Reliability Configure Command

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Chapter 1 Port Backup Command

1.1.1 backup always

The backup interface configured for deciding whether to dial immediately when the main port protocol is down.

Syntas

backup always

no backup always

Parameter

none

Default

This function is not started.

command mode

Interface configuration status

Explanation:

This command is applicable only when back port is dial port. Under general condition, when the main port protocol is down, router will be noted that message can be sent from backup port. But it will not dial automatically and send message until the upper layer sends the data through this backup port. If the command is configured, the backup port will dial immediately and keeps a connective state all the time when the main port is down.

Example

The example below is configuring port backup delay on serial port s1/0

Router_config_s1/0#backup int a0/0
Router_config_s1/0#backup always

1.1.2 backup interface

Choosing backup interface and starting the function of backup. The command “no” is used for canceling the function of backup.

Syntas

backup interface *slot/port*

no backup interface

Parameter

Parameter	Description
slot/port	The type and port number of backup interface. The backup interface can be physical interface and logic interface of the dialer.

Default

none

Command mode

Interface configuration mode

Explanation

The backup interface should be chosen by this command. When the main port works normally, the backup port is usually under backup state and is not under normal function. An interface can only choose another interface as its backup interface. Repeating the execution of the above commands, the port designated by the last command will be effective. The backup interface can only be used as a backup port of some interface and cannot be used as a backup port of multiple interfaces simultaneously. At the same time, the backup interface cannot be used as the main port for setting backup interface for the purpose of avoiding the setup of backup interface for each other or the formation of the circular chain of backup interface. When the command “shutdown” is executed on the main port of from the port automatically, the backup function of the port will be forbidden.

Example

The following example configures s1/1 port as standby port of s1/0

Router_config_s1/0#backup interface int s1/0

The command below is used for canceling the function.

Router_config_s1/0#no backup interface

1.1.3 backup delay

Configuring activation and deactivation time delay of backup interface. The command “no” is used for setting the parameter as default value.

Syntas

backup delay {**enable-delay** | **never** } {**disable-delay** | **never** }

no backup delay

Parameter

Parameter	Description
Enable-delay	When the main interface is down, the backup interface is activated after the enable-delay seconds.

Disable-delay	When the main port is up, the backup interface is deactivated after disable-delay seconds.
Never	Preventing activation or deactivation.

Default

The delay of activation and deactivation is 0 seconds.

Command mode

Interface configuration status

Explanation

The backup interface shall be configured before configuring delay, namely starting the backup function first. Inactivation and deactivation delay always never do. So the backup function bears no practical significance.

Example

The example below configures port backup delay on the serial port s1/0

```
Router_config_s1/0#backup int s1/1
Router_config_s1/0#backup delay 5 5
```

1.1.4 backup load

Configuring the balancing backup function of backup interface flow. The command “no” is used for setting the parameter as default value.

Syntas

backup load {**enable-threshold** | **never** } {**disable-threshold** | **never**}

no backup load

Parameter

Parameter	Description
enable-threshold	The backup interface will be activated when the ratio of the speed of the data sent or received by the main port occupying the bandwidth of the interface exceeds the value of the enable-threshold.
disable-threshold	The backup interface will be deactivated when the proportion of the load occupying the bandwidth is less than the value of disable-threshold.
Never	Preventing activation or deactivation.

Default

The parameter value is never, namely the balancing function of flow is not started.

Command mode

Interface configuration status

Explanation

The backup interface shall be configured first before configuring backup flow balance, namely the backup function shall be started first. The threshold value of setting activation backup interface shall not be smaller than that of deactivation backup interface.

Example

The example below configures flow balance on the serial port s1/0

```
Router_config_s1/0#backup int s1/1
Router_config_s1/0#backup load 70 30
```

1.1.5 Debug backup

Syntas

deubug backup

no debug backup

Parameter

none

Default

none

Command mode

supervisor mode

Explanation

The debug information switch of port backup is used for observing the time received in the interface of port backup function and transition information. The command “no” is used for closing Debug information.

