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# Mellanox ONIE Switch User Manual

Rev 1.4

Mellanox ONIE Ver. 5.0.1404

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Mellanox Technologies  
 350 Oakmead Parkway Suite 100  
 Sunnyvale, CA 94085  
 U.S.A.  
 www.mellanox.com  
 Tel: (408) 970-3400  
 Fax: (408) 970-3403

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# Document Revision History

**Table 1 - Document Revision History**

Revision	Date	Description
Rev 1.4	May 31, 2016	Updated: <ul style="list-style-type: none"> <li>• UM to reflect new software printouts</li> <li>• Chapter 3, "CLI Reference" on page 15 with commands "onie-nos-install", "onie-discovery-stop", "onie-discovery-start", and "onie-sysinfo"</li> </ul>
Rev 1.3	January 15, 2015	Removed PPC content Updated: <ul style="list-style-type: none"> <li>• Section "Related Documentation" on page 5</li> <li>• Section 2.1.2, "From TFTP Server," on page 9</li> <li>• Section 2.1.4, "From Local USB Drive," on page 10</li> <li>• Section 2.2.5, "Reinstall," on page 14</li> <li>• Section 2.2.3, "Uninstall," on page 12</li> <li>• Chapter 3, "CLI Reference" on page 15</li> </ul>
Rev 1.2	August 31, 2014	Updated Section 2.1.4, "From Local USB Drive," on page 10
Rev 1.1	July 2014	Removed sections 1.2, 1.3, 1.4 and 2.3. Added Section 2.2.4, "Embed," on page 13 Updated: <ul style="list-style-type: none"> <li>• Chapter 2, "Reference Documents" on page 5</li> <li>• Chapter 3, "CLI Reference" on page 15</li> </ul>
Rev 1.0	September 2013	First release

# Preface

## Intended Audience

This document and the system is a bundle intended for system engineers and system developers interested in assembling their own OS on top of Mellanox switch systems. The system provides an easy way to install a user-defined OS over a Mellanox switch system.

## Related Documentation

The following table lists the documents referenced in this *User's Manual*.

**Table 2 - Reference Documents**

Document Name	Description
Mellanox ONIE Switch Release Notes	<a href="#">Provides an overview of the known issues and bug fixes.</a>
Open Network Install Environment documentation	<a href="https://opencomputeproject.github.io/onie/docs/index.html">https://opencomputeproject.github.io/onie/docs/index.html</a>
x86 CPU Architecture Design	<a href="https://opencomputeproject.github.io/onie/docs/design-spec">https://opencomputeproject.github.io/onie/docs/design-spec</a>





## Documentation Conventions

### Typographical Conventions

**Table 3 - Typographical Conventions**

Description	Convention	Example
File names	file.extension	
Directory names	directory	
Commands and their parameters	command param1	mts3610-1 > show hosts
Required item	< >	
Optional item	[ ]	
Mutually exclusive parameters	{ p1, p2, p3 } or {p1   p2   p3}	
Optional mutually exclusive parameters	[ p1   p2   p3 ]	
Comments to explain command examples	//	// This is a comment
Variables for which users supply specific values	Italic font	enable

**Table 3 - Typographical Conventions**

Description	Convention	Example
Emphasized words	Italic font	These are emphasized words
Note	 <text>	 This is a note.
Warning	 <text>	 Make sure to connect to the RS-232 RJ-45 port of the switch and not to the MGT port.

## Common Abbreviations and Acronyms

**Table 4 - Abbreviations and Acronyms**

Abbreviations	Description
ONIE	Open Network Install Environment
NOS	Network OS

# 1 Introduction

ONIE (Open Network Install Environment) is an open source initiative which enables automatic installation of user-defined OS whose function is to setup a network OS that provides the following services:

- Re/installing an OS
- Booting in "rescue" mode
- Formatting the system

For more information please refer to the following website:

