machines via the file system, but it is better to test these over HTTP
- PHP can only be used via a webserver.
- We can run a webserver on our own computer and access this as ‘http://localhost’ in a browser
- One popular software application to enable this is XAMPP
  - Free and open source
  - Apache, MySQL/MariaDB, PHP and Perl
  - Similar stack of technologies to many servers (WAMP / LAMP)

XAMPP


XAMPP Control Panel v3.2.3 [Compiled: Mar 7th 2019]
XAMPP Control Panel v3.2.3
Modules
Service
Module
PID(s)
Port(s)
Actions
Apache
MySQL
FileZilla
Mercury
Tomcat
Start
Admin
Config
Logs
Config
Netstat
Shell
Explorer
Services
Help
Quit
16:51:03 [main] XAMPP Installation Directory: "c:\xampp\"
16:51:03 [main] Checking for prerequisites
16:51:04 [main] All prerequisites found
16:51:04 [main] Initializing Modules
16:51:04 [main] The Mercury module is disabled
16:51:04 [main] The Tomcat module is disabled
16:51:04 [main] Starting Check-Timer
16:51:04 [main] Control Panel Ready


Index of /
localhost
Index of /
Name
Last modified
Size
Description
hi.html 2018-10-02 19:50 83
hi.php 2018-10-02 19:59 129
stuff/ 2019-10-02 16:22 -
Apache/2.4.38 (Win64) OpenSSL/1.1.1b PHP/7.3.3 Server at localhost Port 80

XAMPP, WAMP and LAMP

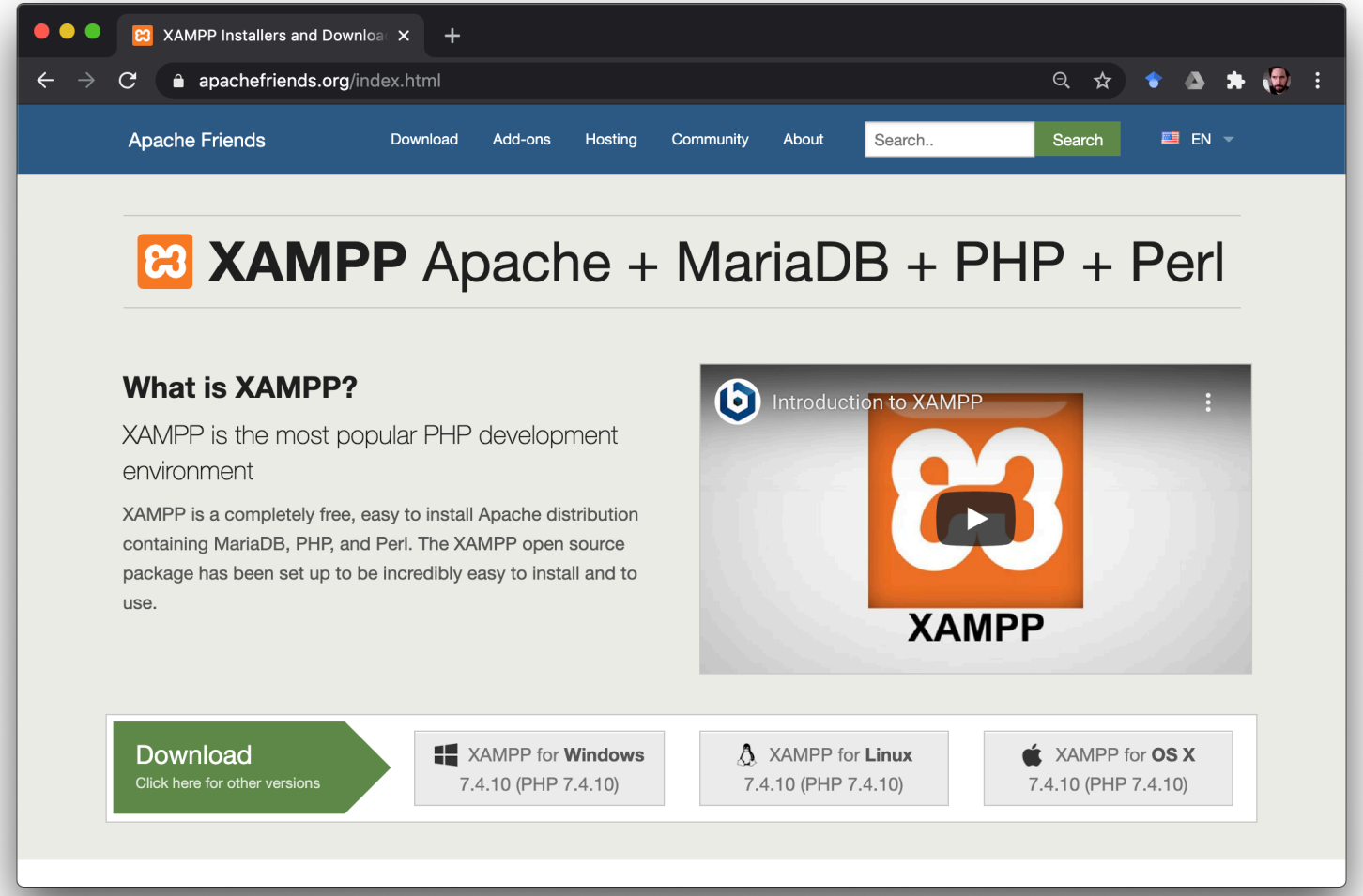
“LAMP” stack architectures are very common

