

Dell S4048 - Installing OS10

OS10 Install

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Article

Installing a new NOS via DHCP and HTTP via ONIE:

In this example, we will use OS10 as the NOS and the Dell S4048-ON as the hardware platform.

We will have the switch and our combined DHCP and HTTP server in the same L2 subnet, to make this first example as simple as possible.

First we need to install the `iscsi dhcp` service on our box.

We need to setup an address space to distribute, the dhcp server and the switch need to be in the same subnet. In my examples, the dhcp server has an additional interface with IP address 10.77.10.1 that is plugged into the switch vlan.

Here is the example config I added to the default config file:

```
subnet 10.77.10.0 netmask 255.255.255.0 {
  range 10.77.10.100 10.77.10.200;
}
```

Regarding the HTTP Server, we installed Apache2, and put the switch image into the default webroot(/var/www/html).

Then we created a copy of the firmware image named "ONIE-installer". The switch will look automatically in the webroot of the dhcp server for a file with this name. This is the most trivial way of naming the file, given your needs there are options to name it more precise referencing the hardware. But as we currently only have the one system to install from this webserver we can use the generic name.

It is a good idea to put a test html document onto the webroot and access it from remote to make sure that everything works from a remote server, and permissions are set correctly.

ONIE will automatically, without any configuration, look for this file on the webroot of the dhcp server address, so there is no additional configuration necessary.

This is all we need to do on the infrastructure side, now we can start install the image from the webserver.

First, lets do a reload and check whether the DHCP Server assigns a correct IP address, and the image is accessible from the switch:

```
Dell#reload
```

```
Proceed with reload [confirm yes/no]: y
```

```
00:10:20: %STKUNIT1-M:CP %CHMGR-5-RELOAD: User request to reload the chassis
```

```
syncing disks... done
```

```
unmounting file systems...
```

```
unmounting /f10/flash (/dev/wd0e)...
```

```
unmounting /f10/ConfD/db (mfs:470)...
```

```
unmounting /usr/pkg (/dev/wd0i)...
```

```
unmounting /boot (/dev/wd0b)...
```

```
unmounting /usr (mfs:29)...
```

```
unmounting /lib (mfs:21)...
```

```
unmounting /f10 (mfs:18)...
```

```
unmounting /tmp (mfs:9)...
```

```
unmounting /kern (kernfs)...
```

```
unmounting / (/dev/md0a)... done
```

```
rebooting...
```

```
Going for Processor reset
```

BIOS (Dell Inc) Boot Selector
S4000 3.21.0.2 (48-port SFP+ 10G/6-port QSFP 40G)

POST Configuration
CPU Signature 406D8
CPU FamilyID=6, Model=4D, SteppingId=8, Processor=0
Microcode Revision 125
POST Control=0xEA000303, Status=0xE6009700
Platform ID: 10041837
PMG_CST_CFG_CTL: 40006
BBL_CR_CTL3: 7E2801FF
Misc EN: 4000840081
Gen PM Con1: 3008
Therm Status: 884C000F

BIOS initializations...

CPGC Memtest for Channel 0 PASS

ECC enabled: channel 0 DECCCTRL_DUNIT_REG=0x000200F3

POST:

RTC Battery OK at last cold boot
RTC date Wednesday 7/20/2016 21:34:52

POST SPD test PASS

POST Lower DRAM Memory test
Short memory cell test
Perf cnt (curr/fixed): 316E313BC/32176848F

POST Lower DRAM Memory test PASS
POST Lower DRAM ECC check PASS

DxE POST

POST PCI test PASS
POST NVRAM check PASS
POST overall test results PASS

NVRAM at POST exit: 00 97 00 E6 03 03 00 EA

Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
BIOS Date: 04/01/2015 19:03:09 Ver: 0ACBZ018
Press or <F2> to enter setup.

GRUB loading.
Welcome to GRUB!

5 Grub 1.99-rc1 (Dell Inc)
Built by root at ubuntu on Thu_Apr_16_09:14:02_UTC_2015
S4000 Boot Flash Label 3.21.2.1 NetBoot Label 3.21.2.1

Press Esc to stop autoboot ...

We can now access ONIE to proceed installation

+-----+
|FTOS |
|FTOS-Boot Line Interface |
|DELL-DIAG |

|ONIE | Grub 1.99~rc1 (Dell Inc)

||
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||

+-----+

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, 'f' to boot FTOS, 'b' to go to
BLI, 'o' to boot ONIE, 'd' to boot DELL-DIAG, 'e' to edit the
commands before booting or 'c' for a command-line.

GNU GRUB version 2.02~beta2+e4a1fe391

And select Install OS on the next screen

+-----+

|*ONIE: Install OS |
| ONIE: Rescue |
| ONIE: Uninstall OS |
| ONIE: Update ONIE |
| ONIE: Embed ONIE |
| ONIE: Diag ONIE |
| DELL-DIAG |
||
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+-----+

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line.

ONIE: OS Install Mode ...

Version : 3.21.1.1

Build Date: 2015-03-17T12:32-0700

Info: Mounting kernel filesystems... done.

Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...

Info: Using eth0 MAC address: 64:00:6a:e5:ab:3e

Info: Using eth1 MAC address: 64:00:6a:e5:ab:3f

Info: eth0: Checking link... up.

Info: Trying DHCPv4 on interface: eth0

ONIE: Using DHCPv4 addr: eth0: 10.77.10.103 / 255.255.255.0

Info: eth1: Checking link... down.

ONIE: eth1: link down. Skipping configuration.

ONIE: Failed to configure eth1 interface

Starting: dropbear ssh daemon... done.

Starting: telnetd... done.

discover: installer mode detected. Running installer.

Starting: discover... done.

As we can see, the switch tried to configure eth0 and eth1. eth0 got 10.77.10.103 assigned, eth1 failed as it was not plugged in. The switch will use eth0 to proceed with the installation.

Please press Enter to activate this console. Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
ONIE: Using DHCPv4 addr: eth0: 10.77.10.103 / 255.255.255.0
Info: eth1: Checking link...
To check the install status inspect /var/log/onie.log.
Try this: tail -f /var/log/onie.log

```
** Installer Mode Enabled **
ONIE:/ # down.
ONIE: eth1: link down. Skipping configuration.
ONIE: Failed to configure eth1 interface
ONIE: Starting ONIE Service Discovery
FAT-fs (sda7): Invalid FSINFO signature: 0x82564557, 0x61417272 (sector = 1)
Info: Fetching http://10.77.10.1/onie-installer-x86_64-dell_s4000_c2338-r0 ...
Info: Fetching http://10.77.10.1/onie-installer-x86_64-dell_s4000_c2338 ...
Info: Fetching http://10.77.10.1/onie-installer-dell_s4000_c2338 ...
Info: Fetching http://10.77.10.1/onie-installer-x86_64 ...
Info: Fetching http://10.77.10.1/onie-installer ...
ONIE: Executing installer: http://10.77.10.1/onie-installer
Initializing installer...OK
Verifying image checksum...OK
OS10 Installer: machine: dell_s4000_c2338
Found unrecognized partition FTOS-GRUB
Found unrecognized partition FTOS-A
Found unrecognized partition FTOS-B
Found unrecognized partition FTOS-NETBSD
ERROR: Existing NOS present, cannot install
Please uninstall the existing NOS first
http success, exiting...
umount: can't remount rootfs read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart
```

Here we can see that the image was found and fetched. As there was already an operating system installed, ONIE denied the installation. We will need to uninstall the existing OS first, which we will do after the next reboot

BIOS (Dell Inc) Boot Selector
S4000 3.21.0.2 (48-port SFP+ 10G/6-port QSFP 40G)

POST Configuration
CPU Signature 406D8
CPU FamilyID=6, Model=4D, SteppingId=8, Processor=0
Microcode Revision 125
POST Control=0xEA000303, Status=0xE6009700
Platform ID: 10041837
PMG_CST_CFG_CTL: 40006
BBL_CR_CTL3: 7E2801FF
Misc EN: 4000840081
Gen PM Con1: 3008
Therm Status: 884E000F

BIOS initializations...

CPGC Memtest for Channel 0 PASS

ECC enabled: channel 0 DECCCTRL_DUNIT_REG=0x000200F3

POST:
RTC Battery OK at last cold boot
RTC date Wednesday 7/20/2016 21:36:26

POST SPD test PASS

POST Lower DRAM Memory test
Short memory cell test
Perf cnt (curr/fixed): 32EB5EC63/33949936B

POST Lower DRAM Memory test PASS
POST Lower DRAM ECC check PASS

DxE POST
POST PCI test PASS
POST NVRAM check PASS
POST overall test results PASS

NVRAM at POST exit: 00 97 00 E6 03 03 00 EA

Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
BIOS Date: 04/01/2015 19:03:09 Ver: 0ACBZ018
Press or <F2> to enter setup.

GRUB loading.
Welcome to GRUB!

Grub 1.99~rc1 (Dell Inc)
Built by root at ubuntu on Thu_Apr_16_09:14:02_UTC_2015
S4000 Boot Flash Label 3.21.2.1 NetBoot Label 3.21.2.1

Press Esc to stop autoboot ... 5

We will access ONIE again:

Grub 1.99~rc1 (Dell Inc)
Built by root at ubuntu on Thu_Apr_16_09:14:02_UTC_2015
S4000 Boot Flash Label 3.21.2.1 NetBoot Label 3.21.2.1

```
+-----+  
|FTOS |  
|FTOS-Boot Line Interface |  
|DELL-DIAG |  
|ONIE |  
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||  
||  
+-----+
```

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, 'f' to boot FTOS, 'b' to go to
BLI, 'o' to boot ONIE, 'd' to boot DELL-DIAG, 'e' to edit the
commands before booting or 'c' for a command-line.

