Grandstream Networks, Inc.

Server Redundancy on Grandstream GXP IP Phones

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SUPPORTED DEVICES

Model	Supported	Firmware
Small Business IP Phones GXP16xx Series		
GXP1610/1615	Yes	1.0.4.6 or higher
GXP1620/1625		
GXP1628		
GXP1630		
Mid-Range IP Phones GXP17XX Series		
GXP1760	Yes	1.0.0.37 or higher
GXP1780/1782		
Enterprise IP Phones GXP21xx Series		
GXP2130	Yes	1.0.7.25 or higher
GXP2140		
GXP2160		
GXP2135		
GXP2170		

INTRODUCTION

A redundant server is mostly used to assure the reliability of an end point's service when it loses connectivity with the primary server.

Configuring a redundant server is recommended for medium and large VoIP deployment installations. Users can then keep using the service on their end points when the main server cannot be reached, service is down or when administrators need to do maintenance tasks on it.

This guide will outline the use and configuration of redundant SIP server on Grandstream GXP IP Phones.

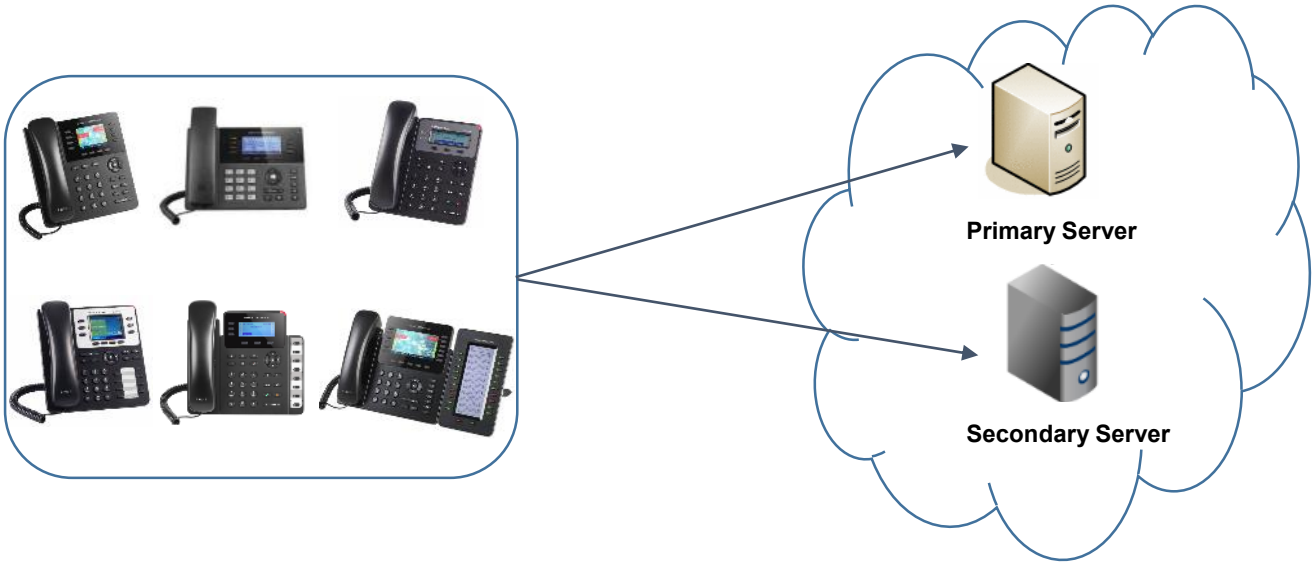

Figure 1: Server Redundancy Diagram

SIP SERVER REDUNDANCY

Grandstream GXP IP phones will send REGISTER requests and SUBSCRIBE messages (except for message waiting) to both primary and secondary SIP servers for the same account, when both primary and secondary SIP servers are configured.

When making a call, the phone will use the registered primary SIP server first. If not available, the secondary SIP server will be used instead.

Requirements

- A SIP end point supporting primary and secondary SIP server configuration options under its SIP account(s)/Profile(s).
- Two SIP servers having the same extension's credentials.

