SIP Proxy Primary/Backup Function and Configuration Description

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Contents

1 Introduction

1.1 Proxy Primary/Backup

The SIP proxy main backup mechanism enhances the stability and maintainability of the SIP service. When one proxy breaks down or needs to be maintained, all SIP requests or responses are automatically switched to the backup proxy for forwarding. The SIP service still runs normally. Proxy switching is transparent to user. Figure 1 shows the logic.

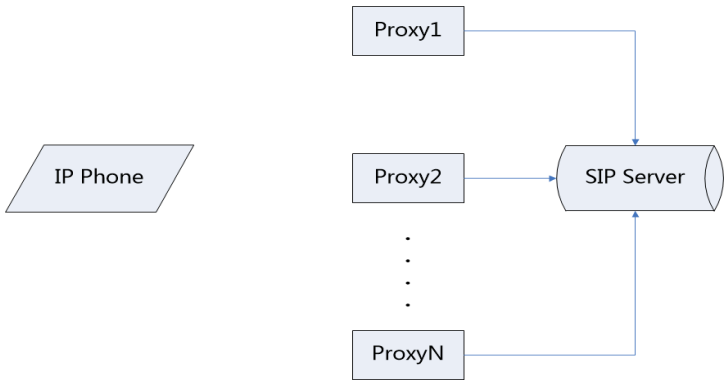

Figure 1 Proxy primary/backup

1.2 Terms

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

Failback: a mechanism in which when the backup/low-priority server is in the working state, the device attempts to interact with the primary/high-priority server in order to quickly switch to the primary/high-priority server

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

Signal Failback: a mechanism in which when the primary server fails and the telephone set registers with the backup server, a certain SIP Request is sent to detect whether the primary server resumes normal. Supported SIP Requests include Register, Invite, and Bye. Here the Register request reuses the successfully registered dialog and a failback is performed only when the registration period is reached. For the Invite and Bye requests, a failback is performed upon a call requirement of the user.

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 SIP Proxy Primary/Backup Function

2.1 Function Settings

Configure at least two proxy addresses. Set the primary and backup proxy addresses to IP addresses or domain names. Alternatively, set the server address to a domain name and then multiple addresses are returned through DNS resolution.

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

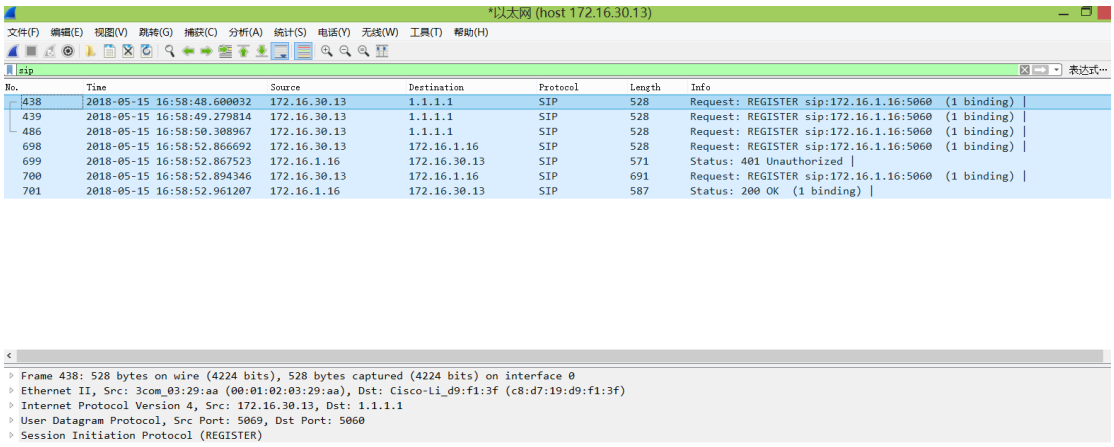

Figure 2 Failover

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 proxy.
3) Telephone set A attempts to send an Invite request to the primary proxy to specify the

number of times (V3 product) or specific time (V2 product).

4) When the primary proxy fails, the telephone set sends an Invite message to the backup proxy.
5) The backup proxy responds to the telephone set 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 proxy, the telephone set hangs up.

