

# H3C S6850 & S9850 & S9820-64H DRNI Configuration Examples

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# Introduction

This document provides DRNI configuration examples.

Distributed Resilient Network Interconnect (DRNI) virtualizes two physical devices into one system through multichassis link aggregation. The standard for DRNI is IEEE P802.1AX-REV™/D4.4c, *Draft Standard for Local and Metropolitan Area Networks*.

DRNI is typically applicable to data center environments.

## Prerequisites

The configuration examples were created and verified in a lab environment, and all the devices were started with the factory default configuration. When you are working on a live network, make sure you understand the potential impact of every command on your network.

The following information is provided based on the assumption that you have basic knowledge of DRNI.

## General restrictions and guidelines

### DR system restrictions and guidelines

- A DR system supports only two DR member devices.
- Make sure the DR member devices are consistent in type 1 configuration, which includes the global and DR interface specific settings listed in [Table 1](#) and [Table 2](#), respectively.

**Table 1 Global type 1 configuration**

Setting	Details
IPP link type	IPP link type, including access, hybrid, and trunk.
PVID on the IPP	PVID on the IPP.
Spanning tree state	<ul style="list-style-type: none"><li>• Global spanning tree state.</li><li>• VLAN-specific spanning tree state.</li></ul>
Spanning tree mode	Spanning tree mode, including STP, RSTP, PVST, and MSTP.
MST region settings	<ul style="list-style-type: none"><li>• MST region name.</li><li>• MST region revision level.</li><li>• VLAN-to-MSTI mappings.</li></ul>

**Table 2 DR interface type 1 configuration**

Setting	Details
Aggregation mode	Aggregation mode, including static and dynamic.
Spanning tree state	Interface-specific spanning tree state.
Link type	Interface link type, including access, hybrid, and trunk.
PVID	Interface PVID.

- If you attach a device to a DR system through a single link, attach it to the primary DR device. If you attach the device to the secondary DR device, traffic interruption will occur after the DR system splits.
- The data restoration interval specifies the maximum amount of time for the secondary DR device to synchronize data (including MAC and ARP entries) with the primary DR device during DR system setup. Make sure the data restoration interval is longer than the time required for the secondary DR device to start up and restore the table entries.
- As a best practice to avoid DR system split, do not modify the DR system MAC address, system number, or system priority of DR member devices after the DR system is established.
- For DR member devices to synchronize ARP entries, you must exclude the VLAN interfaces of the VLANs to which the DR interfaces and IPPs belong from the DRNI MAD DOWN action.

## DR interface restrictions and guidelines

- You can configure only Layer 2 aggregate interfaces as DR interfaces.
- As a best practice, assign Layer 2 aggregate interfaces to a DR group with the same number as their interface numbers.
- Do not use automatic assignment or automatic link aggregation on the Layer 2 aggregate interfaces that act as DR interfaces.
- As a best practice, disable spanning tree on DR interfaces.

## IPP restrictions and guidelines

- Do not use automatic assignment or automatic link aggregation on the Layer 2 aggregate interfaces that act as IPPs.
- As a best practice, configure IPPs as trunk ports and assign them to all VLANs that are permitted on DR interfaces. For the DR member devices to have Layer 3 connectivity over the IPL, create VLAN interfaces for those VLANs and assign IP addresses to them.
- To avoid multi-active collisions, use interfaces on different cards to set up the IPL and keepalive link.

## Keepalive link restrictions and guidelines

- Use Layer 3 physical interfaces to set up the keepalive link. As a best practice, use management Ethernet interfaces.
- To avoid multi-active collisions, use interfaces on different cards to set up the IPL and keepalive link.

# Example: Configuring DRNI at the access Layer

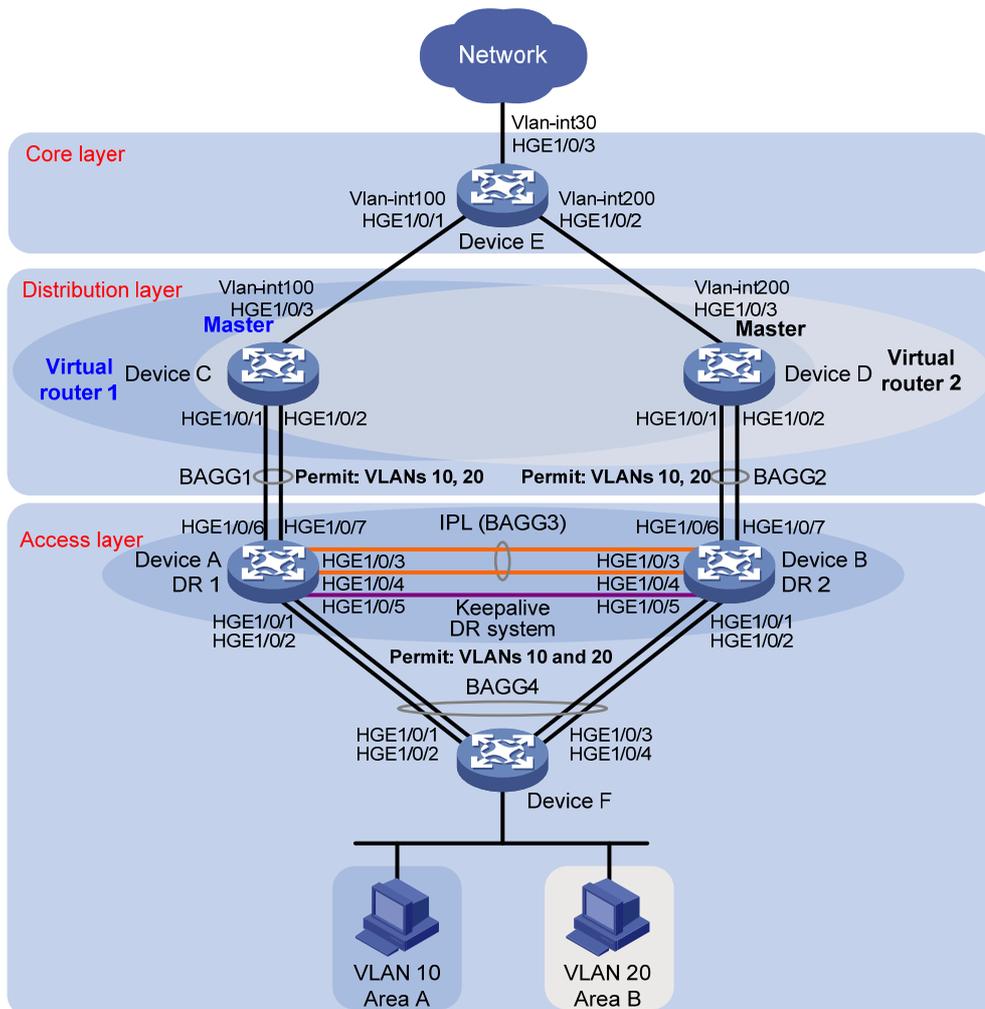
## Network configuration

As shown in [Figure 1](#):

- Configure Device A and Device B as a DR system to establish one multichassis aggregate link with Device F and one with Device C and Device D.

- Set up a keepalive link between HundredGigE 1/0/5 of Device A and HundredGigE 1/0/5 of Device B, and exclude the interfaces from the shutdown action by DRNI MAD.
- Configure two VRRP groups on Device C and Device D to provide gateway services for VLAN 10 and VLAN 20.
  - Configure VRRP group 1 to provide gateway services for hosts in VLAN 10 (Area A). Add Device C and Device D to the group as the master and backup devices, respectively.
  - Configure VRRP group 2 to provide gateway services for hosts in VLAN 20 (Area B). Add Device D and Device C to the group as the master and backup devices, respectively.
- Configure OSPF on Device C, Device D, and Device E for the hosts to communicate with external networks at Layer 3.

**Figure 1 Network diagram**



Device	Interface	IP address	Device	Interface	IP address
Device A	HGE 1/0/5	1.1.1.1/24	Device B	HGE1/0/5	1.1.1.2/24
Device C	VLAN-interface 100	100.1.1.1/24	Device D	VLAN-interface 100	200.1.1.1/24
	VLAN-interface 10	10.1.1.1/24		VLAN-interface 10	10.1.1.2/24
	VLAN-interface 20	20.1.1.1/24		VLAN-interface 20	20.1.1.2/24
	Virtual IP 1	10.1.1.100/24		Virtual IP 1	10.1.1.100/24
	Virtual IP 2	20.1.1.100/24		Virtual IP 2	20.1.1.100/24
Device E	VLAN-interface 100	100.1.1.2/24			

Device	Interface	IP address	Device	Interface	IP address
	VLAN-interface 200	200.1.1.2/24			
	VLAN-interface 30	30.1.1.1/24			

## Analysis

For the secondary DR device to monitor the state of the primary device, establish a Layer 3 keepalive link between the DR member devices.

To balance traffic between two VRRP gateway devices, you can assign them to two VRRP groups with different priorities. In this example, Device C is assigned a higher priority than Device D in VRRP group 1 so Device C can become the master in this group. Device D is assigned a higher priority than Device C in VRRP group 2 so Device D can become the master in this group.

## Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

Hardware	Software version
S6850 switch series S9850 switch series	Release 6555P01
S9820-64H switch	Release 6555P01

## Restrictions and guidelines

### DRNI restrictions and guidelines

For the DR member devices to be identified as one DR system, you must configure the same DR system MAC address and DR system priority on them. You must assign different DR system numbers to the DR member devices.

A DR member device can have only one IPP.

For correct keepalive detection, you must exclude the interfaces used for keepalive detection from the shutdown action by DRNI MAD.

### VRRP restrictions and guidelines

As a best practice, use VRRP standard mode.

You cannot specify the virtual IP address as any of the following IP addresses:

- All-zero address (0.0.0.0).
- Broadcast address (255.255.255.255).
- Loopback address.
- IP address of other than Class A, Class B, and Class C.
- Invalid IP address (for example, 0.0.0.1).

The virtual IP address of an IPv4 VRRP group must be on the same subnet as the downlink interface IP addresses of the VRRP group members to ensure successful traffic forwarding.

