###### 8.6.X XGS-PON OFF Box Solution



8.6.x Configuration for uOLT Management

**Objective:**

In this test case, 8.6.x device is used for OFF box solution.

The following sample configuration shows the configuration required for the uOLT inband management assuming the uOLT is inserted in port 3 and the FRU server is connected to port 1.

Procedure:

virtual-switch create vs TiBiT virtual-switch create vs Mgmt

port set port 3 max-frame-size 10000 port set port 1 speed gigabit auto-neg on

sub-port create sub-port OLT parent-port 3 classifier-precedence 1

sub-port create sub-port SuperM parent-port 1 classifier-precedence 4090 sub-port add sub-port OLT class-element 1 vtag-stack \*

sub-port add sub-port SuperM class-element 1 vtag-stack 4090 virtual-switch interface attach sub-port OLT vs TiBiT

virtual-switch interface attach sub-port SuperM vs TiBiT

Test Case Results:

Passed: Yes No Verified by Date/Time Comments

Configuration on 3926/3906 with FRU Objective:

Configuration is required on the 3906/3926 to forward the PON management frames received on a front panel port through to the PON OAM SW on the FRU and vice versa.

The following sample illustrates the 3906/3926 configuration required to configure the PON management VLAN (0x88a8/4090) from the 3906/3926 front panel through to the FRU.

For the purposes of this example, the 3906/3926 from panel port is port ‘6’, the 3906/3926 internal port towards the FRU is port ‘i1’ and the port as seen from within the FRU is port ‘1’

Procedure:

3906\*> vlan set inner-tpid 88A8 3906\*> vlan create vlan 4090 3906\*> vlan add vlan 4090 port i1 3906\*> vlan add vlan 4090 port 6

3906\*> virtual-circuit ethernet set port 6 vlan-ethertype 88A8 vlan-ethertype-policy vlan-tpid 3906\*> virtual-circuit ethernet set port i1 vlan-ethertype 88A8 vlan-ethertype-policy vlan-tpid 3906\*> vlan set vlan 4090 egress-tpid 88A8

**Note:**

**PON OAM SW should be installed on the x86 server FRU, installation guide can be referred for this action.**

uOLT Management Configuration on PON OAM running on 3926 FRU

***Objective:***

In order for the device that is hosting the uOLT to control/configure the PON service, a management forwarding domain must be created. The uOLT must also be enabled.

Please note, In OFF box solution uOLT is hosted on 5171 running 8.6.x and the uOLT is managed by PON\_OAM running on 3926 x86 server FRU, so below configuration should be done on PON\_OAM hosted on x86server FRU.

***Topology:***

uOLT inserted into 10G port into 8.6.x host.

***Procedure:***

Create classifier and forwarding domain.

classifiers classifier vid\_4090 filter-entry vtag-stack vtags 1 vlan- id 4090

fds fd vs4090 mode vpls

Create flow point. Note: The logical port is the port that the uLOT is inserted. VLAN 4090 and tpid 88a8 are required settings.

fps

fp vid\_4090\_port4 fd-name vs4090 logical-port 4 stats-collection on

mac-learning enabled classifier-list vid\_4090 classifier-list-precedence 10

egress-l2-transform push-vid-4090 vlan-stack 1

push-tpid tpid-88a8 push-vid 4090

exit exit exit exit

Create a management IP interface.

oc-if:interfaces interface pon\_mgmt\_1 config name pon\_mgmt\_1 cn- if:type ip mtu 1500 admin-status true underlay-binding config fd vs4090

Enable the uOLT.

pon-ctrl olts olt OLT\_1 admin-state enabled

management-interface OLT\_MGMT\_IP mac-address 70:b3:d5:52:32:12

exit exit exit

***Expected Results:***

PON\_OAM> show pon-ctrl olts olt OLT\_1

+ OLT +

| Parameter | Value |

+ + +

| Name | OLT\_1 |

| Admin State | Enabled |

| MAC Address | 70:B3:D5:52:32:12 |

| Management Interface | OLT\_MGMT\_IP |

| PON Mode | XGS-PON |

| Auto Boot Mode | Disabled |

| Upstream FEC Profile 0 | Enabled |

| Upstream Preamble Profile 0 | 64 |

| Downstream FEC | Enabled |

| Encryption Mode | Disabled |

| Guard Time | 16 |

| NNI MTU | 9600 |

| PON MTU | 9600 |

+ + +

| Operational State | Active |

| Physical Interface | 4 |

| Management TPID | 0x88A8 |

| Management VID | 4090 |

| Firmware Version | A1.1.0 (394899e) |

| Hardware Version | 180713 |

| Model | XGS-PON OLT |

| Serial Number | OLT-70b3d5523212 |

| Number of Configured ONUs | 0 |

| Number of Registered ONUs | 0 |

| Number of Links | 0 |

+ + +

Test Case Results:

