SIP Server
Primary/Backup Function and Configuration Description

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Contents

1 Introduction

1.1 Server Primary/Backup

The redundancy mechanism of the SIP server ensures the reliability and continuity of the SIP service. The server primary/backup mechanism is one of the redundancy modes. The primary and backup servers share information including the user account, dialog (implementation scheme dependent on the server primary/backup mechanism), and registration. In the normal state, all SIP requests and responses are assumed by the primary server. When the primary server becomes abnormal, is being maintained, or inaccessible, the SIP terminal automatically switches to the backup server to ensure service continuity. When the primary server resumes, the SIP terminal automatically switches back to the primary server.

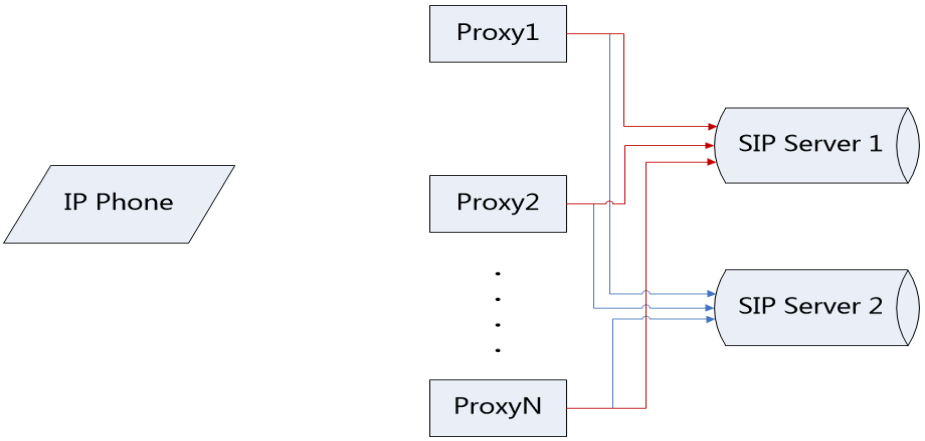

Figure 1 SIP server primary/backup

1.2 Terms

Failover: a mechanism in which when the primary server fails, the backup server takes over all services from the primary server without affecting customer services

Failback: a mechanism in which when the backup server is in the working state, the device detects whether the primary server resumes normal in order to quickly switch to the primary server

Server Unavailable: When the client requests for registration, the server returns with a 500/503 message, UDP receives an ICMP message indicating that the destination address is unreachable, or the TCP connection times out.

Register Failback: a mechanism in which when the primary server fails and the telephone set registers with the backup server, the telephone set creates a new Register Dialog for detecting whether the primary server resumes normal. This function has an independent and configurable detection period.

2 Server Primary/Backup Function

2.1 Function Settings

Configure two SIP servers. SIP Server1 is the primary server and SIP Server2 is the backup server.

2.2 Failover

Fanvil telephone sets support the following failover signaling messages: Register, Invite, and Bye. Others are not supported for the moment.

2.2.1 Register Failover

Triggering condition: manual registration, registration timeout, Option/Cancel request timeout

1) The telephone set sends a Register signaling message to the primary server.
2) The telephone set attempts to send a Register request to the primary server to specify the number of times (V3 product) or specific time (V2 product).
3) When the primary server fails, the telephone set sends a Register signaling message to the backup server.
4) The backup server responds with a 200 OK message. The telephone set gets registered successfully.

2.2.2 Invite Failover

Triggering condition: A user dials a number.

1) Telephone set A calls telephone set B.
2) Telephone set A sends an Invite request to the primary server.
3) The telephone set attempts to send an Invite request to the primary server to specify the number of times (V3 product) or specific time (V2 product).
4) When the primary server fails, the telephone set sends a Register message to the backup server.
5) The backup server responds to the telephone set with a 200 OK message. The telephone set gets registered with the backup server successfully.
6) The telephone set sends an Invite request to the backup server.
7) The backup server responds with a 200 OK message. Telephone set A sets up a conversation with telephone set B.

2.2.3 Bye Failover

Triggering condition: After a telephone set sets up a conversation through the primary server, the telephone set hangs up.

1) Telephone set A sets up a conversation with telephone set B through the primary server.
2) Telephone set A hangs up.
3) Telephone set A sends a Bye request to the primary server.
4) The telephone set attempts to send a Bye request to the primary server to specify the number of times (V3 product) or specific time (V2 product).
5) When the primary server fails, the telephone set sends a Register message to the backup server.
6) The backup server responds to the telephone set with a 200 OK message. The telephone set gets registered with the backup server successfully.
7) The telephone set sends a Bye message to the backup server.
8) The backup server responds with a 200 OK message. The conversation with telephone set B ends.

2.2.4 Failover Failure

When all servers are unavailable, the telephone set will attempt to connect to each server based on the sequence of the primary and backup servers for the specified number of times (V3 product) or specific time (V2 product), except for the last server. According to the RFC3261 specifications, the SIP terminal will try 64*T1 (32s). The current SIP signaling request fails and the information feedback is provided to the user.

2.3 Failback

Fanvil telephone sets support independent Register Failback. After successfully registering with the backup server, the telephone set will periodically send an independent Register message to the primary server to detect whether the primary server resumes normal.

Triggering condition: Register Failback timer expires.

1) The telephone set registers with the backup server successfully.
2) When Register Failback times out, the telephone set sends an independent Register message to the primary server.
3) The primary proxy responds with a 200 OK message. The telephone set switches to the primary server.

If the primary server is still unavailable, the Register sent by the telephone set will be retransmitted according to RFC3261 until 64*T1 (32s) timeout. After timeout, a timer is started again to periodically detect the primary server.