## Procedures

### Configuring Device A

**# Configure DR system settings.**

```
<DeviceA> system-view
```

```
[DeviceA] drni system-mac 1-1-1
```

Changing the system MAC might flap the intra-portal link and cause DR system setup failure.  
Continue? [Y/N]:y

```
[DeviceA] drni system-number 1
```

Changing the system number might flap the intra-portal link and cause DR system setup failure. Continue? [Y/N]:y

```
[DeviceA] drni system-priority 123
```

Changing the system priority might flap the intra-portal link and cause DR system setup failure. Continue? [Y/N]:y

**# Configure DR keepalive packet parameters.**

```
[DeviceA] drni keepalive ip destination 1.1.1.2 source 1.1.1.1
```

**# Configure HundredGigE 1/0/5 as a routed (Layer 3) interface and assign the interface an IP address. The IP address will be used as the source IP address of keepalive packets.**

```
[DeviceA] interface hundredgige 1/0/5
```

```
[DeviceA-HundredGigE1/0/5] port link-mode route
```

```
[DeviceA-HundredGigE1/0/5] ip address 1.1.1.1 24
```

```
[DeviceA-HundredGigE1/0/5] quit
```

**# Exclude the interface used for DR keepalive detection (HundredGigE 1/0/5) from the shutdown action by DRNI MAD.**

```
[DeviceA] drni mad exclude interface hundredgige 1/0/5
```

**# Create VLAN 10 and VLAN 20.**

```
[DeviceA] vlan 10
```

```
[DeviceA-vlan10] quit
```

```
[DeviceA] vlan 20
```

```
[DeviceA-vlan20] quit
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 1.**

```
[DeviceA] interface bridge-aggregation 1
```

```
[DeviceA-Bridge-Aggregation1] link-aggregation mode dynamic
```

```
[DeviceA-Bridge-Aggregation1] quit
```

**# Assign HundredGigE 1/0/6 and HundredGigE 1/0/7 to aggregation group 1.**

```
[DeviceA] interface hundredgige 1/0/6
```

```
[DeviceA-HundredGigE1/0/6] port link-aggregation group 1
```

```
[DeviceA-HundredGigE1/0/6] quit
```

```
[DeviceA] interface hundredgige 1/0/7
```

```
[DeviceA-HundredGigE1/0/7] port link-aggregation group 1
```

```
[DeviceA-HundredGigE1/0/7] quit
```

**# Set the link type of Bridge-Aggregation 1 to trunk and assign it to VLAN 10 and VLAN 20.**

```
[DeviceA] interface bridge-aggregation 1
```

```
[DeviceA-Bridge-Aggregation1] port link-type trunk
Configuring HundredGigE1/0/6 done.
Configuring HundredGigE1/0/7 done.
[DeviceA-Bridge-Aggregation1] port trunk permit vlan 10 20
Configuring HundredGigE1/0/6 done.
Configuring HundredGigE1/0/7 done.
[DeviceA-Bridge-Aggregation1] quit
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 3 and specify it as the IPP.**

```
[DeviceA] interface bridge-aggregation 3
[DeviceA-Bridge-Aggregation3] link-aggregation mode dynamic
[DeviceA-Bridge-Aggregation3] port drni intra-portal-port 1
[DeviceA-Bridge-Aggregation3] quit
```

**# Assign HundredGigE 1/0/3 and HundredGigE 1/0/4 to aggregation group 3.**

```
[DeviceA] interface hundredgige 1/0/3
[DeviceA-HundredGigE1/0/3] port link-aggregation group 3
[DeviceA-HundredGigE1/0/3] quit
[DeviceA] interface hundredgige 1/0/4
[DeviceA-HundredGigE1/0/4] port link-aggregation group 3
[DeviceA-HundredGigE1/0/4] quit
```

**# Set the link type of Bridge-Aggregation 3 to trunk and assign it to VLAN 10 and VLAN 20.**

```
[DeviceA] interface bridge-aggregation 3
[DeviceA-Bridge-Aggregation3] port link-type trunk
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceA-Bridge-Aggregation3] port trunk permit vlan 10 20
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceA-Bridge-Aggregation3] quit
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 4 and assign it to DR group 4.**

```
[DeviceA] interface bridge-aggregation 4
[DeviceA-Bridge-Aggregation4] link-aggregation mode dynamic
[DeviceA-Bridge-Aggregation4] port drni group 4
[DeviceA-Bridge-Aggregation4] quit
```

**# Assign HundredGigE 1/0/1 and HundredGigE 1/0/2 to aggregation group 4.**

```
[DeviceA] interface hundredgige 1/0/1
[DeviceA-HundredGigE1/0/1] port link-aggregation group 4
[DeviceA-HundredGigE1/0/1] quit
[DeviceA] interface hundredgige 1/0/2
[DeviceA-HundredGigE1/0/2] port link-aggregation group 4
[DeviceA-HundredGigE1/0/2] quit
```

**# Set the link type of Bridge-Aggregation 4 to trunk and assign it to VLAN 10 and VLAN 20.**

```
[DeviceA] interface bridge-aggregation 4
[DeviceA-Bridge-Aggregation4] port link-type trunk
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceA-Bridge-Aggregation4] port trunk permit vlan 10 20
Configuring HundredGigE1/0/1 done.
```

```
Configuring HundredGigE1/0/2 done.  
[DeviceA-Bridge-Aggregation4] quit
```

## Configuring Device B

### # Configure DR system settings.

```
<DeviceB> system-view  
[DeviceB] drni system-mac 1-1-1  
Changing the system MAC might flap the intra-portal link and cause DR system setup failure.  
Continue? [Y/N]:y  
[DeviceB] drni system-number 2  
Changing the system number might flap the intra-portal link and cause DR system setup  
failure. Continue? [Y/N]:y  
[DeviceB] drni system-priority 123  
Changing the system priority might flap the intra-portal link and cause DR system setup  
failure. Continue? [Y/N]:y
```

### # Configure DR keepalive packet parameters.

```
[DeviceB] drni keepalive ip destination 1.1.1.1 source 1.1.1.2
```

### # Configure HundredGigE 1/0/5 as a routed (Layer 3) interface and assign the interface an IP address. The IP address will be used as the source IP address of keepalive packets.

```
[DeviceB] interface hundredgige 1/0/5  
[DeviceB-HundredGigE1/0/5] port link-mode route  
[DeviceB-HundredGigE1/0/5] ip address 1.1.1.2 24  
[DeviceB-HundredGigE1/0/5] quit
```

### # Exclude the interface used for DR keepalive detection (HundredGigE 1/0/5) from the shutdown action by DRNI MAD.

```
[DeviceB] drni mad exclude interface hundredgige 1/0/5
```

### # Create VLAN 10 and VLAN 20.

```
[DeviceB] vlan 10  
[DeviceB-vlan10] quit  
[DeviceB] vlan 20  
[DeviceB-vlan20] quit
```

### # Create Layer 2 dynamic aggregate interface Bridge-Aggregation 2.

```
[DeviceB] interface bridge-aggregation 2  
[DeviceB-Bridge-Aggregation2] link-aggregation mode dynamic  
[DeviceB-Bridge-Aggregation2] quit
```

### # Assign HundredGigE 1/0/6 and HundredGigE 1/0/7 to aggregation group 2.

```
[DeviceB] interface hundredgige 1/0/6  
[DeviceB-HundredGigE1/0/6] port link-aggregation group 2  
[DeviceB-HundredGigE1/0/6] quit  
[DeviceB] interface hundredgige 1/0/7  
[DeviceB-HundredGigE1/0/7] port link-aggregation group 2  
[DeviceB-HundredGigE1/0/7] quit
```

### # Set the link type of Bridge-Aggregation 2 to trunk and assign it to VLAN 10 and VLAN 20.

```
[DeviceB] interface bridge-aggregation 2  
[DeviceB-Bridge-Aggregation2] port link-type trunk  
Configuring HundredGigE1/0/6 done.
```

```

Configuring HundredGigE1/0/7 done.
[DeviceB-Bridge-Aggregation2] port trunk permit vlan 10 20
Configuring HundredGigE1/0/6 done.
Configuring HundredGigE1/0/7 done.
[DeviceB-Bridge-Aggregation2] quit

# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 3 and specify it as the IPP.
[DeviceB] interface bridge-aggregation 3
[DeviceB-Bridge-Aggregation3] link-aggregation mode dynamic
[DeviceB-Bridge-Aggregation3] port drni intra-portal-port 1
[DeviceB-Bridge-Aggregation3] quit

# Assign HundredGigE 1/0/3 and HundredGigE 1/0/4 to aggregation group 3.
[DeviceB] interface hundredgige 1/0/3
[DeviceB-HundredGigE1/0/3] port link-aggregation group 3
[DeviceB-HundredGigE1/0/3] quit
[DeviceB] interface hundredgige 1/0/4
[DeviceB-HundredGigE1/0/4] port link-aggregation group 3
[DeviceB-HundredGigE1/0/4] quit

# Set the link type of Bridge-Aggregation 3 to trunk and assign it to VLAN 10 and VLAN 20.
[DeviceB] interface bridge-aggregation 3
[DeviceB-Bridge-Aggregation3] port link-type trunk
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceB-Bridge-Aggregation3] port trunk permit vlan 10 20
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceB-Bridge-Aggregation3] quit

# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 4 and assign it to DR group 4.
[DeviceB] interface bridge-aggregation 4
[DeviceB-Bridge-Aggregation4] link-aggregation mode dynamic
[DeviceB-Bridge-Aggregation4] port drni group 4
[DeviceB-Bridge-Aggregation4] quit

# Assign HundredGigE 1/0/1 and HundredGigE 1/0/2 to aggregation group 4.
[DeviceB] interface hundredgige 1/0/1
[DeviceB-HundredGigE1/0/1] port link-aggregation group 4
[DeviceB-HundredGigE1/0/1] quit
[DeviceB] interface hundredgige 1/0/2
[DeviceB-HundredGigE1/0/2] port link-aggregation group 4
[DeviceB-HundredGigE1/0/2] quit

