

# ONIE

## Release Note V1.1

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# Context

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## Revision History

Date	Version	Author	Comment
2017/09/01	1.0	Hans	Initial copy 1. Released the v1.00 version of ONIE image
2017/11/30	1.1	Hans	1. Add the ONIE trouble shutting 2. Add the ONIE OCP path to get the source

# 1. What is ONIE

The Open Network Install Environment (ONIE) is an open source initiative that defines an open "install environment" for modern networking hardware. ONIE enables an open networking hardware ecosystem where end users have a choice among different network operating systems. You could get more information in the ONIE website <<https://github.com/opencomputeproject/onie>>

You could get ONIE source code of the Delta switch platforms on <<https://github.com/opencomputeproject/onie/tree/master/machine/delta>>

## 2. Install ONIE by USB Storage

### 2.1 Preparation

1. Prepare a USB storage
2. Burn the ISO file (**onie-recovery-x86\_64-delta\_delta\_XXXXX-r0.iso**) into USB storage, to build a bootable USB STORAGE. Used the below Linux command for building a bootable USB storage.  
  

```
dd if= onie-recovery-x86_64-delta_XXXXX-r0.iso
of=/dev/sdx bs=10M( sdx is your device node)
```
3. Connect PC to DUT device with a console cable, the setting of console port are 115200,8n1
4. Power on device, and get into BIOS boot menu. (**By hitting ESC key**).
5. Select "Boot" → "Boot Option #1" → "UEFI: USB Flash Drive 0.00"

### 2.2 Installation procedure

1. Select item ONIE :Embed ONIE
2. Wait for finished, then the device will auto reboot

### 2.3 Example

-----  
-----

.....  
Version 2.17.1245. Copyright (C) 2016 American Megatrends, Inc.  
BIOS Date: 07/29/2016 15:19:05 Ver: 0ACBZ033 Minor\_Ver:AG9032V1\_V1.02

Press <DEL> or <ESC> to enter setup.

GNU GRUB version 2.02~beta2+e4a1fe391

```
+-----+
+-----+
| ONIE: Rescue                                     |
| *ONIE: Embed 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.
```

ONIE: Embedding ONIE ...

```
Platform : x86_64-delta_ag9032v1-r0
Version : 2016.01.14-V1.0
Build Date: 2016-06-06T14:07+0800
Info: Mounting kernel filesystems... done.
sed: /proc/mtd: No such file or directory
Info: Mounting ONIE-BOOT on /mnt/onie-boot ...
/etc/rcS.d/S10networking.sh: line 186: arithmetic syntax error
Info: eth0: Checking link... scsi 6:0:0:0: Direct-Access Generic Flash
Disk 8.07 PQ: 0 ANSI: 2
sd 6:0:0:0: Attached scsi generic sg1 type 0
sd 6:0:0:0: [sdb] 8270848 512-byte logical blocks: (4.23 GB/3.94 GiB)
sd 6:0:0:0: [sdb] Write Protect is off
sd 6:0:0:0: [sdb] No Caching mode page present
sd 6:0:0:0: [sdb] Assuming drive cache: write through
sd 6:0:0:0: [sdb] No Caching mode page present
sd 6:0:0:0: [sdb] Assuming drive cache: write through
sd 6:0:0:0: [sdb] No Caching mode page present
sd 6:0:0:0: [sdb] Assuming drive cache: write through
sd 6:0:0:0: [sdb] Attached SCSI removable disk
down.
ONIE: eth0: link down. Skipping configuration.
ONIE: Failed to configure eth0 interface
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: ONIE embed mode detected. Running updater.
Starting: discover... done.
```

Please press Enter to activate this console. Info: eth0: Checking link...  
To check the install status inspect /var/log/onie.log.  
Try this: tail -f /var/log/onie.log

```
** ONIE Update Mode Enabled **
ONIE-RECOVERY:/ # down.
ONIE: eth0: link down. Skipping configuration.
ONIE: Failed to configure eth0 interface
ONIE: Starting ONIE Service Discovery
Info: Found static url: file:///lib/onie/onie-updater
ONIE: Executing installer: file:///lib/onie/onie-updater
Verifying image checksum ... OK.
Preparing image archive ... OK.
ONIE: Version : 2016.01.14-V1.0
ONIE: Architecture : x86_64
ONIE: Machine : delta_ag9032v1
```

```
ONIE: Machine Rev   : 0
ONIE: Config Version: 1
Installing ONIE on: /dev/sda Rebooting...
discover: ONIE embed mode detected.
Stopping: discover...start-stop-daemon: warning: killing process 735: No
such process
done.
Stopping: dropbear ssh daemon... done.
Stopping: telnetd... done.
Stopping: syslogd... done.
Info: Unmounting kernel filesystems
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL tosd 4:0:0:0: [sda] Synchronizing SCSI cache
Disabling non-boot CPUs ...
Restarting system.
.....
** Installer Mode Enabled **
ONIE:/ #
-----
-----
```

