

SBC HA Topic

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Foreword

- This course introduces the HA features of SBC.

Course Objective

Through this course
you will be able to



Know what HA is.



Understand the logic of HA.



Know how SBC configure HA.

Contents

- 1 HA Introduction
- 2 SBC HA Configuration
- 3 Active And Standby Switching

Chapter One Course Introduce

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1.1 What is HA



1.2 Logic of HA

1. HA Introduction

1.1 What is HA

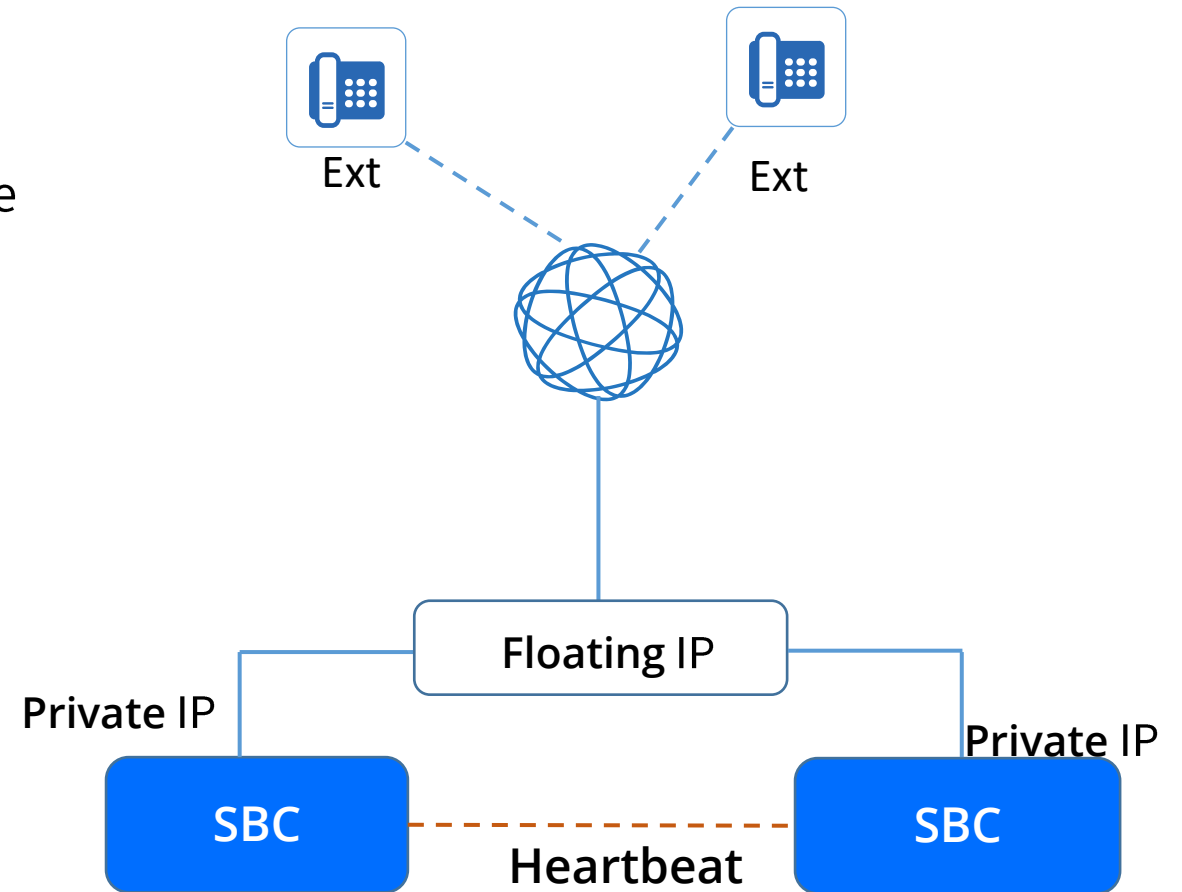
what is HA ?

Answer : High Availability Active-Standby.

HA (High Availability) solution, through the cooperative work of two devices, to ensure that the system can continue to working in the event of a single point of failure.

Logic of HA

1. The management ports of the two devices detect each other. By default, Device A is active and Device B is in Standby state.
2. When device A fails, device B does not detect the response from device A. Device B switches to the active state, and the service port is activated to provide service.
3. When A recovers, A&B will choose one of them to be active and the other to be Standby according to the policy.



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SBC HA Configuration

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2.1 Basic Conditions for SBC HA

2.2 Configuration of SBC HA

2.3 Expand Configuration

Basic conditions for SBC HA

1. Prepare two SBC devices of the same model, such as SBC3000.
2. The software of the two SBC devices should be the same.
3. Copy the current license page information (Device SN, Hardware ID, etc.) of the two SBC devices to us. We will generate a new license and upgrade the SBC with the new license to support HA.
4. There must be multiple network segments in the working environment. Assign independent network segments to the management port of SBC for detecting each other's activity status.