And this time select Uninstall OS:

GNU GRUB version 2.02~beta2+e4a1fe391

```
+-----+
| ONIE: Install OS |
| ONIE: Rescue |
|*ONIE: Uninstall OS |
| ONIE: Update ONIE |
| ONIE: Embed ONIE |
| ONIE: Diag ONIE |
| DELL-DIAG |
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+-----+
```

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line.

ONIE: OS Uninstall Mode ...

GRUB loading.
Welcome to GRUB!

Version : 3.21.1.1
Build Date: 2015-03-17T12:32-0700
Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
Info: Using eth0 MAC address: 64:00:6a:e5:ab:3e
Info: Using eth1 MAC address: 64:00:6a:e5:ab:3f
Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
ONIE: Using DHCPv4 addr: eth0: 10.77.10.103 / 255.255.255.0
Info: eth1: Checking link... down.
ONIE: eth1: link down. Skipping configuration.
ONIE: Failed to configure eth1 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: Uninstall mode detected. Running uninstaller.
Erasing internal mass storage device: /dev/sda4 (32MB)
Percent complete: 100%
Erase complete.
Deleting partition 4 from /dev/sda
Erasing internal mass storage device: /dev/sda5 (300MB)
Percent complete: 100%
Erase complete.
Deleting partition 5 from /dev/sda
Erasing internal mass storage device: /dev/sda6 (300MB)
Percent complete: 100%
Erase complete.
Deleting partition 6 from /dev/sda
Erasing internal mass storage device: /dev/sda7 (6578MB)
Percent complete: 100%
Erase complete.
Deleting partition 7 from /dev/sda
Installing for i386-pc platform.
Installation finished. No error reported.
Uninstall complete. Rebooting...

umount: can't remount roots read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
sd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart

**ONIE removed the OS and cleared all partitions from the file system. The switch then automatically reboots.
We will select the Install option this time**

BIOS (Dell Inc) Boot Selector
S4000 3.21.0.2 (48-port SFP+ 10G/6-port QSFP 40G)

POST Configuration
CPU Signature 406D8
CPU FamilyID=6, Model=4D, SteppingId=8, Processor=0
Microcode Revision 125
POST Control=0xEA000303, Status=0xE6009700
Platform ID: 10041837
PMG_CST_CFG_CTL: 40006
BBL_CR_CTL3: 7E2801FF
Misc EN: 4000840081
Gen PM Con1: 3008
Therm Status: 884E000F

BIOS initializations...

CPGC Memtest for Channel 0 PASS

ECC enabled: channel 0 DECCCTRL_DUNIT_REG=0x000200F3

POST:

RTC Battery OK at last cold boot
RTC date Wednesday 7/20/2016 21:47:24

POST SPD test PASS

POST Lower DRAM Memory test
Short memory cell test
Perf cnt (curr/fixed): 318654EFB/322F95C0C

POST Lower DRAM Memory test PASS
POST Lower DRAM ECC check PASS

DxE POST

POST PCI test PASS
POST NVRAM check PASS
POST overall test results PASS

NVRAM at POST exit: 00 97 00 E6 03 03 00 EA

Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
BIOS Date: 04/01/2015 19:03:09 Ver: 0ACBZ018
Press or <F2> to enter setup.

GRUB loading.

GNU GRUB version 2.02~beta2+e4a1fe391

+-----+
[*ONIE: Install OS |

```
| ONIE: Rescue |
| ONIE: Uninstall OS |
| ONIE: Update ONIE |
| ONIE: Embed ONIE |
| ONIE: Diag ONIE |
| DELL-DIAG |
||
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+-----+
```

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, `e` to edit the commands
before booting or `c` for a command-line.
The highlighted entry will be executed automatically in 0s.

Booting `ONIE: Install OS`
Welcome to GRUB!

```
Version : 3.21.1.1
Build Date: 2015-03-17T12:32-0700
Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
Info: Using eth0 MAC address: 64:00:6a:e5:ab:3e
Info: Using eth1 MAC address: 64:00:6a:e5:ab:3f
Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
ONIE: Using DHCPv4 addr: eth0: 10.77.10.103 / 255.255.255.0
Info: eth1: Checking link... down.
ONIE: eth1: link down. Skipping configuration.
ONIE: Failed to configure eth1 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: installer mode detected. Running installer.
Starting: discover... done.
```

Please press Enter to activate this console. Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
ONIE: Using DHCPv4 addr: eth0: 10.77.10.103 / 255.255.255.0
Info: eth1: Checking link...
To check the install status inspect /var/log/onie.log.
Try this: tail -f /var/log/onie.log

**** Installer Mode Enabled ****

```
ONIE:/ # down.
ONIE: eth1: link down. Skipping configuration.
ONIE: Failed to configure eth1 interface
ONIE: Starting ONIE Service Discovery
Info: Fetching http://10.77.10.1/onie-installer-x86_64-dell_s4000_c2338-r0 ...
Info: Fetching http://10.77.10.1/onie-installer-x86_64-dell_s4000_c2338 ...
Info: Fetching http://10.77.10.1/onie-installer-dell_s4000_c2338 ...
Info: Fetching http://10.77.10.1/onie-installer-x86_64 ...
Info: Fetching http://10.77.10.1/onie-installer ...
ONIE: Executing installer: http://10.77.10.1/onie-installer
Initializing installer...OK
Verifying image checksum...OK
OS10 Installer: machine: dell_s4000_c2338
Next available partition is /dev/sda4
Creating new partition /dev/sda4 as OS10-LICENSE, size 32MB...Warning: The kernel is still using the old partition table.
```


The new table will be used at the next reboot.

The operation has completed successfully.

OK

Next available partition is /dev/sda5

Creating new partition /dev/sda5 as OS10-BOOT, size 8MB...Warning: The kernel is still using the old partition table.

The new table will be used at the next reboot.

The operation has completed successfully.

OK

Next available partition is /dev/sda6

Creating new partition /dev/sda6 as OS10-CONFIG, size 200MB...Warning: The kernel is still using the old partition table.

The new table will be used at the next reboot.

The operation has completed successfully.

OK

Partition size is 7137280 sectors (3568640 MB)

Next available partition is /dev/sda7

Creating new partition /dev/sda7 as OS10-SYSROOT1, size 7137280...Warning: The kernel is still using the old partition table.

The new table will be used at the next reboot.

The operation has completed successfully.

OK

Next available partition is /dev/sda8

Creating new partition /dev/sda8 as OS10-SYSROOT2, size 7137280...Warning: The kernel is still using the old partition table.

The new table will be used at the next reboot.

The operation has completed successfully.

OK

Creating ext4 filesystem on /dev/sda7, volume label OS10-SYSROOT1

mke2fs 1.42.8 (20-Jun-2013)

Filesystem label=OS10-SYSROOT1

OS type: Linux

Block size=4096 (log=2)

Fragment size=4096 (log=2)

Stride=0 blocks, Stripe width=0 blocks

223104 inodes, 892160 blocks

44608 blocks (5.00%) reserved for the super user

First data block=0

Maximum filesystem blocks=914358272

28 block groups

32768 blocks per group, 32768 fragments per group

7968 inodes per group

Superblock backups stored on blocks:

32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done

Writing inode tables: done

Creating journal (16384 blocks): done

Writing superblocks and filesystem accounting information: done

Untaring into /mnt/sysroot (/dev/sda7)

Success: Support tarball created: /mnt/sysroot/onie-support.tar.bz2

Creating ext4 filesystem on /dev/sda8, volume label OS10-SYSROOT2

mke2fs 1.42.8 (20-Jun-2013)

Filesystem label=OS10-SYSROOT2

OS type: Linux

Block size=4096 (log=2)

Fragment size=4096 (log=2)

Stride=0 blocks, Stripe width=0 blocks

223104 inodes, 892160 blocks

44608 blocks (5.00%) reserved for the super user

First data block=0

Maximum filesystem blocks=914358272

28 block groups

32768 blocks per group, 32768 fragments per group

7968 inodes per group
Superblock backups stored on blocks:
32768, 98304, 163840, 229376, 294912, 819200, 884736

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

Untaring into /mnt/sysroot (/dev/sda8)
Success: Support tarball created: /mnt/sysroot/onie-support.tar.bz2
Creating ext4 filesystem on /dev/sda8, volume label OS10-CONFIG
mke2fs 1.42.8 (20-Jun-2013)
Filesystem label=OS10-CONFIG
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
Stride=0 blocks, Stripe width=0 blocks
51200 inodes, 204800 blocks
10240 blocks (5.00%) reserved for the super user
First data block=1
Maximum filesystem blocks=67371008
25 block groups
8192 blocks per group, 8192 fragments per group
2048 inodes per group
Superblock backups stored on blocks:
8193, 24577, 40961, 57345, 73729

Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

Creating ext4 filesystem on /dev/sda8, volume label OS10-LICENSE
mke2fs 1.42.8 (20-Jun-2013)
Filesystem label=OS10-LICENSE
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
Stride=0 blocks, Stripe width=0 blocks
8192 inodes, 32768 blocks
1638 blocks (5.00%) reserved for the super user
First data block=1
Maximum filesystem blocks=33554432
4 block groups
8192 blocks per group, 8192 fragments per group
2048 inodes per group
Superblock backups stored on blocks:
8193, 24577

Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

Creating ext4 filesystem on /dev/sda8, volume label OS10-BOOT
mke2fs 1.42.8 (20-Jun-2013)
Filesystem label=OS10-BOOT
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
Stride=0 blocks, Stripe width=0 blocks

2048 inodes, 8192 blocks
409 blocks (4.99%) reserved for the super user
First data block=1
Maximum filesystem blocks=8388608
1 block group
8192 blocks per group, 8192 fragments per group
2048 inodes per group

Allocating group tables: done
Writing inode tables: done
Creating journal (1024 blocks): done
Writing superblocks and filesystem accounting information: done

Installing GRUB on /dev/sda (boot-dir /mnt/boot)...Installing for i386-pc platform.
Installation finished. No error reported.

