

Sun Ethernet Fabric Operating System

ONET Administration Guide



Part No.: E26379-02
July 2012

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Using This Documentation

Oracle's ONET feature groups uplink and downlink ports on its switch. ONET provides internal and external isolated network connectivity for blade servers by bridging downlink ports with uplink ports connected to an external switched network. By restricting traffic within the uplink/downlink port combination, ONET ensures that traffic is not propagated to other ports that should not have access to this data. By linking the uplink port to the downlink port, ONET effectively turns that connection into a bridge for the blade server connected to the downlink port. This document describes the use of ONET on a switch.

- "Product Notes" on page 1
- "Related Documentation" on page 2
- "Acronyms and Abbreviations" on page 2
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- "Feedback" on page 3
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Product Notes

For late-breaking information and known issues about the following products, refer to the product notes at:

Sun Blade 6000 Ethernet Switched NEM 24p 10GbE:

<http://www.oracle.com/pls/topic/lookup?ctx=SB6K-24p-10GbE>

Related Documentation

Documentation	Links
All Oracle products	http://oracle.com/documentation
Sun Blade 6000 Ethernet Switched NEM 24p 10GbE	http://www.oracle.com/pls/topic/lookup?ctx=SB6K-24p-10GbE
Sun Network 10GbE Switch 72p	http://www.oracle.com/pls/topic/lookup?ctx=SN-10GbE-72p
Sun Blade 6000 modular system	http://www.oracle.com/pls/topic/lookup?ctx=sb6000
Oracle Integrated Lights Out Manager (Oracle ILOM) 3.0	http://www.oracle.com/pls/topic/lookup?ctx=ilom30

For detailed information about the commands and options described in this document, refer to the *Sun Ethernet Fabric Operating System CLI Base Reference Manual*.

Acronyms and Abbreviations

Acronym or Abbreviation	Explanation
CLI	Command-line interface
GARP	Generic Attribute Registration Protocol
GMRP	GARP Multicast Registration Protocol
GVRP	GARP VLAN Registration Protocol
IP	Internet Protocol
LAN	Local area network
MAC	Media access control
RSTP	Rapid Spanning Tree Protocol
STP	Spanning Tree Protocol

Acronym or Abbreviation	Explanation
VLAN	Virtual local area network
WAN	Wide area network

CLI Command Modes

The following table lists the configuration mode used in this document with the access and exit methods.

Command Mode	Access Method	Prompt	Exit Method
Privileged EXEC	This is the default mode and only way to access the ONET CLI commands.	ONET#	Use the <code>exit</code> command to return to the Oracle ILOM prompt.

Feedback

Provide feedback on this documentation at:

<http://www.oracle.com/goto/docfeedback>

Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	http://support.oracle.com
	For hearing impaired: http://www.oracle.com/accessibility/support.html
Learn about Oracle's commitment to accessibility	http://www.oracle.com/us/corporate/accessibility/index.html

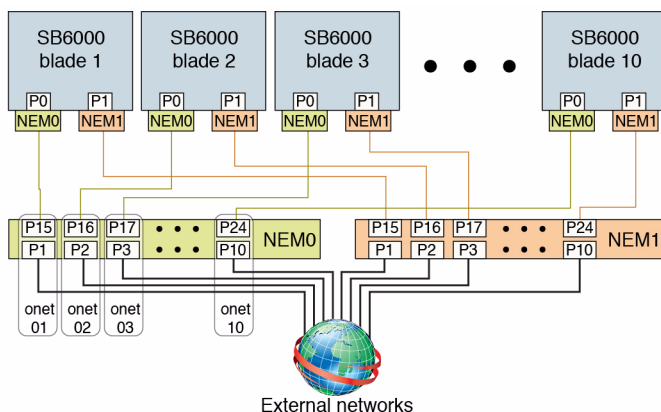
ONET Configuration

These sections describe the ONET configuration and default settings:

- “ONET Example Configuration” on page 5
- “Default Settings” on page 6

ONET Example Configuration

The ONET configuration is predefined and cannot be changed during switch operation. The downlink ports connected to the blade servers are configured to be connected to individual uplink ports. The following figure illustrates the ONET port assignments.



The ONETs are named onet01 to onet10, where onet01 is configured with port 1 as the uplink port and port 15 as the downlink port connected to the blade server. Onet02 is a pairing of port 2 as the uplink port, port 16 as the downlink port, and so on, until onet10 pairs port 10 with port 24.

Default Settings

The following table lists the default settings for the switch.

