

组网及说明

1 配置需求及说明

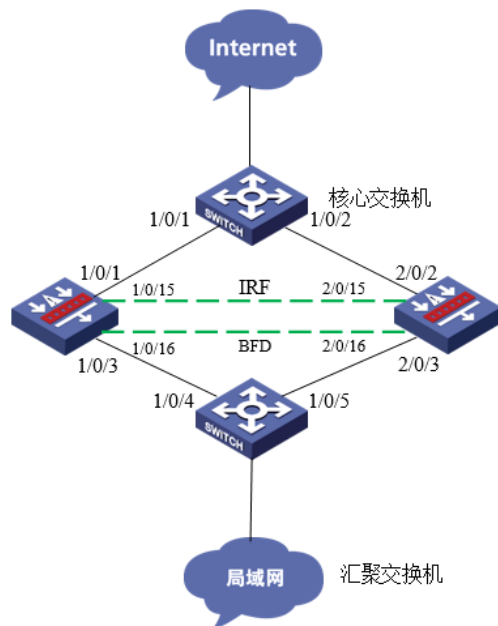
1.1 适用的产品系列

本案例适用于如F5080、F5060、F5030、F5000-M等F5000、F5000-X系列的防火墙。

1.2 配置需求及实现的效果

防火墙A与防火墙B堆叠后使用透明模式部署在核心交换机与汇聚交换机之间，需要使用目前情况下所有流量通过防火墙A进行转发，如果防火墙A出现宕机再由防火墙B接管所有业务、当防火墙A故障恢复后再次接管所有业务。

1.3 组网图



配置步骤

2 配置步骤

2.1 核心交换机配置

#创建三层聚合接口并设置IP地址。

```
<H3C>system
[H3C]interface Route-Aggregation 1
[H3C-Route-Aggregation1]ip address 192.168.1.1 255.255.255.0
[H3C-Route-Aggregation1]link-aggregation selected-port maximum 1
[H3C-Route-Aggregation1]quit
```

#将1/0/1接口加入聚合组并设置聚合优先级。

```
[H3C]interface GigabitEthernet 1/0/1
[H3C-GigabitEthernet1/0/1]link-aggregation port-priority 10
[H3C-GigabitEthernet1/0/1]port link-aggregation group 1
[H3C-GigabitEthernet1/0/1]quit
```

#将1/0/2接口加入聚合组并设置聚合优先级。

```
[H3C]interface GigabitEthernet 1/0/2
[H3C-GigabitEthernet1/0/2]link-aggregation port-priority 100
[H3C-GigabitEthernet1/0/2]port link-aggregation group 1
[H3C-GigabitEthernet1/0/2]quit
```

2.2 防火墙配置

2.2.1 FWA与FWB建立堆叠并配置BFD MAD检测

具体配置可参考防火墙虚拟化配置举例，本章不做介绍。

2.2.2 防火墙开启会话同步并关闭本框优先命令

#开启本地IP优先转发功能

```
[Sysname] ip load-sharing local-first enable
```

#开启会话同步功能

```
[Sysname] session synchronization enable
```

#开启会话数据统计功能

[Sysname] session statistics enable

2.2.3 防火墙聚合配置

1. 防火墙上行接口聚合配置

#创建二层聚合接口并设置聚合最大选中个数。

```
<H3C>system
[H3C]interface Bridge-Aggregation 1
[H3C-Bridge-Aggregation1]link-aggregation selected-port maximum 1
[H3C-Bridge-Aggregation1]quit
#将1/0/1接口加入聚合组并设置聚合优先级。
[H3C]interface GigabitEthernet 1/0/1
[H3C-GigabitEthernet1/0/1]link-aggregation port-priority 10
[H3C-GigabitEthernet1/0/1]port link-aggregation group 1
[H3C-GigabitEthernet1/0/1]quit
#将2/0/2接口加入聚合组并设置聚合优先级。
[H3C]interface GigabitEthernet 2/0/2
[H3C-GigabitEthernet2/0/2]link-aggregation port-priority 100
[H3C-GigabitEthernet2/0/2]port link-aggregation group 1
[H3C-GigabitEthernet2/0/2]quit
```