OK
http success, exiting...
umount: can't remount rootfs read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Restarting system.
machine restart

The OS got installed, and the machine reboots again. Now we will boot into the newly installed OS.

BIOS (Dell Inc) Boot Selector
S4000 3.21.0.2 (48-port SFP+ 10G/6-port QSFP 40G)

POST Configuration
CPU Signature 406D8
CPU FamilyID=6, Model=4D, SteppingId=8, Processor=0
Microcode Revision 125
POST Control=0xEA000303, Status=0xE6009700
Platform ID: 10041837
PMG_CST_CFG_CTL: 40006
BBL_CR_CTL3: 7E2801FF
Misc EN: 4000840081
Gen PM Con1: 3008
Therm Status: 884F000F

BIOS initializations...

CPGC Memtest for Channel 0 PASS

ECC enabled: channel 0 DECCCTRL_DUNIT_REG=0x000200F3

POST:

RTC Battery OK at last cold boot
RTC date Wednesday 7/20/2016 21:54:01

POST SPD test PASS

POST Lower DRAM Memory test
Short memory cell test
Perf cnt (curr/fixed): 311BD31F1/31C514C28

POST Lower DRAM Memory test PASS
POST Lower DRAM ECC check PASS

DxE POST
POST PCI test PASS

POST NVRAM check PASS
POST overall test results PASS

NVRAM at POST exit: 00 97 00 E6 03 03 00 EA

Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc.
BIOS Date: 04/01/2015 19:03:09 Ver: 0ACBZ018
Press or <F2> to enter setup.

GRUB loading.
Welcome to GRUB!

GNU GRUB version 2.02~beta2+e4a1fe391

We see the new OS is installed, and we can now boot it up!

```
+-----+  
|*OS10-A |  
| OS10-B |  
| ONIE  |  
||  
||  
||  
||  
||  
||  
||  
||  
||  
||  
||  
+-----+
```

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS, `e` to edit the commands
before booting or `c` for a command-line.
The highlighted entry will be executed automatically in 0s.

