# **RAM Drive**

### What ? Why ? How ?

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## **RAM Drive - WHAT?**

Reserving part of the RAM memory to be provide temporary systems storage,

usually allocated to a Hard Drive ...

## **RAM Drive - WHY?**

Reserving part of the FAST RAM memory to be provide temporary systems storage,

usually allocated to a much-slower Hard Drive



**RAM Drive :** No Access Delay, 20 - 40x faster Transfers

### Home Desktop – "Disk" Drives

| Disk 0<br>Basic<br>931.51 GB<br>Online | <b>Win7-1T (D:)</b><br>55.55 GB NTFS<br>Healthy (Active, Prima                                     | <b>Win7-1T-B (F:)</b><br>56.93 GB NTFS<br>Healthy (Primary Partii | <b>Spare-1T (E:)</b><br>58.86 GB NTFS<br>Healthy (Primary Partil | <b>Data-1T (G:)</b><br>226.87 GB NTFS<br>Healthy (Logical Drive) | <b>Hold-1T (K:)</b><br>533.31 GB NTFS<br>Healthy (Page File, Logical |  |
|--|--|---|--|--|--|--|
| Disk 1<br>Basic<br>55.90 GB<br>Online  | Win7-1T-SSD (C:)<br>55.90 GB NTFS<br>Healthy (System, Boot, Active, Crash Dump, Primary Partition) |   |  |  |  |  |
| Disk 2<br>Basic<br>699 MB<br>Online    | <b>RAM DISK (Z:)</b><br>697 MB FAT32<br>Healthy (Primary Partiti                                   | on)   | 2 M<br>Una   |  |  |  |

### **Device Performance Comparison**

| Device              | Size  | Av Xfer<br>MB/sec | Access Time<br>millisecs |
|---------------------|-------|-------------------|--------------------------|
| USB - Flash         | 8 G   | 19                | 0.6                      |
| USB - External HD   | 2 T   | 33                | 15.7                     |
| Laptop Internal HD  | 160 G | 35                | 17.5                     |
| WD Internal Sata HD | 1 T   | 80                | 14.6                     |
| Samsung - eSata HD  | 1 T   | 87                | 15.3                     |
| SSD eSata           | 60 G  | 110               | 0.1                      |
| SSD Internal Sata   | 60 G  | 200               | 0.1                      |
| RAM-Drive           | 750 M | 2,110             | 0                        |

# **RAM Drive - HOW ?**

- Download and Install Software
  - eg. DataRam RAMDrive (free)
- Configure for PC amount of memory (20%)
- Assign Drive Letter (recommend Z: )
- Change Temp and TMP locations to RamDrive
  - Maybe also temporary files from other Apps ...



#### What is RAMDisk?

RAMDisk is a program that takes a portion of your system memory and uses it as a disk drive. The more RAM your computer has, the larger the RAMDisk you can create.

#### What is the benefit?

In a word: SPEED! The performance of a RAMDisk, in general, is orders of magnitude faster than other forms of storage media, such as an SSD (up to 100X) and hard drive (up to 200X).

Most users use RAMDisk to speed up applications like:

- Games
- Browser cache for faster web surfing
- Audio and Video editing
- CAD programs
- Software compilers
- Databases
- Speeding up CD duplication
- SETI processing
- TEMP files
- Swap space
- Web server cache
- Security all information can be wiped upon power loss or shutdown
- Custom applications with high I/O, high bandwidth, or high security requirements

#### **RAMDisk Software**

RAMDisk is offered as "freeware" for personal use and will allow you to create disks up to 1 GB in size. Some features not enabled and require the purchase of a license key to be enabled. For personal use only. "100% CLEAN award granted by Softpedia"



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### S/W from :

### Dataram.com

### Install and configure RAMDisk

| 😻 Dataram RAMDisk Configuration Utility — 🗌 🗙  |   |              |     |  |  |
|--|---|--------------|-----|--|--|
| File View Purchase Help  |   |              |     |  |  |
| Settings Load/Save Event Log Optio   | ns  |              |     |  |  |
| Basic Settings<br>Set the size and type of RAMDisk you w   |   |              |     |  |  |
| Disk Size 750 MB<br>Max 1023 MB  | <ul> <li>FAT Partition (Auto)</li> <li>FAT16 Partition</li> <li>FAT32 Partition</li> <li>Unformatted Partition</li> </ul> | A CONTRACTOR |     |  |  |
| Format Options          Image: Create TEMP Directory         Image: Set Disk Label         RAMDisk | <ul><li>Windows Boot Sector</li><li>DOS Boot Sector</li></ul>   |              |     |  |  |
| Start RAMDisk  | Stop RAMDisk  | RAMD         | ISK |  |  |