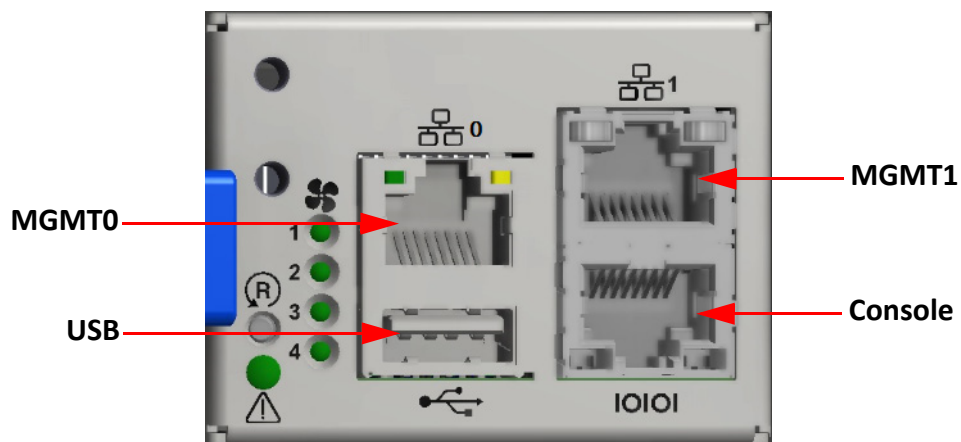
<https://github.com/opencomputeproject/onie>.

## 1.1 Accessing the Mellanox System for the First Time

The system provided has DHCP enabled by default, therefore, login may be performed through the management ports (using "root" username and no password) and/or the serial console as explained in the following steps:

- Step 1.** Connect the host PC to the CONSOLE (RJ-45) port of the switch system using the supplied cable. The CONSOLE ports are shown below as examples.

**Figure 1: Console Ports**



Make sure to connect to the CONSOLE port of the switch and not to the MGT port.

**Step 2.** Configure a serial terminal program (for example, HyperTerminal, minicom, or Tera Term) on your host PC with the settings described in the table below.

**Table 5 - Serial Terminal Program Configuration**

Parameter	Setting
Baud Rate	115200
Data bits	8
Stop bits	1
Parity	None
Flow Control	None

**Step 3.** Activate the console by pressing Enter.

```
Please press Enter to activate this console. Info: eth0: Checking link... up.
** Installer Mode Enabled **
ONIE:/ #
```

**Step 4.** (Optional) The system is configured to fetch an image using auto-discovery which is enabled by default. To disable auto discovery, run:.

```
ONIE:/ # onie-discovery-stop
Stopping: discover... done.
ONIE:/ #
```

## 1.2 Log Facilities

Mellanox ONIE uses the following log facilities:

- dmesg
- /var/log/messages
- /var/log/onie.log (Mellanox ONIE OS only)
- /var/log/syslog



## 2 How-Tos

### 2.1 Install Network OS

The following subsections illustrate how to install a Network OS using different methods.

#### 2.1.1 From DHCP Server

Perform the following in your DHCP server.

**Step 1.** Define a DHCP filename by configuring it in `/etc/dhcpd.conf`. Run:

```
filename "tftpboot_location/onie-installer-x86_64-mlnx_x86-r5.0.1404";
```

**Step 2.** Enable auto-discovery mode (if disabled). Run:

```
ONIE:/ # onie-discovery-start
Starting: discover... done.
ONIE:/ #
```

**Step 3.** The switch system will fetch and install the OS image.

```
Info: Fetching http:// <IP address>/onie-installer-x86_64-mlnx_x86-r5.0.1404 ...
ONIE: Executing installer: http:// <IP address> /onie-installer-x86_64-mlnx_x86-
r5.0.1404
Verifying image checksum ... OK.
Preparing image archive ... OK.
MLNX OS Installer: platform: x86_64-mlnx_x86-r5.0
===== Invoking MLNX OS installer via kexec
===== Network will disconnect, further logs may be reviewed via serial console
[1018004.495413] sd 0:0:0:0: [sda] Synchronizing SCSI cache
[1018004.501473] Starting new kernel
[ 0.000000] Initializing cgroup subsys cpuset
[ 0.000000] Initializing cgroup subsys cpu
...
```

#### 2.1.2 From TFTP Server

Perform the following in your TFTP server.

