

In this Lecture we will

- Learn how the Web Server handles requests for Web Pages (Internet Information Server IIS)
- Learn about the Application Server (usually built into the Web Server)
 - this is the part that understands the code/types: ASP.NET/PHP
- Learn about the Database Server
 - SQL/MySQL/Access (only supports a few simultaneous users)
- Learn about how the application server processes the code and sends a complete HTML page back to the Web Server which in turn sends that on to the page

Firstly - "Server" can refer to a physical thing (a computer), or a logical thing (a piece of software).

Web, application and database server software can all run on the same physical server machine, or be distributed across multiple physical machines. Most large websites have multiple machines; most "consumer" hosting packages run on a single box.

The logical separation is as follows.

The Web server (in our case Microsoft Internet Information Server IIS) deals with HTTP(S) requests, and passes these requests on to "handlers". They have built-in handlers for file requests - HTML pages, images, CSS, JavaScript etc. You can add additional handlers for requests that they cannot manage - e.g. dynamic pages delivered by the application server. Web servers implement the HTTP specification, and know how to manage request and response headers.

The application server handles requests which create dynamic pages. So instead of serving an HTML page that is stored on the hard drive, they dynamically generate the HTML sent to the end user. Common languages/frameworks for this are Java, .Net (aspx), PHP, Ruby (on Rails or not), Python etc. Most of the time, this application server software is running on the same physical server machine as the web server.

The database server software is where the application stores its structured information. Typically, this means custom software which allows the application server to ask questions like "how many items does user x have in their basket?", using a programming language. Examples are MySQL, SQL Server, Oracle (all "relational databases")

The database software can run on the same physical machine as the web server, but it's usually the first thing that gets hosted on separate physical hardware when the site needs to scale.