Example

The example below opens debug information and shows the information related to port backup function.

```
outer#debug backup
Router#conf
Router_config#int s1/0
Router_config_s1/0#backup int d1
Router_config_s1/0#2001-11-28 11:13:30 BACKUP Serial1/0 secondary interface Seri
al0/1 unconfigured
2001-11-28 11:13:30 BACKUP Serial0/0 changed state to initializing
2001-11-28 11:13:30 BACKUP Serial0/0 second interface Dialer1 configured
2001-11-28 11:13:30 BACKUP Serial0/0 changed state to NORMAL
2001-11-28 11:13:30 BACKUP Serial0/0 second interface move to standby
```

1.1.6 show backup

Syntas

show backup

Parameter

none

Default

none

Command mode

supervisor mode

Explanation

Showing all the interfaces of the configured port backup function and relevant status information.

Example

```
Router_config_s1/1#show ba
Primary Interface    Secondary Interface  Status
Serial1/0            Dialer1              NORMAL
Serial1/1            Dialer2              BACKUPMODE
```

Chapter 2 HSRP Command

2.1 HSRP Command

2.1.1 debug standby event

Use "debug standby" command to show hsrp runtime infomation .Use "no debug standby" to stop showing the information.

Syntas

debug standby [**interface** *interface-name group-id*] **event**

no debug standby [**interface** *interface-name group-id*] **event**

Parameter

None

Command mode

manage model

Explanation

output all hsrp group runtime event information configured in the interface. if you want to appoint one hsrp group, the corresponding interface name and group id must be supplied .

Example

debug standby output information show below :

Router# debug standby event
2000-1-13 00:00:09 HSRP EVT : e0/0 group 0 delete virtual ip 192.168.20.1
2000-1-13 00:00:09 HSRP EVT : e0/0 group 0 add virtual ip 192.168.20.5

2.1.2 debug standby packets

Syntas

debug standby [**interface** *interface-name*] [*group-id*] **packets**

no debug standby [**interface** *interface-name*] [*group-id*] **packets**

Parameter

None

Command mode

manage model

Explanation

Show HSRP interactive packet information, such as sending HSRP packet, receiving HSRP response etc… . If you want to appoint one hsrp group, the corresponding interface name and group id must be supplied .

Example

Router# debug standby packets
2000-1-13 00:08:57 HSRP PKT SEND : e0/0 HELLO out 192.168.20.237 Active pri 100 ip 192.168.20.201
2000-1-13 00:09:00 HSRP PKT SEND : e0/0 HELLO out 192.168.20.237 Active pri 100 ip 192.168.20.201

field	Description
2001-1-13 00:08:57	processing hsrp packet time
HSRP PKT	HSRP Packet
SEND/RECV	Send/Recv HSRP Packet
e0/0	interface name recv/send packet
HELLO/COUP/RESIGN	packet type
192.168.20.237	ip packet source address
Active/Standby/Speak	hsrp protocol status
pri 100	hsrp group priority
ip 192.168.20.201	hsrp gourp virtual ip address

2.1.3 debug standby errors

Syntas

debug standby [**interface** *interface-name*] [*group-id*] **errors**

no debug standby [**interface** *interface-name*] [*group-id*] **errors**

Parameter

None

Command mode

manage model

Explanation

Show HSRP interactive error information. If you want to appoint one HSRP group, the corresponding interface name and group id must be supplied .

2.1.4 debug standby terses

Syntas

debug standby [**interface** *interface-name*] [*group-id*] **terses**

no debug standby [**interface** *interface-name*] [*group-id*] **terses**

Parameter

none

Command mode

manage model

Explanation

Show HSRP interactive terse information. If you want to appoint one HSRP group, the corresponding interface name and group id must be supplied .

2.1.5 show standby

Use "show standby" command to show HSRP group status infomation .

Syntas

show standby [**interface** *interface-name*]

Parameter

Parameter	Description
interface-name	interface name to show hsrp gourp information.