2. 防火墙下行接口聚合配置

#创建二层聚合接口并设置聚合最大选中个数。

```
<H3C>system
[H3C]interface Bridge-Aggregation 2
[H3C-Bridge-Aggregation2]link-aggregation selected-port maximum 1
[H3C-Bridge-Aggregation2]quit
#将1/0/1接口加入聚合组并设置聚合优先级。
[H3C]interface GigabitEthernet 1/0/3
[H3C-GigabitEthernet1/0/3]link-aggregation port-priority 10
[H3C-GigabitEthernet1/0/3]port link-aggregation group 2
[H3C-GigabitEthernet1/0/3]quit
#将2/0/3接口加入聚合组并设置聚合优先级。
[H3C]interface GigabitEthernet 2/0/3
[H3C-GigabitEthernet2/0/3]link-aggregation port-priority 100
[H3C-GigabitEthernet2/0/3]port link-aggregation group 2
[H3C-GigabitEthernet2/0/3]quit
```

2.2.4 防火墙安全域配置

#将防火墙上行接口接入Untrust区域

```
[H3C]security-zone name Untrust
[H3C-security-zone-Untrust]import interface Bridge-Aggregation1 vlan 1
[H3C-security-zone-Untrust]import interface GigabitEthernet1/0/1 vlan 1
[H3C-security-zone-Untrust]import interface GigabitEthernet2/0/2 vlan 1
[H3C-security-zone-Untrust]quit
#将防火墙下行接口接入trust区域
[H3C]security-zone name Untrust
[H3C-security-zone-Trust]import interface Bridge-Aggregation2 vlan 1
[H3C-security-zone-Trust]import interface GigabitEthernet1/0/3 vlan 1
[H3C-security-zone-Trust]import interface GigabitEthernet2/0/3 vlan 1
[H3C-security-zone-Trust]quit
```

2.2.5 配置端口冗余组配置

#配置track监控物理端口

```
[H3C]track 1 interface GigabitEthernet1/0/1 physical
[H3C]track 2 interface GigabitEthernet2/0/2 physical
[H3C]track 3 interface GigabitEthernet1/0/3 physical
[H3C]track 4 interface GigabitEthernet2/0/3 physical
#创建节点1与防火墙A所有接口绑定
[H3C]redundancy group aaa
[H3C-redundancy-group-aaa] node 1
[H3C-redundancy-group-aaa-node1] bind slot 1
[H3C-redundancy-group-aaa-node1] priority 100
[H3C-redundancy-group-aaa-node1] node-member interface gigabitethernet 1/0/1
[H3C-redundancy-group-aaa-node1] node-member interface gigabitethernet 1/0/3
[H3C-redundancy-group-aaa-node1] track 1 interface gigabitethernet 1/0/1
[H3C-redundancy-group-aaa-node1] track 3 interface gigabitethernet 1/0/3
[H3C-redundancy-group-aaa-node1] quit
```

1. 创建节点2与防火墙B所有接口绑定

```
[H3C-redundancy-group-aaa] node 2
[H3C-redundancy-group-aaa-node2] bind slot 2
[H3C-redundancy-group-aaa-node2] priority 50
[H3C-redundancy-group-aaa-node2] node-member interface gigabitethernet 2/0/2
[H3C-redundancy-group-aaa-node2] node-member interface gigabitethernet 2/0/3
[H3C-redundancy-group-aaa-node2] track 2 interface gigabitethernet 2/0/2
[H3C-redundancy-group-aaa-node2] track 4 interface gigabitethernet 2/0/3
[H3C-redundancy-group-aaa-node2] quit
```

2.2.6 安全策略配置

防火墙目前版本存在两套安全策略，请在放通安全策略前确认设备运行那种类型的安全策略？以下配置任选其一。

1. 通过命令“display cu | in security-policy”如果查到命令行存在“security-policy disable”或者没有查到任何信息，则使用下面策略配置。

```
[H3C]display cu | in security-policy
security-policy disable
#创建对象策略pass。
[H3C]object-policy ip pass
[H3C-object-policy-ip-pass] rule 0 pass
[H3C-object-policy-ip-pass]quit
#创建Trust到Untrust域的域间策略调用pass策略。
[H3C]zone-pair security source Trust destination local
[H3C-zone-pair-security-Trust- local]object-policy apply ip pass
[H3C-zone-pair-security-Trust- local]quit
[H3C]zone-pair security source local destination Trust
[H3C-zone-pair-security-local -trust]object-policy apply ip pass
[H3C-zone-pair-security-local -trust]quit
[H3C]zone-pair security source Untrust destination local
[H3C-zone-pair-security-Untrust- local]object-policy apply ip pass
[H3C-zone-pair-security-Untrust- local]quit
[H3C]zone-pair security source local destination Untrust
[H3C-zone-pair-security-local -Untrust]object-policy apply ip pass
[H3C-zone-pair-security-local -Untrust]quit
[H3C]zone-pair security source Trust destination Untrust
[H3C-zone-pair-security-Trust -Untrust]object-policy apply ip pass
[H3C-zone-pair-security-Trust -Untrust]quit
```

