Grandstream Networks, Inc.

Using UCM6XXX as Firmware Upgrade Server Guide

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INTRODUCTION

Grandstream UCM6XXX series have the possibility to act as firmware server allowing to upgrade Grandstream endpoints introduced by Zero-Config module using different template levels.

Using UCM6XXX as firmware server allows to manage firmware files for Grandstream endpoints in a single server, the firmware files can be uploaded and stored using UCM internal memory or using connected SD card/USB flash drive.

This feature is very useful in closed network environments (without Internet access) with many Grandstream devices, and it can help also to reduce bandwidth usage; instead of having each device contacting a remote server to upgrade, this can be managed locally using UCM6XXX series.

This guide provides steps on how to configure the UCM6XXX as firmware upgrade server and provision discovered Grandstream devices via Zero Config.

To find out more options and parameter descriptions regarding Zero Config and Provisioning, please refer to one of the UCM6XXX user manuals, UCM62XX series User Manual as example.

Note:

All Grandstream products' firmware are improved and updated on a regular basis. Latest firmware versions are available at http://www.grandstream.com/support/firmware
Published firmware versions in Grandstream official website have passed QA tests and included new enhancements implemented, reported issues fixes for better user experience; all changes are logged in Release Notes documents.
Provided Firmware package is specific to a single product or product series, same as release notes document. For example, Release_GXP16xx_1.0.4.56.zip and Release_Note_GXP16xx_1.0.4.56.pdf are specific to GXP16XX Small Business IP Phones series.
Grandstream recommends to read Release Notes document which may include special firmware upgrade notices and always keep your devices up-to-date by upgrading their firmware versions regularly.

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UCM6XXX SETUP OVERVIEW

The following diagram illustrates a typical scenario using Grandstream UCM6XXX series (UCM6202 as example in this guide) and different endpoints:

Figure 1: UCM6XXX Typical Scenario

By default, UCM6202 has network method set to Route in network settings, WAN port interface is used for uplink connection and will act as DHCP client while LAN port interface is used as a router assigning IP addresses to connected devices (default segment is 192.168.2.0/24).

Administrator can change networking method from **Web UI→System Settings→Network Settings→Basic Settings** to use UCM6XXX as Switch or Dual modes. To find out more options and parameter descriptions related to network settings, please refer to user manual: UCM62XX series User Manual

Note: All UCM6XXX series models can act as firmware upgrade server using any network interface method (Route, Switch or Dual). Endpoints and UCM6XXX need to be on the same LAN/VPN using private or public IP addresses, or can be connected through a router using public or private IP addresses (with necessary port forwarding or DMZ).

CONFIGURING UCM6XXX AS FIRMWARE SERVER

The ability for UCM6XXX series to act as firmware server is introduced by Zero-Config module and it can be used with different templates levels (Global Policy, Global Templates, Model Templates, Device Template).

In the following sections, we will provide steps how to use each method and users may choose the best method fitting their environments depending on deployed units (models, quantity). Different templates levels can be combined, and template with highest priority will override settings in other templates with lower one.

