



Grandstream Networks, Inc.

GVC32XX

Video Conferencing System

XML Based Phonebook Guide



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SUPPORTED DEVICES

Following table shows Grandstream products supporting xml phonebook protocol.

Table 1: List of Supported Products

Model	Firmware
GVC3200/3202	1.0.1.74 or higher
GVC3210	1.0.1.69 or higher
GVC3220	1.0.1.24 or higher



INTRODUCTION

The Grandstream GVC32XX Full HD Video Conferencing System supports XML based downloadable phone book for users to share and maintain a phone book remotely with ease. Besides directly importing VCard/CSV format contacts, loading contacts from synced-up accounts and manually editing from LCD or web UI, the GVC32XX offers this XML API as a user-friendly download method via the GVC32XX's LCD and web UI.

For the ease of efficient deployment and management, the XML phone book file could be stored on a web server for the SIP endpoints to download. There are also applications that require a centralized directory server and have all SIP endpoints synchronized with the server periodically.

This document specifies the Grandstream XML based downloadable phone book configuration that will be applied to GVC32XX. An example XML phone book file is provided at the end of this guide. Users could start a phone book by adding contacts to the example file or exporting the existed phone book file from its LCD or web UI.

What is XML

XML (eXtensible Markup Language) is a markup language* for documents and applications containing structured information. This information contains both content (text, pictures, input box and etc.) and an indication of what role that content plays (e.g. contents in a section header is different from contents in a footnote). Almost all documents are structured.*

*A markup language is a mechanism to identify structures in a document. The XML specification defines a standard way to add markup to documents.

Why XML

XML API Architecture

The XML based phone book downloading for the GVC32XX could use HTTP or TFTP as the transport protocol. The following figure shows how it works via HTTP as an example.



First, the GVC32XX initiates the HTTP GET Request to the HTTP server and waits for the response. Once the device receives the response with XML content in BODY, it displays the information.

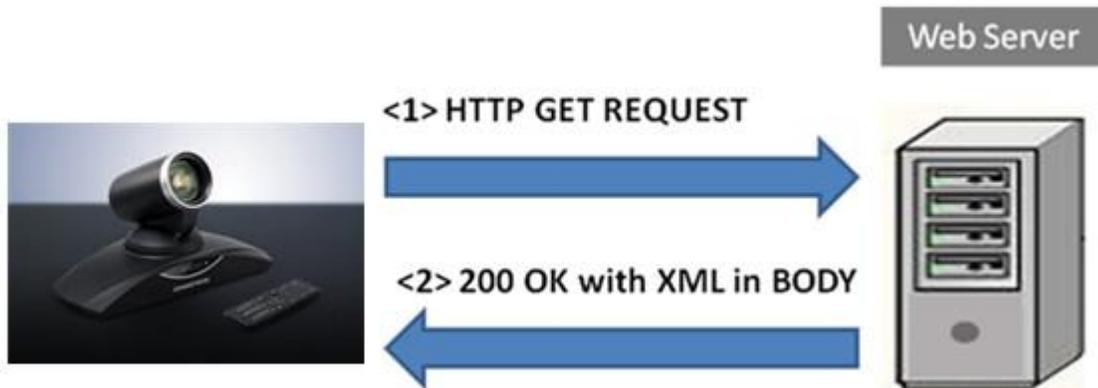


Figure 1: GVC32XX XML API via HTTP

Two types of XML API architecture are introduced below, depending on whether the transaction is via LAN or Internet.

1. A transaction in the LAN may exchange information in the following manner. The GVC32XX sends a request to the web server via HTTP/TFTP and waits for a response with the XML contents. The web server will handle the request and communicate with the application server to get the information for the XML phone book content display. The following figure shows downloading XML phone book file via HTTP within a LAN.

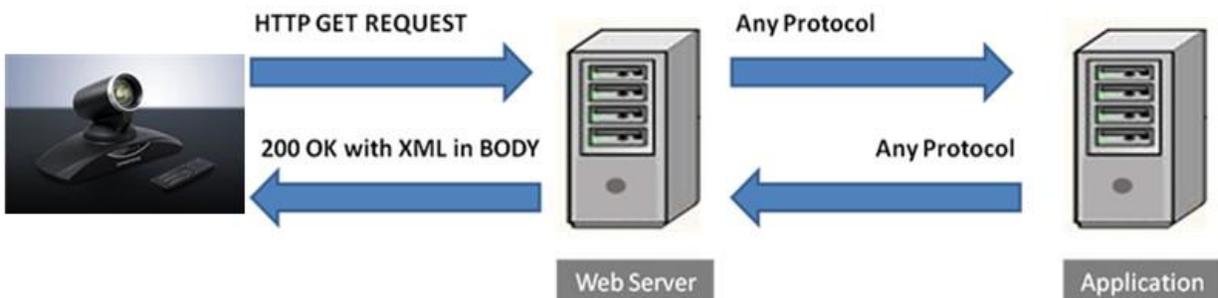


Figure 2: GVC32XX XML API Structure 1

2. If the above Web Server accesses Internet, it could interact with outside web server and respond with real-time content to the GVC32XX.



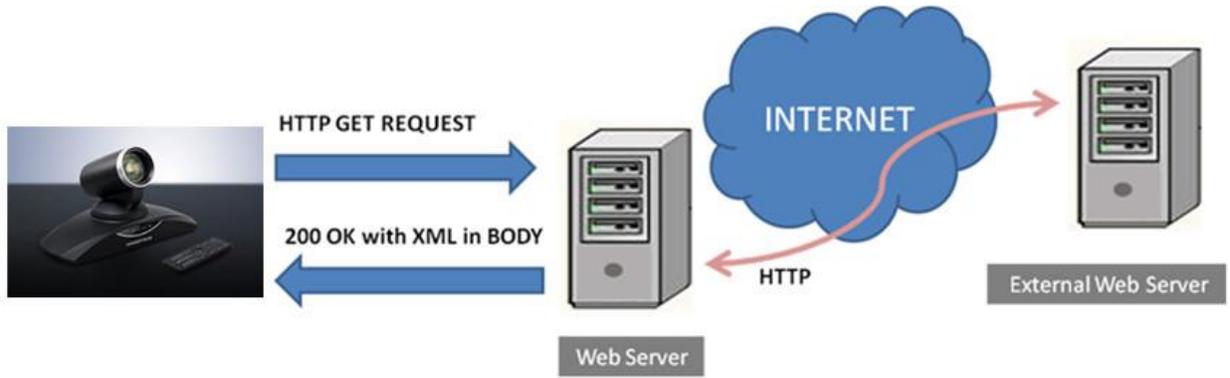


Figure 3: GVC32XX XML API Structure 2

As illustrated above, all the logic lies within the server side of the architecture. The GVC32XX just receives the XML documents and displays it accordingly.

XML PHONEBOOK CONFIGURATION

Firmware

Before the XML phone book is used on GVC32XX, please make sure the firmware on the device is upgraded to the latest version. Please refer to the following link for firmware upgrading information:

<http://www.grandstream.com/support/firmware>

Web Configuration

To configure XML phone book file download, go to **web UI -> Contacts**, click on **“More”** icon on the bottom and select **“Download”** on GVC3200/3202/3210. This will open the XML Phone Book download interface in a new window.