Default

show all hsrp group information in every interface

Command mode

manage/config/interface config model

Explanation

Show HSRP group information. If you want to appoint one HSRP group, the corresponding interface name and group id must be supplied .

Example

```
Router# show  standby interface e0/0
    Ethernet0/0 - Group 0
      HSRP State is Active
      Virtual IP address : 192.168.20.201/24 (config)
      Virtual Mac address : 0000.0102.0306
      Active Router IP : 192.168.20.237
      Standby Router IP : unknown
      Preempt is not set
      Current Priority is 100
      Config Priority is 100
      HSRP timer : hello 3 s(default) hold 10s (default)
      HSRP current timer : hello 3 active 3 standby 0
```

Authentication string is aaaaaaaa

Domain	Description
Ethernet0/0	interface name
Group 0	HSRP Group id
HSRP State is Acvite	HSRP Group status is Active
Virtual IP address : 192.168.20.201/24 (config)	HSRP Group virtual ip is 192.168.20.201(configure by command)
Virtual Mac address : 0000.0102.0306	virtual mac address is 0000.0102.0306
Active Router IP : 192.168.20.237	Active Router ip address is 192.168.20.237
Standby Router IP : unknown	Standby Router ip address is unknown
Preempt is not set	not config preempt
Current Priority is 100	current priority level is 100
Config Priority is 100	configured priority level is 100
HSRP timer : hello 3 s(default) hold 10s (default)	hello timer is 3s(default), hold timer is 10s(default)
Authentication string is bdcom	authentication string is bdcom

2.1.6 show standby brief

Syntas

show standby brief

Parameter

none

Command mode

supevisor mode/global configuration mode/interface configuration mode

Explanation

show hsrp group brief information

Example

Router# show standby brief
Interface Grp Prio Pree State Active addr Standby addr Virtual addr
e0/0 0 100 N Active 192.168.20.237 unknown 192.168.20.201

domain	Description
Interface	interface name
Grp	HSRP Group id
Prio	priority
Pree	preempt
State	current hsrp group status
Active addr	current hsrp group active router address

Standby addr	current hsrp group standby router address
Virtual addr	current hsrp group virtual ip address

2.1.7 standby authentication

Use "standby authentication" command to configure hsrp group authentication string . Use "no standby authentication" to configure default authentication string .

Syntas

standby [*group-number*] **authentication** *string*

no standby [*group-number*] **authentication**

Parameter

Parameter	Description
Group-number	（Optional）hsrp group id
String	authentication string . default string is "bdcom"

Default

group-number: 0

string: **bdcom**

Command mode

interface configure mode

Explanation

Authentication string in all hsrp packet transfered is unencrypted.The same authentication string must be configured in one hsrp group of every router and access server to interact.HSRP group virtual ip address and timer can not be learned from other router if authentication unmatched .But authentication string unmatched can not deny one router to be replaced by another router .

Example

hsrp group 1 of interface ethernet0/0 is configured authentication string "word" :

```
interface ethernet 0/0
standby 1 authentication word
```

2.1.8 standby ip

Use "standby ip" command to enable hsrp protocol process .Use "no standby ip" to disable hsrp protocol process .

Syntas

standby [*group-number*] **ip** [*ip-address* [**secondary**]]

no standby [*group-number*] **ip** [*ip-address*]

Parameter

Parameter	Description
group-number	(Optional)hsrp group id to enable
ip-address	(Optional)hsrp group virtual ip
secondary	(Optional)hsrp group virtual secondary ip

Default

group-number: 0

hsrp protocl is disabled.

Command mode

interface configure mode

Explanation

"standby ip" enable HSRP protocol process .If ip address is supplied,the ip address act as the hsrp group virtual ip address .If not supplied,hsrp group should learn virtual ip address from active router.Virtual ip address must be configured in one hsrp router at least of a hsrp group.