Prerequisites

Download Firmware files
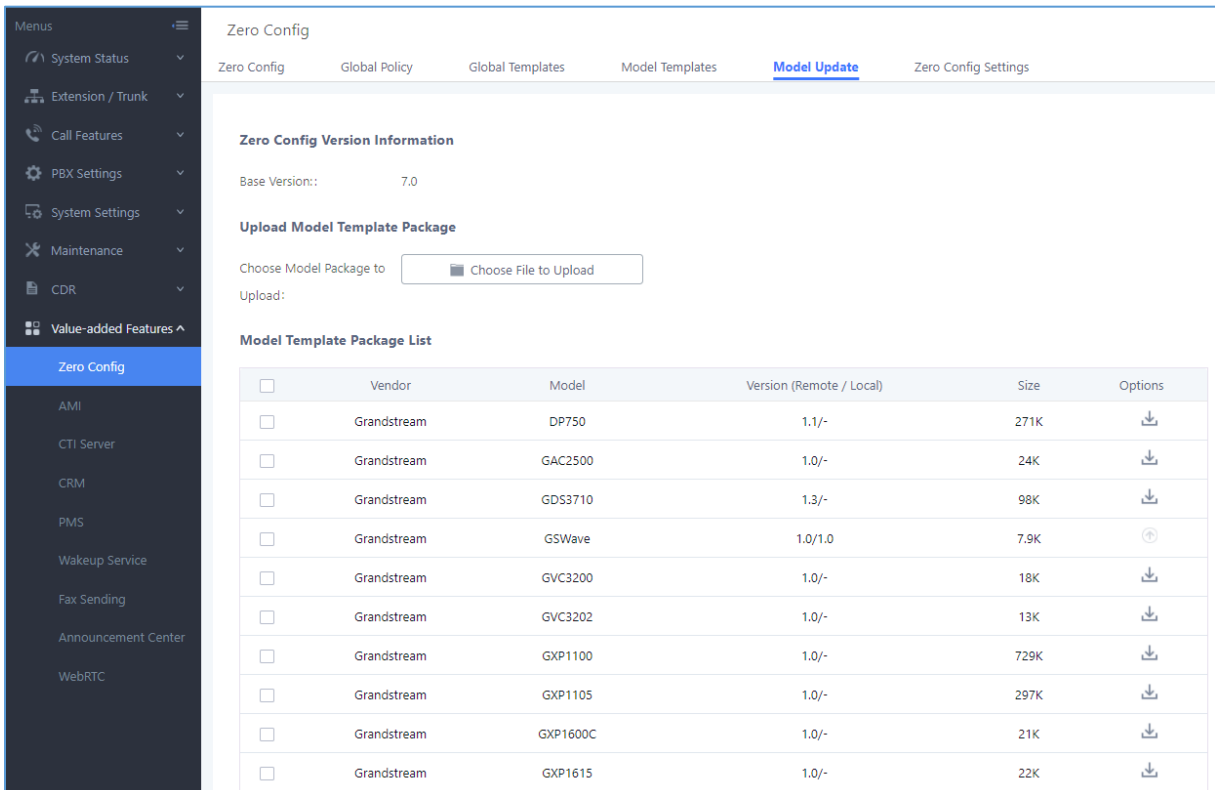
We will assume that needed firmware files are previously downloaded from Grandstream website: http://www.grandstream.com/support/firmware

Update and Download Default Model Templates

Users may need first to update and download Model Templates for their specific Grandstream devices.

To update or download default model templates:

1. Access to **Value-added Features→Zero Config→Model Update** as shown on the below figure.

2. Click on ⬇ to download or update the corresponding default template for the device's model.

Figure 2: Update and Download Model Templates

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Configuration via Zero-Config Templates

Using Global Policy

1. Access web UI→**Value-added Features**→**Zero Config**→**Global Policy**.
2. Under Maintenance section, check "**Firmware Source**".
3. Select "**Local UCM Server**" from "Source" dropdown list.
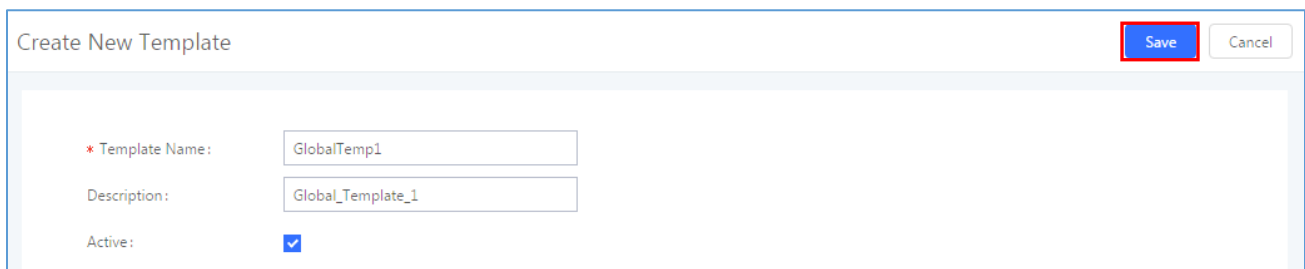

Figure 3: Firmware Source

4. Select "**Directory**" where firmware files are uploaded.

   To manage UCM6XXX firmware storage and upload firmware files. Please refer to [MANAGING FIRMWARE STORAGE].
5. Once firmware file(s) uploaded, press "Save" button to store Global Policy settings.
6. Provision endpoints to start upgrade process. Please refer to [PROVISIONING DEVICES].