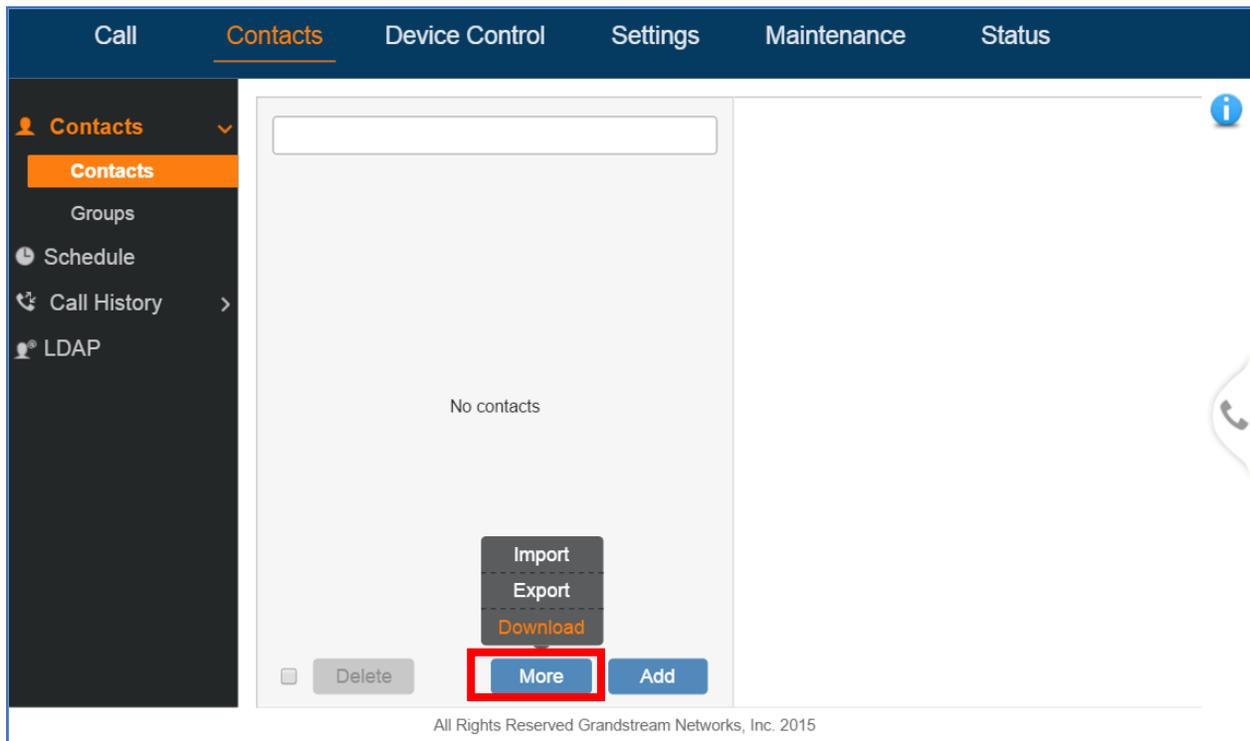


Figure 4: Contacts->More->Download on GVC3200/3202/3210



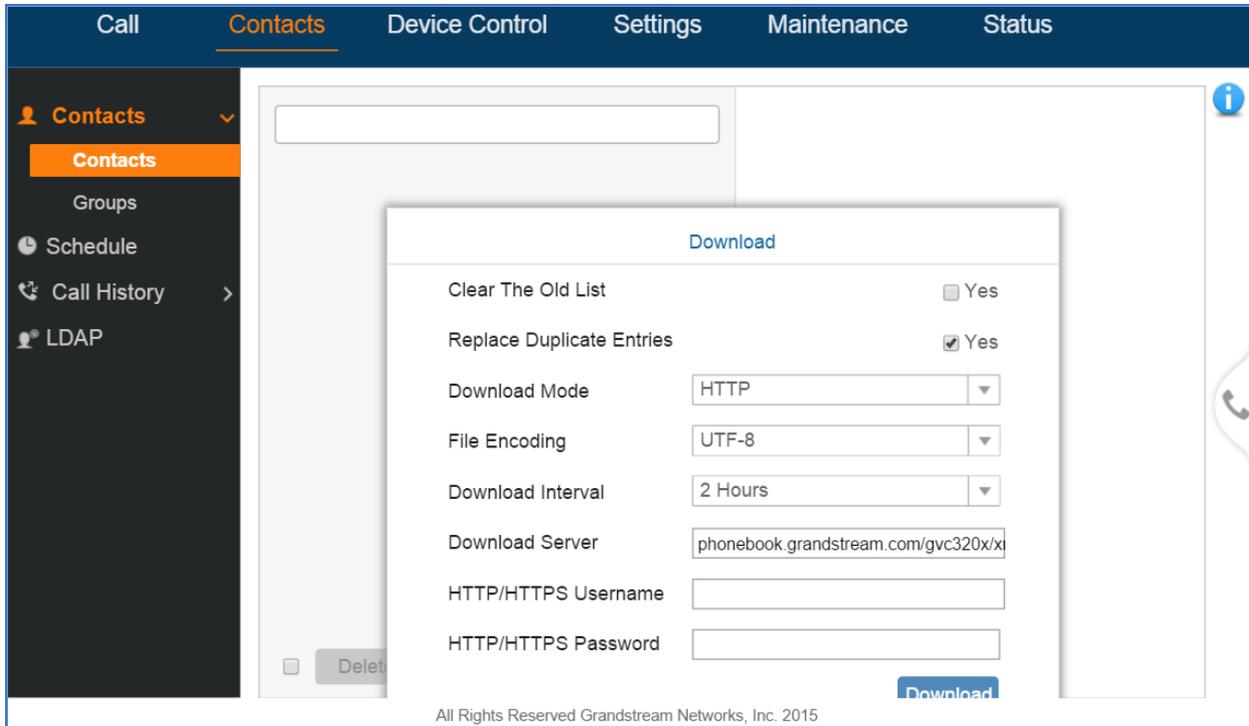


Figure 5: XML Phone Book Download on GVC3200/3202/3210

For the GVC3220 go to **web UI -> Call -> Contacts**, click on “More” icon on the bottom and select “Download”.

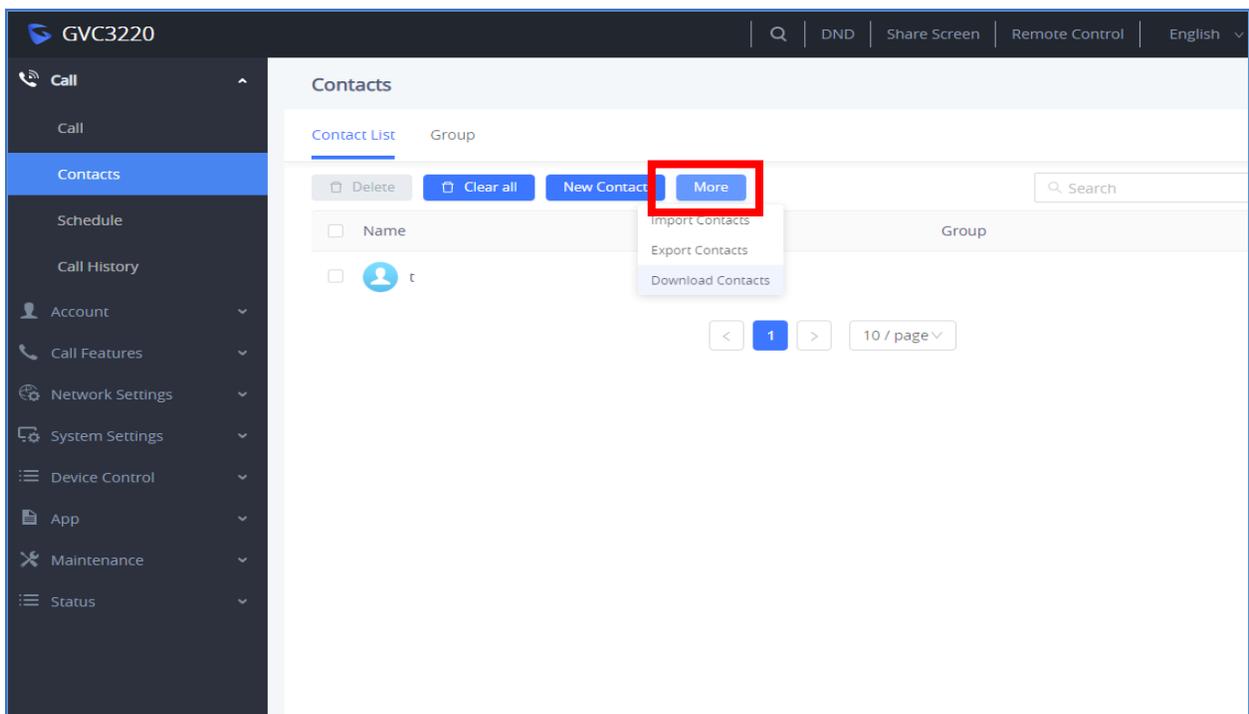


Figure 6: Contacts->More->Download on GVC32020



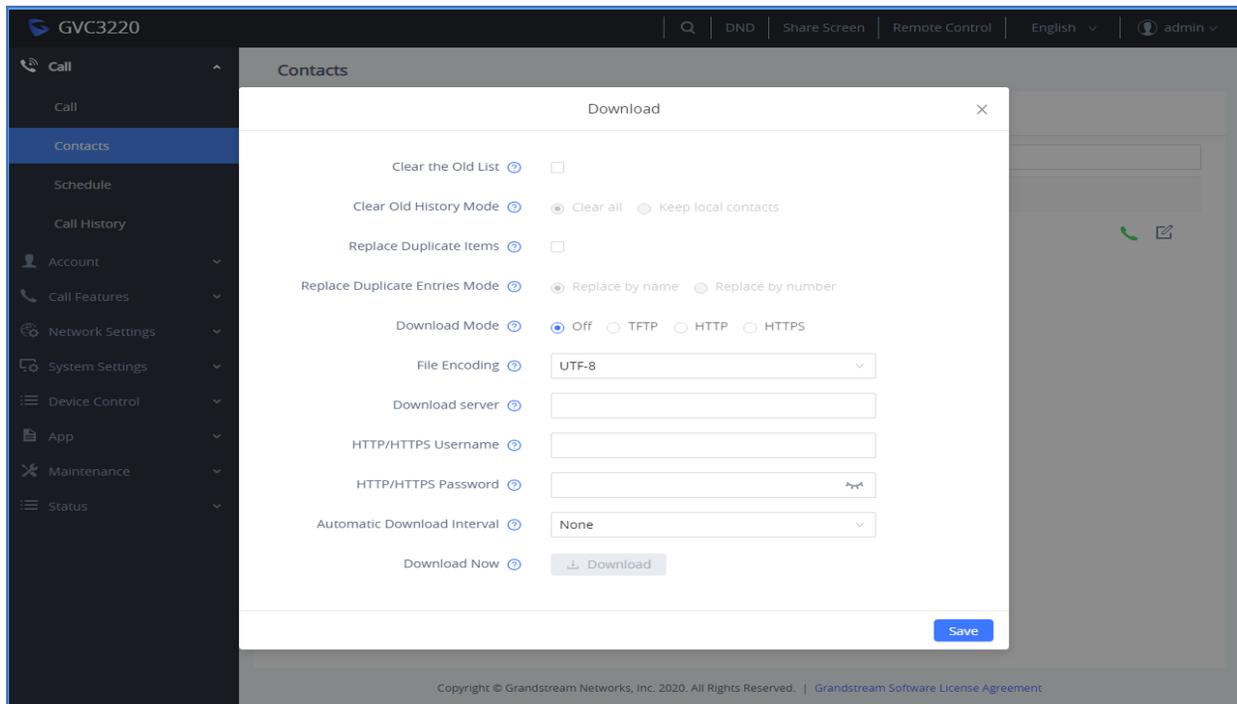


Figure 7: XML Phone Book Download GVC3220

- **Clear The Old List**

If this option is set to "ON", all the existed entries in the GVC32XX Contacts will be automatically removed when the XML phone book is downloaded to the device. The default value is "OFF".