If hsrp process is enabled , proxy ARP process shouled be change unless proxy arp is disabled.If hsrp group status is active,proxy ARP request should be replied by hsrp group virtual mac-address . Otherwise ,proxy ARP is disabled .

Example

configure a hsrp group 1 in ehternet 0/0 . the hsrp group virtual ip should be learned from active router .

interface ethernet 0/0
standby 1 ip
the three virtual ip address used the same virtual mac address in arp table.
ip address 1.1.1.1. 255.255.255.0
ip address 1.2.2.2. 255.255.255.0 secondary
ip address 1.3.3.3. 255.255.255.0 secondary
ip address 1.4.4.4. 255.255.255.0 secondary
standby ip 1.1.1.254
standby ip 1.2.2.254 secondary
standby ip 1.3.3.254 secondary

2.1.9 standby mac-address

Use "standby ip" command to configure hsrp group virtual mac-address .Use "no standby ip" to configure default virtual mac-address.

Syntas

standby [*group-number*] **mac-address** *mac-address*

no standby [*group-number*] **mac-address**

Parameter

Parameter	Description
group-number	（Optional）hsrp group id
mac-address	the virtual mac address to configure

Default

group-number: 0

mac-address: 0x00 00 0c 07 ac group-number

Command mode

interface configure mode

Explanation

HSRP group default virtual mac address is "0x00 00 0c 07 ac group-numer"

Example

HSRP group 1 virtual mac-address is 0x00 00 01 02 03 04

interface ethernet 0
standby 1 authentication 00:00:01:02:03:04

2.1.10 standby priority, standby preempt

Use "standby priority" command to configure hsrp group priority level .Use "no standby priority" to configure default standby priority level .

Use "standby preempt" command to configure hsrp group preempt and delay timer . Use "no standby preempt" to configure default standby preempt and delay timer .

Syntas

standby [*group-number*] **priority** *priority*

standby [*group-number*] **preempt** [**delay** *delay*]

no standby [*group-number*] **priority**

no standby [*group-number*] **preempt**

Parameter

Parameter	Description
group-number	(Optional)HSRP Group id
Priority *priority*	(Optional)priority level(1-255), default value is 100
Preempt	(Optional)If router is configued preempt,it should coup the active router while the priority level is larger than it.Otherwise ,the local router act as active until no other router is active .

delay *delay*	(Optional) Delay Parameter appoint the delay timer which local router replace the active router .Scope is from 0 to 3600 seconds .Default value is 0〔no delay〕.

Default

group-number: 0

priority: 100

delay: 0 seconds(no delay) .

Command mode

interface configure mode

Explanation

Configure priority value to select active and standby router.If preempt is configured ,the router with largest priority value is active .If priority is equal,the router with higher ip address is active .

Warning: If standby track is configured and the track interface is invalid,the group priority can be changed dynamic .

While the router reboot, the route table is not a whole .If the preempt is configured ,the router maybe act as an active without the full route service.This problem can be resolved by configure a delay timer .

Example

router priority level is 120(larger than default value) and delay 300 seconds(5 minutes) before acting as a active router :

```
interface ethernet 0
standby ip 172.19.108.254
standby priority 120 preempt delay 300
```

2.1.11 standby timers

Use "standby timer" command to configure hsrp group timer .Use "no standby timer" to configure default standby timer.

Syntas

standby [*group-number*] **timers** *hellotime holdtime*

no standby [*group-number*] **timers**

Parameter

Parameter	Description
group-number	(Optional)group id
Hellotime	hello timer (1-255) seconds
Holdtime	hold timer (1-255) seconds

Default

group-number: 0

hellotime: 3 seconds

holdtime: 10 seconds

Command mode

interface configure mode

Explanation

Use "standby timers" command to configure hsrp hello packet sending interval and standing interval used to judge the active/standby router invalid .

If the hello/hold timer is not configured , hsrp group can be learned from active router and access server .Generally,hold timer is larger of equal 3 times hellotime.