**Step 1.** Move the image file under the TFTP boot location.

**Step 2.** Enable auto-discovery mode (if disabled). Run:

```
ONIE:/ # onie-discovery-start
Starting: discover... done.
ONIE:/ #
```

**Step 3.** The switch system will fetch and install the OS image.

```
Info: Fetching tftp://<IP address>/onie-installer-x86_64-mlnx_x86-r5.0.1404 ...
ONIE: Executing installer: tftp:// <IP address>/onie-installer-x86_64-mlnx_x86-
r5.0.1404
Verifying image checksum ... OK.
Preparing image archive ... OK.
MLNX OS Installer: platform: x86_64-mlnx_x86-r5.0
===== Invoking MLNX OS installer via kexec
===== Network will disconnect, further logs may be reviewed via serial console
[1018004.495413] sd 0:0:0:0: [sda] Synchronizing SCSI cache
```

```
[1018004.501473] Starting new kernel
[ 0.000000] Initializing cgroup subsys cpuset
[ 0.000000] Initializing cgroup subsys cpu
...
```

### 2.1.3 From IPv6 Neighbors

➤ *To install a Network OS from IPv6 neighbors using an installer test script:*

**Step 1.** Boot ONIE in install mode.

**Step 2.** Prepare a small installer test script at the deployment server (using HTTP server).

```
# cat /var/www/html/onie-installer-mlnx
#/bin/sh

echo "Mellanox ONIE discovery over eth0 ipv6 neighbors test"
exit 1
```

**Step 3.** Let the automatic installer detect the IPv6 neighbor you prepared.

```
ONIE: Using DHCPv4 addr: eth0: <ip-address> / 255.255.248.0
ONIE: Using DHCPv4 addr: eth1: 192.168.10.232 / 255.255.255.0
discover: installer mode detected. Running installer.

Please press Enter to activate this console. ONIE: Using DHCPv4 addr: eth0: <ip-
address> / 255.255.248.0
ONIE: Using DHCPv4 addr: eth1: 192.168.10.232 / 255.255.255.0
ONIE: Starting ONIE Service Discovery
ONIE: Looking for file onie-installer-x86_64-mlnx_x86-r5.0.1404 at device /dev/sda1
ONIE: Looking for file onie-installer-x86_64-mlnx_x86 at device /dev/sda1
ONIE: Looking for file onie-installer-mlnx_x86 at device /dev/sda1
ONIE: Looking for file onie-installer-x86_64-mlnx at device /dev/sda1
ONIE: Looking for file onie-installer-x86_64 at device /dev/sda1
ONIE: Executing installer: http://<ip-address>/onie-installer-x86_64-mlnx_x86-
r5.0.1404
ONIE: Executing installer: http://<ip-address>/onie-installer-x86_64-mlnx_x86
ONIE: Executing installer: http://<ip-address>/onie-installer-mlnx_x86
ONIE: Executing installer: http://<ip-address>/onie-installer-x86_64-mlnx
ONIE: Executing installer: http://<ip-address>/onie-installer-x86_64
Mellanox ONIE discovery over eth1 ipv6 neighbors test
```

### 2.1.4 From Local USB Drive



ONIE discovery and installation from USB does not support EXFAT (NTFS). Use VFAT formatting instead.

➤ *To install a Network OS from a USB drive:*

**Step 1.** Put the NOS image inside the USB root directory.

**Step 2. Mount and install the NOS version. Run:**

```

ONIE:/ # mkdir /mnt/tmpusb
ONIE:/ # mount /dev/sda1 /mnt/tmpusb
ONIE:/ # cd /mnt/tmpusb
ONIE:/ # mnt/tmpusb # sync
ONIE:/ # install onie-installer-x86_64-mlnx_x86-r5.0.1404
Rebooting into ONIE (re)install mode...
ONIE:/ # umount: can't remount rootfs read-only
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processesRestarting system.
...

```

## 2.2 Boot Modes

### 2.2.1 Rescue Mode

➤ *To boot in rescue mode:*

```

# rescue
ONIE: Rescue Mode ...
Version : master-201604201145
Build Date: 2016-04-20T13:08+0300
[ 5.798037] i8042: No controller found
Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
[ 10.274265] LPCI2C DBG: LPC Generic Decode Range 2 configured: 0xfc2001
[ 10.280955] LPCI2C DBG: LPC Generic Decode Range 3 configured: 0xfc2501
[ 10.287628] LPCI2C DBG: Access to ioport 0x2000-0x2100 is granted
[ 10.293783] LPCI2C DBG: Access to ioport 0x2500-0x2600 is granted
[ 10.349361] LPCI2C DBG: Add lpci2c adapter to bus 1 is done
[ 10.355023] LPCI2C DBG: lpci2c initialised
Info: Using eth0 MAC address: 7c:fe:90:cd:87:98
Info: Using eth1 MAC address: 7c:fe:90:cd:87:99
Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
ONIE: Using DHCPv4 addr: eth0: 10.7.144.102 / 255.255.248.0
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: Rescue mode detected. Installer disabled.

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

** Rescue Mode Enabled **
ONIE:/ #