# Set the link type of Bridge-Aggregation 4 to trunk and assign it to VLAN 10 and VLAN 20.
[DeviceB] interface bridge-aggregation 4
[DeviceB-Bridge-Aggregation4] port link-type trunk
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceB-Bridge-Aggregation4] port trunk permit vlan 10 20
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceB-Bridge-Aggregation4] quit

```

# Configuring Device C

**# Create VLAN 10, VLAN 20, and VLAN 100.**

```
<DeviceC> system-view
[DeviceC] vlan 10
[DeviceC-vlan10] quit
[DeviceC] vlan 20
[DeviceC-vlan20] quit
[DeviceC] vlan 100
```

**# Assign HundredGigE 1/0/3 to VLAN 100.**

```
[DeviceC] vlan 100
[DeviceC-vlan100] port hundredgige 1/0/3
[DeviceC-vlan100] quit
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 1.**

```
[DeviceC] interface bridge-aggregation 1
[DeviceC-Bridge-Aggregation1] link-aggregation mode dynamic
[DeviceC-Bridge-Aggregation1] quit
```

**# Assign HundredGigE 1/0/1 and HundredGigE1/0/2 to aggregation group 1.**

```
[DeviceC] interface range hundredgige 1/0/1 to hundredgige 1/0/2
[DeviceC-if-range] port link-aggregation group 1
[DeviceC-if-range] quit
```

**# Set the link type of Bridge-Aggregation 1 to trunk and assign it to VLAN 10 and VLAN 20.**

```
[DeviceC] interface bridge-aggregation 1
[DeviceC-Bridge-Aggregation1] port link-type trunk
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceC-Bridge-Aggregation1] port trunk permit vlan 10 20
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceC-Bridge-Aggregation1] quit
```

**# Create uplink interface VLAN-interface 100 and assign it an IP address.**

```
[DeviceC] interface vlan-interface 100
[DeviceC-Vlan-interface100] ip address 100.1.1.1 24
[DeviceC-Vlan-interface100] quit
```

**# Create VLAN-interface 10 and VLAN-interface 20 and assign an IP address to each of them.**

```
[DeviceC] interface vlan-interface 10
[DeviceC-vlan-interface10] ip address 10.1.1.1 24
[DeviceC-vlan-interface10] quit
[DeviceC] interface vlan-interface 20
[DeviceC-vlan-interface20] ip address 20.1.1.1 24
[DeviceC-vlan-interface20] quit
```

**# Create VRRP group 1 on VLAN-interface 10 and set its virtual IP address to 10.1.1.100.**

```
[DeviceC] interface vlan-interface 10
[DeviceC-Vlan-interface10] vrrp vrid 1 virtual-ip 10.1.1.100
```

**# Set the priority of Device C to 200 for it to become the master in VRRP group 1.**

```
[DeviceC-Vlan-interface10] vrrp vrid 1 priority 200
```

```

[DeviceC-Vlan-interface10] quit
# Create VRRP group 2 on VLAN-interface 20 and set its virtual IP address to 20.1.1.100.
[DeviceC] interface vlan-interface 20
[DeviceC-Vlan-interface20] vrrp vrid 2 virtual-ip 20.1.1.100
[DeviceC-vlan-interface20] quit
# Configure Device C to operate in preemptive mode in VRRP group 1. Set the preemption delay to 500 centiseconds to avoid frequent status switchover.
[DeviceC] interface vlan-interface 10
[DeviceC-Vlan-interface10] vrrp vrid 1 preempt-mode delay 500
[DeviceC-Vlan-interface10] quit
# Create track entry 1 to monitor the upstream link status of HundredGigE 1/0/3.
[DeviceC] track 1 interface hundredgige 1/0/3
# Configure Device C in VRRP group 1 to monitor track entry 1, and decrease its priority by 150 when the track entry transits to Negative.
[DeviceC] interface vlan-interface 10
[DeviceC-Vlan-interface10] vrrp vrid 1 track 1 priority reduced 150
[DeviceC-Vlan-interface10] quit
# Configure OSPF.
[DeviceC] ospf
[DeviceC-ospf-1] area 0
[DeviceC-ospf-1-area-0.0.0.0] network 10.1.1.0 0.0.0.255
[DeviceC-ospf-1-area-0.0.0.0] network 20.1.1.0 0.0.0.255
[DeviceC-ospf-1-area-0.0.0.0] network 100.1.1.0 0.0.0.255
[DeviceC-ospf-1-area-0.0.0.0] quit
[DeviceC-ospf-1] quit

```

## Configuring Device D

```

# Create VLAN 10, VLAN 20, and VLAN 200.
<DeviceD> system-view
[DeviceD] vlan 10
[DeviceD-vlan10] quit
[DeviceD] vlan 20
[DeviceD-vlan20] quit
[DeviceD] vlan 200
# Assign HundredGigE 1/0/3 to VLAN 200.
[DeviceD] vlan 200
[DeviceD-vlan200] port hundredgige 1/0/3
[DeviceD-vlan200] quit
# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 2.
[DeviceD] interface bridge-aggregation 2
[DeviceD-Bridge-Aggregation2] link-aggregation mode dynamic
[DeviceD-Bridge-Aggregation2] quit
# Assign HundredGigE 1/0/1 and HundredGigE 1/0/2 to aggregation group 2.
[DeviceD] interface range hundredgige 1/0/1 to hundredgige 1/0/2
[DeviceD-if-range] port link-aggregation group 2
[DeviceD-if-range] quit

```

**# Set the link type of Bridge-Aggregation 2 to trunk and assign it to VLAN 10 and VLAN 20.**

```
[DeviceD] interface bridge-aggregation 2
[DeviceD-Bridge-Aggregation2] port link-type trunk
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceD-Bridge-Aggregation2] port trunk permit vlan 10 20
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceD-Bridge-Aggregation2] quit
```

**# Create uplink interface VLAN-interface 200 and assign it an IP address.**

```
[DeviceD] interface vlan-interface 200
[DeviceD-Vlan-interface200] ip address 200.1.1.1 24
[DeviceD-Vlan-interface200] quit
```

**# Create VLAN-interface 10 and VLAN-interface 20 and assign an IP address to each of them.**

```
[DeviceD] interface vlan-interface 10
[DeviceD-vlan-interface10] ip address 10.1.1.2 24
[DeviceD-vlan-interface10] quit
[DeviceD] interface vlan-interface 20
[DeviceD-vlan-interface20] ip address 20.1.1.2 24
[DeviceD-vlan-interface20] quit
```

**# Create VRRP group 1 on VLAN-interface 10 and set its virtual IP address to 10.1.1.100.**

```
[DeviceD] interface vlan-interface 10
[DeviceD-Vlan-interface10] vrrp vrid 1 virtual-ip 10.1.1.100
[DeviceD-vlan-interface10] quit
```

**# Create VRRP group 2 on VLAN-interface 20 and set its virtual IP address to 20.1.1.100.**

```
[DeviceD] interface vlan-interface 20
[DeviceD-Vlan-interface20] vrrp vrid 2 virtual-ip 20.1.1.100
```

**# Set the priority of Device D to 200 for it to become the master in VRRP group 2.**

```
[DeviceD-Vlan-interface20] vrrp vrid 2 priority 200
```

**# Configure Device D to operate in preemptive mode in VRRP group 2. Set the preemption delay to 500 centiseconds to avoid frequent status switchover.**

```
[DeviceD-Vlan-interface20] vrrp vrid 2 preempt-mode delay 500
[DeviceD-Vlan-interface20] quit
```

**# Create track entry 2 to monitor the upstream link status of HundredGigE 1/0/3.**

```
[DeviceD] track 2 interface hundredgige 1/0/3
```

**# Configure Device D in VRRP group 2 to monitor track entry 2, and decrease its priority by 150 when the track entry transits to Negative.**

```
[DeviceD] interface vlan-interface 20
[DeviceD-Vlan-interface20] vrrp vrid 2 track 2 priority reduced 150
[DeviceD-Vlan-interface20] quit
```

**# Configure OSPF.**

```
[DeviceD] ospf
[DeviceD-ospf-1] area 0
[DeviceD-ospf-1-area-0.0.0.0] network 10.1.1.0 0.0.0.255
[DeviceD-ospf-1-area-0.0.0.0] network 20.1.1.0 0.0.0.255
[DeviceD-ospf-1-area-0.0.0.0] network 200.1.1.0 0.0.0.255
[DeviceD-ospf-1-area-0.0.0.0] quit
```

```
[DeviceD-ospf-1] quit
```

## Configuring Device E

**# Create VLAN 100 and assign HundredGigE 1/0/1 to the VLAN.**

```
<DeviceE> system-view
[DeviceE] vlan 100
[DeviceE-vlan100] port hundredgige 1/0/1
[DeviceE-vlan100] quit
```

**# Create VLAN-interface 100 and assign it an IP address.**

```
[DeviceE] interface vlan-interface 100
[DeviceE-vlan-interface100] ip address 100.1.1.2 24
[DeviceE-vlan-interface100] quit
```

**# Create VLAN 200 and assign HundredGigE 1/0/2 to the VLAN.**

```
[DeviceE] vlan 200
[DeviceE-vlan200] port hundredgige 1/0/2
[DeviceE-vlan200] quit
```

**# Create VLAN-interface 200 and assign it an IP address.**

```
[DeviceE] interface vlan-interface 200
[DeviceE-vlan-interface200] ip address 200.1.1.2 24
[DeviceE-vlan-interface200] quit
```

**# Create VLAN 30 and assign HundredGigE 1/0/3 to the VLAN.**

```
[DeviceE] vlan 30
[DeviceE-vlan30] port hundredgige 1/0/3
[DeviceE-vlan30] quit
```

**# Create VLAN-interface 30 and assign it an IP address.**

```
[DeviceE] interface vlan-interface 30
[DeviceE-vlan-interface30] ip address 30.1.1.1 24
[DeviceE-vlan-interface30] quit
```

**# Configure OSPF.**

```
[DeviceD] ospf
[DeviceD-ospf-1] area 0
[DeviceD-ospf-1-area-0.0.0.0] network 100.1.1.0 0.0.0.255
[DeviceD-ospf-1-area-0.0.0.0] network 200.1.1.0 0.0.0.255
[DeviceD-ospf-1-area-0.0.0.0] network 30.1.1.0 0.0.0.255
[DeviceD-ospf-1-area-0.0.0.0] quit
[DeviceD-ospf-1] quit
```

## Configuring Device F

**# Create VLAN 10 and VLAN 20.**

```
[DeviceF] vlan 10
[DeviceF-vlan10] quit
[DeviceF] vlan 20
[DeviceF-vlan20] quit
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 4.**

```
[DeviceF] interface bridge-aggregation 4
```

```

[DeviceF-Bridge-Aggregation4] link-aggregation mode dynamic
[DeviceF-Bridge-Aggregation4] quit
# Assign HundredGigE 1/0/1 through HundredGigE 1/0/4 to aggregation group 4.
[DeviceF] interface range hundredgige 1/0/1 to hundredgige 1/0/4
[DeviceF-if-range] port link-aggregation group 4
[DeviceF-if-range] quit
# Set the link type of Bridge-Aggregation 4 to trunk and assign it to VLAN 10 and VLAN 20.
[DeviceF] interface bridge-aggregation 4
[DeviceF-Bridge-Aggregation4] port link-type trunk
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceF-Bridge-Aggregation4] port trunk permit vlan 10 20
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceF-Bridge-Aggregation4] quit

```

## Verifying the configuration

# Verify that Device A and Device B have formed a DR system.

