Compare and contrast server roles and requirements.

There are many different roles that a server can be in and servers are not always only performing one isolated role but in fact could be performing multiple roles at the same time. Granted this is not an ideal situation primarily because of the specific requirements that are needed for servers to perform their identified roles to the best of their ability.

The Major roles for servers and the requirements for them are as follows:

Web Server:

* The disk subsystem should be as fast as possible.
* The RAM should also have a large amount with a quick clock speed.
* The CPU is not quite as critical to the web server as it will be to other server types.
* The NIC – should be at least a 1 Gbps but multiple would be better

For the web server the Disk subsystem, the RAM and the NIC would be the be requirements that are vital to its functionality. Your disks and RAM will need to have fast access times to keep up with the demand on the system for content. The CPU is not as important unless your web server is handing its own encryption and decryption then you will want a beefier CPU and the NIC is the gateway in and out so the more speed or individual NICS you have the faster you would be able to take in request and deliver the requested data.

Application Server:

* The disk subsystem should be fast but not the most critical part
* The RAM – this system requires a lot of memory
* The CPU is very important
* NIC should be at least a 1 Gbps

With the Application Server the CPU and the RAM are the most important because the server is doing the processing for the applications that it is hosting and the disk should be quick but it is not the most vital part of the system an likewise with the NIC

Directory Server

* The Disk subsystem should be quick with decent read and write speeds
* The RAM requirement is dependent on the size of the AD database
* The CPU – this should be a multi-core processor
* The NIC should be a 1 Gbps to 10 Gbps

You will need the disks to have quick read and write times and you should use multiple of them in a RAID configuration that allows for fault tolerance and performance. You will need multi-core processors especially if the server is doing it’s own encryption. The size of the RAM as I stated earlier is dependent on the AD database and it should be able to hold the database in memory with some to spare.

Database Server

* The Disk subsystem needs to be multiple disks in a RAID
* The RAM it not a very important part to this particular server type
* The CPU should be as fast as you can get and you should have multiple of them.
* The NIC should be at least a 1 Gbps card

This particular server will be one of the most important assets in your company so you will want to set it up on hard drives that are running in a RAID array that emphasizes redundancy and speed. The CPUs for this system should be as fast as you can buy and there should be multiple CPUs to handle the load of all the queries that are pushed through the systems. The RAM is not the most important part of this server.