***AESI EI TORITO VER 1.0 EMULATION Kern. SQL***

Assembler : Nasm Version 2.11.06

Bootable cd/dvd maker : Nero Burning ROM 2019

­­­Instruction set: 64-Bit Instruction set

Duration: 12 Months

Status: Finished

Role: Coding and Testing

***Description***

***INTRODUCTION***

EI TORITO Version 1.0 Bootable CD-ROM Format Specification was published by 1995. This defines Bootable CD-/DVD-ROM Format. In this standard, Following emulations are available.

1. Floppy emulations
2. Hard drive emulation
3. No emulation

In Floppy emulation, There are following three emulations are supported.

1. Floppy emulation 1.20MB
2. Floppy emulation 1.44MB
3. Floppy emulation 2.88MB

Using these emulations, A BOOTABLE CD/DVD can be made to act as a Virtual Floppy disks at the booting end.

Using Hard drive emulation, A bootable CD/DVD-ROM can be made as hard disk drive like SCSI, SATA etc.

No emulation disks can be used to install OS. Interrupt 0x13 service 0x02 can be used to design the boot loaders.

***DRIVE GEOMETRY***

Drive geometry is comprised of #Cylinders, #Heads and #Sectors (CHS). For floppy emulations, following drive geometry and capacity are provided. This means that floppy emulations are limited to use the following capacity and drive geometry.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***S.No*** | ***Floppy emulation*** | ***#Cylinders*** | ***#Heads*** | ***#Sectors*** | ***Capacity in MB*** |
| 1. | Floppy emulation 1.20 MB | 0x50 | 0x02 | 0x0F | 1.20MB |
| 2. | Floppy emulation 1.44 MB | 0x50 | 0x02 | 0x12 | 1.44MB |
| 3. | Floppy emulation 2.88MB | 0x50 | 0x02 | 0x24 | 2.88MB |

For Hard drive emulation and No emulation, No Drive geometry limitation is imposed. For Hard drive emulation, Drive geometry depends on the size of the boot image. Drive Geometry can be adopted by using Interrupt 0x13 services 0x08 with the drive letter assigned at the time of booting from a CD-/DVD-ROM.

***PRODUCT DEFINITION***

This product is a SQL that boots directly from CD-/DVD-ROM. No operating system is necessary for this SQL. This means that SQL product acts as an operating system so that SQL commands can be executed at the booting end. In this product, the following fifteen different commands are supported.

|  |  |  |
| --- | --- | --- |
| ***S.No*** | ***SQL Commands*** | ***Description*** |
| 1. | SHOW COMMANDS | To list out the supported SQL Commands. |
| 2. | DESC DRIVEGEOMETRY | To describe table DriveGeometry. |
| 3 | SHOW COLUMNIDS | To list out the Column Ids. |
| 4. | SELECT/SELECT COLUMNS: | To list out the columns of the table DriveGeometry. |
| 5. | SHOW <COLUMNS> | To list out the content of specific column. |
| 6. | SHOW MAGICAPPLICATIONID | To Show the Magic Application Id. |
| 7. | SHOW MAGICBOOTSECTORID | To Show the Magic Boot Sector Id. |
| 8. | SHOW GENERICDRIVEGEOMETRY | To show the generic floppy emulation’s default drive geometry. |
| 9. | SHOW FEEDDBACK | To show the status of SET COMMAND FEEDBACK(ON/OFF). |
| 10. | SHOW TITLE | To show the status of SET COMMAND TITLE(ON/OFF). |
| 11. | SHOW STATUS | To show the status of SET COMMANDS TITLE AND FEEDBACK(ON/OFF) |
| 12. | SET FEEDBACK ON/OFF | To enable or disable FEEDBCAK. |
| 13. | SET TITLE ON/OFF | To enable or disable TITLE. |
| 14. | CLS | To Clear Console. |
| 15. | RESTART | To restart PC. |
| 16. | SHUTDOWN | To turn off PC. |

***PROCESSORS AND CHIPSETS REQUIREMENT***

This product will function only in Genuine Intel Processors and Intel chipsets 5-series onwards.

***FEATURES***

1. This product needs neither Operating System nor any other platform.
2. This is 32-bit Operating Environment.
3. Instead of specifying column names, you can use columns ids.
4. Single column can be retrieved using \*Show <Column>\* command.
5. This product is menu driven initially. Suppose you press 2. The PC will be restarted. Suppose you press 3. The PC will be turned off. Suppose you press 1. The application will be made ready to use. Other keystrokes are not useable.
6. DOS Key like utility has been included in this product so that the keys like \*UP Arrow\*, \*Down Arrow\* and etc can be manipulated.
7. \*Restart\* command can be executed to restart PC.
8. \*Shutdown\* command can be executed to Turn off PC.
9. Feedback can be turned On/Off.
10. Title can be turned On/Off.

***TARGET AUDIENCE***

1. Processor manufactures
2. Chipset manufactures
3. Motherboard manufactures
4. BIOS Designers
5. OS Designers
6. RTOS Designers