Passed: Yes No Verified by Date/Time Comments

Register ONUs

***Objective:***

The objective of this test is to register and configure connected ONUs.

***Procedure:***

When an uOLT is active and ONUs are connected, they automatically register with the uOLT and the ONU count is displayed per uOLT.

PON\_OAM> show pon-ctrl olts

+ OLTS +

| Name | MAC Address | Oper State | Registered ONUs |

+ + + + +

| OLT\_1 | 70:B3:D5:52:32:12 | Active | 3 |

+ + + + +

Test Case Results:

Passed: Yes No Verified by Date/Time Comments

ONU Configuration

***Objective:***

The objective of this test is to configure an ONU. The serial number of each connected ONU is required for this step. The user is still required to configure the ONU data link which establishes a channel between ONU and uOLT.

***Procedure:***

Enter the serial number of each connected ONU.

pon-ctrl onus onu ONU\_1 OLT\_1 serial-number ALPHe30cae24 pon-ctrl onus onu ONU\_2 OLT\_1 serial-number ALPHe3d367c7 pon-ctrl onus onu ONU\_3 OLT\_1 serial-number ALPHe3d36588

***Expected Results:***

5170\_PON> show pon-ctrl olts olt OLT\_1 onus

+ ONUS +

| Name | Serial Number | Oper State | ONU-ID | Number of Links |

+ + + + + +

| ONU\_1 | ALPHE30CAE24 | Registered | 3 | 2 |

| ONU\_2 | ALPHE3D367C7 | Registered | 2 | 2 |

| ONU\_3 | ALPHE3D36588 | Registered | 1 | 1 |

+ + + + + +

Test Case Results:

Passed: Yes No Verified by Date/Time Comments

Create SLA Profile

***Objective:***

The objective of this test is to create a SLA profile. The SLA profile controls the bandwidth allocated to an ONU (upstream and downstream).

***Procedure:***

Configure upstream and downstream SLA parameters.

pon-ctrl sla-profiles sla-profile SLA\_1 up-fixed-rate 0

up-guaranteed-rate 128

up-guaranteed-max-burst 409600

up-best-effort-rate 10000000

up-best-effort-max-burst 409600

up-priority 1

up-service-limit 128

up-min-grant-period 0

up-max-grant-period 10

down-guaranteed-rate 128

down-guaranteed-max-burst 262144

down-best-effort-rate 10000000

down-best-effort-max-burst 245760

exit exit exit

***Expected Results:***

PON\_OAM> show pon-ctrl sla-profiles

+

SLA PROFILES +

| Name | Up Guaranteed Rate | Up Best-Effort Rate | Down Guaranteed Rate | Down Best-Effort Rate |

+ + + + + +

| SLA\_1 | 128 | 10000000 | 128 | 10000000 |

+ + + + + +

PON\_OAM> show pon-ctrl sla-profiles sla-profile SLA\_1

+ SLA PROFILE +

| Parameter | Value |

+ + +

| Name | SLA\_1 |

| Up Fixed Rate (Kbps) | 0 |

| Up Guaranteed Rate (Kbps) | 128 |

| Up Guaranteed Max Burst (Bytes) | 409600 |

| Up Best Effort Rate (Kbps) | 10000000 |

| Up Best Effort Max Burst (Bytes) | 409600 |

| Up Priority | 1 |

| Up Service Limit (kBytes) | 128 |

| Up Min Grant Period | 0 |

| Up Max Grant Period | 10 |

| Down Guaranteed Rate (Kbps) | 128 |

| Down Guaranteed Max Burst (Bytes) | 262144 |

| Down Best Effort Rate (Kbps) | 10000000 |

| Down Best Effort Max Burst (Bytes) | 245760 |

+ + +

Test Case Results:

Passed: Yes No Verified by Date/Time Comments

uOLT Data Link Configuration, Networks and PON Connections

***Objective:***

The objective of the following tests is to configure networks, data links and PON connections allowing traffic to flow between connected hosts and the network.