Basic conditions for SBC HA



- 1. The model and version of the two SBC devices need to be consistent

General	
Device Model	SBC3000
Device Name	SBC3000
Software Version	2.90.4.psp4
Version Time	2025-06-17 18:12:24 CST
Device SN	dc28-0711-5031-0036
Hardware SN	B877-231B-0A39
License Status	Valid
License Expires	52days 23:59:60
Current Time	2025-06-19 11:27:41
Running Time	1days 17:08:45
Active-Standby Status	Active

General	
Device Model	SBC3000
Device Name	SBC3000
Software Version	2.90.4.psp4
Version Time	2025-06-17 18:12:24 CST
Device SN	dc28-0711-5031-0023
Hardware SN	B877-2337-1429
License Status	Valid
License Expires	53days 03:58:56
Current Time	2025-06-19 11:28:06
Running Time	1days 17:03:42
Active-Standby Status	Standby

Basic conditions for SBC HA

2. Check the License information and make sure that Active And Standby is Authorized

DINSTAR SBC Overview Service Security **System** Maintenance

System Management
Web Configuration
Network
Network Port Binding
Port Mapping
Static Route
User
Date&Time
Upgrade
Backup & Restore
License
Certificate
UserBoard

License

Main Board license Standby Board license

Version	1.0.1.13
Device SN	19
Device SN	dc28-0711-5031-0036
Hardware SN	B877-231B-0A39
License Type	demo
License Begin Time	2025-05-09 11:15:01.266542847 +0800 CST
License Total Time	90days 00:00:00
License Expires	52days 23:59:60
Max Media Sessions	2000
Max Transcoding Sessions	1500
Max Registered Users	10000
RPS	200
CPS	200
Active And Standby	Double-device Hot Standby
Access Network	enable
TLS/SRTP	enable
Video Call	enable
WebRTC	enable
Rate Limit	enable

DINSTAR SBC Overview Service Security **System** Maintenance

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Static Route
User
Date&Time
Upgrade
Backup & Restore
License
Certificate
UserBoard

License

Main Board license Standby Board license

Version	1.0.1.13
Device SN	16
Device SN	dc28-0711-5031-0023
Hardware SN	B877-2337-1429
License Type	demo
License Begin Time	2025-05-09 11:14:34.353350866 +0800 CST
License Total Time	90days 00:00:00
License Expires	53days 04:00:00
Max Media Sessions	2000
Max Transcoding Sessions	1500
Max Registered Users	10000
RPS	200
CPS	200
Active And Standby	Double-device Hot Standby
Access Network	enable

Basic conditions for SBC HA

3. System--Network page Modify the management port IP of SBC, so that SBC_A & SBC_B have different management IPs and are connected under the same switch.

DINSTAR SBC

OverviewServiceSecuritySystemMaintenance

System Management

Web Configuration

Network

Network Port Binding

Port Mapping

Static Route

User

Date&Time

Network

Name	Service or Management Port	MTU	Mac	IPv4 Address	Subnet Mask	IPv4 Gateway	IPv4 DNS	IPv6 Address
GE0	Service Port	1500	f8:aa:00:23:00:30	172.28.3.71	255.255.0.0	172.28.1.1	8.8.8.8/	2020::faaa:ff:fe23:30/64
GE1	Management Port	1500	f8:a0:3d:46:04:01	172.28.3.80	255.255.0.0	172.28.1.1	8.8.8.8/172.28.1.1	
GE2	Service Port	1500	f8:aa:00:23:00:32	192.168.13.1	255.255.255.0		/	
GE3	Service Port	1500	f8:aa:00:23:00:33	192.168.14.1	255.255.255.0		/	
GE0:1	Service Port		f8:aa:00:23:00:30	172.28.3.88	255.255.0.0		/	

DINSTAR SBC

OverviewServiceSecuritySystemMaintenance

System Management

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Network Port Binding

Port Mapping

Static Route

User

Date&Time

Upgrade

Network

Name	Service or Management Port	MTU	Mac	IPv4 Address	Subnet Mask	IPv4 Gateway	IPv4 DNS
GE0	Service Port	1500	f8:aa:00:23:00:30	172.28.3.71	255.255.0.0	172.28.1.1	8.8.8.8/
GE1	Management Port	1500	f8:a0:3d:46:01:61	172.28.3.70	255.255.0.0	172.28.1.1	8.8.8.8/172.28.1.1
GE2	Service Port	1500	f8:aa:00:23:00:32	192.168.13.1	255.255.255.0		/
GE3	Service Port	1500	f8:aa:00:23:00:33	192.168.14.1	255.255.255.0		/
GE0:1	Service Port		f8:aa:00:23:00:30	172.28.3.88	255.255.0.0		/