```

[DeviceA] display drni summary
Global consistency check          : SUCCESS
Inconsistent type 1 global settings: -

IPP                               IPP ID      State
BAGG3                             1           UP

DR interface    DR group ID  State    Check result  Type 1 inconsistency
BAGG4          4             UP        SUCCESS        -
[DeviceA] display drni verbose
Flags: A -- Home_Gateway, B -- Neighbor_Gateway, C -- Other_Gateway,
       D -- IPP_Activity, E -- DRCP_Timeout, F -- Gateway_Sync,
       G -- Port_Sync, H -- Expired

IPP/IPP ID: BAGG3/1
State: UP
Local state/Peer state: ABDFG/ABDFG
Local Selected ports (index): HGE1/0/3 (2), HGE1/0/4 (5)
Peer Selected ports indexes: 2, 5

DR interface/DR group ID: BAGG4/4
State: UP
Local state/Peer state: ABDFG/ABDFG
Local Selected ports (index): HGE1/0/1 (16385), HGE1/0/2 (16388)
Peer Selected ports indexes: 32769, 32772

```

# Verify that all member ports of aggregation group 4 are in Selected state on Device F, which indicates a successful link aggregation between the DR system and Device F.

```
[DeviceF] display link-aggregation verbose
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Port Status: S -- Selected, U -- Unselected, I -- Individual
Port: A -- Auto port, M -- Management port, R -- Reference port
Flags:  A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
        D -- Synchronization, E -- Collecting, F -- Distributing,
        G -- Defaulted, H -- Expired
```

Aggregate Interface: Bridge-Aggregation4

Creation Mode: Manual

Aggregation Mode: Dynamic

Loadsharing Type: Shar

Management VLANs: None

System ID: 0x8000, 1eba-3c46-0300

Local:

Port	Status	Priority	Index	Oper-Key	Flag
HGE1/0/1	S	32768	1	1	{ACDEF}
HGE1/0/2	S	32768	2	1	{ACDEF}
HGE1/0/3	S	32768	3	1	{ACDEF}
HGE1/0/4	S	32768	4	1	{ACDEF}

Remote:

Actor	Priority	Index	Oper-Key	SystemID	Flag
HGE1/0/1(R)	32768	16385	40004	0x7b , 0001-0001-0001	{ACDEF}
HGE1/0/2	32768	16388	40004	0x7b , 0001-0001-0001	{ACDEF}
HGE1/0/3	32768	32769	40004	0x7b , 0001-0001-0001	{ACDEF}
HGE1/0/4	32768	32772	40004	0x7b , 0001-0001-0001	{ACDEF}

# Verify that Device C is the master in VRRP group 1 and Device D is the master in VRRP group 2.

```
[DeviceC] display vrrp
```

IPv4 Virtual Router Information:

Running mode : Standard

Total number of virtual routers : 2

Interface	VRID	State	Running Pri	Adver Timer	Auth Type	Virtual IP
Vlan10	1	Master	200	100	None	10.1.1.100
Vlan20	2	Backup	100	100	None	20.1.1.100

```
[DeviceD] display vrrp
```

IPv4 Virtual Router Information:

Running mode : Standard

Total number of virtual routers : 2

Interface	VRID	State	Running Pri	Adver Timer	Auth Type	Virtual IP
Vlan10	1	Backup	100	100	None	10.1.1.100
Vlan20	2	Master	200	100	None	20.1.1.100

# Verify that Device E has established OSPF neighbor relationships with Device C and Device D.

```
[DeviceE] display ospf peer
```

```
OSPF Process 1 with Router ID 200.1.1.2  
Neighbor Brief Information
```

```
Area: 0.0.0.0
```

Router ID	Address	Pri	Dead-Time	State	Interface
100.1.1.1	100.1.1.1	1	35	Full/BDR	Vlan100
200.1.1.1	200.1.1.1	1	33	Full/BDR	Vlan200

```
# Verify that the host in Area A can ping VLAN-interface 30 (30.1.1.1) on Device E.
```

```
C:\Documents and Settings\Administrator>ping 30.1.1.1
```

```
Pinging 30.1.1.1 with 32 bytes of data:
```

```
Reply from 30.1.1.1: bytes=32 time=1ms TTL=126
```

```
Ping statistics for 30.1.1.1:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

```
    Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

## Configuration files

- Device A:

```
#  
vlan 10  
#  
vlan 20  
#  
interface Bridge-Aggregation1  
  port link-type trunk  
  port trunk permit vlan 1 10 20  
  link-aggregation mode dynamic  
#  
interface Bridge-Aggregation3  
  port link-type trunk  
  port trunk permit vlan 1 10 20  
  link-aggregation mode dynamic  
  port drni intra-portal-port 1  
#  
interface Bridge-Aggregation4  
  port link-type trunk  
  port trunk permit vlan 1 10 20  
  link-aggregation mode dynamic  
  port drni group 4
```

```

#
interface HundredGigE1/0/5
  port link-mode route
  ip address 1.1.1.1 255.255.255.0
#
interface HundredGigE1/0/1
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 4
#
interface HundredGigE1/0/2
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 4
#
interface HundredGigE1/0/3
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 3
#
interface HundredGigE1/0/4
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 3
#
interface HundredGigE1/0/6
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 1
#
interface HundredGigE1/0/7
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 1
#
drni system-mac 0001-0001-0001
drni system-number 1
drni system-priority 123
drni keepalive ip destination 1.1.1.2 source 1.1.1.1
#
drni mad exclude interface HundredGigE1/0/5
#

```

- **Device B:**

```
#
vlan 10
#
vlan 20
#
interface Bridge-Aggregation2
  port link-type trunk
  port trunk permit vlan 1 10 20
  link-aggregation mode dynamic
#
interface Bridge-Aggregation3
  port link-type trunk
  port trunk permit vlan 1 10 20
  link-aggregation mode dynamic
  port drni intra-portal-port 1
#
interface Bridge-Aggregation4
  port link-type trunk
  port trunk permit vlan 1 10 20
  link-aggregation mode dynamic
  port drni group 4
#
interface HundredGigE1/0/5
  port link-mode route
  ip address 1.1.1.2 255.255.255.0
#
interface HundredGigE1/0/1
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 4
#
interface HundredGigE1/0/2
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 4
#
interface HundredGigE1/0/3
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 3
#
interface HundredGigE1/0/4
  port link-mode bridge
  port link-type trunk
```

```

port trunk permit vlan 1 10 20
port link-aggregation group 3
#
interface HundredGigE1/0/6
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 10 20
port link-aggregation group 2
#
interface HundredGigE1/0/7
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 10 20
port link-aggregation group 2
#
drni system-mac 0001-0001-0001
drni system-number 2
drni system-priority 123
drni keepalive ip destination 1.1.1.1 source 1.1.1.2
#
drni mad exclude interface HundredGigE1/0/5
#

```

- **Device C:**

```

#
ospf 1
area 0.0.0.0
network 10.1.1.0 0.0.0.255
network 20.1.1.0 0.0.0.255
network 100.1.1.0 0.0.0.255
#
vlan 10
#
vlan 20
#
vlan 100
#
interface Bridge-Aggregation1
port link-type trunk
port trunk permit vlan 1 10 20
link-aggregation mode dynamic
#
interface Vlan-interface10
ip address 10.1.1.1 255.255.255.0
vrrp vrid 1 virtual-ip 10.1.1.100
vrrp vrid 1 priority 200
vrrp vrid 1 preempt-mode delay 500
vrrp vrid 1 track 1 priority reduced 150
#

```

```

interface Vlan-interface20
 ip address 20.1.1.1 255.255.255.0
 vrrp vrid 2 virtual-ip 20.1.1.100
#
interface Vlan-interface100
 ip address 100.1.1.1 255.255.255.0
#
interface HundredGigE1/0/1
 port link-mode bridge
 port link-type trunk
 port trunk permit vlan 1 10 20
 port link-aggregation group 1
#
interface HundredGigE1/0/2
 port link-mode bridge
 port link-type trunk
 port trunk permit vlan 1 10 20
 port link-aggregation group 1
#
interface HundredGigE1/0/3
 port link-mode bridge
 port access vlan 100
#
 track 1 interface HundredGigE1/0/3
#

```

- **Device D:**

```

#
ospf 1
 area 0.0.0.0
  network 10.1.1.0 0.0.0.255
  network 20.1.1.0 0.0.0.255
  network 200.1.1.0 0.0.0.255
#
vlan 10
#
vlan 20
#
vlan 200
#
interface Bridge-Aggregation2
 port link-type trunk
 port trunk permit vlan 1 10 20
 link-aggregation mode dynamic
#
interface Vlan-interface10
 ip address 10.1.1.2 255.255.255.0
 vrrp vrid 1 virtual-ip 10.1.1.100
#

```