Booting `OS10-A`
Welcome to GRUB!

```
[ 0.000000] Initializing cgroup subsys cpuset  
[ 0.000000] Initializing cgroup subsys cpu  
[ 0.000000] Initializing cgroup subsys cpuacct  
[ 0.000000] Linux version 3.16.7-ckt20 (support@dell.com) (gcc version 4.8.2 (Ubuntu 4.8.2-19ubuntu1) ) #1 SMP Debian 3.16.7-ckt20-  
1+deb8u4 (2016-02-29)  
[ 0.000000] Command line: BOOT_IMAGE=/boot/os10.linux console=ttyS0,115200 root=/dev/sda7 rw  
[ 0.000000] KERNEL supported cpus:  
[ 0.000000] Intel GenuineIntel  
[ 0.000000] e820: BIOS-provided physical RAM map:  
[ 0.000000] BIOS-e820: [mem 0x0000000000000000-0x0000000000009abff] usable  
[ 0.000000] BIOS-e820: [mem 0x0000000000009ac00-0x0000000000009ffff] reserved  
[ 0.000000] BIOS-e820: [mem 0x00000000000e0000-0x000000000000ffff] reserved  
[ 0.000000] BIOS-e820: [mem 0x0000000000100000-0x00000000007e97afff] usable  
[ 0.000000] BIOS-e820: [mem 0x00000000007e97b000-0x00000000007e9aafff] reserved  
[ 0.000000] BIOS-e820: [mem 0x00000000007e9ab000-0x00000000007ebd3fff] usable  
[ 0.000000] BIOS-e820: [mem 0x00000000007ebd4000-0x00000000007f43efff] ACPI NVS  
[ 0.000000] BIOS-e820: [mem 0x00000000007f43f000-0x00000000007f63dfff] reserved  
[ 0.000000] BIOS-e820: [mem 0x00000000007f63e000-0x00000000007f7fffff] usable  
[ 0.000000] BIOS-e820: [mem 0x00000000e0000000-0x00000000e3ffffff] reserved  
[ 0.000000] BIOS-e820: [mem 0x00000000fed01000-0x00000000fed03fff] reserved  
[ 0.000000] BIOS-e820: [mem 0x00000000fed08000-0x00000000fed08fff] reserved  
[ 0.000000] BIOS-e820: [mem 0x00000000fed0c000-0x00000000fed0ffff] reserved
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[0.000000] BIOS-e820: [mem 0x00000000fed1c000-0x00000000fed1cfff] reserved
[0.000000] BIOS-e820: [mem 0x00000000fef00000-0x00000000feffffff] reserved
[0.000000] BIOS-e820: [mem 0x00000000ff800000-0x00000000ffffffff] reserved
[0.000000] NX (Execute Disable) protection: active
[0.000000] SMBIOS 2.8 present.
[0.000000] e820: last_pfn = 0x7f800 max_arch_pfn = 0x400000000
[0.000000] x86 PAT enabled: cpu 0, old 0x7040600070406, new 0x7010600070106
[0.000000] found SMP MP-table at [mem 0x000fd6a0-0x000fd6af] mapped at [ffff8800000fd6a0]
[0.000000] Scanning 1 areas for low memory corruption
[0.000000] init_memory_mapping: [mem 0x00000000-0x000fffff]
[0.000000] init_memory_mapping: [mem 0x7e600000-0x7e7fffff]
[0.000000] init_memory_mapping: [mem 0x7c000000-0x7e5fffff]
[0.000000] init_memory_mapping: [mem 0x00100000-0x7bfffff]
[0.000000] init_memory_mapping: [mem 0x7e800000-0x7e97afff]
[0.000000] init_memory_mapping: [mem 0x7e9ab000-0x7ebd3fff]
[0.000000] init_memory_mapping: [mem 0x7f63e000-0x7f7fffff]
[0.000000] RAMDISK: [mem 0x35bb8000-0x36dd3fff]
[0.000000] ACPI: Early table checksum verification disabled
[0.000000] ACPI: RSDP 0x0000000000F04A0 000024 (v02 ALASKA)
[0.000000] ACPI: XSDT 0x000000007EC2A088 000094 (v01 ALASKA A M I 01072009 AMI 00010013)
[0.000000] ACPI: FACP 0x000000007EC2CA18 00010C (v05 ALASKA A M I 01072009 AMI 00010013)
[0.000000] ACPI: DSDT 0x000000007EC2A1B8 00285B (v02 ALASKA A M I 01072009 INTL 20061109)
[0.000000] ACPI: FACS 0x000000007F43B080 000040
[0.000000] ACPI: FPDT 0x000000007EC2CB28 000044 (v01 ALASKA A M I 01072009 AMI 00010013)
[0.000000] ACPI: MCFG 0x000000007EC2CB70 00003C (v01 ALASKA A M I 01072009 MSFT 00000097)
[0.000000] ACPI: WDAT 0x000000007EC2CBB0 0001AC (v01 ALASKA A M I 01072009 MSFT 00010013)
[0.000000] ACPI: UEFI 0x000000007EC2CD60 000042 (v01 00000000 00000000)
[0.000000] ACPI: APIC 0x000000007EC2CDA8 000068 (v03 INTEL TIANO 00000001 MSFT 00000000)
[0.000000] ACPI: BDAT 0x000000007EC2CE10 000030 (v01 00000000 00000000)
[0.000000] ACPI: HPET 0x000000007EC2CE40 000038 (v01 INTEL 00000001 MSFT 01000013)
[0.000000] ACPI: SSDT 0x000000007EC2CE78 0009F1 (v01 PmRef CpuPm 00003000 INTL 20061109)
[0.000000] ACPI: SPCR 0x000000007EC2D870 000050 (v01 A M I APTIO V 01072009 AMI. 00000005)
[0.000000] ACPI: HEST 0x000000007EC2D8C0 0000A8 (v01 INTEL AVOTON B 00000001 INTL 00000001)
[0.000000] ACPI: BERT 0x000000007EC2D968 000030 (v01 INTEL AVOTON B 00000001 INTL 00000001)
[0.000000] ACPI: ERST 0x000000007EC2D998 000230 (v01 INTEL AVOTON B 00000001 INTL 00000001)
[0.000000] ACPI: EINJ 0x000000007EC2DBC8 000150 (v01 INTEL AVOTON B 00000001 INTL 00000001)
[0.000000] No NUMA configuration found
[0.000000] Faking a node at [mem 0x0000000000000000-0x000000007f7fffff]
[0.000000] Initmem setup node 0 [mem 0x00000000-0x7f7fffff]
[0.000000] NODE_DATA [mem 0x7f7fb000-0x7f7fffff]
[0.000000] Zone ranges:
[0.000000] DMA [mem 0x00001000-0x00fffff]
[0.000000] DMA32 [mem 0x01000000-0xfffffff]
[0.000000] Normal empty
[0.000000] Movable zone start for each node
[0.000000] Early memory node ranges
[0.000000] node 0: [mem 0x00001000-0x00099fff]
[0.000000] node 0: [mem 0x00100000-0x7e97afff]
[0.000000] node 0: [mem 0x7e9ab000-0x7ebd3fff]
[0.000000] node 0: [mem 0x7f63e000-0x7f7fffff]
[0.000000] ACPI: PM-Timer IO Port: 0x408
[0.000000] ACPI: LAPIC (acpi_id[0x01] lapic_id[0x00] enabled)
[0.000000] ACPI: LAPIC (acpi_id[0x02] lapic_id[0x02] enabled)
[0.000000] ACPI: LAPIC_NMI (acpi_id[0x01] high edge lint[0x1])
[0.000000] ACPI: LAPIC_NMI (acpi_id[0x02] high edge lint[0x1])
[0.000000] ACPI: IOAPIC (id[0x02] address[0xfec00000] gsi_base[0])
[0.000000] IOAPIC[0]: apic_id 2, version 32, address 0xfec00000, GSI 0-23
[0.000000] ACPI: INT_SRC_OVR (bus 0 bus_irq 0 global_irq 2 dfl dfl)
[0.000000] ACPI: INT_SRC_OVR (bus 0 bus_irq 9 global_irq 9 high level)
[0.000000] Using ACPI (MADT) for SMP configuration information

[0.000000] ACPI: HPET id: 0x8086a201 base: 0xfed00000
[0.000000] smpboot: Allowing 2 CPUs, 0 hotplug CPUs
[0.000000] e820: [mem 0x7f800000-0xdfffffff] available for PCI devices
[0.000000] Booting paravirtualized kernel on bare hardware
[0.000000] setup_percpu: NR_CPUS:256 nr_cpumask_bits:256 nr_cpu_ids:2 nr_node_ids:1
[0.000000] PERCPU: Embedded 27 pages/cpu @ffff88007e600000 s81664 r8192 d20736 u1048576
[0.000000] Built 1 zonelists in Node order, mobility grouping on. Total pages: 511242
[0.000000] Policy zone: DMA32
[0.000000] Kernel command line: BOOT_IMAGE=/boot/os10.linux console=ttyS0,115200 root=/dev/sda7 rw
[0.000000] PID hash table entries: 4096 (order: 3, 32768 bytes)
[0.000000] Memory: 2002984K/2077692K available (11903K kernel code, 1527K rwdma, 5408K rodata, 1552K init, 1376K bss, 74708K reserved)
[0.000000] SLUB: HWalign=64, Order=0-3, MinObjects=0, CPUs=2, Nodes=1
[0.000000] Hierarchical RCU implementation.
[0.000000] RCU dyntick-idle grace-period acceleration is enabled.
[0.000000] RCU restricting CPUs from NR_CPUS=256 to nr_cpu_ids=2.
[0.000000] Offload RCU callbacks from all CPUs
[0.000000] Offload RCU callbacks from CPUs: 0-1.
[0.000000] RCU: Adjusting geometry for rcu_fanout_leaf=16, nr_cpu_ids=2
[0.000000] NR_IRQS:16640 nr_irqs:512 16
[0.000000] Console: colour dummy device 80x25
[0.000000] console [ttyS0] enabled
[0.000000] allocated 8388608 bytes of page_cgroup
[0.000000] please try 'cgroup_disable=memory' option if you don't want memory cgroups
[0.000000] tsc: Fast TSC calibration using PIT
[0.000000] tsc: Detected 1750.071 MHz processor
[0.000043] Calibrating delay loop (skipped), value calculated using timer frequency.. 3500.14 BogoMIPS (lpj=7000284)
[0.011915] pid_max: default: 32768 minimum: 301
[0.017094] ACPI: Core revision 20140424
[0.026185] ACPI: All ACPI Tables successfully acquired
[0.032083] Security Framework initialized
[0.036689] AppArmor: AppArmor initialized
[0.041273] Yama: disabled by default; enable with sysctl kernel.yama.*
[0.049001] Dentry cache hash table entries: 262144 (order: 9, 2097152 bytes)
[0.058050] Inode-cache hash table entries: 131072 (order: 8, 1048576 bytes)
[0.066444] Mount-cache hash table entries: 4096 (order: 3, 32768 bytes)
[0.073969] Mountpoint-cache hash table entries: 4096 (order: 3, 32768 bytes)
[0.082360] Initializing cgroup subsys memory
[0.087302] Initializing cgroup subsys devices
[0.092289] Initializing cgroup subsys freezer
[0.097266] Initializing cgroup subsys net_cls
[0.102246] Initializing cgroup subsys blkio
[0.107032] Initializing cgroup subsys perf_event
[0.112298] Initializing cgroup subsys hugetlb
[0.117305] CPU: Physical Processor ID: 0
[0.121793] CPU: Processor Core ID: 0
[0.130452] mce: CPU supports 6 MCE banks
[0.134945] CPU0: Thermal monitoring enabled (TM1)
[0.140306] process: using mwait in idle threads
[0.145475] Last level iTLB entries: 4KB 48, 2MB 0, 4MB 0
[0.145475] Last level dTLB entries: 4KB 128, 2MB 16, 4MB 16, 1GB 0
[0.145475] tlb_flushall_shift: 6
[0.162393] Freeing SMP alternatives memory: 44K (ffffff82503000 - fffffff8250e000)
[0.173470] ftrace: allocating 42621 entries in 167 pages
[0.207852] ..TIMER: vector=0x30 apic1=0 pin1=2 apic2=-1 pin2=-1
[0.254249] smpboot: CPU0: Intel(R) Atom(TM) CPU C2338 @ 1.74GHz (fam: 06, model: 4d, stepping: 08)
[0.264625] Performance Events: PEBS fmt2+, 8-deep LBR, Silvermont events, full-width counters, Intel PMU driver.