```

## 2.2.2 Mellanox ONIE Update

➤ *To update the Mellanox ONIE:*

```
# ONIE:/ # update_url http://<ip address>/onie-updater-x86_64-mlnx_x86-r5.0.1404
topping: discover... done.
Info: Fetching http:// <ip address>/onie-updater-x86_64-mlnx_x86-r5.0.1404 ...
Connecting to <ip address> (<ip address>:80)
installer          100% |*****| 24601k  0:00:00 ETA
ONIE: Executing installer: http://<ip address>/onie-updater-x86_64-mlnx_x86-r5.0.1404
Verifying image checksum ... OK.
Preparing image archive ... OK.
ONIE: Version      : master-201604201145
ONIE: Architecture : x86_64
ONIE: Machine      : mlnx_x86
ONIE: Machine Rev  : 5.0.1404
ONIE: Config Version: 1
Installing ONIE on: /dev/sda
Rebooting...
+ killall -TERM dropbear
+ killall -TERM syslogd
+ [ -x /lib/onie/shutdown-machine ]
+ /lib/onie/s[1205783.482229] LPCI2C DBG: LPC Generic Decode Range 3 deconfigured:
0xfc2501
[1205783.490022] LPCI2C DBG: LPC Generic Decode Range 2 deconfigured: 0xfc2001
lpci2c 15706 0 [1205783.498523] LPCI2C DBG: lpci2c removed
- Live 0xffffffffa0000000 (0)
...
```

## 2.2.3 Uninstall

➤ *To uninstall the OS from a system. Run:*

```
# uninstall
ONIE: OS Uninstall Mode ...
Version   : master-201604201145
Build Date: 2016-04-20T13:08+0300
[ 5.796828] i8042: No controller found
Info: Mounting kernel filesystems... done.
Info: Mounting LABEL=ONIE-BOOT on /mnt/onie-boot ...
[ 10.270675] LPCI2C DBG: LPC Generic Decode Range 2 configured: 0xfc2001
[ 10.277368] LPCI2C DBG: LPC Generic Decode Range 3 configured: 0xfc2501
[ 10.284045] LPCI2C DBG: Access to ioport 0x2000-0x2100 is granted
[ 10.290175] LPCI2C DBG: Access to ioport 0x2500-0x2600 is granted
[ 10.345013] LPCI2C DBG: Add lpci2c adapter to bus 1 is done
[ 10.350657] LPCI2C DBG: lpci2c initialised
Info: Using eth0 MAC address: 7c:fe:90:cd:87:98
Info: Using eth1 MAC address: 7c:fe:90:cd:87:99
Info: eth0: Checking link... up.
Info: Trying DHCPv4 on interface: eth0
ONIE: Using DHCPv4 addr: eth0: 10.7.144.102 / 255.255.248.0
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/sda3 (256MB)
  Percent complete: 100%
Erase complete.
Deleting partition 3 from /dev/sda
Erasing internal mass storage device: /dev/sda4 (30146MB)
  Percent complete: 100%
Erase complete.
Deleting partition 4 from /dev/sda
Installing for i386-pc platform.
Installation finished. No error reported.
Uninstall complete. Rebooting...
+ killall -TERM dropbear
+ killall -TERM syslogd
+ [ -x /lib/onie/shutdown-machin[ 942.885225] LPCI2C DBG: LPC Generic Decode Range 3
deconfigured: 0xfc2501
+ /lib/onie[ 942.892279] LPCI2C DBG: LPC Generic Decode Range 2 deconfigured: 0xfc2001
/shutdown-machin[ 942.900627] LPCI2C DBG: lpci2c removed
lpci2c 15706 0 - Live 0xffffffffa0000000 (0)
+ /bin/umount -a -r
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot
[ 944.915224] sd 0:0:0:0: [sda] Synchronizing SCSI cache
[ 945.996730] Restarting system.
[ 945.999838] reboot: machine restart
...