```

interface Vlan-interface20
 ip address 20.1.1.2 255.255.255.0
 vrrp vrid 2 virtual-ip 20.1.1.100
 vrrp vrid 2 priority 200
 vrrp vrid 2 preempt-mode delay 500
 vrrp vrid 2 track 2 priority reduced 150
#
interface Vlan-interface200
 ip address 200.1.1.1 255.255.255.0
#
interface HundredGigE1/0/1
 port link-mode bridge
 port link-type trunk
 port trunk permit vlan 1 10 20
 port link-aggregation group 2
#
interface HundredGigE1/0/2
 port link-mode bridge
 port link-type trunk
 port trunk permit vlan 1 10 20
 port link-aggregation group 2
#
interface HundredGigE1/0/3
 port link-mode bridge
 port access vlan 200
#
 track 2 interface HundredGigE1/0/3
#

```

- **Device E:**

```

#
ospf 1
 area 0.0.0.0
  network 30.1.1.0 0.0.0.255
  network 100.1.1.0 0.0.0.255
  network 200.1.1.0 0.0.0.255
#
vlan 30
#
vlan 100
#
vlan 200
#
interface Vlan-interface30
 ip address 30.1.1.1 255.255.255.0
#
interface Vlan-interface100
 ip address 100.1.1.2 255.255.255.0
#

```

```

interface Vlan-interface200
  ip address 200.1.1.2 255.255.255.0
#
interface HundredGigE1/0/1
  port link-mode bridge
  port access vlan 100
#
interface HundredGigE1/0/2
  port link-mode bridge
  port access vlan 200
#
interface HundredGigE1/0/3
  port link-mode bridge
  port access vlan 30
#

```

- **Device F:**

```

#
vlan 10
#
vlan 20
#
interface Bridge-Aggregation4
  port link-type trunk
  port trunk permit vlan 1 10 20
  link-aggregation mode dynamic
#
interface HundredGigE1/0/1
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 4
#
interface HundredGigE1/0/2
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 4
#
interface HundredGigE1/0/3
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20
  port link-aggregation group 4
#
interface HundredGigE1/0/4
  port link-mode bridge
  port link-type trunk
  port trunk permit vlan 1 10 20

```

```
port link-aggregation group 4
#
```

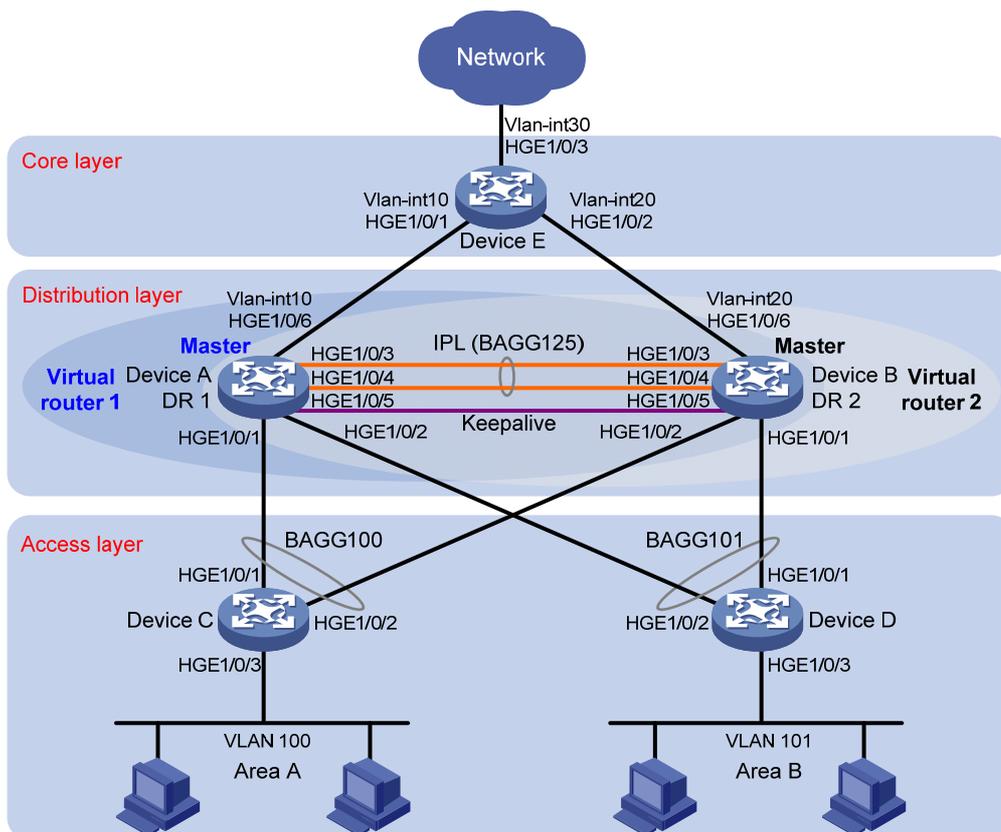
# Example: Configuring DRNI at the distribution Layer

## Network configuration

As shown in [Figure 2](#):

- Configure Device A and Device B as a DR system to establish one multichassis aggregate link with Device C and Device D.
- Set up a keepalive link between HundredGigE 1/0/5 of Device A and HundredGigE 1/0/5 of Device B, and exclude the interfaces from the shutdown action by DRNI MAD.
- Configure two VRRP groups on Device A and Device B to provide gateway services for VLAN 100 and VLAN 101.
  - Configure VRRP group 1 to provide gateway services for hosts in VLAN 100 (Area A). Add Device A and Device B to the group as the master and backup devices, respectively.
  - Configure VRRP group 2 to provide gateway services for hosts in VLAN 101 (Area B). Add Device B and Device A to the group as the master and backup devices, respectively.
- Configure OSPF on Device A, Device B, and Device E for the hosts to communicate with external networks at Layer 3.

**Figure 2 Network diagram**



Device	Interface	IP address	Device	Interface	IP address
Device A	HGE 1/0/5	1.1.1.1/24	Device B	HGE 1/0/5	1.1.1.2/24
	VLAN-interface 100	100.1.1.1/24		VLAN-interface 100	100.1.1.2/24
	VLAN-interface 101	101.1.1.1/24		VLAN-interface 101	101.1.1.2/24
	VLAN-interface 10	10.1.1.1/24		VLAN-interface 20	20.1.1.1/24
	Virtual IP 1	100.1.1.100/24		Virtual IP 1	100.1.1.100/24
	Virtual IP 2	101.1.1.100/24		Virtual IP 2	101.1.1.100/24
Device E	VLAN-interface 10	10.1.1.2/24			
	VLAN-interface 20	20.1.1.2/24			
	VLAN-interface 30	30.1.1.1/24			

## Analysis

For the secondary DR device to monitor the state of the primary device, establish a Layer 3 keepalive link between the DR member devices.

For Device A to be the master in VRRP group 1, assign it a higher priority than Device B. For Device B to be the master in VRRP group 2, assign it a higher priority than Device A.

## Applicable hardware and software versions

The following matrix shows the hardware and software versions to which this configuration example is applicable:

Hardware	Software version
S6850 switch series S9850 switch series	Release 6555P01
S9820-64H switch	Release 6555P01

## Restrictions and guidelines

### DRNI restrictions and guidelines

For the DR member devices to be identified as one DR system, you must configure the same DR system MAC address and DR system priority on them. You must assign different DR system numbers to the DR member devices.

To balance traffic between two VRRP gateway devices, you can assign them to two VRRP groups with different priorities. In this example, Device A is assigned a higher priority than Device B in VRRP group 1 so Device A can become the master in this group. Device B is assigned a higher priority than Device A in VRRP group 2 so Device B can become the master in this group.

A DR member device can have only one IPP.

For correct keepalive detection, you must exclude the interfaces used for keepalive detection from the shutdown action by DRNI MAD.

# VRRP restrictions and guidelines

As a best practice, use VRRP standard mode.

You cannot specify the virtual IP address as any of the following IP addresses:

- All-zero address (0.0.0.0).
- Broadcast address (255.255.255.255).
- Loopback address.
- IP address of other than Class A, Class B, and Class C.
- Invalid IP address (for example, 0.0.0.1).

The virtual IP address of an IPv4 VRRP group must be on the same subnet as the downlink interface IP addresses of the VRRP group members to ensure successful traffic forwarding.

## Procedures

### Configuring Device A

**# Configure DR system settings.**

```
<DeviceA> system-view
```

```
[DeviceA] drni system-mac 1-1-1
```

Changing the system MAC might flap the intra-portal link and cause DR system setup failure. Continue? [Y/N]:y

```
[DeviceA] drni system-number 1
```

Changing the system number might flap the intra-portal link and cause DR system setup failure. Continue? [Y/N]:y

```
[DeviceA] drni system-priority 123
```

Changing the system priority might flap the intra-portal link and cause DR system setup failure. Continue? [Y/N]:y

**# Configure DR keepalive packet parameters.**

```
[DeviceA] drni keepalive ip destination 1.1.1.2 source 1.1.1.1
```

**# Configure HundredGigE 1/0/5 as a routed (Layer 3) interface and assign the interface an IP address. The IP address will be used as the source IP address of keepalive packets.**

```
[DeviceA] interface hundredgige 1/0/5
```

```
[DeviceA-HundredGigE1/0/5] port link-mode route
```

```
[DeviceA-HundredGigE1/0/5] ip address 1.1.1.1 24
```

```
[DeviceA-HundredGigE1/0/5] quit
```

**# Exclude the interface used for DR keepalive detection (HundredGigE 1/0/5) from the shutdown action by DRNI MAD.**

```
[DeviceA] drni mad exclude interface hundredgige 1/0/5
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 125 and specify it as the IPP.**

```
[DeviceA] interface bridge-aggregation 125
```

```
[DeviceA-Bridge-Aggregation125] link-aggregation mode dynamic
```

```
[DeviceA-Bridge-Aggregation125] port drni intra-portal-port 1
```

```
[DeviceA-Bridge-Aggregation125] quit
```