[0.276138] ... version: 3
[0.280616] ... bit width: 40
[0.285190] ... generic registers: 2

[0.289666] ... value mask: 000000ffffffff
[0.295600] ... max period: 000000ffffffff
[0.301533] ... fixed-purpose events: 3
[0.306009] ... event mask: 000000700000003
[0.316007] x86: Booting SMP configuration:
[0.320687] node #0, CPUs: #1
[0.342536] x86: Booted up 1 node, 2 CPUs
[0.347221] smpboot: Total of 2 processors activated (7000.28 BogoMIPS)
[0.354702] NMI watchdog: enabled on all CPUs, permanently consumes one hw-PMU counter.
[0.364247] devtmpfs: initialized
[0.368327] evm: security.selinux
[0.372035] evm: security.SMACK64
[0.375731] evm: security.SMACK64EXEC
[0.379821] evm: security.SMACK64TRANSMUTE
[0.384395] evm: security.SMACK64MMAP
[0.388484] evm: security.ima
[0.391793] evm: security.capability
[0.395921] PM: Registering ACPI NVS region [mem 0x7ebd4000-0x7f43efff] (8826880 bytes)
[0.407324] xor: measuring software checksum speed
[0.451710] prefetch64-sse: 5991.000 MB/sec
[0.495725] generic_sse: 5368.000 MB/sec
[0.500495] xor: using function: prefetch64-sse (5991.000 MB/sec)
[0.507311] pinctrl core: initialized pinctrl subsystem
[0.513336] regulator-dummy: no parameters
[0.517964] RTC time: 21:54:14, date: 07/20/16
[0.523027] NET: Registered protocol family 16
[0.528380] cpuidle: using governor ladder
[0.532962] cpuidle: using governor menu
[0.537447] ACPI: bus type PCI registered
[0.541930] acpihp: ACPI Hot Plug PCI Controller Driver version: 0.5
[0.549244] dca service started, version 1.12.1
[0.554342] PCI: MMCONFIG for domain 0000 [bus 00-ff] at [mem 0xe0000000-0xffffffff] (base 0xe0000000)
[0.564747] PCI: MMCONFIG at [mem 0xe0000000-0xffffffff] reserved in E820
[0.572334] PCI: MMCONFIG for 0000 [bus00-3f] at [mem 0xe0000000-0xe3ffffff] (base 0xe0000000) (size reduced!)
[0.583732] PCI: Using configuration type 1 for base access
[0.667853] raid6: sse2x1 717 MB/s
[0.740152] raid6: sse2x2 734 MB/s
[0.812376] raid6: sse2x4 1139 MB/s
[0.816564] raid6: using algorithm sse2x4 (1139 MB/s)
[0.822207] raid6: using ssse3x2 recovery algorithm
[0.827768] ACPI: Added _OSI(Module Device)
[0.832444] ACPI: Added _OSI(Processor Device)
[0.837407] ACPI: Added _OSI(3.0 _SCP Extensions)
[0.842662] ACPI: Added _OSI(Processor Aggregator Device)
[0.853407] ACPI: Dynamic OEM Table Load:
[0.857907] ACPI: SSDT 0xFFFF88007B25A400 0001FA (v01 PmRef Cpu0Cst 00003001 INTL 20061109)
[0.871810] ACPI: Dynamic OEM Table Load:
[0.876309] ACPI: SSDT 0xFFFF88007B25A600 000119 (v01 PmRef ApCst 00003000 INTL 20061109)
[0.889917] ACPI: Interpreter enabled
[0.894019] ACPI Exception: AE_NOT_FOUND, While evaluating Sleep State [_S1_] (20140424/hwxface-580)
[0.904335] ACPI Exception: AE_NOT_FOUND, While evaluating Sleep State [_S2_] (20140424/hwxface-580)
[0.914657] ACPI Exception: AE_NOT_FOUND, While evaluating Sleep State [_S3_] (20140424/hwxface-580)
[0.924987] ACPI: (supports S0 S5)
[0.928782] ACPI: Using IOAPIC for interrupt routing
[0.934472] HEST: Table parsing has been initialized.
[0.940122] PCI: Using host bridge windows from ACPI; if necessary, use "pci=nocrs" and report a bug
[0.953810] [Firmware Bug]: ACPI: BIOS _OSI(Linux) query ignored
[0.964032] ACPI: PCI Root Bridge [PCI0] (domain 0000 [bus 00-ff])
[0.970950] acpi PNP0A08:00: _OSC: OS supports [ExtendedConfig ASPM ClockPM Segments MSI]
[0.980723] acpi PNP0A08:00: _OSC: OS now controls [PCIeHotplug PME AER PCIeCapability]

[0.990040] acpi PNP0A08:00: [Firmware Info]: MMCONFIG for domain 0000 [bus 00-3f] only partially covers this bridge
[1.002114] PCI host bridge to bus 0000:00
[1.006696] pci_bus 0000:00: root bus resource [bus 00-ff]
[1.012828] pci_bus 0000:00: root bus resource [io 0x0000-0x0cf7]
[1.019735] pci_bus 0000:00: root bus resource [io 0x0d00-0xffff]
[1.026643] pci_bus 0000:00: root bus resource [mem 0x000a0000-0x000bffff]
[1.034327] pci_bus 0000:00: root bus resource [mem 0x80000000-0xdfffffff]
[1.042011] pci_bus 0000:00: root bus resource [mem 0x100000000-0xffffffff]
[1.050244] pci 0000:00:01.0: System wakeup disabled by ACPI
[1.056830] pci 0000:00:02.0: System wakeup disabled by ACPI
[1.063412] pci 0000:00:03.0: System wakeup disabled by ACPI
[1.070000] pci 0000:00:04.0: System wakeup disabled by ACPI
[1.078529] pci 0000:00:16.0: System wakeup disabled by ACPI
[1.092887] pci 0000:00:01.0: PCI bridge to [bus 01]
[1.098551] pci 0000:00:02.0: PCI bridge to [bus 02]
[1.104210] pci 0000:00:03.0: PCI bridge to [bus 03]
[1.109865] pci 0000:00:04.0: PCI bridge to [bus 04]
[1.115663] ACPI: PCI Interrupt Link [LNKA] (IRQs 6 7 10 *11 12 15)
[1.122852] ACPI: PCI Interrupt Link [LNKB] (IRQs 6 7 10 11 12 15) *0, disabled.
[1.131308] ACPI: PCI Interrupt Link [LNKC] (IRQs 6 7 10 11 12 *15)
[1.138489] ACPI: PCI Interrupt Link [LNKD] (IRQs 6 7 *10 11 12 15)
[1.145670] ACPI: PCI Interrupt Link [LNKE] (IRQs 6 7 *10 11 12 15)
[1.152852] ACPI: PCI Interrupt Link [LNKF] (IRQs 6 7 10 11 12 *15)
[1.160032] ACPI: PCI Interrupt Link [LNKG] (IRQs 6 *7 10 11 12 15)
[1.167214] ACPI: PCI Interrupt Link [LNKH] (IRQs 6 7 10 *11 12 15)
[1.174814] ACPI: Enabled 1 GPEs in block 00 to 1F
[1.180427] vgaarb: loaded
[1.183697] SCSI subsystem initialized
[1.188032] ACPI: bus type USB registered
[1.192559] usbcore: registered new interface driver usbfs
[1.198719] usbcore: registered new interface driver hub
[1.204718] usbcore: registered new device driver usb
[1.210435] pps_core: LinuxPPS API ver. 1 registered
[1.215974] pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giometti <giometti@linux.it>
[1.226195] PTP clock support registered
[1.230774] PCI: Using ACPI for IRQ routing
[1.236711] pci 0000:00:16.0: can't claim BAR 0 [mem 0xfd000000-0xfd0003ff]: no compatible bridge window
[1.247578] NetLabel: Initializing
[1.251371] NetLabel: domain hash size = 128
[1.256236] NetLabel: protocols = UNLABELED CIPSOv4
[1.261803] NetLabel: unlabeled traffic allowed by default
[1.268174] Switched to clocksource hpet
[1.288471] FS-Cache: Loaded
[1.291784] CacheFiles: Loaded
[1.295276] AppArmor: AppArmor Filesystem Enabled
[1.300592] pnp: PnP ACPI init
[1.304022] ACPI: bus type PNP registered
[1.308982] system 00:00: [mem 0xe0000000-0xefffffff] could not be reserved
[1.316772] system 00:00: [mem 0x7f800000-0x7fffffff] could not be reserved
[1.324683] system 00:01: [io 0x0680-0x069f] has been reserved
[1.331313] system 00:01: [io 0x0400-0x047f] could not be reserved
[1.338325] system 00:01: [io 0x0500-0x05fe] has been reserved
[1.344947] system 00:01: [mem 0xfed00000-0xfedfffff] could not be reserved
[1.352735] system 00:01: [mem 0x000c0000-0x000dffff] has been reserved
[1.360134] system 00:01: [mem 0x000e0000-0x000fffff] could not be reserved
[1.367922] system 00:01: [mem 0xffa00000-0xffffffff] has been reserved
[1.375320] system 00:01: [mem 0xfe000000-0xfeffffff] has been reserved
[1.383244] pnp: PnP ACPI: found 5 devices
[1.387828] ACPI: bus type PNP unregistered
[1.402364] pci 0000:00:16.0: BAR 0: assigned [mem 0x80000000-0x800003ff]

[1.409965] pci 0000:00:01.0: PCI bridge to [bus 01]
[1.415523] pci 0000:00:01.0: bridge window [mem 0xdfd00000-0xdfdfffff]
[1.423125] pci 0000:00:02.0: PCI bridge to [bus 02]
[1.428691] pci 0000:00:03.0: PCI bridge to [bus 03]
[1.434256] pci 0000:00:04.0: PCI bridge to [bus 04]
[1.439896] NET: Registered protocol family 2
[1.445143] TCP established hash table entries: 16384 (order: 5, 131072 bytes)
[1.453309] TCP bind hash table entries: 16384 (order: 6, 262144 bytes)
[1.460797] TCP: Hash tables configured (established 16384 bind 16384)
[1.468155] TCP: reno registered
[1.471766] UDP hash table entries: 1024 (order: 3, 32768 bytes)
[1.478507] UDP-Lite hash table entries: 1024 (order: 3, 32768 bytes)
[1.485818] NET: Registered protocol family 1
[1.490901] RPC: Registered named UNIX socket transport module.
[1.497530] RPC: Registered udp transport module.
[1.502792] RPC: Registered tcp transport module.
[1.508053] RPC: Registered tcp NFSv4.1 backchannel transport module.
[1.528535] Trying to unpack rootfs image as initramfs...
[2.084961] Freeing initrd memory: 18544K (ffff880035bb8000 - ffff880036dd4000)
[2.093662] kvm: already loaded the other module
[2.099078] microcode: CPU0 sig=0x406d8, pf=0x1, revision=0x125
[2.105712] microcode: CPU1 sig=0x406d8, pf=0x1, revision=0x125
[2.112410] microcode: Microcode Update Driver: v2.00 <tigran@aivazian.fsnet.co.uk>, Peter Oruba
[2.122614] Scanning for low memory corruption every 60 seconds
[2.129837] futex hash table entries: 512 (order: 3, 32768 bytes)
[2.136695] Initialise system trusted keyring
[2.141630] audit: initializing netlink subsys (disabled)
[2.147701] audit: type=2000 audit(1469051654.904:1): initialized
[2.155343] HugeTLB registered 2 MB page size, pre-allocated 0 pages
[2.166839] VFS: Disk quotas dquot_6.5.2
[2.171334] Dquot-cache hash table entries: 512 (order 0, 4096 bytes)
[2.178914] DLM installed