Notes:
- Global Policy has the lowest priority compared to other templates. To use Global Policy, other templates should not have Firmware Source settings, otherwise they will be overridden.

- Only one Global Policy can be configured.

Using Global Template(s)

1. Access web UI→**Value-added Features**→**Zero Config**→**Global Templates**.
2. Press, "**Add**" to create a new global template.
3. Enter "Template Name" and "Description" (optional) fields. Keep "**Active**" checked and press "**Save**" in bottom of the page.

Figure 4: Global Template Creation

Steps 2 and 3 can be skipped if Global Templates are previously created. Customers can press **Edit** button and follow below instructions.

4. In "Options" dropdown list, select "**Firmware Source**" and press "**Add Option**".

5. Select "**Local UCM Server**" from "Source" dropdown list as shown in [Figure 3: Firmware Source].

6. Select "**Directory**" where firmware files are uploaded.

   To manage UCM6XXX firmware storage and upload firmware files. Please refer to [MANAGING FIRMWARE STORAGE].

7. Provision endpoints using created Global Template to start upgrade process. Please refer to [PROVISIONING DEVICES].

Notes:

- Global Templates have higher priority compared to Global Policy and lower than Model templates and Device Template. If "Firmware Source" setting is available in templates with higher priority, settings on global templates might be overridden.
- Many Global Templates can be created on the same UCM6XXX system.
- Global Template needs to be selected when provisioning a device.

Using Model Template(s)

1. Access web UI→**Value-added Features**→**Zero Config**→**Model Templates**.

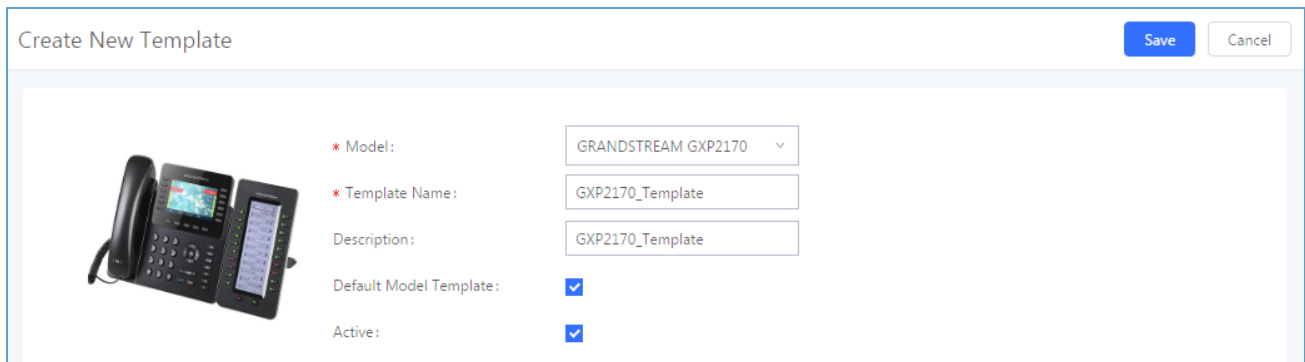2. Click on "**Add**" to add a model template.

Figure 5: Create a New Model Template

3. Choose the **Model**, enter the **Template Name** and **Description** (optional).

4. Check **Default Model Template** if you want to use this template as default for the chosen device's model.

5. Check **Active** to make this template active and press "Create New Template" in bottom of the page.

6. In "Options" dropdown list, select "Firmware Source" and press "Add Option".

7. Select "Local UCM Server" from "Source" dropdown list as shown in [Figure 3: Firmware Source].

8. Select "**Directory**" where firmware files are uploaded.

   To manage UCM6XXX firmware storage and upload firmware files. Please refer to [MANAGING FIRMWARE STORAGE].

9. Provision endpoints using created Model Template to start upgrade process. Please refer to [PROVISIONING DEVICES].

Notes:
- Model Templates have higher priority compared to Global Policy and Global Templates. If "Firmware Source" setting is available in templates with higher priority, settings on Global Templates or Global Policy might be overridden.
- Many Model Templates can be created on the same UCM6XXX system and only one can be assigned as Default Model Template.
- Model Template needs to be selected when provision a device, unless if Default Model Template is available. "Selected Model Template" will have higher priority compared to Default Model Template.