- **Clear The Old List Mode**

If set to "Clear All", the device will delete all previous records before downloading the new records. If set to "Keep Local Contacts", manually added local contacts will not be deleted when downloading new records.

Note: This is only available on the GVC3220

- **Replace Duplicate Entries/Items**

If this option is set to "ON", the duplicate entries in the GVC32XX Contacts will be automatically replaced with the ones in the downloaded XML phone book. The default value is "OFF".

- **Replace Duplicate Entries Mode**

If set to "Replace by Name", records of the same name will be replaced automatically when downloading new records. If set to "Replace by Number", records of the same number will be replaced when downloading new records.

Note: This is only available on the GVC3220



- **Download Mode**

The phone book XML file could be downloaded via HTTP/TFTP/HTTPS. Users could also set it to "OFF" to disable phone book download.

- **File Encoding**

This option specifies the encoding format for the XML phone book file. Users could select "UTF-8", "GBK" (for Chinese characters), "UTF-16", "UTF-32", "Big5", "Big5-HKSCS", "SHIFT-JIS", "ISO8859-1", "ISO8859-15" and "Windows-1251". The default value is "UTF-8".

- **Download Interval/Automatic Download Interval**

This specifies the phone book automatic download time interval. The available intervals are 2 hour, 4 hour, 6 hour, 8 hour and 12 hour. If it's set to "None", automatic download will be disabled.

- **Download Server**

This specifies the path where the device is going to download the XML phone book file. Since download method is already specified in the previous selection, users do not have to provide this information in the server path. The accepted format is as follows:

IP_address[:port]/dir

Hostname[:port]/dir

Examples:

192.168.40.10/XMLphonebookdir

192.168.40.10:443/XMLphonebookdir

service.mycompany.com/XML/phonebook

mycompany.com:8080/phonebook

- **HTTP/HTTPS Username**

If the HTTP/HTTPS server has access control set up that requires HTTP/HTTPS authentication, the user needs to fill up the HTTP/HTTPS username here.

- **HTTP/HTTPS Password**

If the HTTP/HTTPS server has access control set up that requires HTTP/HTTPS authentication, the user needs to fill up the HTTP/HTTPS password here.



 **Note:**

1. If "[:port]" is not specified, port 80 will be used as default for HTTP, port 8089 will be used as default for HTTPS, and Port 69 will be used as default for TFTP.
2. The GVC32XX always looks for the phone book file **phonebook.xml** for downloading if no file name is specified in the server path. Users could also change the phone book name if desired. In this case, the phone book file name needs to be specified in the server path. For example, if the phone book file name is **GVC320xcontacts.xml** and the server directory is **192.168.40.10/XML**, the download server path should be **192.168.40.10/XML/GVC320xcontacts.xml**.

After the above configuration, click on "Save" to save the changes. Users could click on "Download" to start the downloading process.

