Cluster Management Configuration

Table of Contents

Chapter 1 Cluster Management Configuration

1.1 Overview

The OLT cluster is a group of OLTs which can be managed as a single entity. In the cluster, there must be an OLT worked as the command OLT, which allows up to 253 OLTs simultaneously to join the cluster as member OLTs. As the single access node in the cluster, the command OLT is used to configure, manage and monitor member OLTs. One OLT belongs to only one cluster at a certain moment.

1.2 Cluster Management Configuration Task List

- Planning cluster

- Creating cluster

- Configuring cluster

- Monitoring cluster state

- Using SNMP to manage cluster

1.3 Cluster Management Configuration Task

1.3.1 Planning Cluster

1. VLAN

To manage the OLT through the cluster, the command OLT, the member OLT and standby OLT of a cluster must have the default VLAN. The interface of the default VLAN of these OLTs has already existed.

2. Automatically discover member OLT and standby OLT

The command OLT uses the BDP protocol to find the member OLT, standby OLT and other clusters. The command OLT also uses the BDP protocol to find the network topology. Therefore, you need to run the BDP protocol on the member OLT, standby OLT and other clusters and activate BDP on the interconnected interfaces.

3. IP address

If the management station accesses the cluster through the TCP/IP management mode, such as telnet, http and snmp, you need configure the IP address of the

command OLT that the management station can access. You don't need to configure the IP address for the member OLT of the cluster.

After the member OLT joins in the cluster, the command OLT distributes an IP address to each member OLT. These IP addresses are selected from the IP pool of the cluster configured on the command OLT. When planning the address pool, pay attention that the service addresses cannot be the same as those in the address pool; note that the address number in the address pool cannot be smaller than the maximum number of member OLTs in the cluster (including the command OLT).

1.3.2 Creating Cluster

1. Activating Command OLT

Run the following command in global configuration mode to set the current OLT to the command OLT:

Command	Purpose
cluster mode commander *cluster-name*	Configures the current OLT to command OLT

2. Activating Standby OLT

Run the following command in global configuration mode to set the current OLT to the standby OLT:

Command	Purpose
cluster mode member	Configures the current OLT to the standby OLT

3. Adding Member OLT

Run the following command in global configuration mode to add the standby OLT with the designated MAC address to the cluster:

Command	Purpose
cluster member [**id** *member-id*] **mac-address** *H.H.H*	Adds member OLT

1.3.3 Configuring Cluster

1. Configuring IP Pool

Run the following command in global configuration mode to configure the IP address pool for cluster management:

Command	Purpose
cluster address-pool *A.B.C.D A.B.C.D*	Configures the IP address pool.

2. Configuring hellotime

You can modify the interval to send the handshake message between the command OLT and the member OLT by configuring hellotime (unit:second).

Command	Purpose
cluster hellotime *<1-300>*	Configures the interval of sending hello message between the command OLT and the member OLT.

3. Configuring holdtime

If the member OLT and the command OLT do not receive the handshake message from the peer in an interval, they think the peer is in down state. You can configure holdtime to change the interval value. Run the following command in global configuration mode to configure the cluster's holdtime:

Command	Purpose
cluster holdtime *<1-300>*	Configures the interval of sending handshake message between the command OLT and the member OLT.

4. Configuring hop number of the discovery protocol

The cluster uses the hop number to measure the distance of OLTs in the cluster. The hop number of the discovery protocol configured on the command OLT equals the distance between the cluster verge and the candidate OLT which is farthest to the cluster verge. Run the following command in global configuration mode to configure the hop number of the discovery protocol for the cluster:

Command	Purpose
cluster discovery hop-count *<1-7>*	Configures the PDP hop number of the discovery protocol.

5. Configuring the to-be-used ND

The cluster obtains Neighbor information by the ND protocol. Run the following command in global configuration mode to configure the discovery protocol for the cluster:

Command	Purpose
cluster discovery mode {pdp|lldp}	Configures the to-be-used ND

6. Configuring Management VLAN

Cluster command OLT and each member OLT can communicate only when they are configured with the same management VLAN. Run the following command before enable cluster to configure cluster management VLAN:

Command	Purpose
cluster management-vlan <1-4094>	Configures Management VLAN

1.3.4 Monitoring the State of Standby Group

Run the following command in the non-user mode to monitor the configuration and state of cluster:

Command	Purpose
show cluster	Monitors the state of the standby group.
show cluster member	Checks the cluster member.
show cluster candidate	Checks the cluster candidate.
show cluster topo	Checks the cluster topology.
show cluster address-pool	Checks the address pool the cluster.

1.3.5 Using SNMP to Manage Cluster

After the cluster is created, the snmp message can be transmitted between the member OLT and the snmp application through the command OLT. The detailed process is shown as follows: To access No. N member OLT in snmp mode, specify the destination IP address as the address of the OLT in a snmp application. Set community string to community string + @esN, which belongs to the corresponding right of the command OLT. If community string on the command OLT is public, community string of No.6 member OLT is public@es6.