Using Device Configuration

1. Access web UI→**Value-added Features**→**Zero Config**→**Zero Config**.
2. Locate the device to upgrade and press ☑ to edit device configuration.
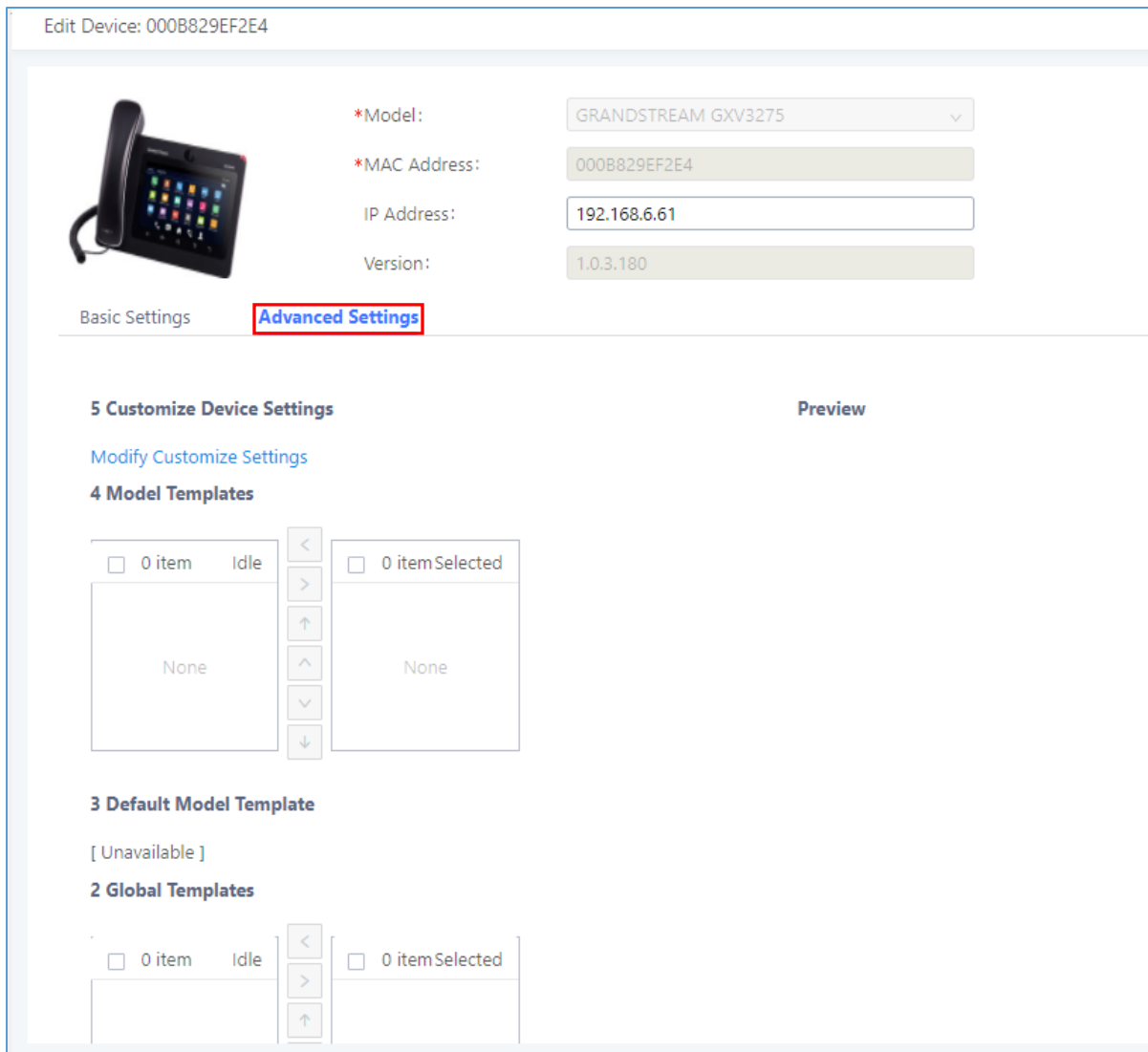3. Access "**Advanced**" tab as shown in next figure.