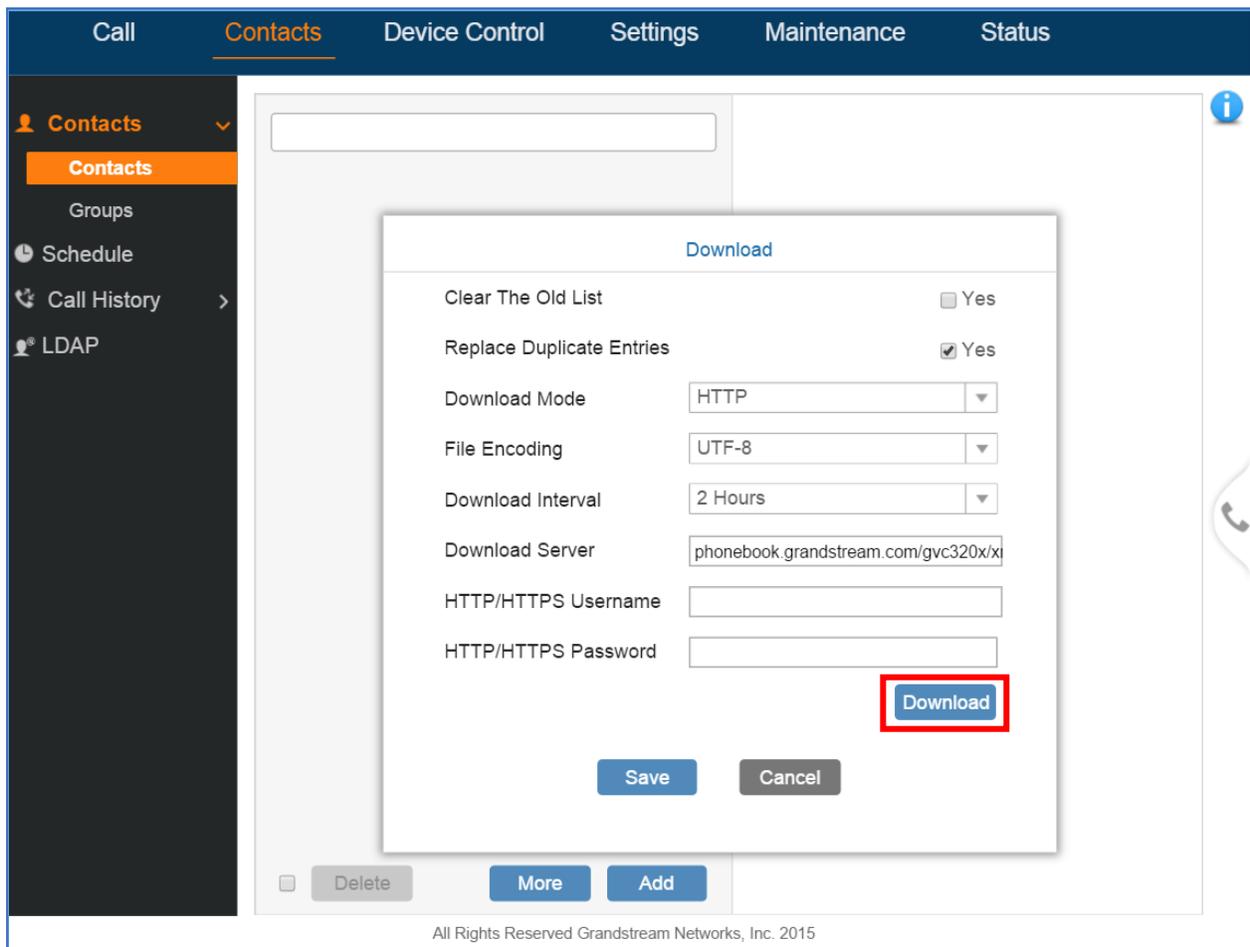


Figure 8: Download XML Phone Book on GVC3200/3202/3210



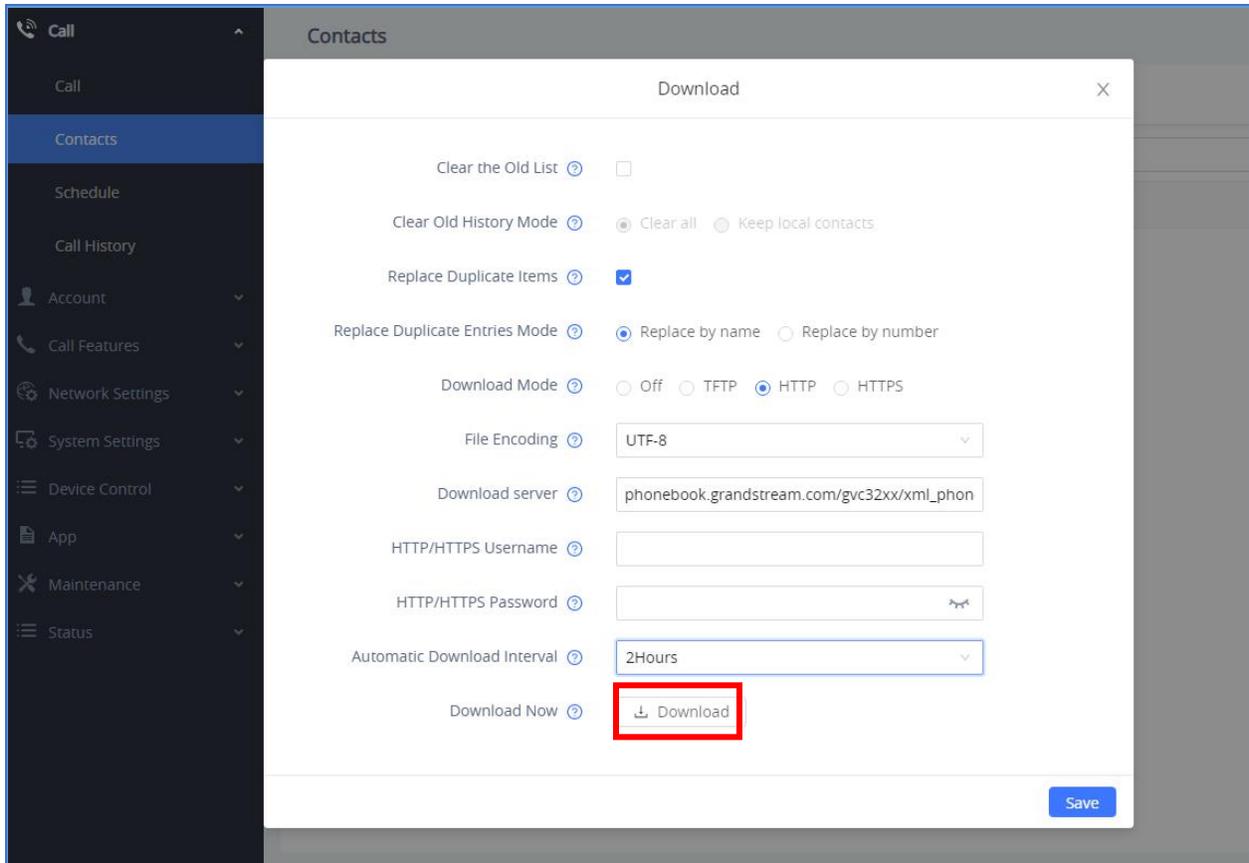


Figure 9: Download XML Phone Book on GVC3220

LCD Configuration on GVC3200/3202/3210

Besides using the web UI to configure XML phone book download, the users could also achieve the same configuration via GVC3200/3202/3210 LCD display using the GVC remote control.

1. On the GVC3200/3202/3210 LCD main screen, click on "Contacts".

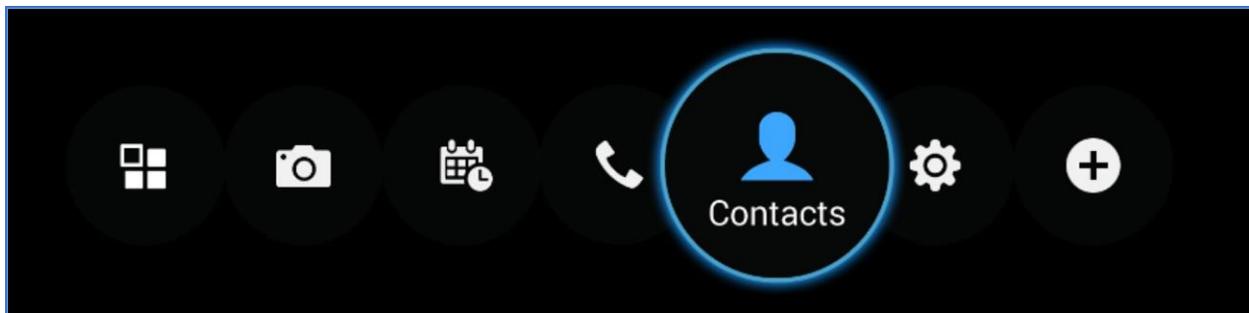


Figure 10: LCD Main Screen --> Contacts

2. Press button  on the remote control and select "Download".



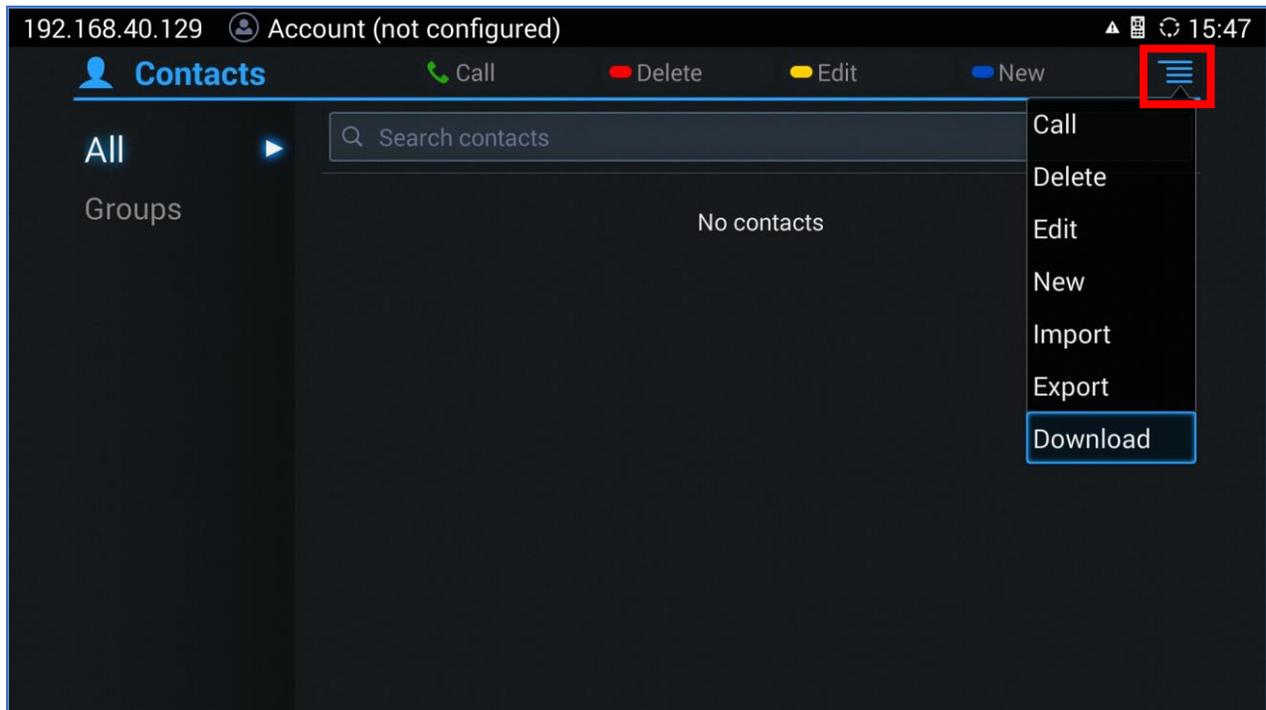


Figure 11: Contacts --> Download

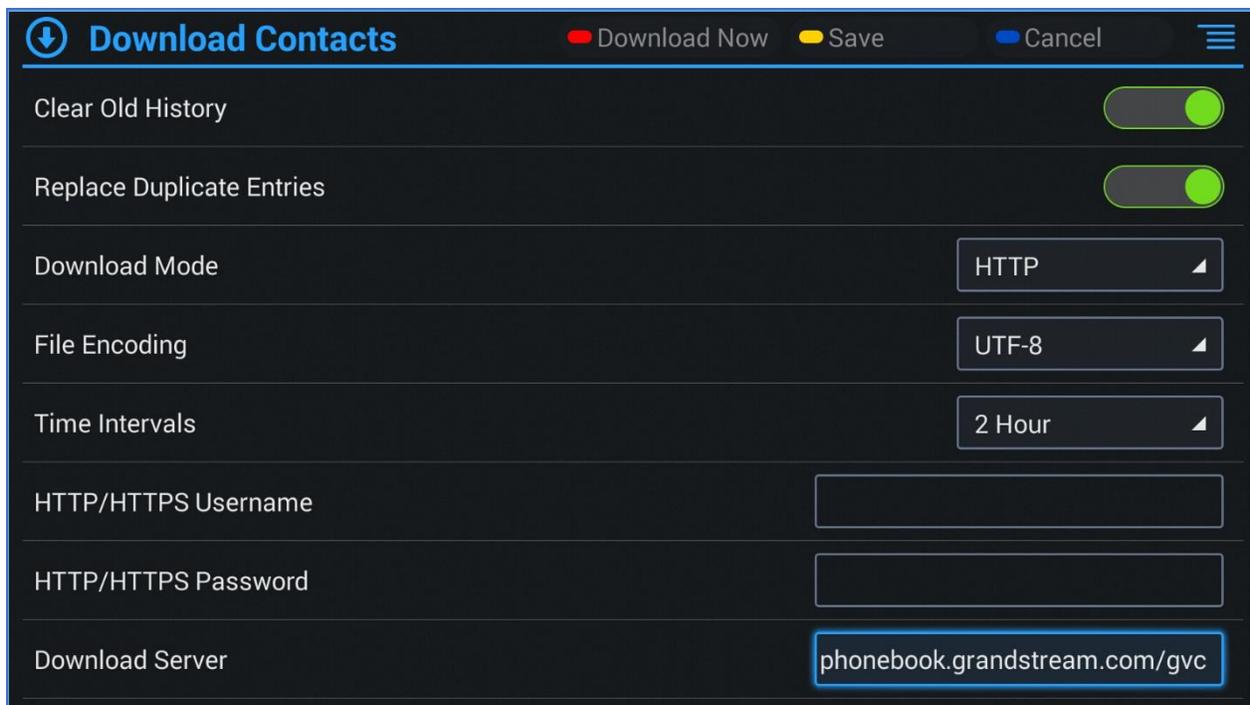


Figure 12: XML Phone Book Download Configurations in LCD



- Use the remote control to configure phone book download parameters, which are the same as described in section **Web Configuration**.
- Press the yellow shortcut key on the GVC remote control or press  --> **Save** to save the configuration.