Feature	Default Setting
VLAN module status	Enable
Default VLAN ID (configured in the switch)	1
MAC address table aging time	300 seconds
Acceptable frame types	All (accepts untagged frames or priority-tagged frames or tagged frames received on the port)
STP	Disabled
GMRP	Disabled
GVRP	Disabled

ONET and Oracle ILOM

You must start ONET from Oracle ILOM. You can also access ONET CLI commands through Oracle ILOM.

- “Start ONET From Oracle ILOM” on page 7
- “Start the ONET CLI” on page 8
- “Stopping SEFOS Before Starting ONET” on page 8

▼ Start ONET From Oracle ILOM

- Login to Oracle ILOM and start ONET from the Oracle ILOM prompt.

```
Oracle(R) Integrated Lights Out Manager (Fabric Component Edition)
Version 3.0.5.2
Copyright (c) 2011, Oracle and/or its affiliates. All rights
reserved.
Warning: password is set to factory default.

-> start /NEM/onet
Are you sure you want to start /NEM/onet (y/n)? y

start: Please wait while onet comes up, this can take anywhere from
30 seconds to 2 minutes depending on the configuration
.....
start: ONET Enabled successfully.
```

▼ Start the ONET CLI

- Access the ONET CLI.

```
-> start /NEM/onet_cli/  
Are you sure you want to start /NEM/onet_cli (y/n)? y  
  
start: Connecting to Fabric Switch CLI  
SUNSP-UN0064 ONET#
```

Stopping SEFOS Before Starting ONET

ONET works in tandem with SEFOS so that the one-to-one uplink to downlink port combination is achieved. SEFOS uses a different set of configuration files when used with ONET. ONET cannot run in conjunction with stand-alone SEFOS and SEFOS must be stopped before ONET can be started. When ONET is started while SEFOS is running, Oracle ILOM displays the following message:

```
-> start /NEM/onet  
Are you sure you want to start /NEM/onet (y/n)? y  
  
start: ONET start failed because SEFOS is running
```

- “Stop SEFOS” on page 8
- “Start ONET” on page 9
- “Stop ONET” on page 9

▼ Stop SEFOS

- Stop SEFOS before starting ONET.

```
-> stop /NEM/sefos  
stop: Unsaved SEFOS configuration will be lost  
Are you sure you want to stop /NEM/sefos (y/n)? y  
  
stop: SEFOS stopped successfully.
```

▼ Start ONET

- Type.

```
-> start /NEM/onet  
Are you sure you want to start /NEM/onet (y/n)? y  
  
start: Please wait while onet comes up, this can take anywhere from  
30 seconds to 2 minutes depending on the configuration  
.....  
start: ONET Enabled successfully.
```

If you reset the switch while ONET is running, ONET will be running once it is restarted.

▼ Stop ONET

- Stop ONET from Oracle ILOM.

```
-> stop /NEM/onet  
Are you sure you want to stop /NEM/onet (y/n)? y  
  
stop: ONET Disabled successfully.
```


ONET CLI Commands and Outputs

You can use these CLI commands with ONET. With the exception of the `show onet` and `show onets` commands, these commands are similar to their SEFOS equivalents.

- “help Command” on page 11
- “show onet <onet-id> [counters] Command” on page 12
- “show onets Command” on page 13
- “show interfaces description Command” on page 14
- “show vlan Command” on page 16
- “show lldp Command” on page 18
- “show mac-address-table Command” on page 19
- “speed port <interface-type> <interface> { 1000 | 10000 } Command” on page 19
- “exit Command” on page 20

help Command

This command provides a description of the available CLI commands.

```
SUNSP-UN0064 ONET# help help  
help: Displays help for a particular command
```

show onet <onet-id> [counters] Command

This command shows the detail of an individual ONET. This command includes the uplink and downlink ports assigned to the specified ONET and the internal ONET VLAN information. The tunneled VLAN information is empty initially, but is displayed when ONET manipulation commands are supported.

```
SUNSP-UN0064 ONET# show onet onet01
Name: onet01
  Onet VLAN:          4075
  Downlink port(s):  15
  VLAN(s):
  Uplink port:       01
SUNSP-UN0064 ONET# show onets onet01 counters
Name: onet10
  Onet VLAN:          4075
  Downlink port(s):  15
  VLAN(s):
  Uplink port:       01
Port      InOctet      InUcast      InDiscard    InErrs      InHCOctet
----      -
Ex0/1     0             0             0             0             0

Port      OutOctet      OutUcast      OutDiscard    OutErrs      OutHCOctet
----      -
Ex0/1     0             0             0             0             0

Port      InOctet      InUcast      InDiscard    InErrs      InHCOctet
----      -
Ex0/15    0             0             0             0             0

Port      OutOctet      OutUcast      OutDiscard    OutErrs      OutHCOctet
----      -
Ex0/15    0             0             0             0             0
```