## 3.Update ONIE by USB Storage

### 3.1 Prepare

1. Prepare a USB storage.
2. Put the updated file( onie-updater-x86\_64-delta\_XXXXX-r0 ) to USB storage.
3. Connect PC to DUT device with a console cable, console setting is 115200,8n1
4. Power on device, and get into ONIE menu.

### 3.2 Installation procedure

1. Wait to see the GRUB menu
2. Select " ONIE: Update ONIE", and press enter key.
3. Wait for the prompt show up

### 3.3 Example

```

.....
Version 2.17.1245. Copyright (C) 2016 American Megatrends, Inc.
BIOS Date: 07/29/2016 15:19:05 Ver: 0ACBZ033 Minor_Ver:AG9032V1_V1.02
Press <DEL> or <ESC> to enter setup.

GNU GRUB version 2.02~beta2+e4a1fe391

+-----+
+-----+
| ONIE: Install OS                                     |
| ONIE: Rescue                                         |
| ONIE: Uninstall OS                                  |
| *ONIE: Update ONIE                                 |
| ONIE: Embed 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.
GRUB loading.
Welcome                                     to GRUB!
Version   : 2016.01.14-V1.0
Build Date: 2016-06-06T14:07+0800
Error: Write failed
....

```

```
Building script ....
Info: Mounting kernel filesystems... done.
sed: /proc/mtd: No such file or directory
Info: Mounting ONIE-BOOT on /mnt/onie-boot ...
[ 5.574671] scsi 6:0:0:0: Direct-Access SanDisk Cruzer Blade 1.00
PQ: 0 ANSI: 6
[ 5.585442] sd 6:0:0:0: Attached scsi generic sg1 type 0
[ 5.591877] sd 6:0:0:0: [sdb] 15630336 512-byte logical blocks: (8.00
GB/7.45 GiB)
[ 5.601526] sd 6:0:0:0: [sdb] Write Protect is off
[ 5.607664] sd 6:0:0:0: [sdb] Write cache: disabled, read cache: enabled,
doesn't support DPO or FUA
[ 5.628885] sd 6:0:0:0: [sdb] Attached SCSI removable disk
/etc/rcS.d/S10networking.sh: line 222: arithmetic syntax error
Failure: Unable to configure MAC address for eth0
/etc/rcS.d/S10networking.sh: line 222: arithmetic syntax error
Failure: Unable to configure MAC address for eth1
Info: eth0: Checking link... down.
ONIE: eth0: link down. Skipping configuration.
Info: eth1: Checking link... down.
ONIE: eth1: link down. Skipping configuration.
ONIE: Failed to configure eth0 interface
ONIE: Failed to configure eth1 interface
insmod: can't insert '/lib/onie/dca.ko': File exists
insmod: can't insert '/lib/onie/igb.ko': File exists
Building script ....
Starting: dropbear ssh daemon... done.
Starting: telnetd... done.
discover: ONIE update mode detected. Running updater.
Starting: discover... done.
```

```
Please press Enter to activate this console. Info: eth0: Checking link...
down.
ONIE: eth0: link down. Skipping configuration.
Info: eth1: Checking link... down.
ONIE: eth1: link down. Skipping configuration.
ONIE: Failed to configure eth0 interface
ONIE: Failed to configure eth1 interface
ONIE: Starting ONIE Service Discovery
ONIE: Executing installer: file:///dev/sdb/onie-updater-x86_64-
delta_ag9032v1-r0
Verifying image checksum ... OK.
Preparing image archive ...OK.
ONIE: Version : 2016.01.14-V1.0
ONIE: Architecture : x86_64
ONIE: Machine : delta_ag9032v1
ONIE: Machine Rev : 0
ONIE: Config Version: 1
Installing ONIE on: /dev/sda
Rebooting...
insmod: can't insert '/lib/onie/dca.ko': File exists
insmod: can't insert '/lib/onie/igb.ko': File exists
Building script ....
discover: ONIE update mode detected.
Stopping: discover...start-stop-daemon: warning: killing process 981: No
such process
done.
Stopping: dropbear ssh daemon... done.
Stopping: telnetd... done.
```



```
Stopping: syslogd... done.  
Info: Unmounting kernel filesystems  
The system is going down NOW!  
Sent SIGTERM to all processes  
Sent SIGKILL to all processes  
Requesting system reboot  
[ 77.586714] sd 4:0:0:0: [sda] Synchronizing SCSI cache  
[ 78.913570] Disabling non-boot CPUs ...  
[ 79.020294] Restarting system.  
[ 79.023732] machine restart
```

## 4. Software Feature support

Specification	Version	Date	Description

## 5.New Features support

Features Description	SKU	Requested by	Available Version	Date	Status	Reference

## 6. Know Bugs

Bug ID/Reporter	Problem	Version	Open Version	Comments
1.				
2.				