Configuration of SBC HA

1. Click on Service - Active And Standby - Active And Standby Configuration
2. Fill in the local management port IP, remote management port IP, and peer device SN
3. Other configuration items can be configured by default

The screenshot shows the 'Active And Standby' configuration page in the DINSTAR SBC interface. The 'Running Mode' is set to 'Double-device Hot Standby'. The 'Local Management Port IP' is 172.28.3.80, the 'Remote Management port IP' is 172.28.3.70, and the 'Peer Device SN' is dc28-0711-5031-0023. The 'Local Port' is 4222 and the 'Remote Port' is 5222. The 'Number of MFU Boards' is 4. The 'Max Heartbeats for Detecting Active/Standby' is 2, the 'Interval of Sending Heartbeat for Detecting Active/Standby' is 2, the 'Call Synchronization Delay' is 5, and the 'Time for Detecting Calls' is 3600. The 'Max Heartbeats for Detecting Service' is 2 and the 'Interval of Sending Heartbeat for Detecting Service' is 2. A note at the bottom states: 'Note: 0 indicates that the time for detecting calls isn't detected'. There are 'Save' and 'Cancel' buttons at the bottom.

The screenshot shows the 'Active And Standby' configuration page in the DINSTAR SBC interface. The 'Running Mode' is set to 'Double-device Hot Standby'. The 'Local Management Port IP' is 172.28.3.70, the 'Remote Management port IP' is 172.28.3.80, and the 'Peer Device SN' is dc28-0711-5031-0036. The 'Local Port' is 4222 and the 'Remote Port' is 5222. The 'Number of MFU Boards' is 4. The 'Max Heartbeats for Detecting Active/Standby' is 2, the 'Interval of Sending Heartbeat for Detecting Active/Standby' is 2, the 'Call Synchronization Delay' is 5, and the 'Time for Detecting Calls' is 3600. The 'Max Heartbeats for Detecting Service' is 2 and the 'Interval of Sending Heartbeat for Detecting Service' is 2. A note at the bottom states: 'Note: 0 indicates that the time for detecting calls isn't detected'. There are 'Save' and 'Cancel' buttons at the bottom.

Ha status check

Click on the **Overview - HA state** to check if the HA status is normal

DINSTAR SBC Overview Service Security System Maintenance

System Status Access Network Status Access Trunk Status Core Trunk Status Calls Status Register Status Attack List SIP Account Status Statistics Monitor Status CDR BFD Status Radius server status Recording server status SIP anti-attack status ha state

ha state

ha dev sn	dc28-0711-5031-0023
ha enable	true
ha local rpc addr	172.28.3.70
ha local state	HaStateSlave
ha local subboard active	true
ha peer sn	dc28-0711-5031-0036
ha remote rpc addr	172.28.3.80
ha remote state	HaStateMaster
ha run mode	dual
nw if flag	true
remote subboard active	true

DINSTAR SBC Overview Service Security System Maintenance

System Status Access Network Status Access Trunk Status Core Trunk Status Calls Status Register Status Attack List SIP Account Status Statistics Monitor Status CDR BFD Status Radius server status Recording server status SIP anti-attack status ha state

ha state

ha dev sn	dc28-0711-5031-0036
ha enable	true
ha local rpc addr	172.28.3.80
ha local state	HaStateMaster
ha local subboard active	true
ha peer sn	dc28-0711-5031-0023
ha remote rpc addr	172.28.3.70
ha remote state	HaStateSlave
ha run mode	dual
nw if flag	true
remote subboard active	true

Expand configuration

BFD detect

1. Click on Service - Active And Standby – BFD Detect
2. Fill in the local IP, local port, remote IP, and remote port

Note: It is necessary to ensure the quality of network transmission between the primary and backup machines. BFD Echo messages are encapsulated in UDP, please use with caution

DINSTAR SBC

Overview Service Security System Maintenance

TransPort Endpoint

Access Network

Access SIP Trunk

Core SIP Trunk

Routing Profile

Media Detection

CDR

Codec Profile

TLS Configuration

Active And Standby

Active And Standby Configuration

BFD Detect

Network Port Detection

Switching Rules

Recording configuration

Advanced

BFD Service Type

Service Type ☐ Standby/Active Service Type ☒

Local IP Type: IPv4

Local IP: 172.28.3.80

Local Port: 1024

Remote IP Type: IPv4

Remote IP: 172.28.3.70

Remote Port: 1024

Maximum Times of Detecting heartbeat connection: 10

Minimum Interval of Sending Heartbeat: 100 ms

Expected Minimum Interval of Receiving Heartbeat: 100 ms

ECHO Min Receiving Time: 0

Note: BFD master/standby configuration will cause switching. It's not allowed to increase the retransmission times a quality is'nt high

