Definitions:

Application Server
It is the framework that hosts facilities to run the web with all its software and hardware requirements. It includes all forms and reports, and hosts a variety of programming and scripting languages used to query databases and display the respective results. In short, it is the framework which hosts the front end part of the web application visible for the user along with all the added tools.

Database Server
A framework that provides database services. It includes a collection of information, links, tables, relationships between them, and data requirements. The Application and Database servers constitute the web application as a whole and can either be installed on the same server or on two different servers depending on the customer's needs. In short, the database server is the databank where all the live data is stored.

Computer Network Topology Definition:

A network topology refers to the arrangement or layout of a network, how different nodes are connected to each other and how they communicate. There are two different ways of defining network geometry: The physical topology is the actual geometric layout of workstations and devices on a network; Whereas the logical topology refers to the way that the data passes through the network from one device to another.
We will be visualizing the physical topology of the network.
In it, there are several topologies as described below:

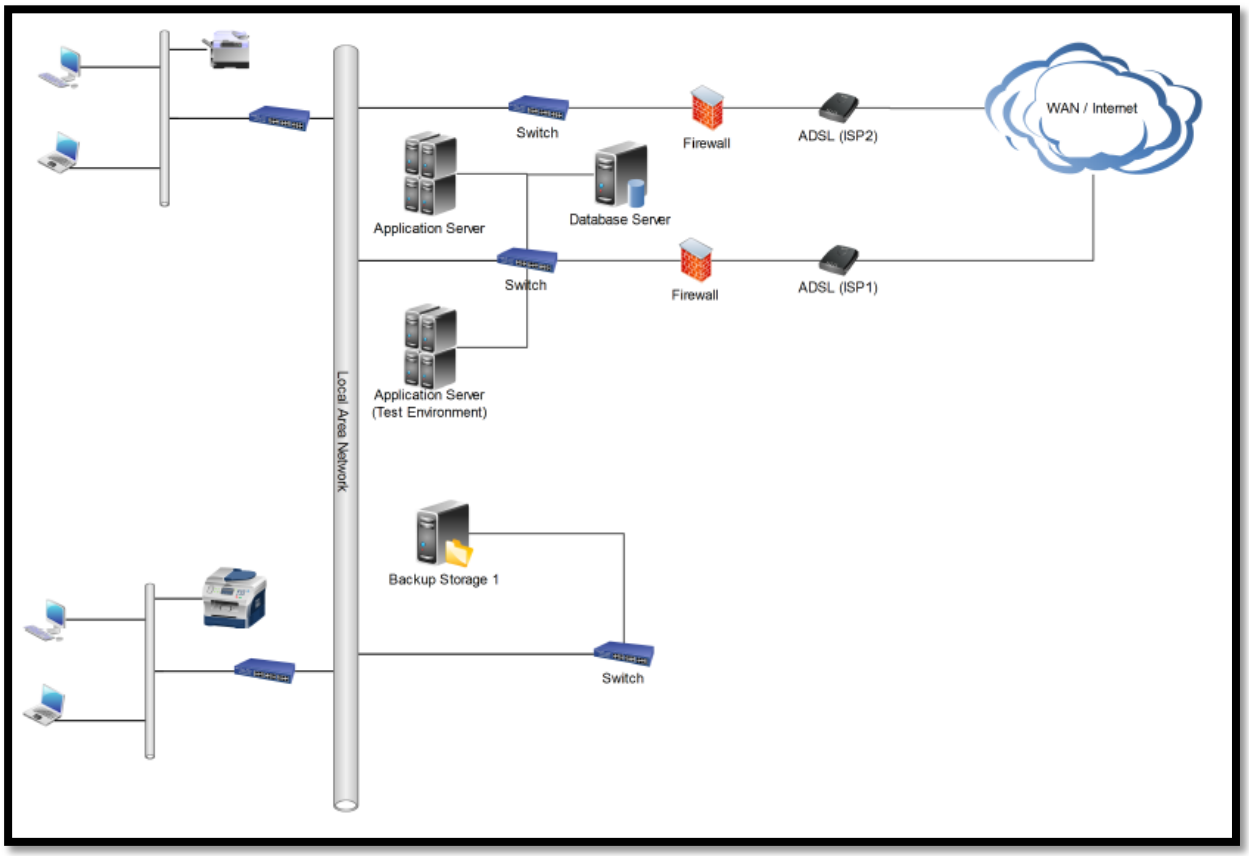
1. In-house Hosting:

It is the basic in-house topology which defines the network inside the company. It requires an IT department with continuous daily maintenance and/or preventative maintenance. The network, hardware, and software should always run on the latest technologies, and the IT department must continuously upgrade the network. Moreover, the company should provide 24/24 power supply service in addition to 24/24 accessibility to the system and sometimes requiring a redundant internet connection. However, this network is not strongly recommended due to its high cost of implementation and constant maintenance, long processing time, hardware availability, and high cost of labor and personnel IT department. This network topology can be used by a company with a large network that can meet all the above requirements to assure accessibility to the system through the internet at all times.

Switch
A computer networking device that centralizes communications among multiple devices within one local area network. The switch connects the Application Server and the Database Server together and forwards data to the destination devices using the LAN (local area network).

Test Application Server
A device designed to function as a dummy data for testing purposes to test backup solutions, applications, tools, and network solutions among which is the web application itself. It is used for application server upgrades, hardware updates, changes, set ups, and installations such as new module, add-ons, or any other tools.
The Application Server, Database Server, and Test Server can either be the same server or different servers or running on virtual machines.