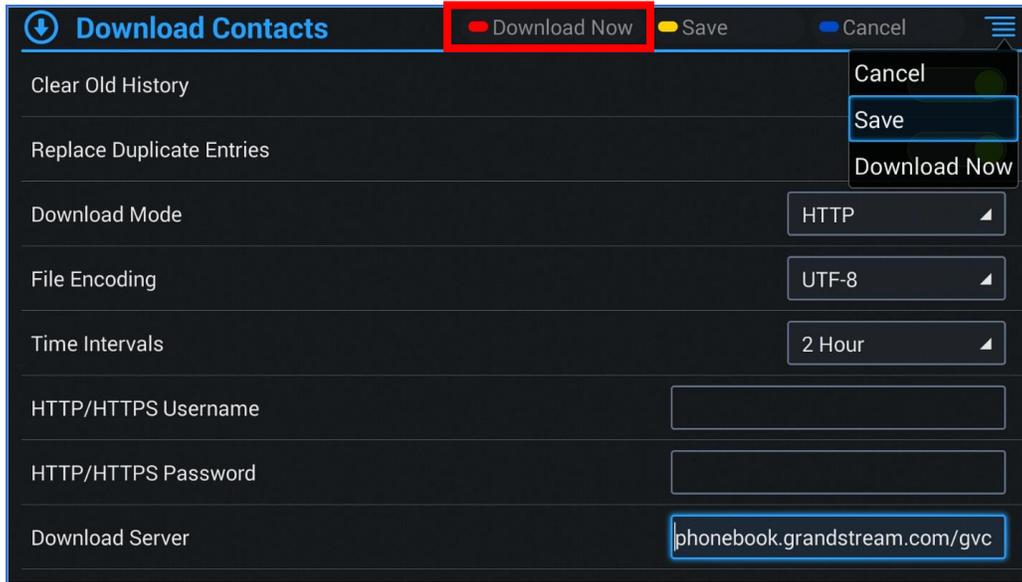


Figure 13: Save Configuration

- The users can press the red shortcut key on the GVC remote control or press  --> **Download Now** to download the phone book XML immediately. Or the users can wait for the next downloading interval (if configured) for the phone book to be downloaded to GVC3200/3202/3210.

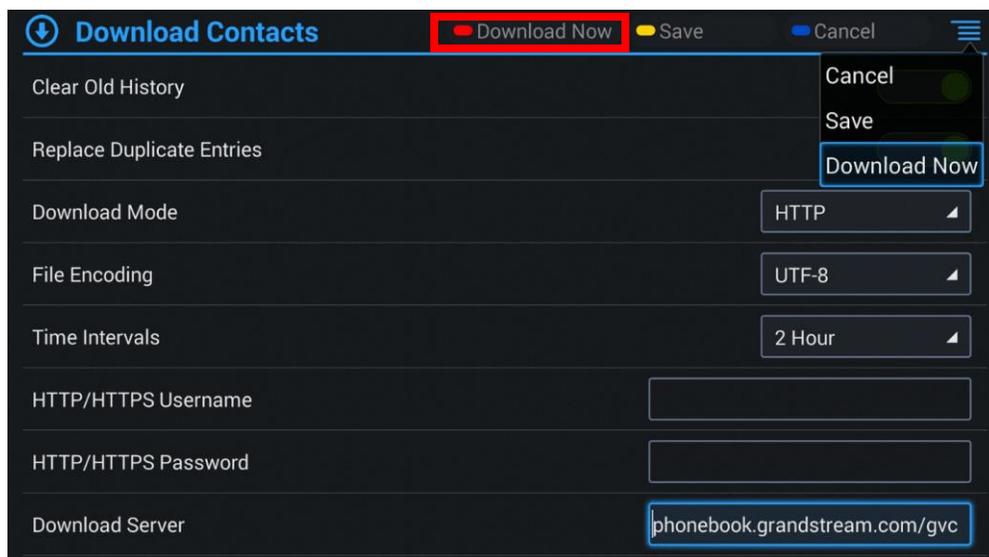


Figure 14: Download Now



Note: LCD configuration is not possible on the GVC3220

Provisioning

Users may also use the config file to provision GVC32XX with the above XML phone book downloading options. The corresponding P values are as shown below:

- **P330:** Download Mode. Possible values: 1 (TFTP) / 2 (HTTP) / 3 (HTTPS) / 0 (OFF); other values are ignored. The default value is 0.
- **P1435:** Clear the Old List. Possible values: 0 (No) / 1 (Yes); other values are ignored. The default value is 0.
- **P1436:** Replace Duplicate Entries. Possible values: 0 (No) / 1 (Yes); other values are ignored. The default value is 0.
- **P1681:** File encoding. Possible values: UTF-8, GBK, UTF-16, UTF-32, Big5, Big5-HKSCS, SHIFT-JIS, ISO8859-1, ISO8859-15, Windows-1251. The default value is UTF-8.
- **P331:** Download Server. This is a string for the path to download the phonebook.xml file. It MUST be in the host/path format.
- **P332:** Download Interval (in minutes). Possible values: 0 - "None", 120 - "2 hour", 240 - "4 hour", 360 - "6 hour", 480 - "8 hour", and 720 - "12 hour"; other values are ignored. The default value is 0 (automatic download disabled).
- **P6713:** HTTP/HTTPS Username for phonebook downloading
- **P6714:** HTTP/HTTPS Password for phonebook downloading

GVC32XX will be set up with the P values when the provisioning routine is completed. It will attempt to download the phone book XML file specified in "Download Server" with configured interval and process it. If the "Download Interval" is set to a non-zero value, a recurring timer will be activated periodically to check the phone book file in the server and the device will repeat this process automatically.

 **Note:**

1. As you may know, it is also possible to enter the XML phone book file server path into a web browser. In this way you'll be able to see the exact XML document on your PC that your phone will be receiving.
 2. The downloaded XML phone book file can be displayed but it won't be saved internally on the device. It is recommended to save the XML phone book file externally on your PC or server for your reference and future use.
-



Import/Export Phonebook

Besides downloading phone book file from remote server, users could also directly import phonebook.xml to the GVC32XX from the web UI. If there is an existing phone book in the device's Contacts already, users may export the phone book file to PC as well. The "Import" and "Export" settings are under **web UI--> Contacts**: More on the GVC3200/3202/3210 or under **web UI --> Call --> Contacts**: More on the GVC3220.