**# Assign HundredGigE 1/0/3 and HundredGigE 1/0/4 to aggregation group 125.**

```
[DeviceA] interface hundredgige 1/0/3
```

```
[DeviceA-HundredGigE1/0/3] port link-aggregation group 125
```

```

[DeviceA-HundredGigE1/0/3] quit
[DeviceA] interface hundredgige 1/0/4
[DeviceA-HundredGigE1/0/4] port link-aggregation group 125
[DeviceA-HundredGigE1/0/4] quit

# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 100 and assign it to DR group 1.
[DeviceA] interface bridge-aggregation 100
[DeviceA-Bridge-Aggregation100] link-aggregation mode dynamic
[DeviceA-Bridge-Aggregation100] port drni group 1
[DeviceA-Bridge-Aggregation100] quit

# Assign HundredGigE 1/0/1 to aggregation group 100.
[DeviceA] interface hundredgige 1/0/1
[DeviceA-HundredGigE1/0/1] port link-aggregation group 100
[DeviceA-HundredGigE1/0/1] quit

# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 101 and assign it to DR group 2.
[DeviceA] interface bridge-aggregation 101
[DeviceA-Bridge-Aggregation101] link-aggregation mode dynamic
[DeviceA-Bridge-Aggregation101] port drni group 2
[DeviceA-Bridge-Aggregation101] quit

# Assign HundredGigE 1/0/2 to aggregation group 101.
[DeviceA] interface hundredgige 1/0/2
[DeviceA-HundredGigE1/0/2] port link-aggregation group 101
[DeviceA-HundredGigE1/0/2] quit

# Create VLAN 10, VLAN 100, and VLAN 101.
[DeviceA] vlan 10
[DeviceA-vlan10] quit
[DeviceA] vlan 100
[DeviceA-vlan100] quit
[DeviceA] vlan 101
[DeviceA-vlan101] quit

# Assign HundredGigE 1/0/6 to VLAN 10.
[DeviceA] vlan 10
[DeviceA-vlan10] port hundredgige 1/0/6
[DeviceA-vlan10] quit

# Set the link type of Bridge-Aggregation 100 to trunk and assign it to VLAN 100.
[DeviceA] interface bridge-aggregation 100
[DeviceA-Bridge-Aggregation100] port link-type trunk
Configuring HundredGigE1/0/1 done.
[DeviceA-Bridge-Aggregation100] port trunk permit vlan 100
Configuring HundredGigE1/0/1 done.
[DeviceA-Bridge-Aggregation100] quit

# Set the link type of Bridge-Aggregation 101 to trunk and assign it to VLAN 101.
[DeviceA] interface bridge-aggregation 101
[DeviceA-Bridge-Aggregation101] port link-type trunk
Configuring HundredGigE1/0/2 done.
[DeviceA-Bridge-Aggregation101] port trunk permit vlan 101
Configuring HundredGigE1/0/2 done.

```

```

[DeviceA-Bridge-Aggregation101] quit

# Set the link type of Bridge-Aggregation 125 to trunk and assign it to VLAN 100 and VLAN 101.
[DeviceA] interface bridge-aggregation 125
[DeviceA-Bridge-Aggregation125] port link-type trunk
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceA-Bridge-Aggregation125] port trunk permit vlan 100 101
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceA-Bridge-Aggregation125] quit

# Create VLAN-interface 10, VLAN-interface 100, and VLAN-interface 101 and assign an IP address to each of them.
[DeviceA] interface vlan-interface 10
[DeviceA-vlan-interfacel0] ip address 10.1.1.1 24
[DeviceA-vlan-interfacel0] quit
[DeviceA] interface vlan-interface 100
[DeviceA-vlan-interfacel00] ip address 100.1.1.1 24
[DeviceA-vlan-interfacel00] quit
[DeviceA] interface vlan-interface 101
[DeviceA-vlan-interfacel01] ip address 101.1.1.1 24
[DeviceA-vlan-interfacel01] quit

# Configure OSPF.
[DeviceA] ospf
[DeviceA-ospf-1] area 0
[DeviceA-ospf-1-area-0.0.0.0] network 10.1.1.0 0.0.0.255
[DeviceA-ospf-1-area-0.0.0.0] network 100.1.1.0 0.0.0.255
[DeviceA-ospf-1-area-0.0.0.0] network 101.1.1.0 0.0.0.255
[DeviceA-ospf-1-area-0.0.0.0] quit
[DeviceA-ospf-1] quit

# Create VRRP group 1 on VLAN-interface 100 and set its virtual IP address to 100.1.1.100.
[DeviceA] interface vlan-interface 100
[DeviceA-Vlan-interfacel00] vrrp vrid 1 virtual-ip 100.1.1.100

# Set the priority of Device A to 200 for it to become the master in VRRP group 1.
[DeviceA-Vlan-interfacel00] vrrp vrid 1 priority 200
[DeviceA-Vlan-interfacel00] quit

# Create VRRP group 2 on VLAN-interface 101 and set its virtual IP address to 101.1.1.100.
[DeviceA] interface vlan-interface 101
[DeviceA-Vlan-interfacel01] vrrp vrid 2 virtual-ip 101.1.1.100
[DeviceA-Vlan-interfacel01] quit

# Configure Device A to operate in preemptive mode in VRRP group 1. Set the preemption delay to 500 centiseconds to avoid frequent status switchover.
[DeviceA] interface vlan-interface 100
[DeviceA-Vlan-interfacel00] vrrp vrid 1 preempt-mode delay 500
[DeviceA-Vlan-interfacel00] quit

# Create track entry 1 to monitor the upstream link status of HundredGigE 1/0/6.
[DeviceA] track 1 interface hundredgige 1/0/6

```

**# Configure Device A in VRRP group 1 to monitor track entry 1, and decrease its priority by 150 when the track entry transits to Negative.**

```
[DeviceA] interface vlan-interface 100
[DeviceA-Vlan-interface100] vrrp vrid 1 track 1 priority reduced 150
[DeviceA-Vlan-interface100] quit
```

## Configuring Device B

**# Configure DR system settings.**

```
<DeviceB> system-view
[DeviceB] drni system-mac 1-1-1
Changing the system MAC might flap the intra-portal link and cause DR system setup failure.
Continue? [Y/N]:y
[DeviceB] drni system-number 2
Changing the system number might flap the intra-portal link and cause DR system setup
failure. Continue? [Y/N]:y
[DeviceB] drni system-priority 123
Changing the system priority might flap the intra-portal link and cause DR system setup
failure. Continue? [Y/N]:y
```

**# Configure DR keepalive packet parameters.**

```
[DeviceB] drni keepalive ip destination 1.1.1.1 source 1.1.1.2
```

**# Configure HundredGigE 1/0/5 as a routed (Layer 3) interface and assign the interface an IP address. The IP address will be used as the source IP address of keepalive packets.**

```
[DeviceB] interface hundredgige 1/0/5
[DeviceB-HundredGigE1/0/5] port link-mode route
[DeviceB-HundredGigE1/0/5] ip address 1.1.1.2 24
[DeviceB-HundredGigE1/0/5] quit
```

**# Exclude the interface used for DR keepalive detection (HundredGigE 1/0/5) from the shutdown action by DRNI MAD.**

```
[DeviceB] drni mad exclude interface hundredgige 1/0/5
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 125 and specify it as the IPP.**

```
[DeviceB] interface bridge-aggregation 125
[DeviceB-Bridge-Aggregation125] link-aggregation mode dynamic
[DeviceB-Bridge-Aggregation125] port drni intra-portal-port 1
[DeviceB-Bridge-Aggregation125] quit
```

**# Assign HundredGigE 1/0/3 and HundredGigE 1/0/4 to aggregation group 125.**

```
[DeviceB] interface hundredgige 1/0/3
[DeviceB-HundredGigE1/0/3] port link-aggregation group 125
[DeviceB-HundredGigE1/0/3] quit
[DeviceB] interface hundredgige 1/0/4
[DeviceB-HundredGigE1/0/4] port link-aggregation group 125
[DeviceB-HundredGigE1/0/4] quit
```

**# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 100 and assign it to DR group 1.**

```
[DeviceB] interface bridge-aggregation 100
[DeviceB-Bridge-Aggregation100] link-aggregation mode dynamic
[DeviceB-Bridge-Aggregation100] port drni group 1
[DeviceB-Bridge-Aggregation100] quit
```

**# Assign HundredGigE 1/0/2 to aggregation group 100.**

```

[DeviceB] interface hundredgige 1/0/2
[DeviceB-HundredGigE1/0/2] port link-aggregation group 100
[DeviceB-HundredGigE1/0/2] quit
# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 101 and assign it to DR group 2.
[DeviceB] interface bridge-aggregation 101
[DeviceB-Bridge-Aggregation101] link-aggregation mode dynamic
[DeviceB-Bridge-Aggregation101] port drni group 2
[DeviceB-Bridge-Aggregation101] quit
# Assign HundredGigE 1/0/1 to aggregation group 101.
[DeviceB] interface hundredgige 1/0/1
[DeviceB-HundredGigE1/0/1] port link-aggregation group 101
[DeviceB-HundredGigE1/0/1] quit
# Create VLAN 20, VLAN 100, and VLAN 101.
[DeviceB] vlan 20
[DeviceB-vlan20] quit
[DeviceB] vlan 100
[DeviceB-vlan100] quit
[DeviceB] vlan 101
[DeviceB-vlan101] quit
# Assign HundredGigE 1/0/6 to VLAN 20.
[DeviceB] vlan 20
[DeviceB-vlan20] port hundredgige 1/0/6
[DeviceB-vlan20] quit
# Set the link type of Bridge-Aggregation 100 to trunk and assign it to VLAN 100.
[DeviceB] interface bridge-aggregation 100
[DeviceB-Bridge-Aggregation100] port link-type trunk
Configuring HundredGigE1/0/2 done.
[DeviceB-Bridge-Aggregation100] port trunk permit vlan 100
Configuring HundredGigE1/0/2 done.
[DeviceB-Bridge-Aggregation100] quit
# Set the link type of Bridge-Aggregation 101 to trunk and assign it to VLAN 101.
[DeviceB] interface bridge-aggregation 101
[DeviceB-Bridge-Aggregation101] port link-type trunk
Configuring HundredGigE1/0/1 done.
[DeviceB-Bridge-Aggregation101] port trunk permit vlan 101
Configuring HundredGigE1/0/1 done.
[DeviceB-Bridge-Aggregation101] quit
# Set the link type of Bridge-Aggregation 125 to trunk and assign it to VLAN 100 and VLAN 101.
[DeviceB] interface bridge-aggregation 125
[DeviceB-Bridge-Aggregation125] port link-type trunk
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceB-Bridge-Aggregation125] port trunk permit vlan 100 101
Configuring HundredGigE1/0/3 done.
Configuring HundredGigE1/0/4 done.
[DeviceB-Bridge-Aggregation125] quit

```

**# Create VLAN-interface 20, VLAN-interface 100, and VLAN-interface 101 and assign an IP address to each of them.**