```

## 2.2.4 Embed

```

ONIE:/ # onie-self-update -e http://<ip-address>/sx_mlnx_os/onie/x86.r5.0.1404/on
ie-updater-x86_64-mlnx_x86-r5.0.1404
Stopping: discover... done.
Info: Fetching http://<ip-address>/sx_mlnx_os/onie/x86.r5.0.1404/onie-updater-x86_64-
mlnx_x86-r5.0.1404 ...
Connecting to <ip-address> (<ip-address>:<port>)
installer          100% |*****| 24601k  0:00:00 ETA
ONIE: Executing installer: http://<ip-address>/sx_mlnx_os/onie/x86.r5.0.1404/onie-
updater-x86_64-mlnx_x86-r5.0.1404
Verifying image checksum ... OK.
Preparing image archive ... OK.
ONIE: Version      : master-201604201145-dirty
ONIE: Architecture : x86_64
ONIE: Machine      : mlnx_x86
ONIE: Machine Rev  : 5.0.1404
ONIE: Config Version: 1
Installing ONIE on: /dev/sda
Rebooting...
+ killall -TERM dropbear
+ killall -TERM syslogd
+ [ -x /lib/onie/shutdown-machine ]

```

```
+ /lib/onie/shutd[ 2271.814813] LPCI2C DBG: LPC Generic Decode Range 3 deconfigured:
0xfc2501
own-machine
lpc[ 2271.822815] LPCI2C DBG: LPC Generic Decode Range 2 deconfigured: 0xfc2001
i2c 15706 0 - Li[ 2271.831089] LPCI2C DBG: lpci2c removed
ve 0xfffffffffa0000000 (0)
ONIE:/ # + /bin/umount -a -r
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to[ 2273.838644] sd 0:0:0:0: [sda] Synchronizing SCSI cache
[ 2274.035401] Restarting system.
[ 2274.038521] reboot: machine restart
...
```

## 2.2.5 Reinstall

There are two possible methods to reinstall the network OS on a x86 system:

1. Uninstall (Section 2.2.3 on page 12) and then install (Section 2.1 on page 9) the OS from ONIE instead (scrubs the former data).
2. Embed (Section 2.2.4 on page 13) and then install (Section 2.1 on page 9) the OS (does not scrub).

## 3 CLI Reference

### 3.1 ONIE Commands

#### onie-syseeprom

##### onie-syseeprom

Display the system EEPROM data block.

Syntax Description	N/A
Default	N/A
History	5.0.0100
Example	<pre> ONIE:/ # onie-syseeprom TlvInfo Header: Id String:    TlvInfo Version:     1 Total Length: 584 TLV Name           Code Len Value ----- Product Name       0x21  64 MSN2700 Part Number        0x22  20 MSN2700-CS2F Serial Number      0x23  24 MT1607X11210 Base MAC Address   0x24   6 7C:FE:90:EB:BB:80 Manufacture Date   0x25  19 10/30/2013 10:03:00 Device Version     0x26   1 0 MAC Addresses      0x2A   2 128 Manufacturer       0x2B   8 Mellanox Vendor Extension   0xFD  36 0x00 0x00 0x81 0x19 0x00 0x16 0x01 0x01 0x03 0x6C 0x00 0x00 0x4D 0x4C 0x4E 0x58 0x02 0x01 0x0C 0x05 0x0E 0x02 0x10 0x06 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 Vendor Extension   0xFD 164 0x00 0x00 0x81 0x19 0x00 0x92 0x00 0x03 0x01 0xBF 0x00 0x00 0x4D 0x54 0x31 0x36 0x30 0x37 0x58 0x31 0x31 0x32 0x31 0x30 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x4E 0x32 0x37 0x30 0x30 0x2D 0x43 0x53 0x32 0x46 0x00 0x00 0x00 0x00 0x00 0x00 0x41 0x37 0x00 0x00 0x00 0xA1 0x8D 0xF6 0x50 0x61 0x6E 0x74 0x68 0x65 0x72 0x20 0x45 0x74 0x68 0x20 0x31 0x30 0x30 0x00 Vendor Extension   0xFD  36 0x00 0x00 0x81 0x19 0x00 0x10 0x00 0x03 0x05 0xE8 0x00 Vendor Extension   0xFD  36 0x00 0x00 0x81 0x19 0x00 0x1E 0x00 0x11 0x02 0xFF 0x00 0x00 0x0D 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x7C 0xFE 0x90 0xEB 0xBB 0x80 0x30 0x30 0x7C 0xFE 0x90 0x03 0x00 0xEB 0xBB 0x80 Vendor Extension   0xFD  36 0x00 0x00 0x81 0x19 0x00 0x12 0x00 0x01 0x06 0x85 0x00 0x00 0x00 0x00 0x46 0x00 0x00 0x08 0x00 0x05 0x05 0x05 0x05 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 Platform Name      0x28  64 x86_64-mlnx_x86-r0 Loader Version     0x29  32 5.0.1404 CRC-32            0xFE   4 0x15860FD9 Checksum is valid. ONIE:/ # </pre>