[2.182678] squashfs: version 4.0 (2009/01/31) Phillip Lougher
[2.189863] FS-Cache: Netfs 'nfs' registered for caching
[2.196120] NFS: Registering the id_resolver key type
[2.201788] Key type id_resolver registered
[2.206466] Key type id_legacy registered
[2.210957] nfs4filelayout_init: NFSv4 File Layout Driver Registering...
[2.218455] NFS: objlayout_init: Registered OSD pNFS Layout Driver
[2.225368] Installing knfsd (copyright (C) 1996 okir@monad.swb.de).
[2.232687] ntfs: driver 2.1.30 [Flags: R/O].
[2.237781] fuse init (API version 7.23)
[2.242690] NILFS version 2 loaded
[2.246516] msgmni has been set to 3948
[2.250930] Key type big_key registered
[2.256927] NET: Registered protocol family 38
[2.261929] async_tx: api initialized (async)
[2.266829] Key type asymmetric registered
[2.271432] Asymmetric key parser 'x509' registered
[2.276954] bounce: pool size: 64 pages
[2.281360] Block layer SCSI generic (bsg) driver version 0.4 loaded (major 249)
[2.289734] io scheduler noop registered
[2.294129] io scheduler deadline registered (default)
[2.300009] io scheduler cfq registered
[2.305308] pcieport 0000:00:04.0: can't derive routing for PCI INT A
[2.312514] pcieport 0000:00:04.0: PCI INT A: no GSI
[2.318447] pcieport 0000:00:01.0: Signaling PME through PCIe PME interrupt
[2.326235] pci 0000:01:00.0: Signaling PME through PCIe PME interrupt
[2.333561] pcieport 0000:00:02.0: Signaling PME through PCIe PME interrupt
[2.341372] pcieport 0000:00:03.0: Signaling PME through PCIe PME interrupt

[2.349188] pcieport 0000:00:04.0: Signaling PME through PCIe PME interrupt
[2.357019] pci_hotplug: PCI Hot Plug PCI Core version: 0.5
[2.363293] pciehp: PCI Express Hot Plug Controller Driver version: 0.4
[2.370968] input: Power Button as /devices/LNXSYSTM:00/LNXPWRBN:00/input/input0
[2.379245] ACPI: Power Button [PWRF]
[2.383773] ERST: Error Record Serialization Table (ERST) support is initialized.
[2.392157] pstore: Registered erst as persistent store backend
[2.399447] GHES: APEI firmware first mode is enabled by APEI bit and WHEA _OSC.
[2.407750] ioatdma: Intel(R) QuickData Technology Driver 4.00
[2.414439] xenfs: not registering filesystem on non-xen platform
[2.421497] Serial: 8250/16550 driver, 32 ports, IRQ sharing enabled
[2.448791] 00:03: ttyS0 at I/O 0x3f8 (irq = 4, base_baud = 115200) is a 16550A
[2.477229] 00:04: ttyS1 at I/O 0x2f8 (irq = 3, base_baud = 115200) is a 16550A
[2.489627] Non-volatile memory driver v1.3
[2.494368] Linux agpgart interface v0.103
[2.502550] brd: module loaded
[2.507803] loop: module loaded
[2.511797] nullb0: unknown partition table
[2.516965] nullb1: unknown partition table
[2.521865] null: module loaded
[2.525637] zram: Created 1 device(s) ...
[2.530118] dummy-irq: no IRQ given. Use irq=N
[2.535216] Silicon Labs C2 port support v. 0.51.0 - (C) 2007 Rodolfo Giometti
[2.543433] Guest personality initialized and is inactive
[2.549566] VMCI host device registered (name=vmci, major=10, minor=56)
[2.556965] Initialized host personality
[2.561421] mic_init not running on X100 ret -19
[2.566828] gpio_ich: GPIO from 196 to 255 on gpio_ich
[2.572871] Loading iSCSI transport class v2.0-870.
[2.578591] Loading Adaptec I2O RAID: Version 2.4 Build 5go
[2.584825] Detecting Adaptec I2O RAID controllers...
[2.590531] qla2xxx [0000:00:00.0]-0005: : QLogic Fibre Channel HBA Driver: 8.07.00.08-k.
[2.599709] mpt2sas version 16.100.00.00 loaded
[2.604907] mpt3sas version 02.100.00.00 loaded
[2.610168] esas2r: driver will not be loaded because no ATTO esas2r devices were found
[2.619167] VMware PVSCSI driver - version 1.0.5.0-k
[2.624852] osd: LOADED open-osd 0.2.1
[2.643885] ahci 0000:00:17.0: AHCI 0001.0300 32 slots 4 ports 3 Gbps 0xf impl SATA mode
[2.652938] ahci 0000:00:17.0: flags: 64bit ncq led clo pio deso sadm sds apst
[2.662281] scsi0 : ahci
[2.665417] scsi1 : ahci
[2.668510] scsi2 : ahci
[2.671599] scsi3 : ahci
[2.674541] ata1: SATA max UDMA/133 abar m2048@0xdff12000 port 0xdff12100 irq 44
[2.682814] ata2: SATA max UDMA/133 abar m2048@0xdff12000 port 0xdff12180 irq 44
[2.691085] ata3: SATA max UDMA/133 abar m2048@0xdff12000 port 0xdff12200 irq 44
[2.699355] ata4: SATA max UDMA/133 abar m2048@0xdff12000 port 0xdff12280 irq 44
[2.723852] ahci 0000:00:18.0: AHCI 0001.0300 32 slots 2 ports 6 Gbps 0x3 impl SATA mode
[2.732905] ahci 0000:00:18.0: flags: 64bit ncq led clo pio deso sadm sds apst
[2.741794] scsi4 : ahci
[2.744903] scsi5 : ahci
[2.747852] ata5: SATA max UDMA/133 abar m2048@0xdff11000 port 0xdff11100 irq 45
[2.756126] ata6: SATA max UDMA/133 abar m2048@0xdff11000 port 0xdff11180 irq 45
[2.764747] SSFDC read-only Flash Translation layer
[2.770275] mtdoops: mtd device (mtddev=name/number) must be supplied
[2.777642] bonding: Ethernet Channel Bonding Driver: v3.7.1 (April 27, 2011)
[2.787142] libphy: Fixed MDIO Bus: probed
[2.792010] tun: Universal TUN/TAP device driver, 1.6
[2.797662] tun: (C) 1999-2004 Max Krasnyansky <maxk@qualcomm.com>
[2.804770] e100: Intel(R) PRO/100 Network Driver, 3.5.24-k2-NAPI

[2.811587] e100: Copyright(c) 1999-2006 Intel Corporation
[2.817756] e1000: Intel(R) PRO/1000 Network Driver - version 7.3.21-k8-NAPI
[2.825638] e1000: Copyright (c) 1999-2006 Intel Corporation.
[2.832095] e1000e: Intel(R) PRO/1000 Network Driver - 2.3.2-k
[2.838615] e1000e: Copyright(c) 1999 - 2014 Intel Corporation.
[2.845273] jme: JMicron JMC2XX ethernet driver version 1.0.8
[2.851729] VMware vmxnet3 virtual NIC driver - version 1.2.0.0-k-NAPI
[2.859066] Fusion MPT base driver 3.04.20
[2.863646] Copyright (c) 1999-2008 LSI Corporation
[2.869116] Fusion MPT SPI Host driver 3.04.20
[2.874119] Fusion MPT FC Host driver 3.04.20
[2.879037] Fusion MPT SAS Host driver 3.04.20
[2.884275] VFIO - User Level meta-driver version: 0.3
[2.892225] ehci_hcd: USB 2.0 'Enhanced' Host Controller (EHCI) Driver
[2.899559] ehci-pci: EHCI PCI platform driver
[2.904723] ehci-pci 0000:00:16.0: EHCI Host Controller
[2.910593] ehci-pci 0000:00:16.0: new USB bus registered, assigned bus number 1
[2.918896] ehci-pci 0000:00:16.0: debug port 2
[2.927940] ehci-pci 0000:00:16.0: irq 23, io mem 0x80000000
[2.943812] ehci-pci 0000:00:16.0: USB 2.0 started, EHCI 1.00
[2.950360] usb usb1: New USB device found, idVendor=1d6b, idProduct=0002
[2.957958] usb usb1: New USB device strings: Mfr=3, Product=2, SerialNumber=1
[2.966037] usb usb1: Product: EHCI Host Controller
[2.971492] usb usb1: Manufacturer: Linux 3.16.7-ckt20 ehci_hcd
[2.978111] usb usb1: SerialNumber: 0000:00:16.0
[2.983555] hub 1-0:1.0: USB hub found
[2.987791] hub 1-0:1.0: 8 ports detected
[2.992711] ehci-platform: EHCI generic platform driver
[2.998603] ohci_hcd: USB 1.1 'Open' Host Controller (OHCI) Driver
[3.005535] ohci-pci: OHCI PCI platform driver
[3.010539] ohci-platform: OHCI generic platform driver
[3.016405] uhci_hcd: USB Universal Host Controller Interface driver
[3.023643] usbcore: registered new interface driver usb-storage
[3.023801] ata1: SATA link down (SStatus 0 SControl 300)
[3.027805] ata3: SATA link down (SStatus 0 SControl 300)
[3.027838] ata2: SATA link down (SStatus 0 SControl 300)
[3.048458] usbcore: registered new interface driver ums-alauda
[3.051807] ata4: SATA link down (SStatus 0 SControl 300)
[3.061137] usbcore: registered new interface driver ums-datafab
[3.067876] usbcore: registered new interface driver ums_eneub6250
[3.074805] usbcore: registered new interface driver ums-freecom
[3.081541] usbcore: registered new interface driver ums-isd200
[3.088181] usbcore: registered new interface driver ums-jumpshot
[3.095023] usbcore: registered new interface driver ums-sddr09
[3.101654] tsc: Refined TSC clocksource calibration: 1749.999 MHz
[3.103788] ata5: SATA link up 6.0 Gbps (SStatus 133 SControl 300)
[3.103813] ata6: SATA link down (SStatus 0 SControl 300)
[3.107819] usbcore: registered new interface driver ums-sddr55
[3.107844] usbcore: registered new interface driver ums-usbat
[3.107909] usbcore: registered new interface driver usbserial
[3.107925] usbcore: registered new interface driver usbserial_generic
[3.107939] usbserial: USB Serial support registered for generic
[3.107997] i8042: PNP: No PS/2 controller found. Probing ports directly.
[3.182711] ata5.00: ATA-8: InnoDisk Corp. - mSATA 3ME, S130710, max UDMA/133
[3.190695] ata5.00: 15649200 sectors, multi 16: LBA48 NCQ (depth 31/32), AA
[3.198785] ata5.00: configured for UDMA/133
[3.203822] scsi 4:0:0:0: Direct-Access ATA InnoDisk Corp. - 710 PQ: 0 ANSI: 5
[3.213266] sd 4:0:0:0: [sda] 15649200 512-byte logical blocks: (8.01 GB/7.46 GiB)
[3.213305] sd 4:0:0:0: Attached scsi generic sg0 type 0
[3.227818] sd 4:0:0:0: [sda] Write Protect is off

[3.233244] sd 4:0:0:0: [sda] Write cache: enabled, read cache: enabled, doesn't support DPO or FUA
[3.245406] sda: sda1 sda2 sda3 sda4 sda5 sda6 sda7 sda8
[3.252757] sd 4:0:0:0: [sda] Attached SCSI disk
[3.303733] usb 1-1: new high-speed USB device number 2 using ehci-pci