show onets Command

This command displays the information for all available ONETs. The output shown in this example is for the sample configuration shown in [“ONET Example Configuration” on page 5](#)”.

```
SUNSP-UN0064 ONET# show onets
Name: onet10
  Onet VLAN:          4084
  Downlink port(s):  24
  VLAN(s):
  Uplink port:       10
Name: onet09
  Onet VLAN:          4083
  Downlink port(s):  23
  VLAN(s):
  Uplink port:       09
Name: onet08
  Onet VLAN:          4082
  Downlink port(s):  22
  VLAN(s):
  Uplink port:       08
Name: onet07
  Onet VLAN:          4081
  Downlink port(s):  21
  VLAN(s):
  Uplink port:       07
Name: onet06
  Onet VLAN:          4080
  Downlink port(s):  20
  VLAN(s):
  Uplink port:       06
Name: onet05
  Onet VLAN:          4079
  Downlink port(s):  19
  VLAN(s):
  Uplink port:       05
Name: onet04
  Onet VLAN:          4078
  Downlink port(s):  18
  VLAN(s):
  Uplink port:       04
Name: onet03
  Onet VLAN:          4077
  Downlink port(s):  17
```

```

VLAN(s):
Uplink port:      03
Name: onet02
Onet VLAN:       4076
Downlink port(s): 16
VLAN(s):
Uplink port:      02
Name: onet01
Onet VLAN:       4075
Downlink port(s): 15
VLAN(s):
Uplink port:      01

```

show interfaces description Command

This command displays the status and configuration information for the ports within the switch.

```

SUNSP-UN0064 ONET# show interfaces

Ex0/1 up, line protocol is down (not connect)
Bridge Port Type: Customer Bridge Port

Hardware Address is 00:14:4f:6c:63:4f
MTU 9216 bytes, Full duplex, 10 Gbps, No-Negotiation
HOL Block Prevention enabled.
Input flow-control is off,output flow-control is off

Link Up/Down Trap is enabled

Reception Counters
  Octets                : 0
  Unicast Packets       : 0
  Discarded Packets     : 0
  Error Packets         : 0
  Unknown Protocol      : 0

Transmission Counters
  Octets                : 0
  Unicast Packets       : 0
  Discarded Packets     : 0
  Error Packets         : 0

```

```

Ex0/2 up, line protocol is down (not connect)
Bridge Port Type: Customer Bridge Port

Hardware Address is 00:14:4f:6c:63:50
MTU 9216 bytes, Full duplex, 10 Gbps, No-Negotiation
HOL Block Prevention enabled.
Input flow-control is off,output flow-control is off

Link Up/Down Trap is enabled

Reception Counters
  Octets                : 0
  Unicast Packets       : 0
  Discarded Packets     : 0
  Error Packets         : 0
  Unknown Protocol      : 0

Transmission Counters
  Octets                : 0
  Unicast Packets       : 0
  Discarded Packets     : 0
  Error Packets         : 0
?.....
Ex0/24 up, line protocol is down (not connect)
Bridge Port Type: Customer Bridge Port

Hardware Address is 00:14:4f:6c:63:66
MTU 9216 bytes, Full duplex, 10 Gbps, No-Negotiation
HOL Block Prevention enabled.
Input flow-control is off,output flow-control is off

Link Up/Down Trap is enabled

Reception Counters
  Octets                : 0
  Unicast Packets       : 0
  Discarded Packets     : 0
  Error Packets         : 0
  Unknown Protocol      : 0

Transmission Counters
  Octets                : 0
  Unicast Packets       : 0
  Discarded Packets     : 0
  Error Packets         : 0

vlan1 up, line protocol is down (not connect)

```

```
SUNSP-UN0064 ONET# show interfaces description
```

Interface	Status	Protocol	Description
-----	-----	-----	-----
Ex0/1	up	down	
Ex0/2	up	down	
Ex0/3	up	down	
Ex0/4	up	down	
Ex0/5	up	down	
Ex0/6	up	down	
Ex0/7	up	down	
Ex0/8	up	down	
Ex0/9	up	down	
Ex0/10	up	down	
Ex0/11	down	down	
Ex0/12	down	down	
Ex0/13	down	down	
Ex0/14	down	down	
Ex0/15	down	down	
Ex0/16	down	down	
Ex0/17	down	down	
Ex0/18	down	down	
Ex0/19	down	down	
Ex0/20	down	down	
Ex0/21	down	down	
Ex0/22	down	down	
Ex0/23	down	down	
Ex0/24	down	down	
vlan1	down	down	

show vlan Command

This command displays the VLAN membership of the ports within the switch. This command should display the ONET VLANs and the uplink-downlink port members of each VLAN.