Example

A hsrp group 1 is configured in interface e0/0. The hello timer (hello packet sending interval) is 5 seconds ,the hold timer is 15 seconds :

```
interface ethernet 0/0
standby 1 ip
standby 1 timers 5 15
```

2.1.12 standby track

Use "standby track" command to enable hsrp group priority level track other interface status change .Use "no standby track" to disable the track.

Syntas

standby [*group-number*] **track interface** *interface-name* [*interface-priority*]

no standby [*group-number*] **track *interface*** *interface-name* [*interface-priority*]

Parameter

Parameter	Description
group-number	(Optional)group id
interface-name	track interface name
Interface-priority	(可)delta value of tracking interface

Default

group-number: 0

interface-priority: 10

Command mode

interface configure model

Explanation

The command contact hsrp group priority with interface status .

If the track interface is failed, the hsrp group priority decrease a delta value (defaul 10). If the interface is not tracked, the priority value do not change .

Optional Parameter interface-priority appoint the delta value while the tracking interface is failed or up.If the tracking interface changed from failed to up , the delta value is add to priority ,Otherwise decrease.

Example

Two tracking interface (e0/0 and s0/0) is configured in hsrp group 0 in interface e1/1 .If e0/0 or s0/0 is failed , the hsrp group priority should be decreased 10(default value)

```
interface ethernet 1/1
ip address 198.92.72.37 255.255.255.240
no ip redirects
standby track ethernet 0/0
standby track serial 0/0
standby preempt
standby ip 198.92.72.46
```

Chapter 3 vrrp

Syntas

vrrp *vrid* **associate** *virtual-address*

no vrrp *vrid*

Configure VRRP function to on and off, No command will restore to default value.

Parameter

Parameter	Description
vrid	Virtual Router ID. 1-255
virtual-address	Virtual IP address.

Default

VRRP disable

Explanation

none

Example

The following commands will enable vrrp on vlan 1, Virtual IP address is 192.168.20.100 .

```
Switch(config_v1)#vrrp 1 associate 192.168.20.100
Switch(config_v1)#
```

3.1.1 vrrp associate

Configure the basic IP and secondary IP of VRRP, Equally activ VRRP. No command will cancel the configuration IP, also can stop the VRRP group.

Syntas

[**no**] **vrrp associate** *group-number ip-address netmask* [**secondary**]

no vrrp associate

parameter

Parameter	Description
group-number	The additive VRRP group number. If no import, the default value is 0.
ip-address	The additive IP address.
netmask	Network address cover code.
secondary	Explain the current configuration IP is a secondary IP.

Default

none

Command mode

interface configuration mode

Explanation

The additive VRRP virtual IP address, it can be VRRP basic IP address, also can be VRRP secondary IP address. Basic IP address or secondary IP address doesn't belong to the net segment of any else interface IP, and also doesn't belong to the net segment of any else interface or global application module configuration IP. Besides, the configuration VRRP IP can't be same as any IP of any locality interface except VRRP basic IP (owner configuration mode), but they can be in the same net segment.

no vrrp [*group-number***] associate** can cancel all the VRRP IP address of locality interface group.

When the IP address of a VRRP group is same as the basic IP address of locality interface, VRRP enter owner mode. The owner mode is a especial master mode. Its character is following: the priority of this group becomes to 255 automatically; In spite of configuring occupy mode whether or not, it all occupy; this group must be master; and the configuration track is invalidation.

Example

The following command configure the basic IP address and secondary IP address at interface ethernet1/0.

interface ethernet1/0
vrrp 3 associate 100.1.1.1
vrrp 3 associate 100.1.1.2 secondary

3.1.2 vrrp description

This command is used to configure the interface descriptive string, it is a length of 64 character string. No command can cancel the configuration.

syntas

vrrp *group-number* **description WORD**

no vrrp description WORD

parameter

Parameter	Description
group-number	Group number, the default is 0.
WORD	The descriptive string of configuration this group.