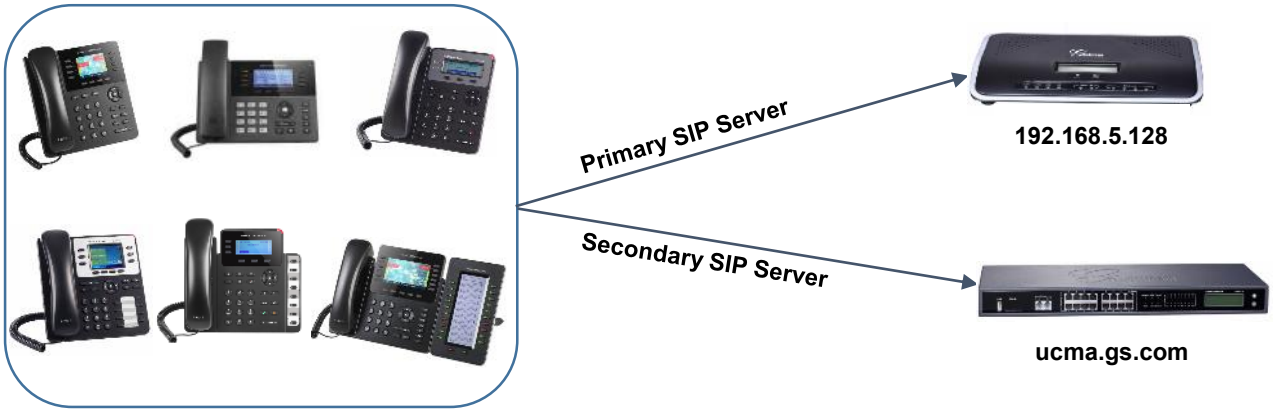

Figure 2: SIP Server Redundancy Diagram

Configuration on GXP phones

The following shows usage and configuration of primary and secondary SIP server using a GXP2130 web interface as example:

1. Access web interface and go to **Accounts -> Account X -> General Settings.**
2. Enter the "IP Address: Port" or "FQDN: Port" of your primary SIP server in **SIP Server** field.
3. Enter the "IP Address: Port" or "FQDN: Port" of your secondary SIP server in **Secondary SIP Server** field.

Note: Do not configure same SIP Server address in Primary and Secondary SIP Servers fields.

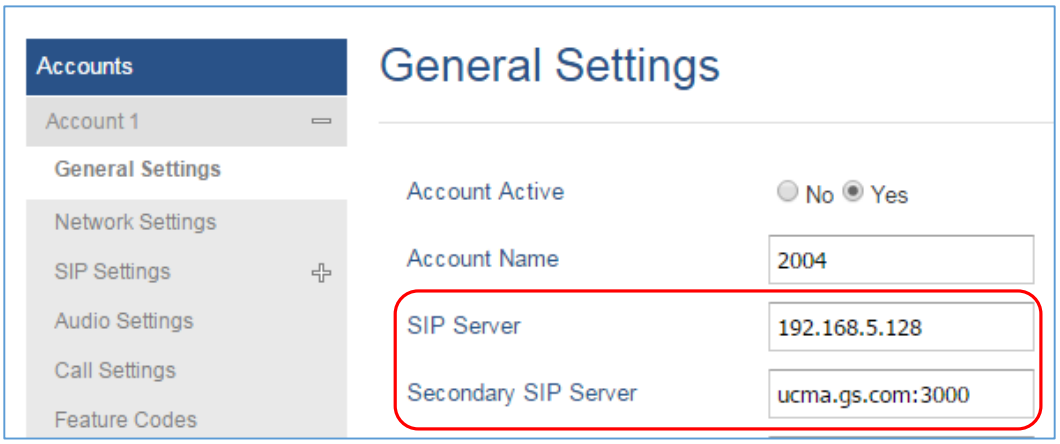

Figure 3: GXP2130 Account General Settings

4. (Optional) Administrator can also change **Register Expiration** and **Reregister before Expiration** values so the end point can check and refresh its registration accordingly with set values (in minutes for Register Expirations and in seconds for Reregister before Expiration).

   In the below figure *Register Expiration* is set to 10 minutes, while *Reregister before Expiration* will not be used (set to 0 second).

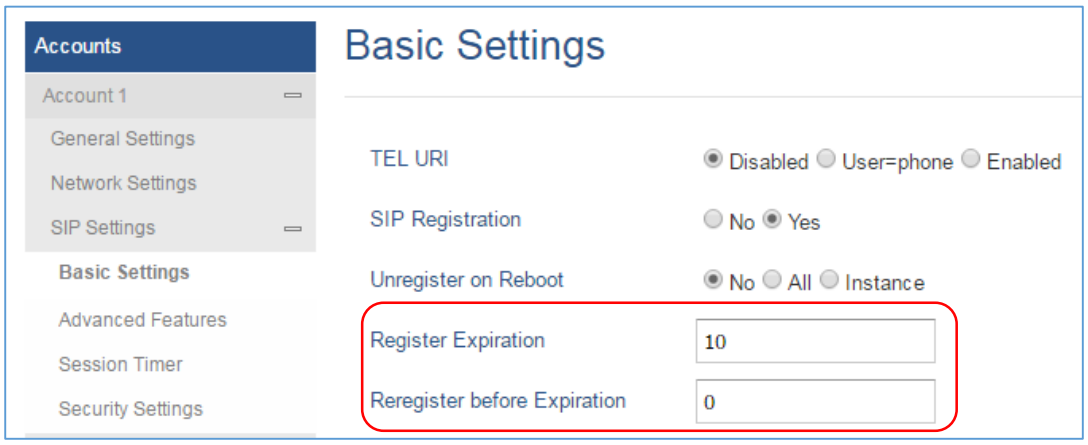

Figure 4: GXP2130 SIP Basic Settings

Phone Behavior against Servers Availability

In above example, GXP2130 will send two SIP REGISTER requests to the IP/FQDN configured in **SIP Server** and **Secondary SIP server** fields.