2. 通过命令“display cu | in security-policy”如果查到命令行存在“security-policy ip”并且没有查到“security-policy disable”，则使用下面策略配置。

```
[H3C]display cu | in security-policy
security-policy ip
创建安全策略并放通local到trust和trust到local的安全策略。
[H3C]security-policy ip
[H3C-security-policy-ip]rule 10 name test
[H3C-security-policy-ip-10-test]action pass
[H3C-security-policy-ip-10-test]source-zone local
[H3C-security-policy-ip-10-test]source-zone Trust
[H3C-security-policy-ip-10-test]source-zone Untrust
[H3C-security-policy-ip-10-test]destination-zone local
[H3C-security-policy-ip-10-test]destination-zone Trust
[H3C-security-policy-ip-10-test]destination-zone Untrust
[H3C-security-policy-ip-10-test]quit
```

2.3 汇聚交换机配置

#创建三层聚合接口并设置IP地址。

```
<H3C>system
[H3C]interface Route-Aggregation 1
[H3C-Route-Aggregation1]ip address 192.168.1.2 255.255.255.0
[H3C-Route-Aggregation1]link-aggregation selected-port maximum 1
[H3C-Route-Aggregation1]quit
#将1/0/4接口加入聚合组并设置聚合优先级。
[H3C]interface GigabitEthernet 1/0/4
[H3C-GigabitEthernet1/0/4]link-aggregation port-priority 10
[H3C-GigabitEthernet1/0/4]port link-aggregation group 1
[H3C-GigabitEthernet1/0/4]quit
#将1/0/5接口加入聚合组并设置聚合优先级。
[H3C]interface GigabitEthernet 1/0/5
```

```
[H3C-GigabitEthernet1/0/5]link-aggregation port-priority 100
[H3C-GigabitEthernet1/0/5]port link-aggregation group 1
[H3C-GigabitEthernet1/0/5]quit
```

3 检验配置结果

3.1.1 正常时查看冗余组状态

节点1为主用状态，节点二为备用状态。

```
[H3C-redundancy-group-aaa] display redundancy group aaa
Redundancy group aaa (ID 1):
```

Node ID	Slot	Priority	Status	Track weight
1	Slot1	100	Primary	255
2	Slot2	50	Secondary	255

```
Preempt delay time remained : 0 min
Preempt delay timer setting : 1 min
Remaining hold-down time : 0 sec
Hold-down timer setting : 1 sec
Manual switchover request : No
```

Member interfaces:

Node 1:

```
Node member Physical status
GE1/0/1 UP
GE1/0/3 UP
```

Track info:

Track	Status	Reduced weight	Interface
1	Positive	255	GE1/0/1
2	Positive	255	GE1/0/3

Node 2:

```
Node member Physical status
GE2/0/2 UP
GE2/0/3 UP
```

Track info:

Track	Status	Reduced weight	Interface
3	Positive	255	GE2/0/2
4	Positive	255	GE2/0/3

3.1.2 手动关闭1/0/1接口后时查看冗余组状态

查看到主备状态已经发生了变化，并且1/0/1与1/0/3的物理状态全部置为down。

```
[H3C] display redundancy group aaa
Redundancy group aaa (ID 1):
```

Node ID	Slot	Priority	Status	Track weight
1	Slot1	100	Secondary	-255
2	Slot2	50	Primary	255

```
Preempt delay time remained : 0 min
Preempt delay timer setting : 1 min
Remaining hold-down time : 0 sec
Hold-down timer setting : 1 sec
Manual switchover request : No
```

Member interfaces:

Node 1:

```
Node member Physical status
GE1/0/1 DOWN(redundancy down)
GE1/0/3 DOWN
```

Track info:

Track	Status	Reduced weight	Interface
1	Negative	255	GE1/0/1
2	Negative	255	GE1/0/2 (Fault)

Node 2:

```
Node member Physical status
GE2/0/2 UP
GE2/0/3 UP
```

Track info:

Track	Status	Reduced weight	Interface
3	Positive	255	GE2/0/2
4	Positive	255	GE2/0/3

配置关键点

3.1.3 注意事项

- 1、配置冗余组后，所有加入冗余组的物理接口状态必须处于UP状态，否则会造成冗余组主备切换异常。