Figure 6: Modify Customize Settings

4. Press "**Modify Customize Settings**" and go to "Maintenance – Upgrade and Provision" tab.

5. Check "Firmware Source", then select "**Local UCM Server**" from "Source" dropdown list as shown in [Figure 3: Firmware Source].

6. Select "**Directory**" where firmware files are uploaded.

   To manage UCM6XXX firmware storage and upload firmware files. Please refer to [MANAGING FIRMWARE STORAGE]

7. Press "Save" button and provision the device to start upgrade process. Please refer to [PROVISIONING DEVICES].

Note:

Device Configuration Template has the highest priority compared to all other templates. If "Firmware Source" setting is defined available in templates with higher priority, settings on Global Templates or Global Policy might be overridden.

MANAGING FIRMWARE STORAGE

During template creation/edition, after selecting "Local UCM Server" in "Source" list under "Maintenance -> Upgrade and Provision" section, press [icon] button next to "Directory" option to manage UCM6XXX local storage for firmware files.

Root Directory

Users may upload firmware files to Root Directory or create another personalized directory when using UCM6XXX local storage.
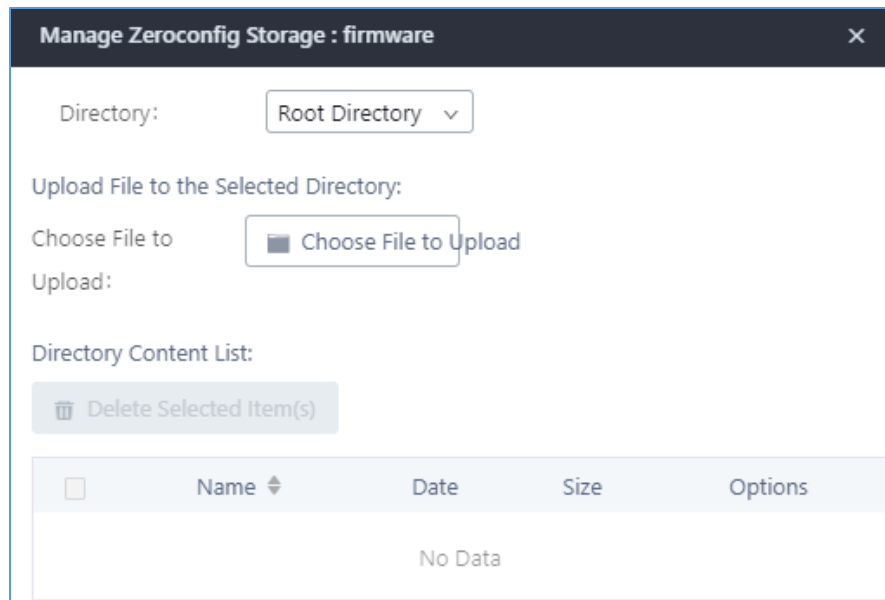

Figure 7: Root Directory

Create New Directory

For better management, it's recommended to create a directory for each model/firmware. For instance, create directory named "GXP2170-1_0_9_26" where to upload firmware version 1.0.9.26 for GXP2170.