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

2.2.4 Failover Failure

When all proxy servers are unavailable, the telephone set will attempt to connect to proxy servers based on the DNS SRV/NAPTR resolution priorities or the sequence of the primary and backup proxy servers for the specified number of times (V3 product) or specific time (V2 product), except for the last proxy. According to the RFC3261 specifications, the telephone set 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 the following failback signaling messages: Register and Invite. Others are not supported for the moment. This is called signaling failback (V2&V3). Fanvil telephone sets also support periodically (interval configurable) sending an independent Register message to detect the availability status of the primary proxy. This is called register failback (V3). The status of the preceding two modes can be controlled in configurations.

2.3.1 Signal (Register) Failback

Triggering conditions: registration timeout/Option, Invite, Bye, or Cancel request timeout

1) The telephone set registers with the backup proxy successfully.
2) When the registration times out, the telephone set first sends a Register request to the

primary proxy.

3) The primary proxy responds with a 200 OK message. The telephone set gets registered successfully.

4) The telephone set switches to the primary proxy.

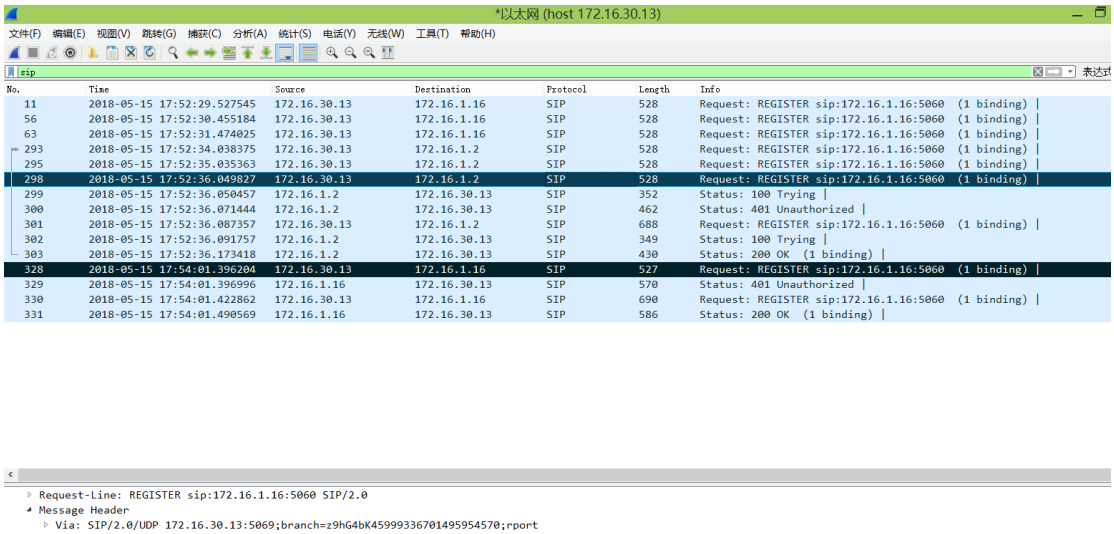

Figure 3 Signal (Register) Failback

2.3.2 Signal (Invite) Failback

Triggering condition: A user dials a number.

1) The telephone set registers with the backup proxy successfully.
2) Telephone set A calls telephone set B.
3) Telephone set A sends an Invite request to the primary proxy.
4) The primary proxy responds to the telephone set with a 200 OK message. Telephone set A sets up a conversation with telephone set B.
5) The telephone set switches to the primary proxy.

2.3.3 Register Failback

Triggering condition: Register Failback timer expires.

1) The telephone set registers with the backup proxy successfully.
2) The telephone set sends a New Register message to the primary proxy.
3) The primary proxy responds with a 200 OK message. The telephone set switches to the primary proxy.

2.3.4 Signal/Register Failback Failure

Before the primary proxy resumes normal, the failover mechanism continues when the signal failback mechanism fails. A retry is performed when the timer expires.

3 Telephone Set Configuration

3.1 Configuration Items

Configuration Item	Description	Value
SIPN Proxy Addr	Address of the primary proxy	IP address or domain name Default value: empty
SIPN Proxy Port	Service port of the primary proxy	Numeric value Default value: 5060
SIPN Proxy User	Authentication user name of the primary proxy	Character string Default value: empty
SIPN Proxy Pswd	Authentication password of the primary proxy	Character string Default value: empty
SIPN BakProxy Addr	Address of the backup proxy	IP address or domain name Default value: empty
SIPN BakProxy Port	Service port of the backup proxy	Numeric value Default value: 5060
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 Failback	Whether to enable the SIP Signal (Register/Invite/ Bye) Failback function	0/1 Default value: 0
SIPN Signal Retry Counts	Number of times for the telephone set to retransmit a SIP message 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 proxy.

