Cluster Management Configuration

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1.1   Overview

The switch cluster is a group of switches which can be managed as a single entity. In the cluster, there must be a switch worked as the command switch, which allows up to 255 switches simultaneously to join the cluster as member switches. As the single access node in the cluster, the command switch is used to configure, manage and monitor member switches. One switch belongs to only one cluster at a certain moment.

1.2   Cluster Management Configuration Task List

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1.3   Cluster Management Configuration Task

1.3.1   Planning Cluster

a. VLAN

To manage the switch through the cluster, the command switch, the member switch and candidate switch of a cluster must have the default VLAN. The interface of the default VLAN of these switches has already existed.

b. Automatically discovering member switches and candidate switches

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

c. 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 switch that the management station can access. You need not configure the IP address for the member switch of the cluster.

After the member switch joins in the cluster, the command switch distributes an IP address to each member switch. These IP addresses are selected from the IP pool of the cluster configured on the command switch. 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 switches in the cluster (including the command switch).

1.3.2   Creating Cluster

a. Activating command switch

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

Command	Description
cluster mode commander *cluster-name*	Sets the current switch to the command switch.

b. Activating standby switch

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

Command	Description
cluster mode commander *member*	Sets the current switch to the standby switch.

c. Adding member switch

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

Command	Description
cluster member [**id** *member-id*] **mac-address** *H.H.H* [**password** *enable-password*]	Adds member switch.

1.3.3   Configuring Cluster

a. Configuring IP pool

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

Command	Description

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

b. Configuring hellotime

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

Run the following command in global configuration mode to configure the cluster's hellotime:

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

c. Configuring holdtime

If the member switch and the command switch 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 hellotime:

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

d. Configuring hop number of the discovery protocol

The cluster uses the hop number to measure the distance of switches in the cluster. The hop number of the discovery protocol configured on the command switch equals the distance between the cluster verge and the candidate switch 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	Description
cluster discovery *hop-count*	Configures the PDP hop number of the discovery protocol.

1.3.4 Monitoring the State of Standby Group

Run the following command in privileged mode to monitor the configuration and state of cluster:

Command	Description
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 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 switch and the snmp application through the command switch. The detailed process is shown as follows:

To access No. N member switch in snmp mode, specify the destination IP address as the address of the switch in an snmp application.

Set **community string** to **community string + @esN**, which belongs to the corresponding right of the command switch. If **community string** on the command switch is **public**, **community string** of No.6 member switch is **public@es6**.

1.3.6 Using Web to Manage Cluster

After the cluster is created, the http message can be transmitted between the member switch and the browser through the command switch. The detailed operation is to add prefix like "esN/" before the url.

Suppose the IP of the command switch is 192.168.20.1, the url of the No.6 member switch is http://192.168.20.1/es6/.