1. Select "Create New Directory" from "Directory" list.
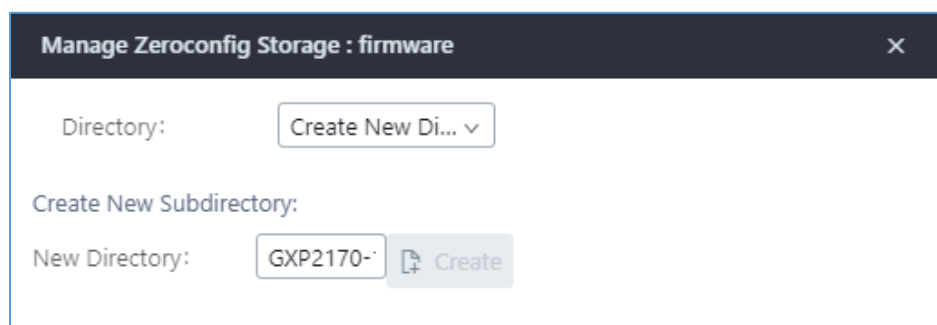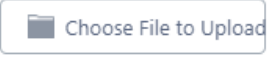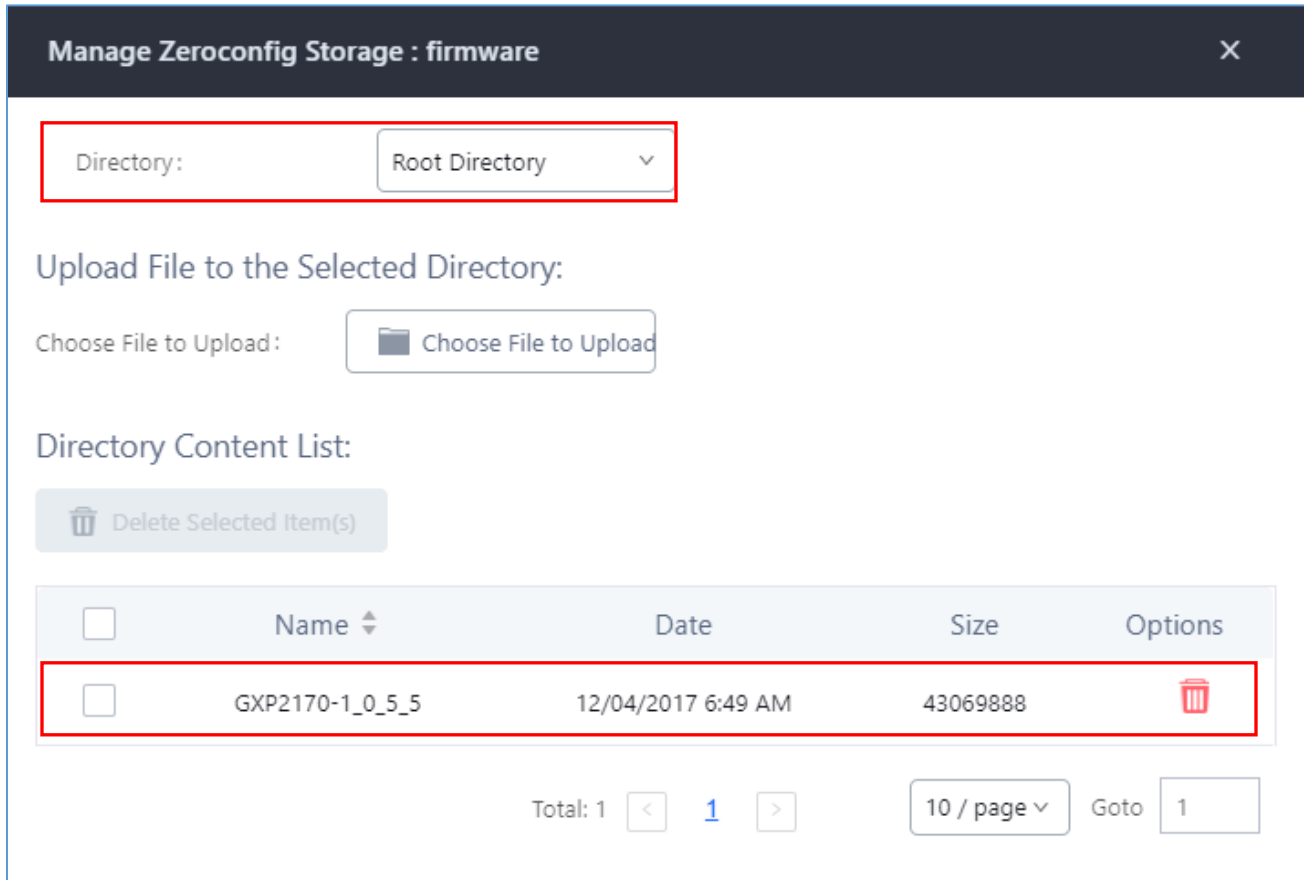2. Enter a name in "New Directory" field and press "Create" button.

