**PC Maintenance and Repair - RAM and CPU Notes**

**CPU Terms**

Processor Speed - Frequency at which the CPU processes information, usually measure in GHz.

Socket - Motherboard slot type that the CPU will fit into.

Processor Architecture - Data path for the CPU. 32 bit or 64 bit.

Multiprocessing - Current CPUs have more than one ALU, which allows the CPU to processor more than one calculation or instruction at the same time.

Dual Processor - Some server motherboards have two sockets

Multi-core - Newer CPUs actually hold several processor cores in a single container. That container, or housing, can contain from 2 to 8 processors and is called dual-core, triple core, quad-core, six-core or 8-core CPU.

Multithreading - A thread is a task given to the CPU by the operating system, such as Windows. Newer CPUs can handle two threads at the same time. Intel calls it HyperThreading. AMD calls it HyperTransport.

Integrated Graphics - Some CPUs have an integrated GPU. Most current processors do have Integrated Graphics. If you have a dedicated graphics card, you would most likely not use this CPU feature.

ALU (Arithmetic Logic Unit) - Part of the CPU that performs calculations. Current CPUs have two of these which can function simultaneously.

x86 processors - 32 bit processors

x86-64 processors - 64 bit processors

Intel CPU Families - Core i7, Core i5, Core i3, Atom, Celeron, Pentium

AMD CPU Families - FX Black multi-core , Phenom, Athon, Sempron

**RAM Terms**

DIMM - Dual Inline Memory Module - RAM type used in current desktops fit into DIMM slots.

So-DIMM - Smaller version of DIMM used in laptops

pin - Number of contact points on the RAM through which data can flow. More pins means higher data transfer rate.

DDR - Double Data Rate - RAM reads/writes data twice per clock cycle, effectively doubling the data transfer rate. There are four versions of DDR, DDR1 to DDR4. Each version is faster than its previous, while consuming less power.

Single Channel - Only one RAM stick can be accessed at a time.

Dual, Triple, Quad Channel - 2, 3 or 4 RAM sticks can be accessed at the same time.

DIMM Speed - The frequency with which data can be pulled from the RAM. It is measured in Mhz. Make sure your motherboard and RAM are able to operate at the same speed to maximize efficiency.

PC Rating - This is the data transfer rate of the RAM, expressed in MBps. It is preceded with PC. For example, DDR3 RAM operating at 800 MHz with a data path of 64 bits can also be expressed as PC6400.