```
[DeviceB] interface vlan-interface 20
[DeviceB-vlan-interface20] ip address 20.1.1.1 24
[DeviceB-vlan-interface20] quit
[DeviceB] interface vlan-interface 100
[DeviceB-vlan-interface100] ip address 100.1.1.2 24
[DeviceB-vlan-interface100] quit
[DeviceB] interface vlan-interface 101
[DeviceB-vlan-interface101] ip address 101.1.1.2 24
[DeviceB-vlan-interface101] quit
```

**# Configure OSPF.**

```
[DeviceB] ospf
[DeviceB-ospf-1] area 0
[DeviceB-ospf-1-area-0.0.0.0] network 20.1.1.0 0.0.0.255
[DeviceB-ospf-1-area-0.0.0.0] network 100.1.1.0 0.0.0.255
[DeviceB-ospf-1-area-0.0.0.0] network 101.1.1.0 0.0.0.255
[DeviceB-ospf-1-area-0.0.0.0] quit
[DeviceB-ospf-1] quit
```

**# Create VRRP group 1 on VLAN-interface 100 and set its virtual IP address to 100.1.1.100.**

```
[DeviceB] interface vlan-interface 100
[DeviceB-Vlan-interface100] vrrp vrid 1 virtual-ip 100.1.1.100
[DeviceB-Vlan-interface100] quit
```

**# Create VRRP group 2 on VLAN-interface 101 and set its virtual IP address to 101.1.1.100.**

```
[DeviceB] interface vlan-interface 101
[DeviceB-Vlan-interface101] vrrp vrid 2 virtual-ip 101.1.1.100
```

**# Set the priority of Device B to 200 for it to become the master in VRRP group 2.**

```
[DeviceB-Vlan-interface101] vrrp vrid 2 priority 200
```

**# Configure Device B to operate in preemptive mode in VRRP group 2. Set the preemption delay to 500 centiseconds to avoid frequent status switchover.**

```
[DeviceB-Vlan-interface101] vrrp vrid 2 preempt-mode delay 500
[DeviceB-Vlan-interface101] quit
```

**# Create track entry 2 to monitor the upstream link status of HundredGigE 1/0/6.**

```
[DeviceB] track 2 interface hundredgige 1/0/6
```

**# Configure Device B in VRRP group 2 to monitor track entry 2, and decrease its priority by 150 when the track entry transits to Negative.**

```
[DeviceB] interface vlan-interface 101
[DeviceB-Vlan-interface101] vrrp vrid 2 track 2 priority reduced 150
[DeviceB-Vlan-interface101] quit
```

## Configuring Device C

**# Create VLAN 100.**

```
[DeviceC] vlan 100
[DeviceC-vlan100] quit
```

**# Assign HundredGigE 1/0/3 to VLAN 100.**

```
[DeviceC] interface hundredgige 1/0/3
```

```

[DeviceC-HundredGigE1/0/3] port access vlan 100
[DeviceC-HundredGigE1/0/3] quit

# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 100.
<DeviceC> system-view
[DeviceC] interface bridge-aggregation 100
[DeviceC-Bridge-Aggregation100] link-aggregation mode dynamic
[DeviceC-Bridge-Aggregation100] quit

# Assign HundredGigE 1/0/1 and HundredGigE 1/0/2 to aggregation group 100.
[DeviceC] interface range hundredgige 1/0/1 to hundredgige 1/0/2
[DeviceC-if-range] port link-aggregation group 100
[DeviceC-if-range] quit

# Set the link type of Bridge-Aggregation 100 to trunk and assign it to VLAN 100.
[DeviceC] interface bridge-aggregation 100
[DeviceC-Bridge-Aggregation100] port link-type trunk
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceC-Bridge-Aggregation100] port trunk permit vlan 100
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceC-Bridge-Aggregation100] quit

```

## Configuring Device D

```

# Create VLAN 101.
[DeviceD] vlan 101
[DeviceD-vlan101] quit

# Assign HundredGigE 1/0/3 to VLAN 101.
[DeviceD] interface hundredgige 1/0/3
[DeviceD-HundredGigE1/0/3] port access vlan 101
[DeviceD-HundredGigE1/0/3] quit

# Create Layer 2 dynamic aggregate interface Bridge-Aggregation 101.
<DeviceD> system-view
[DeviceD] interface bridge-aggregation 101
[DeviceD-Bridge-Aggregation101] link-aggregation mode dynamic
[DeviceD-Bridge-Aggregation101] quit

# Assign HundredGigE 1/0/1 and HundredGigE 1/0/2 to aggregation group 101.
[DeviceD] interface range hundredgige 1/0/1 to hundredgige 1/0/2
[DeviceD-if-range] port link-aggregation group 101
[DeviceD-if-range] quit

# Set the link type of Bridge-Aggregation 101 to trunk and assign it to VLAN 101.
[DeviceD] interface bridge-aggregation 101
[DeviceD-Bridge-Aggregation101] port link-type trunk
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.
[DeviceD-Bridge-Aggregation101] port trunk permit vlan 101
Configuring HundredGigE1/0/1 done.
Configuring HundredGigE1/0/2 done.

```

```
[DeviceD-Bridge-Aggregation101] quit
```

## Configuring Device E

```
# Create VLAN 10 and assign HundredGigE 1/0/1 to the VLAN.
```

```
<DeviceE> system-view
[DeviceE] vlan 10
[DeviceE-vlan10] port hundredgige 1/0/1
[DeviceE-vlan10] quit
```

```
# Create VLAN-interface 10 and assign it an IP address.
```

```
[DeviceE] interface vlan-interface 10
[DeviceE-vlan-interface10] ip address 10.1.1.2 24
[DeviceE-vlan-interface10] quit
```

```
# Create VLAN 20 and assign HundredGigE 1/0/2 to the VLAN.
```

```
[DeviceE] vlan 20
[DeviceE-vlan20] port hundredgige 1/0/2
[DeviceE-vlan20] quit
```

```
# Create VLAN-interface 20 and assign it an IP address.
```

```
[DeviceE] interface vlan-interface 20
[DeviceE-vlan-interface20] ip address 20.1.1.2 24
[DeviceE-vlan-interface20] quit
```

```
# Create VLAN 30 and assign HundredGigE 1/0/3 to the VLAN.
```

```
[DeviceE] vlan 30
[DeviceE-vlan30] port hundredgige 1/0/3
[DeviceE-vlan30] quit
```

```
# Create VLAN-interface 30 and assign it an IP address.
```

```
[DeviceE] interface vlan-interface 30
[DeviceE-vlan-interface30] ip address 30.1.1.1 24
[DeviceE-vlan-interface30] quit
```

```
# Configure OSPF.
```

```
[DeviceE] ospf
[DeviceE-ospf-1] area 0
[DeviceE-ospf-1-area-0.0.0.0] network 10.1.1.0 0.0.0.255
[DeviceE-ospf-1-area-0.0.0.0] network 20.1.1.0 0.0.0.255
[DeviceE-ospf-1-area-0.0.0.0] network 30.1.1.0 0.0.0.255
[DeviceE-ospf-1-area-0.0.0.0] quit
[DeviceE-ospf-1] quit
```

## Verifying the configuration

```
# Verify that Device A and Device B have formed a DR system.
```

```
[DeviceA] display drni summary
Global consistency check          : SUCCESS
Inconsistent type 1 global settings: -
```

IPP	IPP ID	State
BAGG125	1	UP

DR interface	DR group ID	State	Check result	Type 1 inconsistency
BAGG100	1	UP	SUCCESS	-
BAGG101	2	UP	SUCCESS	-

[DeviceA] display drni verbose

Flags: A -- Home\_Gateway, B -- Neighbor\_Gateway, C -- Other\_Gateway,  
 D -- IPP\_Activity, E -- DRCP\_Timeout, F -- Gateway\_Sync,  
 G -- Port\_Sync, H -- Expired

IPP/IPP ID: BAGG125/1

State: UP

Local state/Peer state: ABDFG/ABDFG

Local Selected ports (index): HGE1/0/3 (1), HGE1/0/4 (4)

Peer Selected ports indexes: 1, 4

DR interface/DR group ID: BAGG100/1

State: UP

Local state/Peer state: ABDFG/ABDFG

Local Selected ports (index): HGE1/0/1 (16386)

Peer Selected ports indexes: 32771

DR interface/DR group ID: BAGG101/2

State: UP

Local state/Peer state: ABDFG/ABDFG

Local Selected ports (index): HGE1/0/2 (16387)

Peer Selected ports indexes: 32772

**# Verify that all member ports of aggregation group 100 are in Selected state on Device C, which indicates a successful link aggregation between the DR system and Device C.**

[DeviceC] display link-aggregation verbose

Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing

Port Status: S -- Selected, U -- Unselected, I -- Individual

Port: A -- Auto port, M -- Management port, R -- Reference port

Flags: A -- LACP\_Activity, B -- LACP\_Timeout, C -- Aggregation,

D -- Synchronization, E -- Collecting, F -- Distributing,

G -- Defaulted, H -- Expired

Aggregate Interface: Bridge-Aggregation100

Creation Mode: Manual

Aggregation Mode: Dynamic

Loadsharing Type: Shar

Management VLANs: None

System ID: 0x8000, 8e33-8e4a-0300

Local:

Port	Status	Priority	Index	Oper-Key	Flag
HGE1/0/1	S	32768	1	1	{ACDEF}
HGE1/0/2	S	32768	2	1	{ACDEF}

Remote:

Actor	Priority	Index	Oper-Key	SystemID	Flag
-------	----------	-------	----------	----------	------

```
HGE1/0/1(R)          32768    16386    40001    0x7b , 0001-0001-0001 {ACDEF}
HGE1/0/2            32768    32770    40001    0x7b , 0001-0001-0001 {ACDEF}
```

# Verify that all member ports of aggregation group 101 are in Selected state on Device D, which indicates a successful link aggregation between the DR system and Device D.