***Procedure:***

**Data Link Configuration**

pon-ctrl onus onu ONU\_1 OLT\_1 datalinks datalink DLA\_1 admin-state enabled

uni-ports 5

sla-profile SLA\_1 add-ctag 1012

exit exit exit exit exit

pon-ctrl onus onu ONU\_2 OLT\_1 datalinks datalink DLA\_2 admin-state enabled

uni-ports 5

sla-profile SLA\_1 add-ctag 1020

exit exit exit exit exit

***Expected Results:***

5170\_OAM> show pon-ctrl olts olt OLT\_1 onus onu ONU\_1 datalinks datalink DLA\_1

+ DATALINK +

| Parameter | Value |

+ + +

| Name | DLA\_1 |

| Admin State | Enabled |

| SLA Profile | SLA\_1 |

| UNI Ports | 5 |

| Add Ctag | 1012 |

+ + +

| Alloc-ID | 0x481 |

+ + +

PON\_OAM> show pon-ctrl olts olt OLT\_1 onus onu ONU\_2 datalinks datalink DLA\_2

+ DATALINK +

| Parameter | Value |

+ + +

| Name | DLA\_2 |

| Admin State | Enabled |

| SLA Profile | SLA\_1 |

| UNI Ports | 5 |

| Add Ctag | 1020 |

+ + +

| Alloc-ID | 0x482 |

+ + +

* Network Configuration

***Procedure:***

pon-ctrl olts olt OLT\_1 nni-networks nni-network NNI\_1 match-stag 0

match-ctag-1 65535

match-ctag-2 65535 tag-action none

exit exit exit exit exit

***Expected Results:***

PON\_OAM> show pon-ctrl olts olt OLT\_1 nni-networks

+ NNI NETWORKS +

| Name | S-Tag | C-Tag1 | C-Tag2 | Tag Action |

+ + + + + +

| NNI\_1 | None | Any | Any | None |

+ + + + + +

PON\_OAM> show pon-ctrl olts olt OLT\_1 onus onu ONU\_2 datalinks

+ DATALINKS +

| Name | Admin State | SLA Profile | Alloc-ID |

+ + + + +

| DLA\_2 | Enabled | SLA\_1 | 0x482 |

+ + + + +

PON\_OAM> show pon-ctrl olts olt OLT\_1 nni-networks nni-network NNI\_1

+ NNI NETWORK +

| Parameter | Value |

+ + +

| Name | NNI\_1 |

| Match S-Tag | None |

| Match C-Tag1 | Any |

| Match C-Tag2 | Any |

| Tag Action | None |

+ + +

| Number of PON Connections | 0 |

+ + +

* PON Connection Configuration

***Procedure:***

pon-ctrl onus onu ONU\_1 OLT\_1 pon-connections pon-connection PON\_CON\_1

datalink DLA\_1 nni-network NNI\_1 match-ctag-1 1012

match-ctag-2 0

match-stag 0 tag-action none

exit exit exit exit

exit

pon-ctrl onus onu ONU\_2 OLT\_1 pon-connections pon-connection PON\_CON\_2

datalink DLA\_2 nni-network NNI\_1 match-ctag-1 1020

match-ctag-2 0

match-stag 0 tag-action none

exit exit exit exit exit

***Expected Results:***

PON\_OAM> show pon-ctrl olts olt OLT\_1 onus onu ONU\_1 pon-connections

+ PON CONNECTIONS +

| Name | NNI Network | Datalink | S-Tag | C-Tag1 | C-Tag2 | Tag Action |

+ + + + + + + +

| PON\_CON\_1 | NNI\_1 | DLA\_1 | None | 1012 | None | None |

+ + + + + + + +

PON\_OAM> show pon-ctrl olts olt OLT\_1 onus onu ONU\_2 pon-connections

+ PON CONNECTIONS +

| Name | NNI Network | Datalink | S-Tag | C-Tag1 | C-Tag2 | Tag Action |

+ + + + + + + +

| PON\_CON\_2 | NNI\_1 | DLA\_2 | None | 1020 | None | None |

+ + + + + + + +

Test Case Results:

Passed: Yes No Verified by Date/Time Comments