

## Initial memory map

The standard PC has the following memory map:

| Addresses           | Name                | Description                     |
|---------------------|---------------------|---------------------------------|
| 0x000000-0x09FFFF   | Conventional memory | RAM, which can be used by user  |
| 0x0A0000-0x0BFFFF   | Video memory        | RAM, used by video adapter      |
| 0x0C0000-0x0CFFFF   | Adapter's ROM       | ROM, used by different adapters |
| 0x0D0000-0x0DFFFF   | Page Frame          | RAM used to map Expanded memory |
| 0x0E0000-0x0FFFFFFF | BIOS                | PC BIOS ROM                     |

Conventional memory mapped as:

| Addresses         | Name              | Description                            |
|-------------------|-------------------|----------------------------------------|
| 0x000000-0x0003FF | Interrupt Vectors | This memory used to control Interrupts |
| 0x000400-0x0004FF | BIOS Data Area    | Used by ROM BIOS                       |

### After BIOS POST

| Addresses           | Name                     | Description                            |
|---------------------|--------------------------|----------------------------------------|
| 0x000000-0x0003FF   | Interrupt Vectors        | This memory used to control Interrupts |
| 0x000400-0x0004FF   | BIOS Data Area           | Used by ROM BIOS                       |
| 0x000500-0x007BFF   | Free                     | Free, unused memory                    |
| 0x007C00-0x007DFF   | MBR                      |                                        |
| 0x007E00-0x09FFFF   | Free Conventional memory | RAM, which can be used by user         |
| 0x0A0000-0x0BFFFF   | Video memory             | RAM, used by video adapter             |
| 0x0C0000-0x0CFFFF   | Adapter's ROM            | ROM, used by different adapters        |
| 0x0D0000-0x0DFFFF   | Page Frame               | RAM used to map Expanded memory        |
| 0x0E0000-0x0FFFFFFF | BIOS                     | PC BIOS ROM                            |

### After MBR

This information correct for our [MBR](#)

| Addresses         | Name                     | Description                                             |
|-------------------|--------------------------|---------------------------------------------------------|
| 0x000000-0x0003FF | Interrupt Vectors        | This memory used to control Interrupts                  |
| 0x000400-0x0004FF | BIOS Data Area           | Used by ROM BIOS                                        |
| 0x000500-0x0005FF | Free                     | Free, unused memory                                     |
| 0x000600-0x0007FF | MBR                      | Master Boot Record                                      |
| 0x000800-0x007BFF | Free                     | Free, unused memory                                     |
| 0x007C00-0x007DFF | Boot record              | Boot Record loaded from boot sector of active partition |
| 0x007E00-0x007FFF | MBR Work area            | This area was used as MBR work area                     |
| 0x008000-0x09FFFF | Free Conventional memory | RAM, which can be used by user                          |
| 0x0A0000-0x0BFFFF | Video memory             | RAM, used by video adapter                              |
| 0x0C0000-0x0CFFFF | Adapter's ROM            | ROM, used by different adapters                         |
| 0x0D0000-0x0DFFFF | Page Frame               | RAM used to map Expanded memory                         |

| Addresses           | Name | Description |
|---------------------|------|-------------|
| 0x0E0000-0x0FFFFFFF | BIOS | PC BIOS ROM |

## After boot record

This information correct for our [bootsector](#)

| Addresses               | Name                     | Description                                             |
|-------------------------|--------------------------|---------------------------------------------------------|
| 0x000000-0x0003FF       | Interrupt Vectors        | This memory used to control Interrupts                  |
| 0x000400-0x0004FF       | BIOS Data Area           | Used by ROM BIOS                                        |
| 0x000500-0x0005FF       | Free                     | Free, unused memory                                     |
| 0x000600-0x0007FF       | MBR                      | Master Boot Record                                      |
| 0x000800-0x007BFF       | Free                     | Free, unused memory                                     |
| 0x007C00-0x007DFF       | Boot record              | Boot Record loaded from boot sector of active partition |
| 0x007E00-0x007FFF       | Boot record Work area    | This area was used as Boot Record work area             |
| 0x008000-(MuFSDStart-1) | Free                     | Free, unused memory                                     |
| MuFSDStart-MuFSDEnd     | MicroFSD                 | MicroFSD/BlackBox code                                  |
| (MuFSDEnd+1)-0x09FFFF   | Free Conventional memory | RAM, which can be used by user                          |
| 0x0A0000-0x0BFFFF       | Video memory             | RAM, used by video adapter                              |
| 0x0C0000-0x0CFFFF       | Adapter ROMs             | ROMs, used by different adapters                        |
| 0x0D0000-0x0DFFFF       | Page Frame               | RAM used to map Expanded memory                         |
| 0x0E0000-0x0FFFFFFF     | BIOS                     | PC BIOS ROM                                             |

MuFSDStart=0x008000 or 0x090000. Now we use 0x090000 as LILO does but have a plan to use 0x008000 for more compact memory reuse and less possibility of overlapping.

MuFSDEnd is (0x008000+MicroFSD\_file\_length-1)

## After MicroFSD/BlackBox

Memory map after MicroFSD/BlackBox work known via MemoryMap structure.

## After FreeLDR

Memory map after FreeLDR work known via Multiboot Information block.

## After L4Ka::Kickstart

Memory map after L4Ka:Kickstart work known to microkernel via Kernel Interface Page. Other tasks has access to memory via sigma0 server. Strating from this point all memory operation controlled by L4 microkernel.

## Discussion

From:

<http://osfree.su/doku/> - **osFree wiki**

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<http://osfree.su/doku/doku.php?id=en:docs:boot:memmap&rev=1362695357>

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