Firewall
It is a network security system that monitors and controls the incoming and outgoing network traffic based on predetermined security rules. A firewall typically establishes a barrier between a trusted, secure internal network and another outside network, such as the Internet, that is assumed not to be secure or trusted.



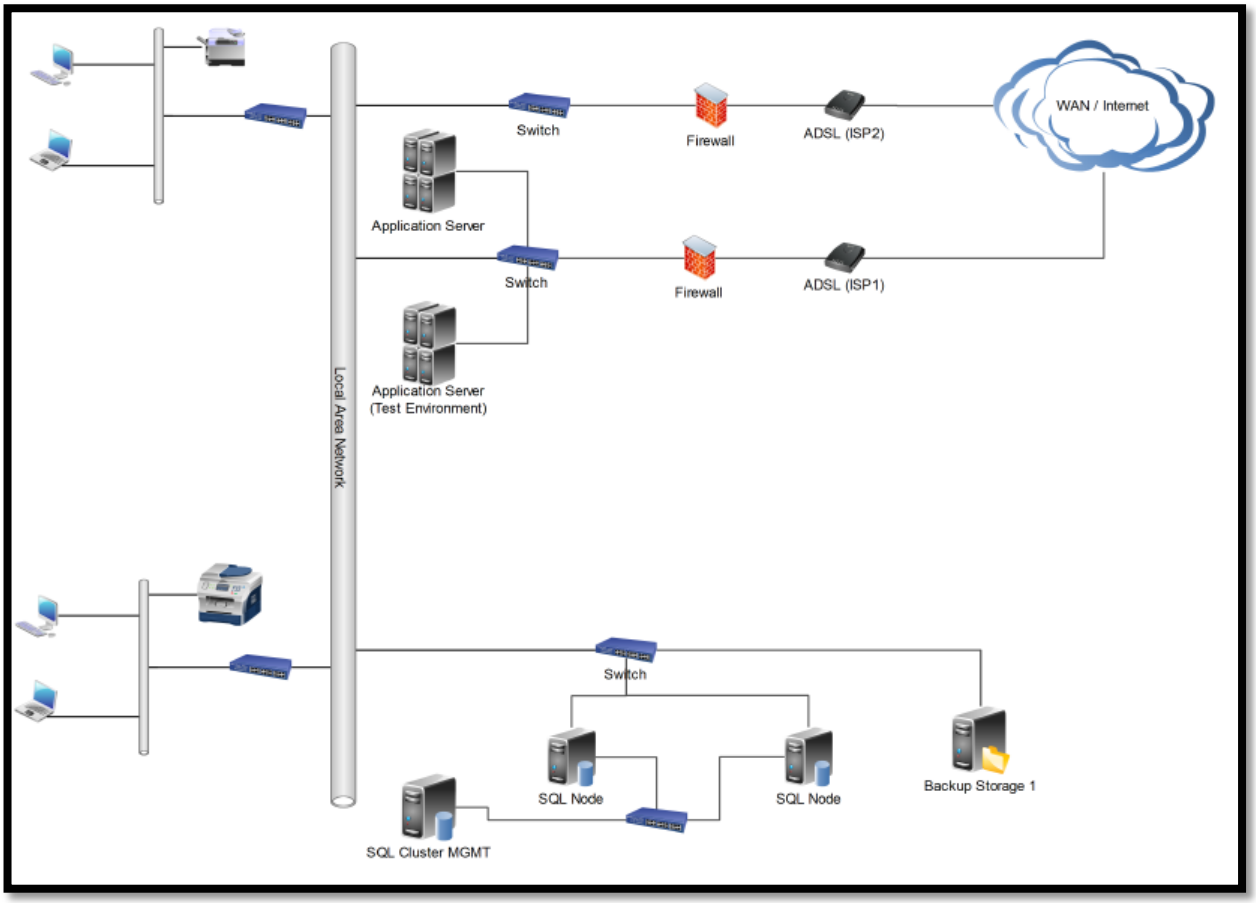
ADSL
Asymmetric digital subscriber line (ADSL) is a type of digital subscriber line (DSL) technology for internet access. This technology enables faster data transmission

ISP
An Internet service provider (ISP) is an organization that provides services for accessing and using the Internet. The ISP can provide consumers with redundant internet connections

Backup Storage
A Backup storage device is used to make backup copies of data that is actively in use. It is the activity of copying files or databases, so that their additional copies may be restored in cases of a data corruption or loss accidents. It is directly linked to the local area network . Historical backups with multiple snapshots are stored at specific time intervals.

2. In-house Hosting with Clustered Database:

It is an advanced in-house topology that functions similarly to the in-house hosting. However, it requires "SQL cluster management" and at least two SQL nodes connected to the local area network. Here, there are two database servers instead of just one. In case of server failure or corruption, SQL cluster management recovers data by establishing communication between the two database servers. Every database server has one SQL node. The database is managed by the SQL management software. Data on any one node is mirrored on all other available nodes.



3. Online Hosting:

The online hosting topology is applied on the online servers where the application and database servers reside. This is totally provided by the datacenter, and there is no client intervention. It is the least demanding from the client and provides the most relevant and secure outcome. The client only provides internet access, and a backup location for the online downloaded backups. In the absence of the Internet, the client will work on an offline copy of the system until internet access is regained.