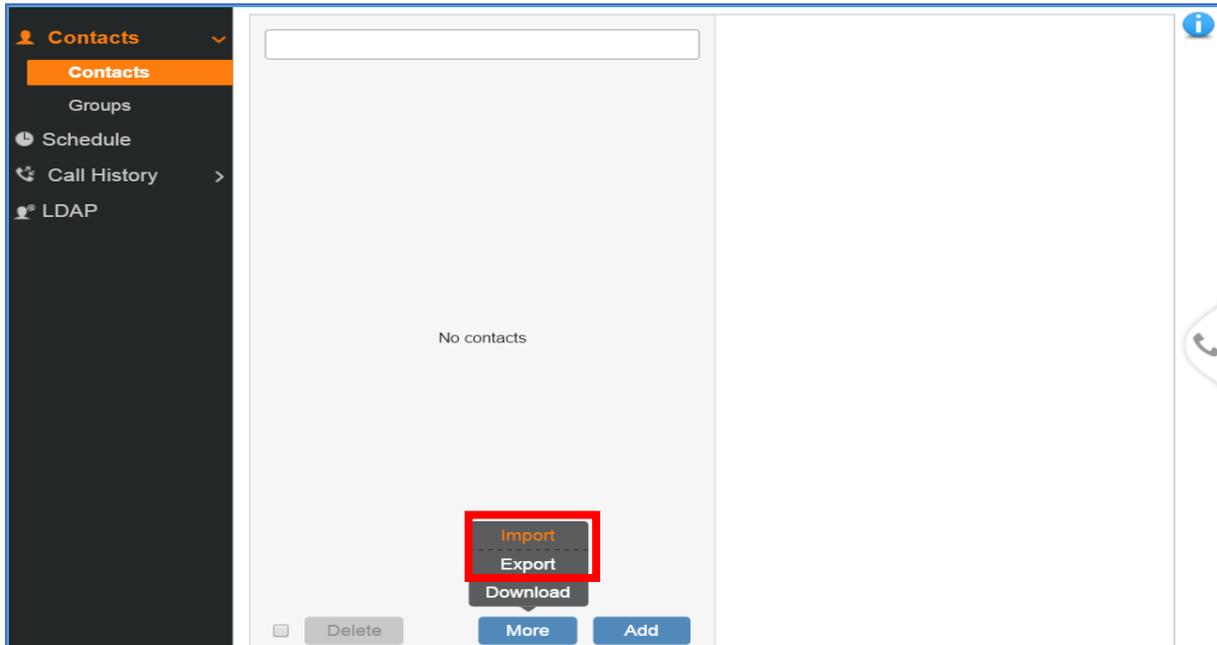


Figure 15: Import/Export Phone Book on GVC3200/3202/3210

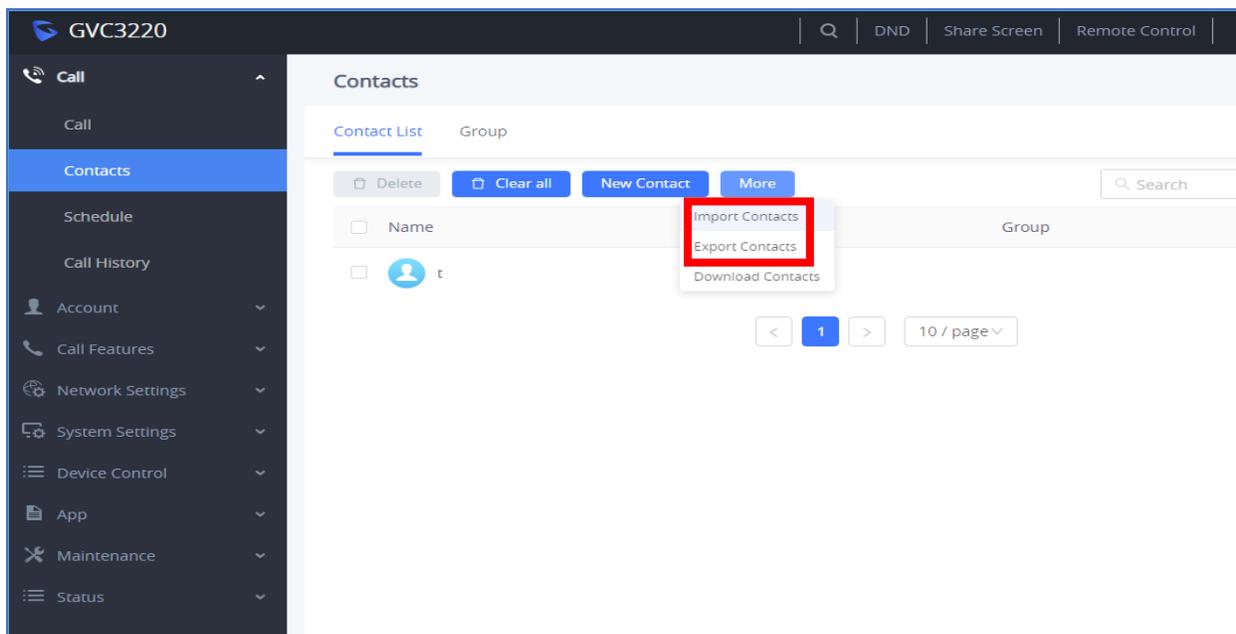


Figure 16: Import/Export Phone Book on GVC3220



- **Import**

Click on "Import" and the following figure will show:

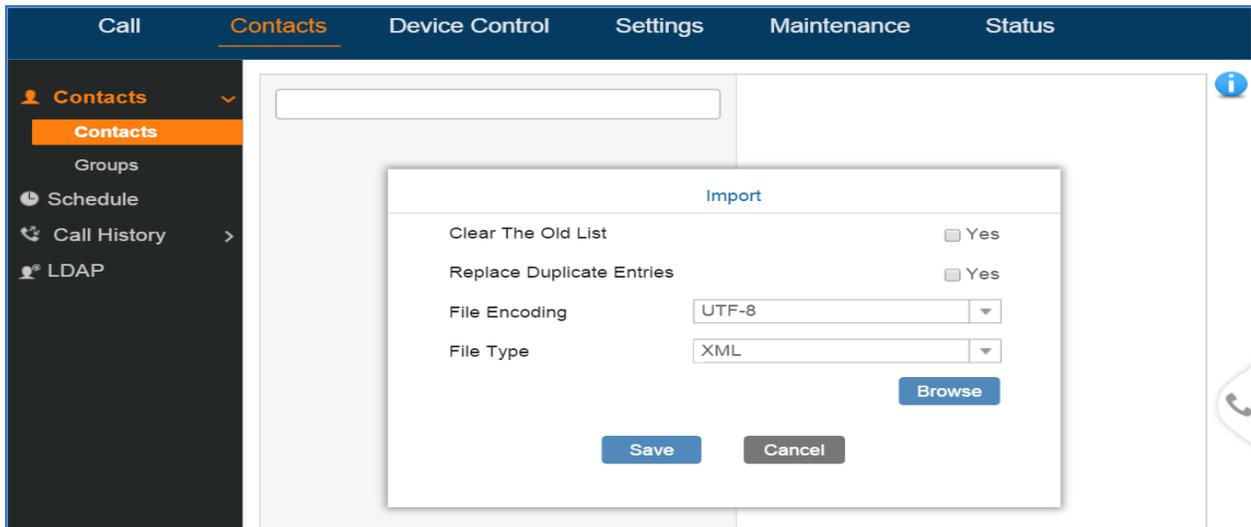


Figure 17: Import Phone Book XML File: Settings on GVC3200/3202/3210

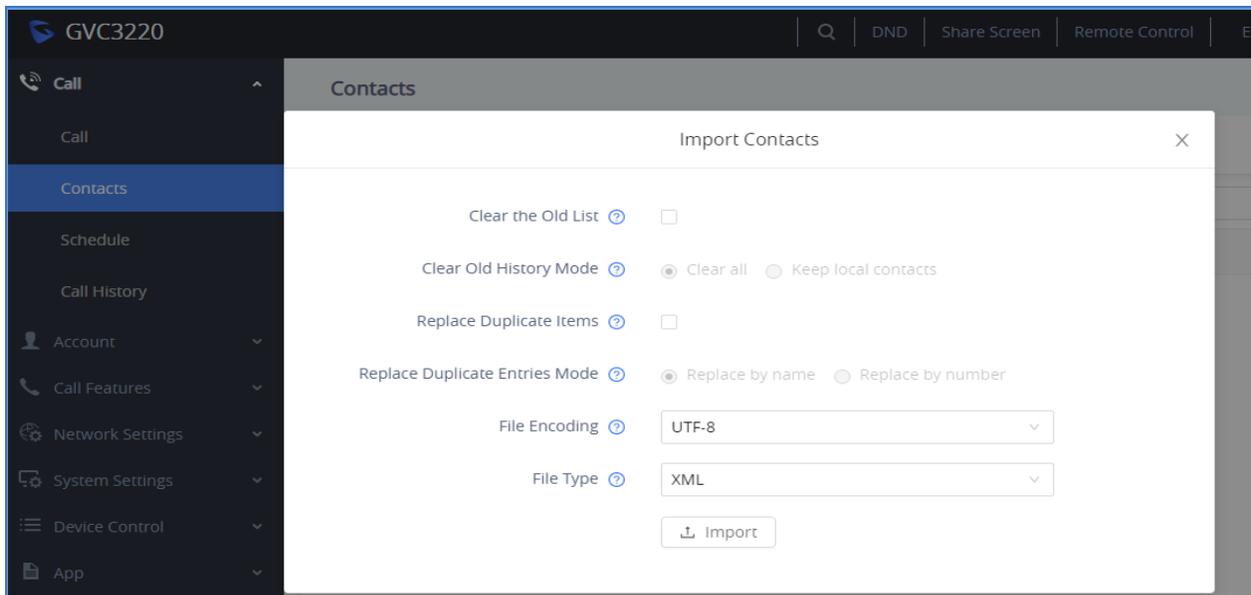


Figure 18: Import Phone Book XML File: Settings on GVC3220

Configure import options "Clear The Old List", "Replace Duplicate Entries", "File Encoding" format and select "File Type" as "XML" (with "Clear The Old List Mode" and "Replace Duplicate Entries Mode" on the GVC3220 only). Then, click on "Browse" button to specify the path where the phonebook.xml is located in the PC.