Submit Cancel

DINSTAR SBC

Overview Service Security System Maintenance

TransPort Endpoint

Access Network

Access SIP Trunk

Core SIP Trunk

Routing Profile

Media Detection

CDR

Codec Profile

TLS Configuration

Active And Standby

Active And Standby Configuration

BFD Detect

Network Port Detection

Switching Rules

Recording configuration

Advanced

BFD Service Type

Service Type ☐ Standby/Active Service Type ☒

Local IP Type: IPv4

Local IP: 172.28.3.70

Local Port: 1024

Remote IP Type: IPv4

Remote IP: 172.28.3.80

Remote Port: 1024

Maximum Times of Detecting heartbeat connection: 10

Minimum Interval of Sending Heartbeat: 100 ms

Expected Minimum Interval of Receiving Heartbeat: 100 ms

ECHO Min Receiving Time: 0

Note: BFD master/standby configuration will cause switching. It's not allowed to increase the retransmission times a quality is'nt high

Submit Cancel

Expand configuration

Network Port Detection

1. Click on Service - Active And Standby – Network Port Detection, Select network port
2. Click on Service - Active And Standby – Switching Rules, Configure weight values
3. Both SBC are configured

The image displays two side-by-side screenshots of the DINSTAR SBC web interface, illustrating the configuration steps for Network Port Detection and Switching Rules.

Left Screenshot (Network Port Detection):

- The left sidebar menu shows "Network Port Detection" highlighted under the "Active And Standby" section.
- The main configuration area is titled "Network Port Detection".
- The "Name" field is set to "GE0".
- The "IPv4 Address" field is set to "172.28.3.71".
- The "IPv6 Address" field is set to "2020::faaa:ff:fe23:30".
- The "Mac" field is set to "f8:aa:00:23:00:30".
- The "Subnet Mask" field is set to "255.255.0.0".
- There are "Submit" and "Cancel" buttons at the bottom.

Right Screenshot (Switching Rules):

- The left sidebar menu shows "Switching Rules" highlighted under the "Active And Standby" section.
- The main configuration area is titled "Switching Rules".
- The "Name" field is set to "GE0".
- The "Weight" field is set to "10".
- A red note states: "Note: The larger the value, the tigher the weight." (Note: "tigher" is a typo for "higher").
- There are "Submit" and "Cancel" buttons at the bottom.

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Active And Standby Switching

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Active And Standby Switching

Automatic switching conditions:

1. **Active SBC system exception:** Linux system restart, virtual machine restart, virtual machine shutdown of SBC8000; SBC device loses power or restart
2. **Active SBC process exception:** Any process related to SBC8000 and active and standby switching experiences an exception
3. **Active SBC management port abnormality:** Management port network cable unplugged, etc
4. **Active SBC user board exception:** The number of user boards on the host is less than that on the backup machine

Active And Standby Switching

BFD detect:

BFD detect increases the speed of fault detection for management ports: normal network port fault detection is in seconds , BFD detection is in milliseconds:

- **Standby SBC:** BFD status is down. Check the status of the local management port. If the status of the local management port is normal, it will be upgraded to the active; If the status of the local management port is abnormal, it will enter the initialization
- **Active SBC:** BFD status is down, detect the status of the local management port, maintain the active with normal status of the local management port, and enter the initialization state with abnormal status of the local management port



BFD Status						
Session Key	Current State	Running Time	Number of Chain Breaks	Current Packet Loss Rate	Current Receiving Interval	
1024:172.28.3.70:172.28.3.80	Up	00:51:41	1	0%	104614ms	

Active And Standby Switching

Network Port Detection-one network port

- Set the network port weight value to 0 when the active SBC service network port is down
- When the active SBC detects that the weight of the standby SBC network port - the weight of the active SBC network port is ≥ 10 , the active SBC restart
- standby SBC becomes active SBC by judging that the HA heartbeat message timed out
- After the original active SBC restarts, it becomes a standby machine

Switching Rules

Name

Weight

GE0

10

Active And Standby Switching

Network Port Detection-multiple network ports

- If the weight of each service network port is 10, as long as the active SBC has one service network port down, the active and standby switches
- Both service network ports have a weight of 5: the active SBC only has one service network port down, with a weight difference of 5, and there is no switch; If both service network ports are down, the weight difference will be ≥ 10 , and the switch will occur
- By analogy, switching will only occur when the weight difference between the two SBC network ports is ≥ 10

Switching Rules	
Name	Weight
GE0	10
GE2	10

Switching Rules	
Name	Weight
GE0	5
GE2	5

Abbreviation

- SIP: Session Initiation Protocol
- SBC: Session Border Controller
- PMS: Property Management System
- HA: High Availability Active-Standby



THANKS



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