Note that ports 11-14 are unused at this time and are assigned to the default VLAN.

```
SUNSP-UN0064 ONET# show vlan
```

```
Vlan database
-----
Vlan ID           : 4075
Member Ports      : Ex0/1, Ex0/15
```

```
Untagged Ports      : Ex0/1, Ex0/15
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
```

```
Vlan ID             : 4076
Member Ports        : Ex0/2, Ex0/16
Untagged Ports      : Ex0/2, Ex0/16
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
```

```
Vlan ID             : 4077
Member Ports        : Ex0/3, Ex0/17
Untagged Ports      : Ex0/3, Ex0/17
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
```

```
Vlan ID             : 4078
Member Ports        : Ex0/4, Ex0/18
Untagged Ports      : Ex0/4, Ex0/18
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
```

```
Vlan ID             : 4079
Member Ports        : Ex0/5, Ex0/19
Untagged Ports      : Ex0/5, Ex0/19
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
```

```
Vlan ID             : 4080
Member Ports        : Ex0/6, Ex0/20
Untagged Ports      : Ex0/6, Ex0/20
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
```

```
Vlan ID             : 4081
Member Ports        : Ex0/7, Ex0/21
Untagged Ports      : Ex0/7, Ex0/21
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
```

```
Vlan ID             : 4082
Member Ports        : Ex0/8, Ex0/22
```

```

Untagged Ports      : Ex0/8, Ex0/22
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
Vlan ID             : 4083
Member Ports        : Ex0/9, Ex0/23
Untagged Ports      : Ex0/9, Ex0/23
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
Vlan ID             : 1
Member Ports        : Ex0/11, Ex0/12, Ex0/13, Ex0/14
Untagged Ports      : Ex0/11, Ex0/12, Ex0/13, Ex0/14
Forbidden Ports     : None
Name                :
Status              : Permanent
-----
Vlan ID             : 4084
Member Ports        : Ex0/10, Ex0/24
Untagged Ports      : Ex0/10, Ex0/24
Forbidden Ports     : None
Name                :
Status              : Permanent
-----

```

show lldp Command

This command displays the configuration information for LLDP.

```

SUNSP-UN0064 ONET# show lldp

LLDP is disabled
Transmit Interval      : 30
Holdtime Multiplier   : 4
Reinitialization Delay : 2
Tx Delay               : 2
Notification Interval : 5
Chassis Id SubType    : Mac Address
Chassis Id             : 00:14:4f:6c:63:4f

```

show mac-address-table Command

This command displays the MAC address table learned and published by the switch.

```
SUNSP-UN0064 ONET# show mac-address-table
```

Vlan	Mac Address	Type	Ports
----	-----	----	-----
Total Mac Addresses displayed: 0			

speed port <interface-type> <interface> { 1000 | 10000 } Command

This command sets the link speed for the SFP ports 1 and 2 only. Error messages are displayed when invalid values for the ports or the speeds are used. The link speed is retained even if the switch is reset.

```
SUNSP-UN0064 ONET# speed port extreme-ethernet 0/3 1000
```

Port speed can only be changed for ports 1 and 2!
Unknown argument value

```
SUNSP-UN0064 ONET# speed port extreme-ethernet 0/2 10001
```

Port speed can only be set to either 1000 or 10000!
Unknown argument value

The default link speed for the SFP ports is 10Gbps. The following output appears for port 1 before the port speed is changed:

```
SUNSP-UN0064 ONET# show interfaces
```

Ex0/1 up, line protocol is down (not connect)
Bridge Port Type: Customer Bridge Port

Hardware Address is 00:21:28:c4:53:01

```
MTU 9216 bytes, Full duplex, 10 Gbps, No-Negotiation
HOL Block Prevention enabled.
Input flow-control is off,output flow-control is off
.....
SUNSP-UN0064 ONET# speed port extreme-ethernet 0/1 1000
```

The following output appears after the speed is changed:

```
SUNSP-UN0064 ONET# show interfaces

Ex0/1 up, line protocol is down (not connect)
Bridge Port Type: Customer Bridge Port

Hardware Address is 00:21:28:c4:53:01
MTU 9216 bytes, Full duplex, 1 Gbps, No-Negotiation
HOL Block Prevention enabled.
Input flow-control is off,output flow-control is off
```

exit Command

Use this command to exit ONET.

```
SUNSP-UN0064 ONET# exit

Connection closed by foreign host.
```