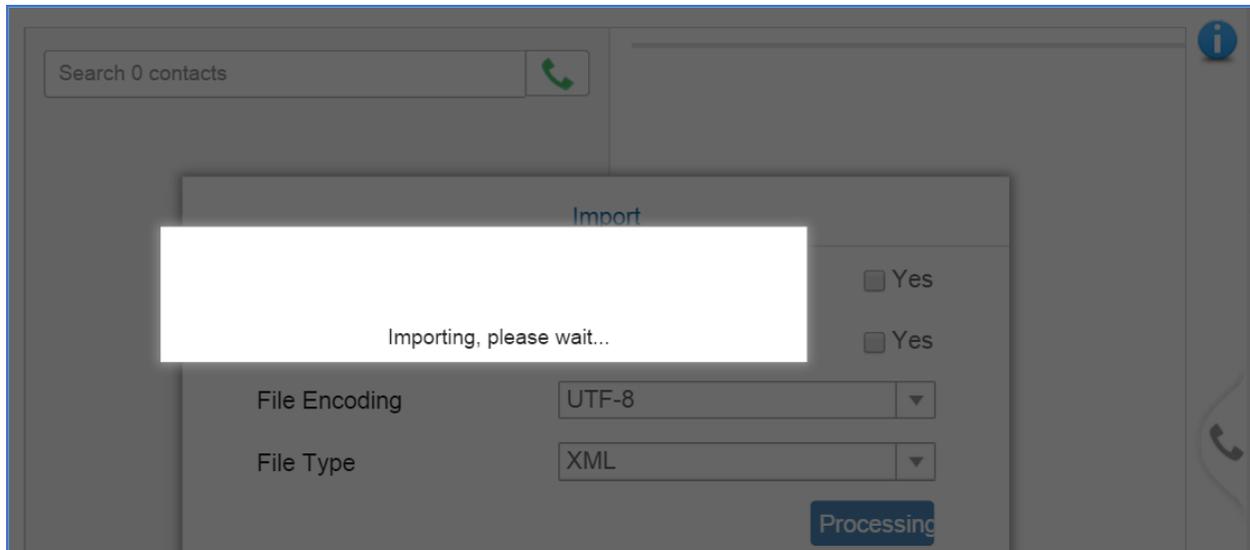


Figure 19: Importing Phone Book XML

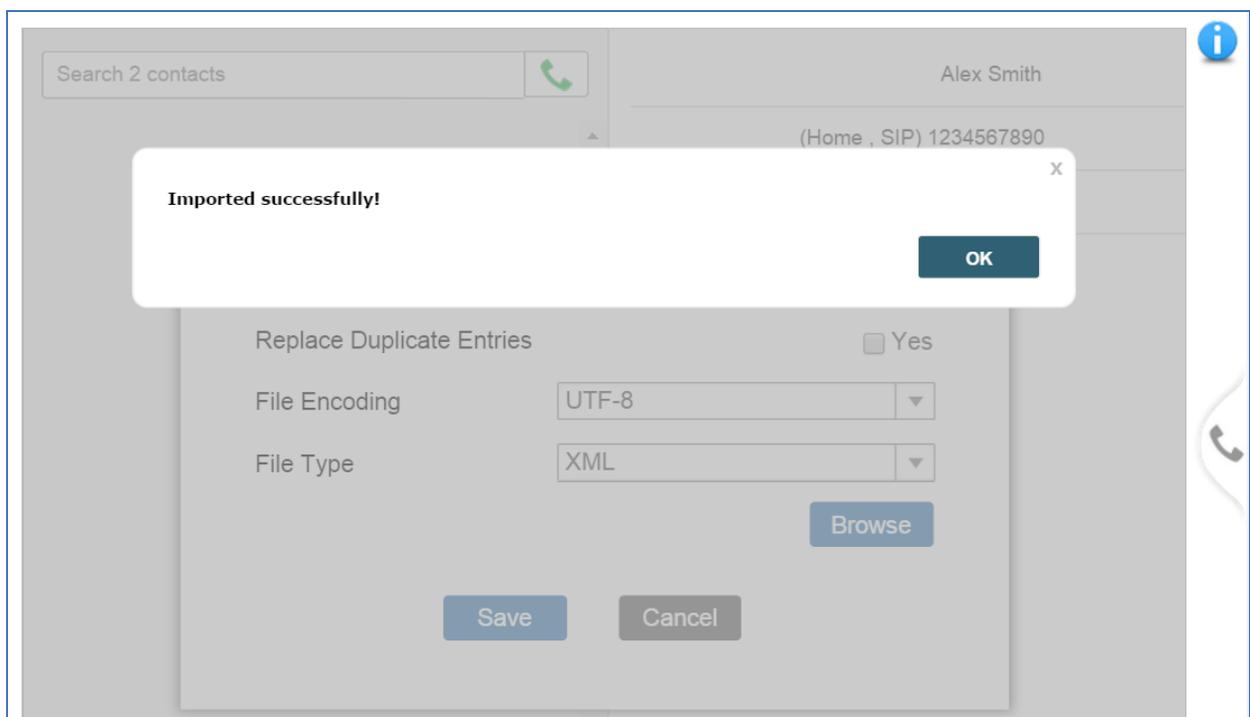


Figure 20: Import Phone Book XML Successfully

After selecting the file, GVC32XX will start importing and finish importing (see figure above) automatically. If the file fails to be imported, please check the format and syntax of the phone book xml file.

- **Export**

Click on "Export" and the following figure will show:



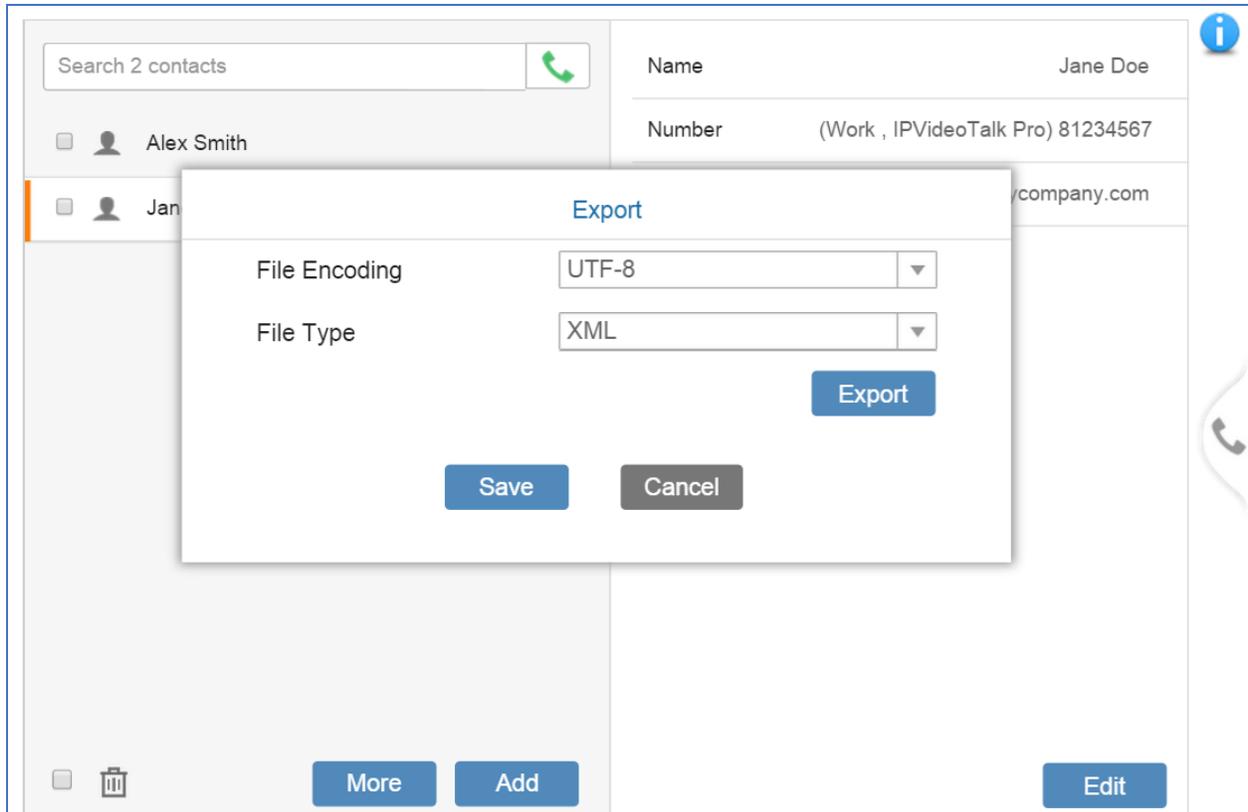


Figure 21: Export Phone Book XML File: Settings

Select "File Encoding" format and select "File Type" as "XML". Then, click on "Export" to download phonebook.xml, this file will be saved in PC, under the default downloading directory.

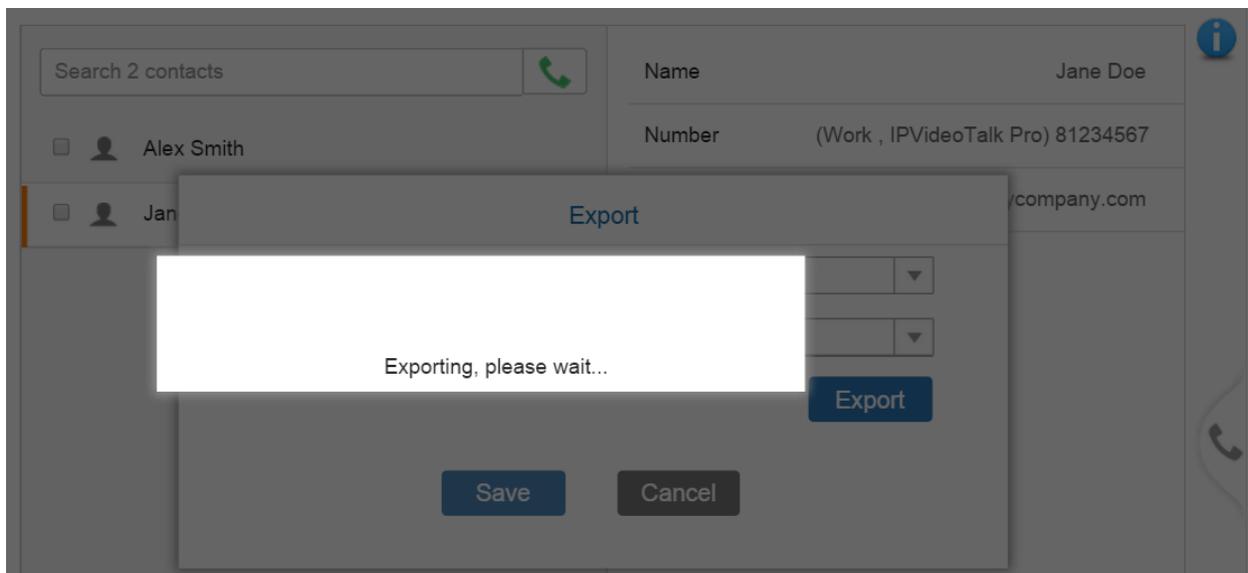


Figure 22: Exporting Phone Book XML File



**Note:**

1. The Import/Export options are also available in GVC3200/3202/3210 LCD main screen → Contacts.

Click on  → select Import/Export.