Case1: Both Servers Reachable

If both SIP Server and Secondary SIP Server are reachable, the phone will register on both servers. The phone will always use the primary server for calls, and refresh its registration each *Register Expiration* period (10 minutes in above example) to ensure that both servers are still reachable.

Case 2: Primary Server Not Responsive

If primary **SIP Server** is not responsive, the phone will use **Secondary SIP Server** for phone services instead (including making/receiving calls).

Flow Examples

The following figure shows SIP flow example between Grandstream IP phone (GXP2130 in this example) and primary/secondary SIP Servers. The flow shows successful registration on both primary and secondary SIP servers (*case 1: both servers reachable)* and also when the primary SIP server becomes unresponsive (*case 2: primary SIP server not responsive*) to the SIP INVITE.

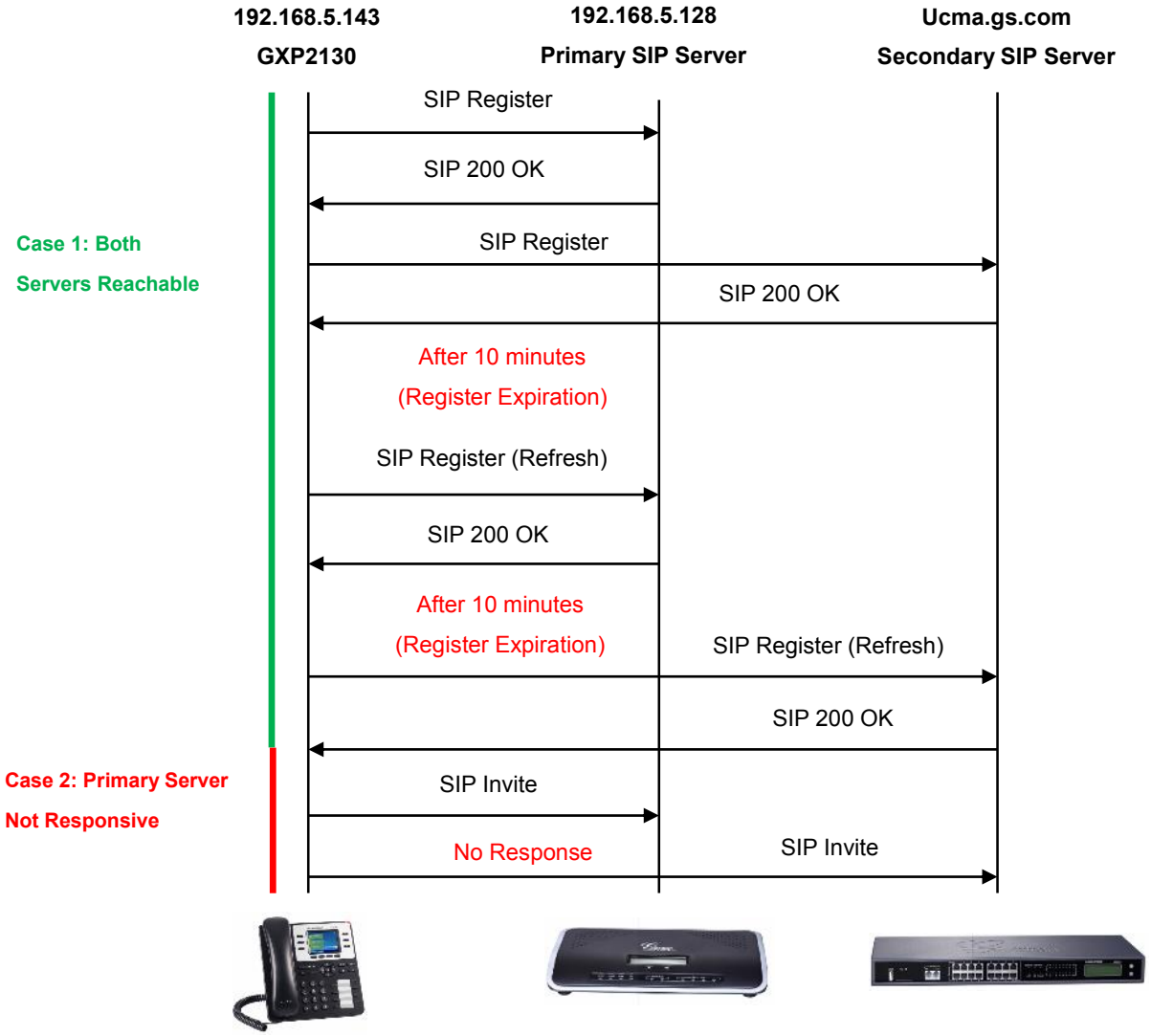

Figure 5: SIP Registration and Invite with Primary and Secondary SIP Servers Flow

Note: We assume in above scenarios that SIP servers are not challenging the SIP register with 401 or 407.