```
[DeviceD] display link-aggregation verbose
```

```
Loadsharing Type: Shar -- Loadsharing, NonS -- Non-Loadsharing
Port Status: S -- Selected, U -- Unselected, I -- Individual
Port: A -- Auto port, M -- Management port, R -- Reference port
Flags: A -- LACP_Activity, B -- LACP_Timeout, C -- Aggregation,
       D -- Synchronization, E -- Collecting, F -- Distributing,
       G -- Defaulted, H -- Expired
```

```
Aggregate Interface: Bridge-Aggregation101
```

```
Creation Mode: Manual
```

```
Aggregation Mode: Dynamic
```

```
Loadsharing Type: Shar
```

```
Management VLANs: None
```

```
System ID: 0x8000, 8e33-9400-0400
```

```
Local:
```

Port	Status	Priority	Index	Oper-Key	Flag
HGE1/0/1	S	32768	1	1	{ACDEF}
HGE1/0/2	S	32768	2	1	{ACDEF}

```
Remote:
```

Actor	Priority	Index	Oper-Key	SystemID	Flag
HGE1/0/1(R)	32768	16387	40002	0x7b , 0001-0001-0001	{ACDEF}
HGE1/0/2	32768	32771	40002	0x7b , 0001-0001-0001	{ACDEF}

# Verify that Device A is the master in VRRP group 1 and Device B is the master in VRRP group 2.

```
[DeviceA] display vrrp
```

```
IPv4 Virtual Router Information:
```

```
Running mode : Standard
```

```
Total number of virtual routers : 2
```

Interface	VRID	State	Running Pri	Adver Timer	Auth Type	Virtual IP
Vlan100	1	Master	200	100	None	100.1.1.100
Vlan101	2	Backup	100	100	None	101.1.1.100

```
[DeviceB] display vrrp
```

```
IPv4 Virtual Router Information:
```

```
Running mode : Standard
```

```
Total number of virtual routers : 2
```

Interface	VRID	State	Running Pri	Adver Timer	Auth Type	Virtual IP
Vlan100	1	Backup	100	100	None	100.1.1.100
Vlan101	2	Master	200	100	None	101.1.1.100

# Verify that Device E has established OSPF neighbor relationships with Device A and Device B.

```
[DeviceE] display ospf peer
```

OSPF Process 1 with Router ID 30.1.1.1  
Neighbor Brief Information

```
Area: 0.0.0.0
Router ID      Address      Pri Dead-Time  State      Interface
101.1.1.1     10.1.1.1    1   34         Full/DR    Vlan10
101.1.1.2     20.1.1.1    1   36         Full/DR    Vlan20
```

# Verify that a host in Area A can ping the host at 101.1.1.4 in Area B.

```
C:\Documents and Settings\Administrator>ping 101.1.1.4
```

Pinging 101.1.1.4 with 32 bytes of data:

```
Reply from 101.1.1.4: bytes=32 time=1ms TTL=126
```

Ping statistics for 101.1.1.4:

```
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

# Verify that a host in Area A can ping VLAN-interface 30 (30.1.1.1) on Device E.

```
C:\Documents and Settings\Administrator>ping 30.1.1.1
```

Pinging 30.1.1.1 with 32 bytes of data:

```
Reply from 30.1.1.1: bytes=32 time=1ms TTL=126
```

Ping statistics for 30.1.1.1:

```
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

## Configuration files

- Device A:

```
#
ospf 1
 area 0.0.0.0
   network 10.1.1.0 0.0.0.255
   network 100.1.1.0 0.0.0.255
   network 101.1.1.0 0.0.0.255
#
vlan 10
#
```

```

vlan 100 to 101
#
interface Bridge-Aggregation100
port link-type trunk
port trunk permit vlan 1 100
link-aggregation mode dynamic
port drni group 1
#
interface Bridge-Aggregation101
port link-type trunk
port trunk permit vlan 1 101
link-aggregation mode dynamic
port drni group 2
#
interface Bridge-Aggregation125
port link-type trunk
port trunk permit vlan 1 100 to 101
link-aggregation mode dynamic
port drni intra-portal-port 1
#
interface Vlan-interface10
ip address 10.1.1.1 255.255.255.0
#
interface Vlan-interface100
ip address 100.1.1.1 255.255.255.0
vrrp vrid 1 virtual-ip 100.1.1.100
vrrp vrid 1 priority 200
vrrp vrid 1 preempt-mode delay 500
vrrp vrid 1 track 1 priority reduced 150
#
interface Vlan-interface101
ip address 101.1.1.1 255.255.255.0
vrrp vrid 2 virtual-ip 101.1.1.100
#
interface HundredGigE1/0/5
port link-mode route
ip address 1.1.1.1 255.255.255.0
#
interface HundredGigE1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
port link-aggregation group 100
#
interface HundredGigE1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 101

```

```

port link-aggregation group 101
#
interface HundredGigE1/0/3
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100 to 101
port link-aggregation group 125
#
interface HundredGigE1/0/4
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100 to 101
port link-aggregation group 125
#
interface HundredGigE1/0/6
port link-mode bridge
port access vlan 10
#
drni system-mac 0001-0001-0001
drni system-number 1
drni system-priority 123
drni keepalive ip destination 1.1.1.2 source 1.1.1.1
#
drni mad exclude interface HundredGigE1/0/5
#
track 1 interface HundredGigE1/0/6
#

```

- **Device B:**

```

#
ospf 1
area 0.0.0.0
network 20.1.1.0 0.0.0.255
network 100.1.1.0 0.0.0.255
network 101.1.1.0 0.0.0.255
#
vlan 20
#
vlan 100 to 101
#
interface Bridge-Aggregation100
port link-type trunk
port trunk permit vlan 1 100
link-aggregation mode dynamic
port drni group 1
#
interface Bridge-Aggregation101
port link-type trunk
port trunk permit vlan 1 101

```

```

link-aggregation mode dynamic
port drni group 2
#
interface Bridge-Aggregation125
port link-type trunk
port trunk permit vlan 1 100 to 101
link-aggregation mode dynamic
port drni intra-portal-port 1
#
interface Vlan-interface20
ip address 20.1.1.1 255.255.255.0
#
interface Vlan-interface100
ip address 100.1.1.2 255.255.255.0
vrrp vrid 1 virtual-ip 100.1.1.100
#
interface Vlan-interface101
ip address 101.1.1.2 255.255.255.0
vrrp vrid 2 virtual-ip 101.1.1.100
vrrp vrid 2 priority 200
vrrp vrid 2 preempt-mode delay 500
vrrp vrid 2 track 2 priority reduced 150
#
interface HundredGigE1/0/5
port link-mode route
ip address 1.1.1.2 255.255.255.0
#
interface HundredGigE1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 101
port link-aggregation group 101
#
interface HundredGigE1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
port link-aggregation group 100
#
interface HundredGigE1/0/3
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100 to 101
port link-aggregation group 125
#
interface HundredGigE1/0/4
port link-mode bridge
port link-type trunk

```

```

port trunk permit vlan 1 100 to 101
port link-aggregation group 125
#
interface HundredGigE1/0/6
port link-mode bridge
port access vlan 20
#
drni system-mac 0001-0001-0001
drni system-number 2
drni system-priority 123
drni keepalive ip destination 1.1.1.1 source 1.1.1.2
#
drni mad exclude interface HundredGigE1/0/5
#
track 2 interface HundredGigE1/0/6
#

```

- **Device C:**

```

#
vlan 100
#
interface Bridge-Aggregation100
port link-type trunk
port trunk permit vlan 1 100
link-aggregation mode dynamic
#
interface HundredGigE1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
port link-aggregation group 100
#
interface HundredGigE1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 100
port link-aggregation group 100
#
interface HundredGigE1/0/3
port link-mode bridge
port access vlan 100
#

```

- **Device D:**

```

#
vlan 101
#
interface Bridge-Aggregation101
port link-type trunk
port trunk permit vlan 1 101

```

```

link-aggregation mode dynamic
#
interface HundredGigE1/0/1
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 101
port link-aggregation group 101
#
interface HundredGigE1/0/2
port link-mode bridge
port link-type trunk
port trunk permit vlan 1 101
port link-aggregation group 101
#
interface HundredGigE1/0/3
port link-mode bridge
port access vlan 101
#

```

- **Device E:**

```

#
ospf 1
area 0.0.0.0
network 10.1.1.0 0.0.0.255
network 20.1.1.0 0.0.0.255
network 30.1.1.0 0.0.0.255
#
vlan 10
#
vlan 20
#
vlan 30
#
interface Vlan-interface10
ip address 10.1.1.2 255.255.255.0
#
interface Vlan-interface20
ip address 20.1.1.2 255.255.255.0
#
interface Vlan-interface30
ip address 30.1.1.1 255.255.255.0
#
interface HundredGigE1/0/1
port link-mode bridge
port access vlan 10
#
interface HundredGigE1/0/2
port link-mode bridge
port access vlan 20

```

```
#  
interface HundredGigE1/0/3  
  port link-mode bridge  
  port access vlan 30  
#
```

## Related documentation

- *H3C S6850 & S9850 Switch Series Layer 2—LAN Switching Configuration Guide-Release 655x*
- *H3C S6850 & S9850 Switch Series Layer 2—LAN Switching Command Reference-Release 655x*
- *H3C S9820-64H Switch Layer 2—LAN Switching Configuration Guide-Release 655x*
- *H3C S9820-64H Switch Layer 2—LAN Switching Command Reference-Release 655x*