2. For “Import”, the phone book file needs to be located in GVC3200/3202/3210 file system or SD card/USB storage plugged into the GVC for selection; for “Export”, choose the GVC file system directory for the phone book xml file to be saved to.
 3. The users could manually add contacts to GVC3200/3202/3210 via web UI or LCD first, and then export the phone book XML file, which can be used as a template of phone book xml file to import or download.
-



XML PHONEBOOK SYNTAX

Header

In the first line of the XML document, the following header can be set as XML declaration. It defines the XML version and encoding. On the GVC32XX, UTF-8, GBK, UTF-16, UTF-32, Big5, Big5-HKSCS, SHIFT-JIS, ISO8859-1, ISO8859-15 and Windows-1251 can be used as encoding method for correct display. Example:

```
<?xml version="1.0" encoding="UTF-8"?>
```

Phonebook XML Structure

An XML phone book example for GVC32XX can be found in the last section of this document. The main structure is represented as below. (Some of the elements are optional).

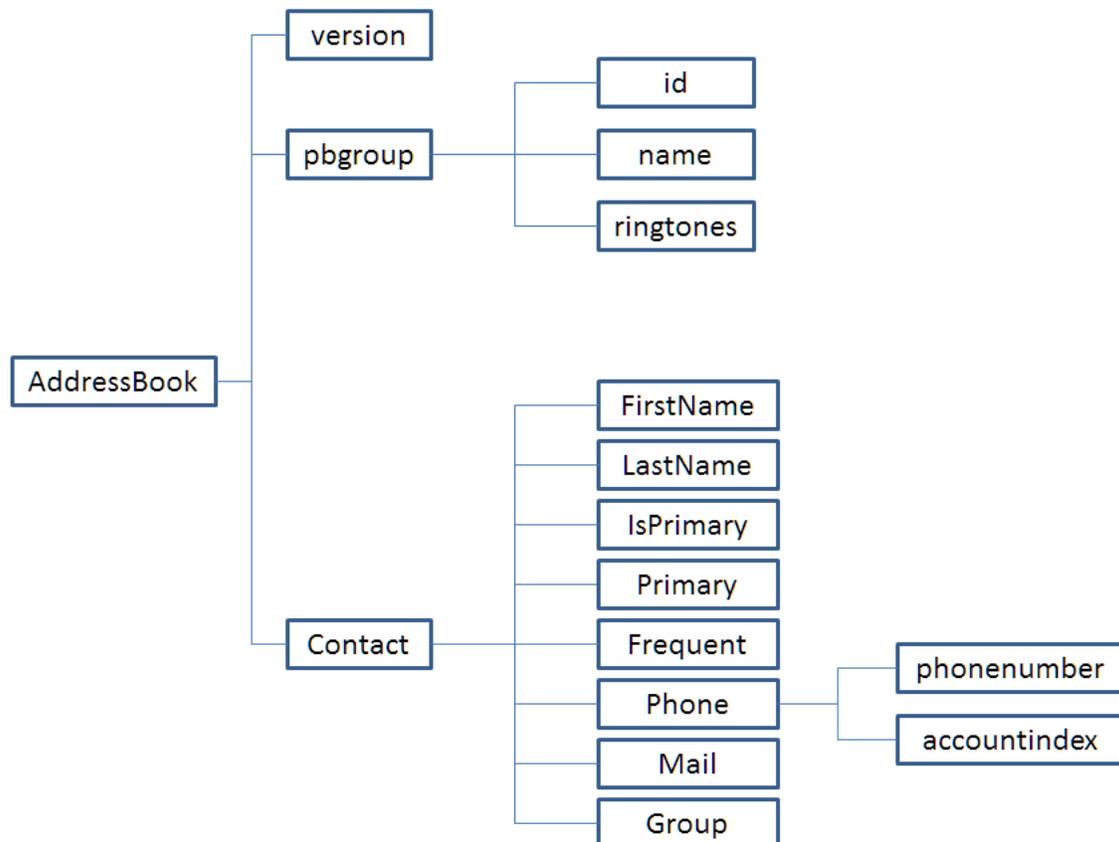


Figure 23: Phone Book XML Structure



```

<AddressBook>
  <version>Enter version number here. Usually 1</version>
  <pbgroup>
    <id>Enter group id here</id>
    <name>Enter group name here</name>
    <ringtones>Enter ring tone URL for the group</ringtones>
  </pbgroup>
  <pbgroup>
    <!-- Enter another group information here, same format as above -->
  </pbgroup>
  <Contact>
    <FirstName>Enter first name here</FirstName>
    <LastName>Enter last name here</LastName>
    <IsPrimary>Enter if it's true or false here</IsPrimary>
    <PhotoUrl> Enter URL here </PhotoUrl>
    <Phone type="Specify phone type here">
      <phonenumber>Enter phone number here</phonenumber>
      <accountindex>Enter account index here</accountindex>
    </Phone>
    <Mail type="Specify phone type here">Enter Email address here</Mail>
    <Group>Enter group ID here</Group>
  </Contact>
  <Contact>
    <!-- Enter another contact information here, same format as above -->
  </Contact>
</AddressBook>

```

Phonebook XML Element

This section describes details of the XML element used in GVC32XX XML phone book file. Please note that the element name is case-sensitive when being used in XML document.

ROOT Element <AddressBook>

<pbgroup> Element

```

<pbgroup>
  <id>Enter group id here</id>
  <name>Enter group name here</name>
  <ringtones>Enter ring tone URL for the group</ringtones>
</pbgroup>

```



Table 2: <pbgroup> Element

Object	Position	Type	Values	Comments
pbgroup	Element	Optional	-	Each pbgroup is a group. More than 1 group can be defined
id	Child element	Optional	Number	To specify group ID.
name	Child element	Mandatory	String	Group name.
ringtones	Child element	Optional	String	The directory/path to the ring tone file stored in the GVC32XX.

<Contact> Element

```

<Contact>
  <FirstName>Enter first name here</FirstName>
  <LastName>Enter last name here</LastName>
  <Phone type="Specify phone type here">
    <phonenumber>Enter phone number here</phonenumber>
    <accountindex>Enter account index here</accountindex>
  </Phone>
  
```

Table 3: <Contact> Element

Object	Position	Type	Values	Comments
Contact	Element	Mandatory	-	Each contact is an entry
FirstName	Child element	Optional	String	Specify first name and last name. At least one of them has to be specified.
LastName	Child element	Optional	String	
Phone	Child element	Optional	-	Phone number information
Mail	Child element	Optional	String	Specify Email address. It has attribute "type". type: Work/Home/Others
Group	Child element	Optional	number	Specify group ID for this contact.

<Phone> Element

```

<Phone type="Specify phone type here">
  <phonenumber>Enter phone number here</phonenumber>
  <accountindex>Enter account index here</accountindex>
</Phone>
  
```

Table 4: <Phone> Element

Object	Position	Type	Values	Comments
Phone	Element	Mandatory	-	It has attribute "type". type: Work/Home/Mobile/Fax/Other



phonenumber	Child element	Mandatory	Number	Phone number
accountindex	Child element	Mandatory	Number	From 0 to 5 for account 1 to account 6

```

<?xml version="1.0" encoding="UTF-8"?>
<AddressBook>
  <version>1</version>
  <pbgroup>
    <id>1</id>
    <name>Work</name>
    <ringtones/>
  </pbgroup>
  <Contact>
    <FirstName>Jane</FirstName>
    <LastName>Doe</LastName>
    <Phone type="Work">
      <phonenumber>81234567</phonenumber>
      <accountindex>1</accountindex>
    </Phone>
    <Mail type="Other">JaneDoe@mycompany.com</Mail>
    <Group>1</Group>
  </Contact>
  <Contact>
    <FirstName>Alex</FirstName>
    <LastName>Smith</LastName>
    <Phone type="Home">
      <phonenumber>1234567890</phonenumber>
      <accountindex>1</accountindex>
    </Phone>
    <Mail type="Other">smith.alex@mycompany.com</Mail>
  </Contact>
  <Contact>
    <FirstName>John</FirstName>
    <LastName>Williams</LastName>
    <Phone type="Mobile">
      <phonenumber>5432154321</phonenumber>
      <accountindex>1</accountindex>
    </Phone>
    <Mail type="Home">Johnwilliams@mycompany.pbx.com</Mail>
  </Contact>
</AddressBook>

```