- Configured easily using cloud services
- Newnumyspace is an example of a LAMP stack

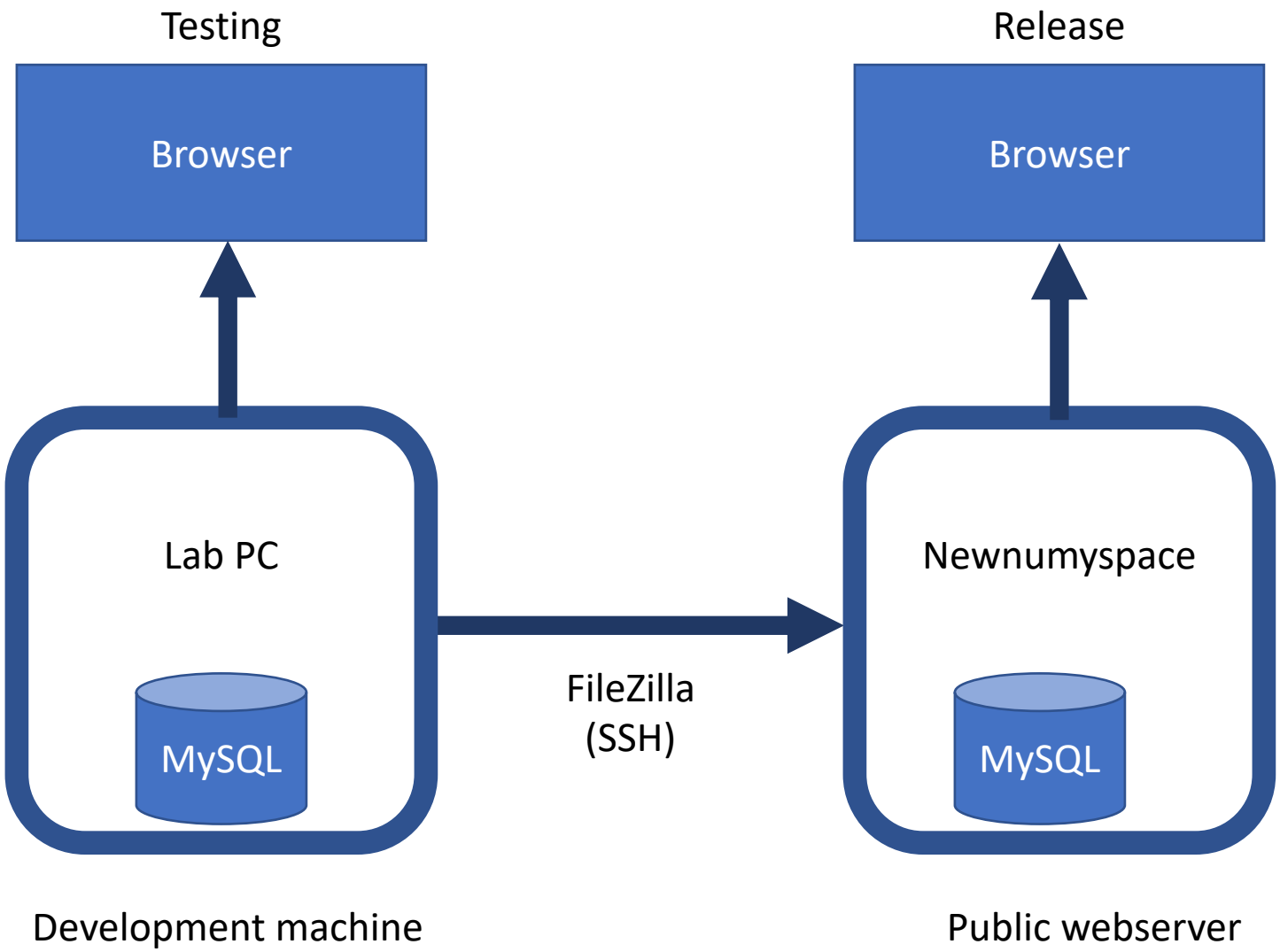
- LAMP/WAMP Stack
  - Linux / Windows
  - Apache
  - MySQL
  - PHP

- XAMPP
  - (Windows, Mac)
  - Apache
  - MySQL/MariaDB
  - PHP
  - PERL

https://www.apachefriends.org/index.html



An improved workflow



Some limitations

- Supports individual working but more is needed for group work
  - Shared code repository
  - Shared development server
  - Shared database
- Some forms of testing (e.g. acceptance testing) are better done on a separate staging server
- Variations in configuration between XAMPP and the actual server can be problematic
  - Many web developers now use containerization (e.g. docker) to ensure servers are configured in exact ways

KF6012: Web Application Integration

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