| ſ | Computer Management         |                      |   |                |   |           |  |
|---|-----------------------------|----------------------|---|----------------|---|-----------|--|
|   | File Action View Help       |                      |   |                |   |           |  |
| ŀ |                             |                      |   |                |   |           |  |
| - |                             |                      |   |                |   |           |  |
| 1 | 🜆 Computer Management (Loca | Volume               | Layout Type                             | File System    | Status                                      |           |  |
|   | ✓                           | 🛲 Data-1T (G:)       | Simple Basic                            | NTFS           | Healthy (Logical Drive)                     |           |  |
| 1 | > 🕑 Task Scheduler          | Hold-1T (K:)         | Simple Basic                            | NTFS           | Healthy (Logical Drive)                     |           |  |
| 3 | > 🛃 Event Viewer            | - OFFSITEDATA (H:)   | Simple Basic                            | FAT32          | Healthy (Primary Partition)                 |           |  |
|   | > ᇌ Shared Folders          | RAMDISK (Z:)         | Simple Basic                            | FAT32          | Healthy (Active, Primary Partition)         |           |  |
| 8 | > 🌆 Local Users and Groups  | System Reserved (Q:) | Simple Basic                            | NTFS           | Healthy (Active, Primary Partition)         |           |  |
| 3 | > 🔕 Performance             | Win-/u-11-HDD (D:)   | Simple Basic                            | NIFS           | Healthy (System, Active, Primary Partition) |           |  |
| 1 | 📇 Device Manager            | Win-10-52-HDD (E:)   | Simple Basic                            | NTES           | Healthy (Primary Partition)                 | artition  |  |
| 8 | V 🔄 Storage                 | Win-81-1T-SSD (E:)   | Simple Basic                            | NTES           | Healthy (Primary Partition)                 | Fartition |  |
| 3 | Disk Management             |                      | 5p.c 555.c                              |                | Open  |           |  |
|   | Services and Applications   |                      |   |                | 5 June 200                                  |           |  |
| 8 |                             |                      |   |                | Explore                                     |           |  |
| ŝ |                             |                      |   |                | Mark Partition as Active                    |           |  |
| 1 |                             |                      |   |                | Change Drive Letter and Paths               |           |  |
| 1 |                             |                      |   |                | Format                                      |           |  |
| 3 |                             | <                    |   |                |   | >         |  |
| 2 |                             |                      |   | _              | Extend Volume                               | ^         |  |
| 1 |                             | - Disk 1             | _                                       |                | Shrink Volume                               |           |  |
| 3 |                             | 111.79 GB 350        | em Reserved (C                          | 2 Win-8        | Add Mirror                                  |           |  |
|   |                             | Online Heal          | thy (Active, Prim                       | a Health       | Delete Volume                               |           |  |
| 1 |                             |                      | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |                |   |           |  |
| ŝ |                             |                      |   |                | Properties                                  |           |  |
| 1 |                             | - Disk 2             |   |                | Help  |           |  |
|   |                             | Basic RAN            | IDISK (Z:)                              |                |   |           |  |
| ŝ |                             | Online 750           | MB FA132                                | any Partition) |   |           |  |
|   |                             | Hea                  | iny (Active, Prim                       | ary Partition) |   |           |  |

Control Panel / Admin Tools / Computer Mgmt / Disk Mgmt → Screen

... Rt Click on RAMDISK -> Change Drive Letter option, assign to Z:

| 😒 System  |  |                   |                  |           | _ X                           |            |
|---|--|-------------------|------------------|-----------|-------------------------------|------------|
| ← → · · ↑ 💄 > Control Pa                          | ע Sear                                     | rch Control Panel | ٩                |           |                               |            |
| ile Edit View Tools Help                          |  |                   |                  | 6 h i × 🗸 |                               |            |
| Control Panel Home                                | View basic information                     | about your co     | omputer          |           | 0                             |            |
| Device Manager                                    | Windows edition                            |                   |                  |           |                               |            |
| Remote settings                                   | Windows 10 Pro                             |                   |                  |           |                               |            |
| System protection                                 | © 2016 Microsoft Corporati                 | Wind              | Windows10        |           |                               |            |
| Advanced system settings                          | All rights reserved.                       |                   |                  |           | •                             |            |
| System Properties Computer Name Hardware Advanced | System Protection Remote                   |                   |                  |           |                               |            |
| You must be logged on as an Administ              | rator to make most of these changes.       | <b>F</b>          |                  |           |                               |            |
| Performance                                       |  | Environme         | int variables    |           |                               | ^          |
| Visual effects, processor scheduling,             | , memory usage and virtual memory Settings | User vari         | iables for daveb |           |                               |            |
| User Profiles                                     |  | Variab<br>Path    | le               | Value     | AppData\Local\Microsoft\\//ir | ndowsApps: |
|   |  | Taur              |                  | ////ILE// |                               | idons/pps, |

|   | variable | Value  |
|---|----------|--|
| User Profiles   | Path     | %USERPROFILE%\AppData\Local\Microsoft\WindowsApps; |
| Desktop settings related to your sign-in                  | TEMP     | z:\Temp  |
| Settings  | ТМР      | Z:\Temp  |
| Start-up and Recovery                                     |          |  |
| System start-up, system failure and debugging information |          |  |
| Settings  |          |  |
| Environment Variables                                     |          | New Edit Delete                                    |

Control Panel / System / Advanced / Environment Variables -> Screen as above,

... then Edit TEMP and TMP from C:\Temp to Z:\Temp

# Summary

- Adding RamDrive speeds up TEMP file usage as used by MS-Office etc
- Trade off on RAM Memory usage hence 20% recommendation
- Wiped clean at each restart . .
- Useful resource for other temp files (Video Editing)
- ... Slightly complex, but very Useful ...