[3.365116] serio: i8042 KBD port at 0x60,0x64 irq 1
[3.371524] mousedev: PS/2 mouse device common for all mice
[3.391729] usbcore: registered new interface driver synaptics_usb
[3.400765] input: AT Translated Set 2 keyboard as /devices/platform/i8042/serio0/input/input1
[3.400818] rtc_cmos 00:02: RTC can wake from S4
[3.401008] rtc_cmos 00:02: rtc core: registered rtc_cmos as rtc0
[3.401049] rtc_cmos 00:02: alarms up to one month, 242 bytes nvram, hpet irqs
[3.401067] i2c /dev entries driver
[3.401268] i801_smbus 0000:00:1f.3: SMBus using PCI Interrupt
[3.401882] usbcore: registered new interface driver i2c-diolan-u2c
[3.401905] usbcore: registered new interface driver i2c-tiny-usb
[3.401908] Driver for 1-wire Dallas network protocol.
[3.460363] hpet1: lost 2 rtc interrupts
[3.465152] softdog: Software Watchdog Timer: 0.08 initialized. soft_noboot=0 soft_margin=60 sec soft_panic=0 (nowayout=0)
[3.477571] sdhci: Secure Digital Host Controller Interface driver
[3.484488] sdhci: Copyright(c) Pierre Ossman
[3.489443] VUB300 Driver rom wait states = 1C irqpoll timeout = 0400
[3.496682] usbcore: registered new interface driver vub300
[3.496711] usb 1-1: New USB device found, idVendor=8087, idProduct=07db
[3.496714] usb 1-1: New USB device strings: Mfr=0, Product=0, SerialNumber=0
[3.518592] usbcore: registered new interface driver ushc
[3.518667] hub 1-1:1.0: USB hub found
[3.518825] hub 1-1:1.0: 4 ports detected
[3.533302] sdhci-pltfm: SDHCI platform and OF driver helper
[3.540838] dcdbas dcdbas: Dell Systems Management Base Driver (version 5.6.0-3.2)
[3.549359] hidraw: raw HID events driver (C) Jiri Kosina
[3.555486] usbcore: registered new interface driver usbhid
[3.561724] usbhid: USB HID core driver
[3.566226] fake-fmc-carrier: mezzanine 0
[3.570811] Manufacturer: fake-vendor
[3.575488] Product name: fake-design-for-testing
[3.581376] fmc fake-design-for-testing-f001: Driver has no ID: matches all
[3.589174] fmc_trivial: probe of fake-design-for-testing-f001 failed with error -95
[3.597857] fmc fake-design-for-testing-f001: Driver has no ID: matches all
[3.605644] fmc_write_eeprom fake-design-for-testing-f001: fmc_write_eeprom: no busid passed, refusing all cards
[3.617047] fmc fake-design-for-testing-f001: Driver has no ID: matches all
[3.624956] fmc_chardev fake-design-for-testing-f001: Created misc device "fake-design-for-testing-f001"
[3.635673] intel_rapl: driver does not support CPU family 6 model 77
[3.642939] NET: Registered protocol family 26
[3.647945] netem: version 1.3
[3.651392] u32 classifier
[3.654507] ipip: IPv4 over IPv4 tunneling driver
[3.659989] gre: GRE over IPv4 demultiplexor driver
[3.665450] ip_gre: GRE over IPv4 tunneling driver
[3.671170] IPv4 over IPSec tunneling driver
[3.676143] TCP: cubic registered
[3.679883] Initializing XFRM netlink socket
[3.684924] NET: Registered protocol family 10
[3.690482] NET: Registered protocol family 17
[3.695472] NET: Registered protocol family 15
[3.700736] Bridge firewalling registered
[3.705268] l2tp_core: L2TP core driver, V2.0
[3.710146] 8021q: 802.1Q VLAN Support v1.8
[3.715716] sctp: Hash tables configured (established 65536 bind 65536)
[3.723423] Key type dns_resolver registered
[3.728219] openvswitch: Open vSwitch switching datapath

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[ 3.734251] mpls_gso: MPLS GSO support
[ 3.739231] Loading compiled-in X.509 certificates
[ 3.746755] Loaded X.509 cert 'Magrathea: Glacier signing key: 5d5a03e849b85bda1fcaa32ec1b568a23f29e8e1'
[ 3.757395] registered taskstats version 1
[ 3.766052] Key type trusted registered
[ 3.778090] Key type encrypted registered
[ 3.782619] AppArmor: AppArmor sha1 policy hashing enabled
[ 3.788775] ima: No TPM chip found, activating TPM-bypass!
[ 3.794957] evm: HMAC attrs: 0x1
[ 3.799081] Magic number: 8:628:955
[ 3.803500] console [netcon0] enabled
[ 3.807604] netconsole: network logging started
[ 3.812801] rtc_cmos 00:02: setting system clock to 2016-07-20 21:54:18 UTC (1469051658)
[ 3.822023] BIOS EDD facility v0.16 2004-Jun-25, 0 devices found
[ 3.828744] EDD information not available.
[ 3.836258] Freeing unused kernel memory: 1552K (ffff8237f000 - fffff82503000)
[ 3.845038] Write protecting the kernel read-only data: 18432k
[ 3.852235] Freeing unused kernel memory: 372K (ffff880001ba3000 - ffff880001c00000)
[ 3.865267] Freeing unused kernel memory: 736K (ffff880002148000 - ffff880002200000)
Loading, please wait...
[ 3.897341] systemd-udevd[147]: starting version 204
Begin: Loading essential drivers ... done.
Begin: Running /scripts/init-premount ... done.
Begin: Mounting root file system ... Begin: Running /scripts/local-top ... done.
Begin: Running /scripts/local-premount ... [ 4.179664] Switched to clocksource tsc
done.
[ 9.062379] EXT4-fs (sda7): mounted filesystem with ordered data mode. Opts: (null)
Begin: Running /scripts/local-bottom ... done.
done.
Begin: Running /scripts/init-bottom ... done.
[ 9.192360] random: systemd urandom read with 52 bits of entropy available
[ 9.202397] systemd[1]: systemd 215 running in system mode. (+PAM +AUDIT +SELINUX +IMA +SYSVINIT +LIBCRYPTSETUP +GCRYPT
+ACL +XZ -SECCOMP -APPARMOR)
[ 9.217618] systemd[1]: Detected architecture 'x86-64'.

Welcome to Debian GNU/Linux 8 (jessie)!

[ 9.234694] systemd[1]: Set hostname to <OS10>.
[ 9.241156] systemd[1]: Hardware watchdog 'Software Watchdog', version 0
[ 9.248673] systemd[1]: Set hardware watchdog to 30s.
[ 9.337446] systemd[1]: Cannot add dependency job for unit display-manager.service, ignoring: Unit display-manager.service failed to load: No
such file or directory.
[ 9.354808] systemd[1]: Starting Forward Password Requests to Wall Directory Watch.
[ 9.363545] systemd[1]: Started Forward Password Requests to Wall Directory Watch.
[ 9.372048] systemd[1]: Expecting device dev-ttyS0.device...
Expecting device dev-ttyS0.device...
[ 9.390296] systemd[1]: Starting Remote File Systems (Pre).
[ OK ] Reached target Remote File Systems (Pre).
[ 9.406277] systemd[1]: Reached target Remote File Systems (Pre).
[ 9.413147] systemd[1]: Starting Dispatch Password Requests to Console Directory Watch.
[ 9.422219] systemd[1]: Started Dispatch Password Requests to Console Directory Watch.
[ 9.431101] systemd[1]: Starting Paths.
[ OK ] Reached target Paths.
[ 9.446268] systemd[1]: Reached target Paths.
[ 9.451196] systemd[1]: Set up automount Arbitrary Executable File Formats File System Automount Point.
[ 9.461733] systemd[1]: Starting Encrypted Volumes.
[ OK ] Reached target Encrypted Volumes.
[ 9.478260] systemd[1]: Reached target Encrypted Volumes.
[ 9.484332] systemd[1]: Starting Swap.
[ OK ] Reached target Swap.
[ 9.498255] systemd[1]: Reached target Swap.
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[9.503062] systemd[1]: Expecting device dev-disk-by\x2dpartlabel-OS10\x2dBOOT.device...
Expecting device dev-disk-by\x2dpartlabel-OS10\x2dBOOT.device...
[9.526253] systemd[1]: Expecting device dev-disk-by\x2dpartlabel-ONIE\x2dBOOT.device...
Expecting device dev-disk-by\x2dpartlabel-ONIE\x2dBOOT.device...
[9.546246] systemd[1]: Expecting device dev-disk-by\x2dpartlabel-OS10\x2dCONFIG.device...
Expecting device dev-disk-by\x2dpartlabel-OS10\x2dCONFIG.device...
[9.570248] systemd[1]: Starting Root Slice.
[OK] Created slice Root Slice.
[9.586233] systemd[1]: Created slice Root Slice.
[9.591526] systemd[1]: Starting User and Session Slice.
[OK] Created slice User and Session Slice.
[9.610228] systemd[1]: Created slice User and Session Slice.
[9.616677] systemd[1]: Starting /dev/initctl Compatibility Named Pipe.
[OK] Listening on /dev/initctl Compatibility Named Pipe.
[9.638220] systemd[1]: Listening on /dev/initctl Compatibility Named Pipe.
[9.646036] systemd[1]: Starting Delayed Shutdown Socket.
[OK] Listening on Delayed Shutdown Socket.
[9.662211] systemd[1]: Listening on Delayed Shutdown Socket.
[9.668669] systemd[1]: Starting Journal Socket (/dev/log).
[OK] Listening on Journal Socket (/dev/log).
[9.686223] systemd[1]: Listening on Journal Socket (/dev/log).
[9.692885] systemd[1]: Starting udev Kernel Socket.
[OK] Listening on udev Kernel Socket.
[9.710212] systemd[1]: Listening on udev Kernel Socket.
[9.716181] systemd[1]: Starting udev Control Socket.
[OK] Listening on udev Control Socket.
[9.734204] systemd[1]: Listening on udev Control Socket.
[9.740290] systemd[1]: Starting Journal Socket.
[OK] Listening on Journal Socket.
[9.754196] systemd[1]: Listening on Journal Socket.
[9.759815] systemd[1]: Starting System Slice.
[OK] Created slice System Slice.
[9.774194] systemd[1]: Created slice System Slice.
[9.779689] systemd[1]: Starting system-getty.slice.
[OK] Created slice system-getty.slice.
[9.794190] systemd[1]: Created slice system-getty.slice.
[9.800260] systemd[1]: Starting system-serial\x2dgetty.slice.
[OK] Created slice system-serial\x2dgetty.slice.
[9.818177] systemd[1]: Created slice system-serial\x2dgetty.slice.