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) or SIP Server2 (backup

server).

5) Configure information about the SIP proxy and backup proxy, as shown in Figure 4.
6) Click Basic Settings and set primary/backup failback items, as shown in Figure 5.
7) Click Apply at the bottom for the settings to take effect.

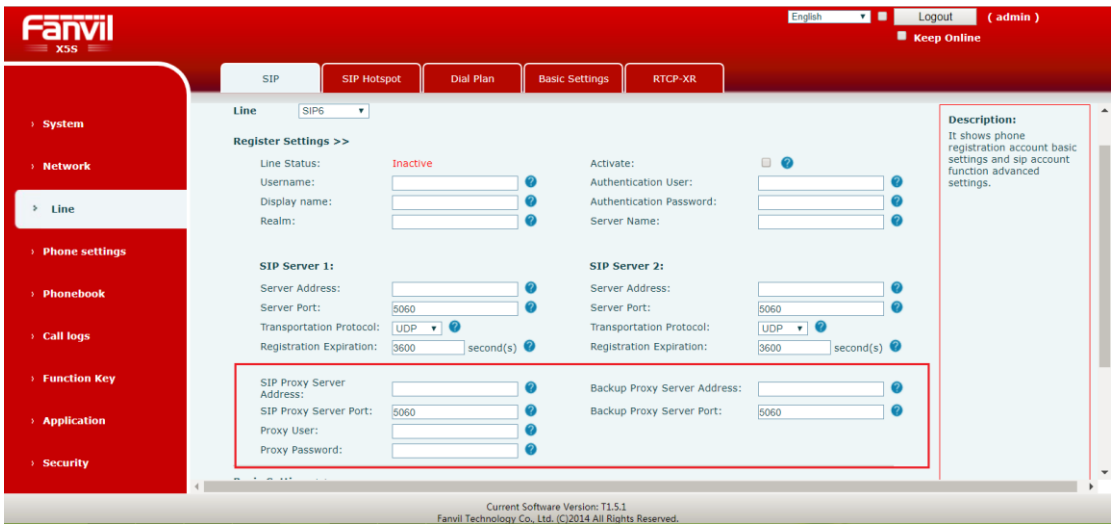

Figure 4 SIP Proxy primary/backup configuration

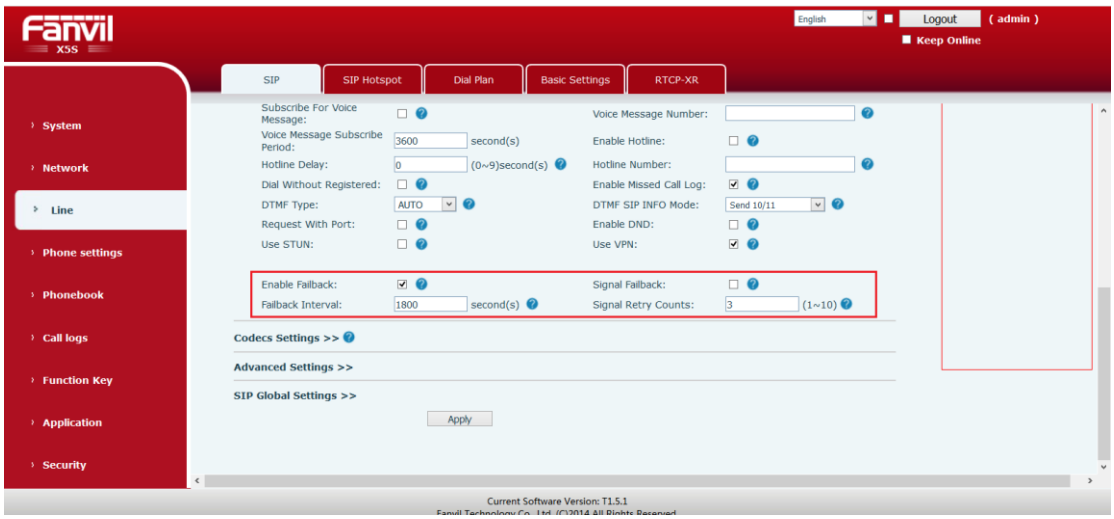

Figure 4 SIP primary/backup failback configuration