## 7. Description of Bug Fixed

Bug ID/Reporter	Problems	Version	Open Version	Comments
1.				
2.				

## 8. Trouble Shutting

When we installing the NOS within ONIE install-mode(both NOS and ONIE are Legacy system) and the device power off accidentally while the ONIE is rewriting the GRUB menu. The GRUB menu will be destroyed and cause the system cannot boot up successfully. The DUT system will enter the GRUB rescue mode without enter GRUB menu anymore.

```
GRUB loading.
Welcome to GRUB!

error: file `/grub/i386-pc/normal.mod' not found.
Entering rescue mode...
grub rescue>
```

Now we will try to fix the GRUB menu to save the system without reinstall whole system. The following steps show how to do it:

### Case 1: (Only ONIE system in the DUT)

- Boot up the DUT system with USB device with ONIE rescue mode
- In the ONIE rescue mode, we will re-install the GRUB menu and reboot the system. The ONI GRUB will recovered and type the following commands in ONE rescue mode.

```
ONIE:/ # grub-install --boot-directory=/mnt/onie-boot /dev/sda
ONIE:/ # reboot
```

After the reboot the system and grub menu are came back

```

GNU GRUB version 2.02-beta2+e4a1fe391

-----
*ONIE: Install OS
ONIE: Rescue
ONIE: Uninstall OS
ONIE: Update ONIE
ONIE: Embed ONIE
-----

```

## Case 2: (ONIE and NOS on the DUT system)

There are lots of different NOS could be installed by ONIE, so we take an example of ONL to show how to recover the GRUB menu.

- Show all the partitions in rescue mode.

```

GRUB loading.
Welcome to GRUB!

error: ELF header smaller than expected.
Entering rescue mode...
grub rescue> ls
(hd0) (hd0,gpt6) (hd0,gpt5) (hd0,gpt4) (hd0,gpt3) (hd0,gpt2) (hd0,gpt1)
grub rescue> █

```

- The ONL grub setting is on the gpt3 partition, so we will load the ONL's grub setting to recovery the GRUB temporarily. After pressing "normal", it loads the ONL's GRUB menu and you could see the GRUB menu are coming back.

```

(hd0) (hd0,gpt6) (hd0,gpt5) (hd0,gpt4) (hd0,gpt3) (hd0,gpt2) (hd0,gpt1)
grub rescue> set prefix=(hd0,gpt3)/grub
grub rescue> set root=(hd0,gpt3)
grub rescue> insmod normal
grub rescue> normal █

```

```

GNU GRUB version 2.02-beta2+e4a1fe391

+-----+
|*Open Network Linux|
|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.

```

- List all the partitions and you could see the ONIE-BOOT partition which its GRUB menu are inside it.

Number	Start	End	Size	File system	Name	Flags
1	1049kB	3146kB	2097kB		GRUB-BOOT	hidden, bios_grub
2	3146kB	137MB	134MB	ext4	ONIE-BOOT	hidden
3	137MB	272MB	134MB	ext4	ONL-BOOT	msftdata
4	272MB	406MB	134MB	ext4	ONL-CONFIG	msftdata
5	406MB	1480MB	1074MB	ext4	ONL-IMAGES	msftdata
6	1480MB	64.0GB	62.5GB	ext4	ONL-DATA	msftdata

- Entering into the ONL system and we will use the ONL's GRUB menu to recover the ONIE's GRUB which missing some components in the i386-pc folder. Now mount the ONIE-BOOT partition and copy the **NOL's i386-pc** components into **ONIE's i386-pc** folder.

```
root@localhost:~# cp -rf /mnt/onl/boot/grub/i386-pc/*
/root/ONIE_GRUB/grub/i386-pc
```

- Now reboot the system then you could see the ONIE's GRUB menu is coming back.



## Support

Please email to [hans.tseng@deltaww.com](mailto:hans.tseng@deltaww.com) or call +886-2-87973250 ext 3046 for DNI support.