3 SIP Server Primary/Backup Configuration

3.1 Configuration Items

Configuration Item	Description	Value
SIPN Register Addr	Address of the primary server	IP address or domain name Default value: empty
SIPN Register Port	Service port of the primary server	Numeric value Default value: 5060
SIPN Register TTL	Registration period of the primary server	Numeric value Default value: 3600 Unit: second
SIPN Transport	Transmission protocol used by the primary server, which can be UDP, TCP, and TLS	0: UDP 1: TCP 3: TLS Default value: 0
SIPN Backup Addr	Address of the backup server	IP address or domain name Default value: empty
SIPN Backup Port	Service port of the backup server	Numeric value Default value: 5060
SIPN Backup TTL	Registration period of the backup server	Numeric value Default value: 3600 Unit: second
SIPN Backup Transport	Transmission protocol used by the backup server, which can be UDP, TCP, and TLS	0: UDP 1: TCP 3: TLS Default value: 0
SIPN Enable Failback	Whether the Register Failback function is enabled for lines	0/1 Default value: 1
SIPN Failback Interval	Interval for detecting whether the primary server/proxy resumes normal after registration with the backup server/proxy	Numeric value Default value: 1800 Unit: second
SIPN Signal Retry Counts	Number of times that a SIP request is retransmitted when the server/proxy fails, except for the last server/proxy (timeout duration: 32s)	Numeric value Default value: 3

3.2 Configuration Interface

A user can log in to the web server of the telephone set to configure the primary/backup server.

1) Click Line and then SIP (SIP tab page displayed by default).
2) Select a line from the Line drop-down list.
3) Configure line registration information:
4) Configure information about SIP Server1 (primary server) and SIP Server2 (backup server), as shown in Figure 2.
5) Click Basic Settings and set primary/backup failback items, as shown in Figure 3.
6) Click Apply at the bottom for the settings to take effect.

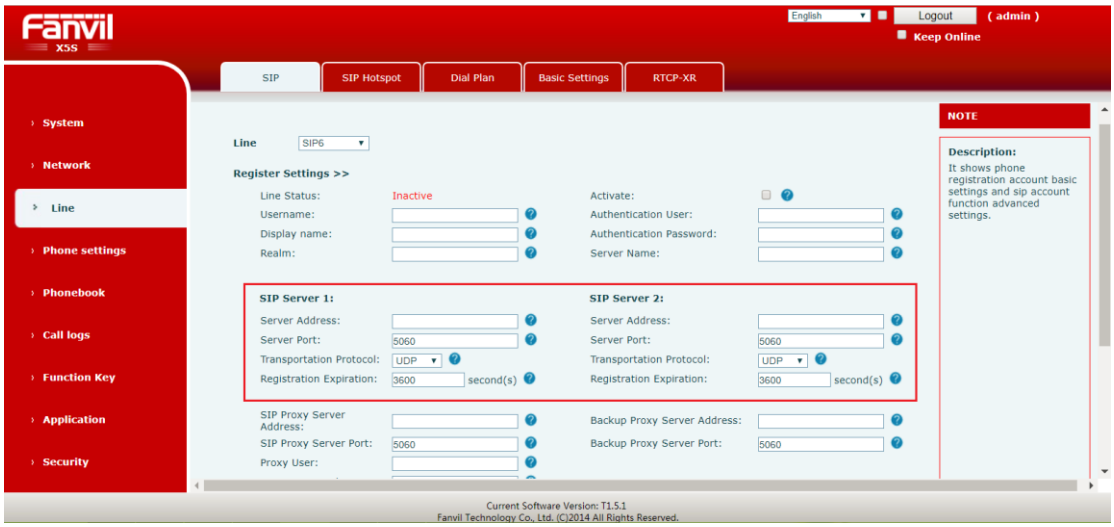

Figure 2 SIP server primary/backup configuration

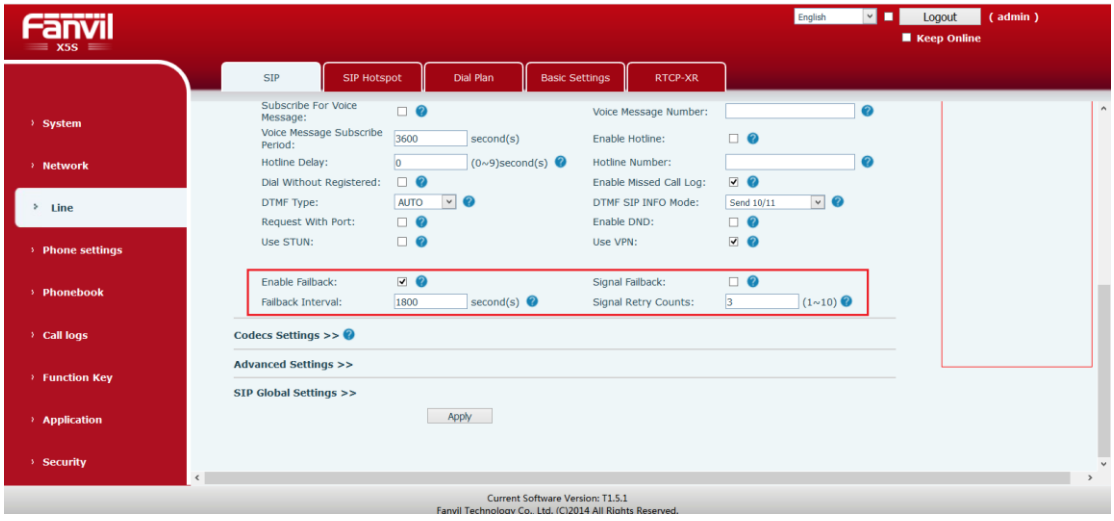

Figure 3 SIP primary/backup failback configuration