Default

none

Command mode

interface configuration mode

Explanation

The character string is configured by this command that only is a description, it is no influence to carry out the function.

Example

vrrp 3 description Shanghai_dial

3.1.3 vrrp authentication

Syntas

vrrp *vrid* **authentication {no-authen | simple-text** *string***}**

[**no**] **vrrp** *vrid* **authentication**

Configure vrrp authenticate type, No command will restore to default value.

Parameter

Parameter	Description
vrid	Virtual Router ID. 1-255
string	Authentication string. 1-8

Default

no-authen

Explanation

none

Example

The following commands will config vrrp simple-text authenticate type on vlan 1, authentication string is bdcom.

Switch(config_v1)#vrrp 1 authentication simple-text bdcom

3.1.4 vrrp preempt

Syntas

vrrp *vrid* **preempt {on|off}**

[no] ***vrrp*** vrid **preempt**

Configure vrrp preempt, No command will restore to default value.

Parameter

Parameter	Description
vrid	Virtual Router ID.1-255

Default

preempt on

Explanation

none

Example

The following commands will config vrrp preempt off on vlan 1.

Switch(config_v1)# vrrp 1 preempt off

3.1.5 vrrp track

This command is used to configure the track interface. When the interface that is tracked occurred change, it can regulate the priority.

Syntas

[**no**] **vrrp** *group-number* **track interface** *interface-number* <*1-255*>

Parameter

Parameter	Description
group-number	The group number, default is 0.
Interface-number	Interface number, for example: f0/0 and so on.
<*1-255*>	The delay of configuration occupy, its unit is second.

Default

none

Command mode

interface configuration mode

Explanation

When a group is configured track, and after the tracked iterface protocol become changed, if it becomes down, that the priority of this group will reduce configuration value; if it is up, the priority will increase the configuration value.

At present it only can track the link protocol state of interface, the following action will take changes of protocol state: the interface connection reticle is disconnection; the interface is shutdown; the interface link is illogical.

When it is owner state, the configured track is of no effect.

Example

vrrp 3 track interface ethernet2/1 20
no vrrp 3 track interface ethernet2/1

3.1.6 vrrp priority

Syntas

vrrp *vrid* **priority** *value*

[no] vrrp *vrid* **priority**

Configure VRRP priority value, No command will restore to default value.

Parameter

Parameter	Description
vrid	Virtual Router ID. 1-255
value	Priority value.1-254

Default

100

Explanation

none

Example

The following commands will config vrrp priority value is 120 on vlan 1.

Switch(config_v1)#vrrp 1 priority 120

3.1.7 vrrp timer

Syntas

vrrp *vrid* **timer advertisement** *time_value*

no vrrp vrid **timer advertisement**

Configure vrrp announce timer, No command will restore to default value.

Parameter

Parameter	Description
vrid	Virtual Router ID. 1-255
time_value	Announce timer value. 1-10 sec

Default

1 sec

Explanation

none

Example

The following commands will config vrrp announce timer value is 2 seconds on vlan 1.

Switch(config_v1)#vrrp 1 timer advertisement 2

3.1.8 show vrrp

Syntas

show vrrp [**interface** *intf-id*]

Show VRRP information

Parameter

Parameter	Description
intf-id	Interface.

Default

none

Explanation

Show vrrp information

Example

The following commands will show vlan 1 vrrp information.

```
Switch(config)# show vrrp interface vlan1
VLAN1   (192.168.20.118,  255.255.255.0   00e0.0f42.0000)
-------------------------------------------------------------------------
group id: 1
state: Master
virtual mac address: 0000.5e00.0101
priority: 100
preempt: on
authentication: no-authen
advertisement interval: 1
associate IP address: 192.168.20.110
advertisement timer expiry: 1
```

3.1.9 debug vrrp

Syntas

debug vrrp {event|packet}

no debug vrrp {**event**|**packet**}

Enable/disable VRRP debug switch.

Parameter

none

Default

disable

Explanation

none

Example

Switch# debug vrrp packet