Figure 8: Create New Directory

Upload Firmware Files

1. Select "Root Directory" or create new directory as "Directory".

2. Click on ![Choose File to Upload] to browse for the firmware files and upload them to the directory.

Note: Firmware files should have extension ".bin", other formats are not allowed.

Figure 9: Firmware File Uploaded

Users can click 🗑 to delete a previously uploaded firmware file or directory.

Local USB / SD Card Media

Users can connect a USB flash drive to USB port of UCM6XXX or SD card to its corresponding port and use them as external firmware file storage.

In this case, firmware files need to be stored in "ZC_firmware" directory under root of the USB or SD card.

PROVISIONING DEVICES

1. Access web UI→**PBX**→**Zero Config**→**Zero Config**.

2. Locate the device to provision and press ⟳ to send a notify to the device.

   The device will then reboot to apply the config, and use the UCM6XXX as firmware upgrade server.

Note: If "**Default Model Template**" option is enabled as shown in [Figure 5], default template settings will be applied to all discovered new devices matching template model. Otherwise users will have to click on ✎ to edit the device configuration, and assign the template(s) to use for the device.
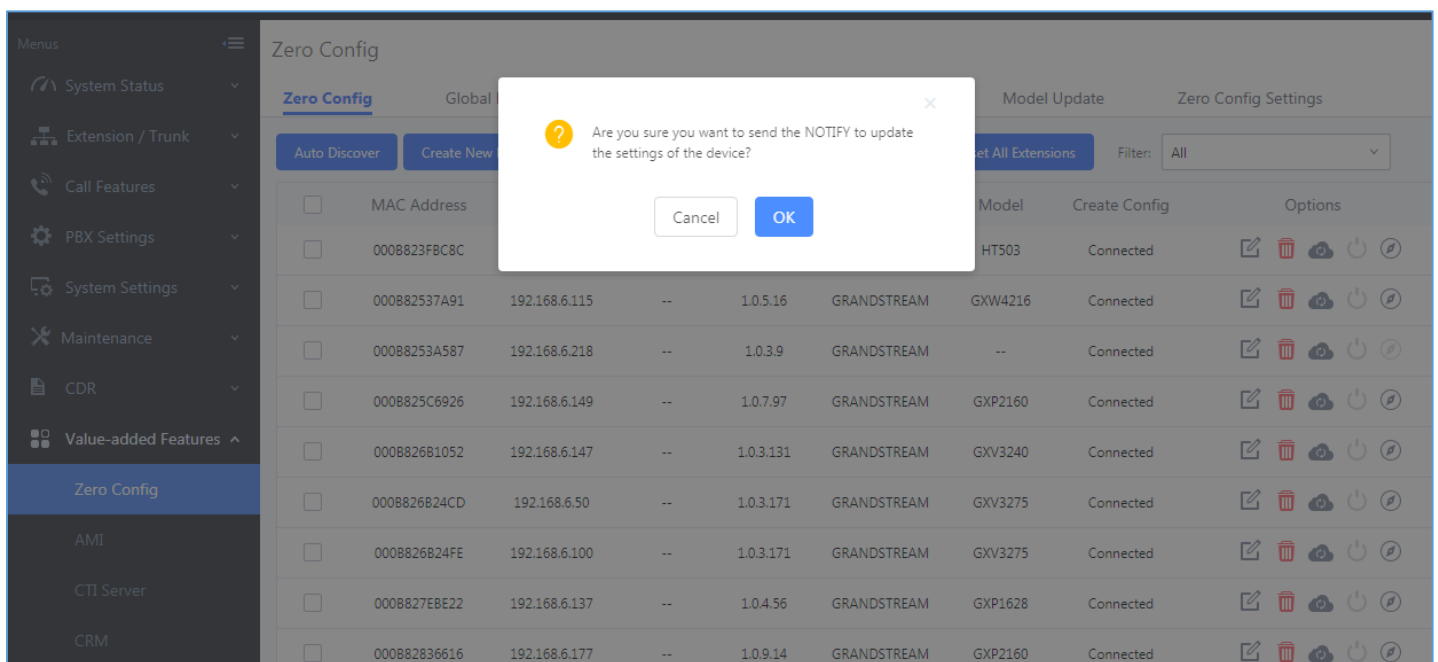

Figure 10: Send Notify to Discovered Devices

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