

NTRLS IT: Real Stories  
**Troubleshooting RAM**

**Issue / Problem:**

RAM – Random Access Memory, and getting system crashes such as blue screens in Windows and beep codes when you turn your computer on

**Background Information you should know about:**

RAM also known as Random Access Memory or simply Memory, is required for all computers so that they will function. Without it your PC's CPU cannot do the processing it needs to in order to compute. Memory module is the actual piece of hardware containing the RAM which you install into your computer usually in singles or pairs. ESD – Electro Static Discharge, please make sure you ground yourself when handling RAM, as a simple shock like you would do to all your friends when growing up can be detrimental to RAM. It would be like lightning striking you with the ESD hitting the RAM. It will damage and or destroy the module. You can ground yourself by always holding onto the computer case when handling RAM, or you can buy a grounding device that will attach to your wrist.

**Resolution / How we solved the problem:**

If memory fails, you will usually see these typical issues with your PC. When your computer enters Windows you may get a blue screen frequently and the system will crash. Or your computer may not boot at all and will simply give a beep code indicating it cannot detect any RAM installed and this is usually do to with only having one memory module installed but sometimes if you have more than one, both can fail or more. If you have more than one module installed in the computer, this will help you troubleshoot the bad module because you can take out all the modules and only install one at a time and see if your computer will boot. If your PC requires the memory in pairs then you will need an additional memory module to change out with your pairs, but I would recommend having another pair with which to test with in case the original pair needs to be completely replaced. Several things you can do to find out what kind of RAM you need for your PC:

1. Check the computer's user manual to see what kind of RAM and how many modules are required to run the computer properly.
2. Check with the vendor of the PC if you cannot find the information you need in the user manual.
3. If this is a custom built computer, check the motherboard (Main Logic board – aka MLB) user manual for the memory information you need. If you cannot find the MLB user manual, then look at the MLB installed in the computer for its model number and do a search online to find the manufacturers website and look up the model you have and then you can download or lookup the manual.

The information supplied by any of these options above will also give you the beep codes for the computer if the MLB in your system won't boot and you suspect it to be a RAM issue. If it's a blue screen or beep codes related to RAM, simply change out memory with memory you know is designed for your computer or MLB and see if it will run properly within windows or if it will boot and no longer beep at you during POST (power on self test – aka, turning your computer on and watching it boot normally). You can also download a free memory tester program to run within Windows or before booting to an operating system if your computer will POST. You can find these online by simply doing a search on Google or your favorite search engine for a free memory tester. You can also purchase an expensive memory hardware tester, but remember that it's only usually for one type of RAM.

If you have any questions or comments, please contact me at [abeatty@ntrls.org](mailto:abeatty@ntrls.org).