#### Note

## onie-syseeprom --list

### onie-syseeprom --list

Lists the supported TLV (type, length and value) codes and names.

<b>Syntax Description</b>	N/A
<b>Default</b>	N/A
<b>History</b>	5.0.0100
<b>Example</b>	<pre> ONIE:~ # onie-syseeprom --list TLV Code   TLV Name ===== 0x21      Product Name 0x22      Part Number 0x23      Serial Number 0x24      Base MAC Address 0x25      Manufacture Date 0x26      Device Version 0x27      Label Revision 0x28      Platform Name 0x29      Loader Version 0x2a      MAC Addresses 0x2b      Manufacturer 0x2c      Country Code 0x2d      Vendor Name 0x2e      Diag Version 0x2f      Service Tag 0xfd      Vendor Extension 0xfe      CRC-32 ONIE:~ # </pre>

### Note



## onie-syseeprom --get

### onie-syseeprom --get

Locates a TLV by code and write the value to stdout.

---

<b>Syntax Description</b>	N/A
<b>Default</b>	N/A
<b>History</b>	5.0.0100
<b>Example</b>	<pre>ONIE:~ # onie-syseeprom --get 0x22 MSX1710-BS2F2E ONIE:~ #</pre>
<b>Note</b>	

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## onie-nos-install

### onie-nos-install

Installs a network operation system.

<b>Syntax Description</b>	N/A
<b>Default</b>	N/A
<b>History</b>	5.0.1404
<b>Example</b>	<pre> ONIE:~ # onie-nos-install http://&lt;ip-address&gt;/CumulusLinux-3.0.0- 1456539878.a71971a-amd64.bin Stopping: discover... done. Info: Fetching http://&lt;ip-address&gt;/CumulusLinux-3.0.0- 1456539878.a71971a-amd64.bin ... Connecting to &lt;ip-address&gt; (&lt;ip-address&gt;:&lt;port&gt;) installer          100%  *****  271M 0:00:00 ETA ONIE: Executing installer: http://&lt;ip-address&gt;/CumulusLinux-3.0.0- 1456539878.a71971a-amd64.bin Verifying image checksum ... OK. Preparing image archive ... OK. Dumping image info... Control File Contents ===== Description: Cumulus Linux OS-Release: 3.0.0~1456539878.a71971a-3d24735-201602270227-clbuilder Architecture: amd64 Date: Mon, 29 Feb 2016 13:15:17 -0800 Installer-Version: 1.2 Homepage: http://www.cumulusnetworks.com/ Data Archive Contents ... </pre>

### Note

## onie-discovery-stop

### onie-discovery-stop

Disables DHCP auto-discovery.

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<b>Syntax Description</b>	N/A
<b>Default</b>	N/A
<b>History</b>	5.0.1404
<b>Example</b>	<pre>ONIE:~ # onie-discovery-stop Stopping: discover... done. ONIE:~ #</pre>
<b>Note</b>	

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## onie-discovery-start

### onie-discovery-start

Enables DHCP auto-discovery

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<b>Syntax Description</b>	N/A
<b>Default</b>	N/A
<b>History</b>	5.0.1404
<b>Example</b>	<pre>ONIE:~ # onie-discovery-start Starting: discover... done. ONIE:~ #</pre>
<b>Note</b>	

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## onie-sysinfo

### onie-sysinfo

Displays ONIE version details

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<b>Syntax Description</b>	N/A
<b>Default</b>	N/A
<b>History</b>	5.0.1404
<b>Example</b>	<pre>ONIE:~ # onie-sysinfo x86_64-mlnx_x86-r5.0.1404 ONIE:~ #</pre>
<b>Note</b>	

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