[9.825248] systemd[1]: Starting Increase datagram queue length...
Starting Increase datagram queue length...
[9.843108] systemd[1]: Mounting POSIX Message Queue File System...
Mounting POSIX Message Queue File System...
[9.863606] systemd[1]: Starting Create list of required static device nodes for the current kernel...
Starting Create list of required static device nodes...rrent kernel...
[9.887179] systemd[1]: Mounting Huge Pages File System...
Mounting Huge Pages File System...
[9.903190] systemd[1]: Mounting Debug File System...
Mounting Debug File System...
[9.922846] systemd[1]: Started Set Up Additional Binary Formats.
[9.933614] systemd[1]: Starting Load Kernel Modules...
Starting Load Kernel Modules...
[9.951139] systemd[1]: Starting udev Coldplug all Devices...
Starting udev Coldplug all Devices...
[9.967211] systemd[1]: Starting Slices.
[OK] Reached target Slices.
[9.981776] iTCO_wdt: Intel TCO WatchDog Timer Driver v1.11
[9.988120] iTCO_wdt: Found a Avoton SoC TCO device (Version=3, TCOBASE=0x0460)
[9.996467] iTCO_wdt: initialized. heartbeat=30 sec (nowayout=0)
[10.003324] systemd[1]: Reached target Slices.

[10.008366] systemd[1]: Starting Remount Root and Kernel File Systems...
Starting Remount Root and Kernel File Systems...
[10.027142] systemd[1]: Expecting device dev-disk-by\x2dpartlabel-OS10\x2dLICENSE.device...
Expecting device dev-disk-by\x2dpartlabel-OS10\x2dLICENSE.device...
[OK] Mounted Debug File System.
[10.062142] systemd[1]: Mounted Debug File System.
[OK] Mounted Huge Pages File System.
[10.078110] systemd[1]: Mounted Huge Pages File System.
[OK] Mounted POSIX Message Queue File System.
[10.094103] systemd[1]: Mounted POSIX Message Queue File System.
[OK] Started Increase datagram queue length.
[10.110135] systemd[1]: Started Increase datagram queue length.
[OK] Started Create list of required static device nodes ...current kernel.
[10.130135] systemd[1]: Started Create list of required static device nodes for the current kernel.
[OK] Started Load Kernel Modules.
[10.150117] systemd[1]: Started Load Kernel Modules.
[OK] Started Remount Root and Kernel File Systems.
[10.166143] systemd[1]: Started Remount Root and Kernel File Systems.
[OK] Started udev Coldplug all Devices.
[10.190123] systemd[1]: Started udev Coldplug all Devices.
[10.218303] systemd[1]: Starting Various fixups to make systemd work better on Debian...
Starting Various fixups to make systemd work better on Debian...
[10.243185] systemd[1]: Starting Load/Save Random Seed...
Starting Load/Save Random Seed...
[10.259098] systemd[1]: Starting Apply Kernel Variables...
Starting Apply Kernel Variables...
[10.275203] systemd[1]: Mounting Configuration File System...
Mounting Configuration File System...
Mounting FUSE Control File System...
Starting Create Static Device Nodes in /dev...
[OK] Listening on Syslog Socket.
Starting Journal Service...
[OK] Started Journal Service.
[OK] Mounted FUSE Control File System.
[OK] Mounted Configuration File System.
[OK] Started Various fixups to make systemd work better on Debian.
[OK] Started Load/Save Random Seed.
[OK] Started Apply Kernel Variables.
[OK] Started Create Static Device Nodes in /dev.
Starting udev Kernel Device Manager...
[OK] Reached target Local File Systems (Pre).
[OK] Started udev Kernel Device Manager.
Starting Copy rules generated while the root was ro...
[OK] Started Copy rules generated while the root was ro.
[OK] Found device /dev/ttyS0.
[OK] Found device InnoDisk_Corp._-_mSATA_3ME OS10-BOOT.
[OK] Found device InnoDisk_Corp._-_mSATA_3ME OS10-LICENSE.
[OK] Found device InnoDisk_Corp._-_mSATA_3ME OS10-CONFIG.
[OK] Found device InnoDisk_Corp._-_mSATA_3ME ONIE-BOOT.
Mounting /mnt/onie-boot...
Mounting /config...
Mounting /mnt/license...
Mounting /mnt/boot...
[OK] Mounted /mnt/onie-boot.
[OK] Mounted /mnt/license.
[OK] Mounted /mnt/boot.
[OK] Mounted /config.
[OK] Reached target Local File Systems.
Starting Create Volatile Files and Directories...
[OK] Reached target Remote File Systems.

Starting Trigger Flushing of Journal to Persistent Storage...
Starting LSB: ebttables ruleset management...
[OK] Started Create Volatile Files and Directories.
[OK] Started Trigger Flushing of Journal to Persistent Storage.
Starting Release Installation Initialization...
Starting The CPS service is responsible for supporti...applications...
[OK] Started The CPS service is responsible for supportin...n applications.
Starting Platform glue service...
Starting Update UTMP about System Boot/Shutdown...
[OK] Started LSB: ebttables ruleset management.
[OK] Started Release Installation Initialization.
Starting Platform Initialization Services...
[OK] Started Update UTMP about System Boot/Shutdown.
[OK] Started Platform Initialization Services.
[OK] Started Platform glue service.
Starting Dell OS10 Platform Adaptation Service....
[OK] Started Dell OS10 Platform Adaptation Service..
Starting Network Abstraction service...
[OK] Started Network Abstraction service.
Starting DN front panel object handler...
[OK] Started DN front panel object handler.
Starting DN interface creation service...
[OK] Started DN interface creation service.
[OK] Reached target Network (Pre).
Starting LSB: Raise network interfaces....
[OK] Started LSB: Raise network interfaces..
[OK] Reached target Network.
[OK] Reached target Network is Online.
[OK] Reached target System Initialization.
[OK] Listening on D-Bus System Message Bus Socket.
[OK] Reached target Sockets.
[OK] Reached target Timers.
[OK] Reached target Basic System.
Starting Watchdog Initialization Services...
Starting User space Ethernet driver...
Starting DN NAS IP Configuration Service...
[OK] Started DN NAS IP Configuration Service.
Starting This package contains Dell OS10 Environment...ture Service...
[OK] Started This package contains Dell OS10 Environmenta...rature Service.
Starting Dell Platform NAS Shell support...
[OK] Started Dell Platform NAS Shell support.
Starting Dell Base default ACL entries for Control P...ocol packets...
[OK] Started Dell Base default ACL entries for Control Pl...otocol packets.
Starting DN physical media specific config provider...
[OK] Started DN physical media specific config provider.
Starting Dell Base QoS default initialization...
Starting DN NAS Interface Configuration Service...
[OK] Started DN NAS Interface Configuration Service.
Starting DN Physical media event handler...
[OK] Started DN Physical media event handler.
Starting Network abstraction initialization...
[OK] Started Network abstraction initialization.
Starting LLDP daemon...
Starting Advanced key-value store...
Starting OpenBSD Secure Shell server...
[OK] Started OpenBSD Secure Shell server.
Starting Regular background program processing daemon...
[OK] Started Regular background program processing daemon.
Starting Puppet agent...
Starting BIND Domain Name Server...


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[ OK ] Started BIND Domain Name Server.
[ OK ] Reached target Host and Network Name Lookups.
Starting /etc/rc.local Compatibility...
Starting Login Service...
Starting LSB: start and stop the Quagga routing suite...
Starting LSB: Start NTP daemon...
Starting LSB: SNMP agents...
Starting LSB: thin initscript...
Starting D-Bus System Message Bus...
[ OK ] Started D-Bus System Message Bus.
Starting System Logging Service...
Starting Permit User Sessions...
[ OK ] Started LLDP daemon.
[ OK ] Started Watchdog Initialization Services.
[ OK ] Started User space Ethernet driver.
[ OK ] Started Advanced key-value store.
[ OK ] Started /etc/rc.local Compatibility.
[ OK ] Started LSB: Start NTP daemon.
[ OK ] Started Permit User Sessions.
[ OK ] Started System Logging Service.
[ OK ] Started Login Service.
Starting Getty on tty1...
[ OK ] Started Getty on tty1.
Starting Serial Getty on ttyS0...
[ OK ] Started Serial Getty on ttyS0.
[ OK ] Reached target Login Prompts.
[ OK ] Started LSB: start and stop the Quagga routing suite.
[ OK ] Started LSB: SNMP agents.
[ OK ] Started LSB: thin initscript.
[ OK ] Created slice system-ifup.slice.
Starting ifup for eth0...
[ OK ] Started ifup for eth0.
```

Debian GNU/Linux 8 OS10 ttyS0

Dell Networking Operating System (OS10)

Now the switch booted OS10 up, and presents us a CLI prompt. We are also forced to change the password after first login:

```
OS10 login: linuxadmin
Password:
You are required to change your password immediately (root enforced)
Changing password for linuxadmin.
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
Linux OS10 3.16.7-ckt20 #1 SMP Debian 3.16.7-ckt20-1+deb8u4 (2016-02-29) x86_64
```

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.

```
*****
-* Dell Networking Operating System (OS10) *-
*_
-* Copyright (c) 1999-2016 by Dell Inc. All Rights Reserved. *-
*_
*****
```

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```
linuxadmin@OS10:~$ ls  
linuxadmin@OS10:~$ pwd  
/home/linuxadmin
```

