

## Grandstream Networks, Inc.

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GVC3200/GVC3202 Full HD Video Conferencing System

XML Based Downloadable Phonebook Guide



# GVC3200/GVC3202 XML Based Downloadable Phonebook Guide

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## INTRODUCTION

The Grandstream GVC3200/GVC3202 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 GVC3200/GVC3202 offers this XML API as a user-friendly download method via the GVC3200/GVC3202'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 GVC3200/GVC3202. 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

What benefits does XML provide to SIP endpoints? XML enables our SIP endpoints to serve as output devices and allows the devices to interact with external applications in a flexible and programmable manner.

### XML API ARCHITECTURE

The XML based phone book downloading for the GVC3200/GVC3202 could use HTTP or TFTP as the transport protocol. The following figure shows how it works via HTTP as an example. First, the

GVC3200/GVC3202 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: GVC3200/GVC3202 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 GVC3200/GVC3202 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.

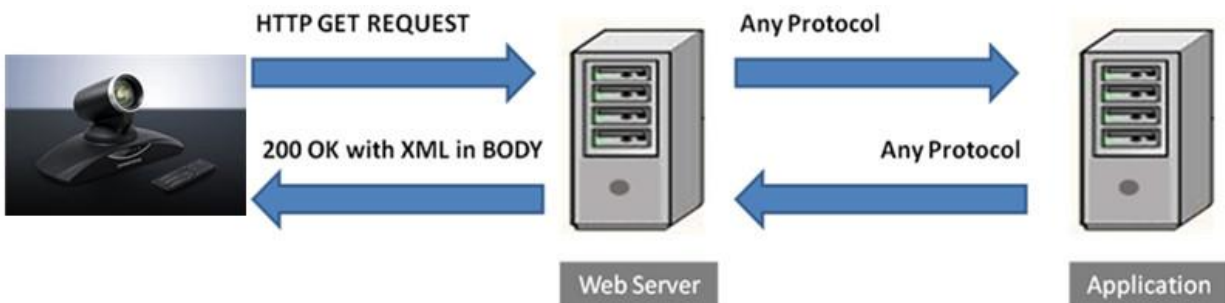


Figure 2: GVC3200/GVC3202 XML API Structure 1

2. If the above Web Server accesses Internet, it could interact with outside web server and respond with real-time content to the GVC3200/GVC3202.

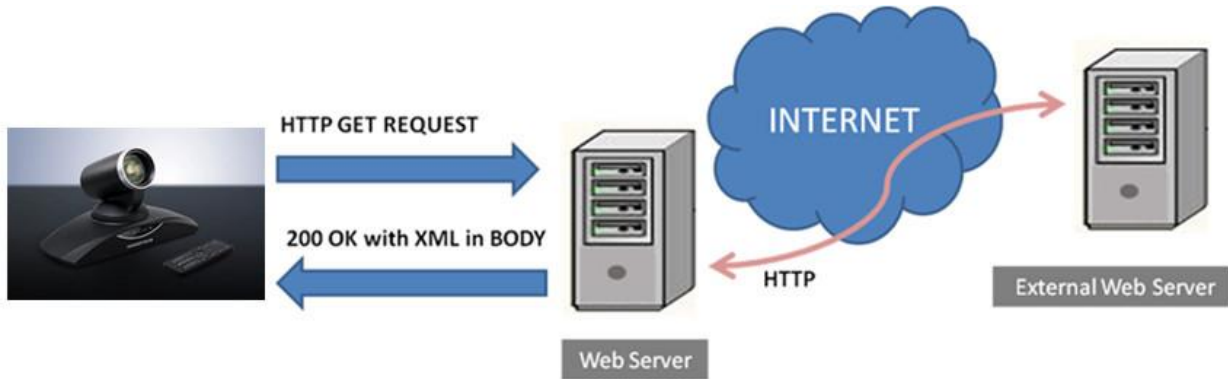


Figure 3: GVC3200/GVC3202 XML API Structure 2

As illustrated above, all the logic lies within the server side of the architecture. The GVC3200/GVC3202 just receives the XML documents and displays it accordingly.

## XML PHONEBOOK CONFIGURATION

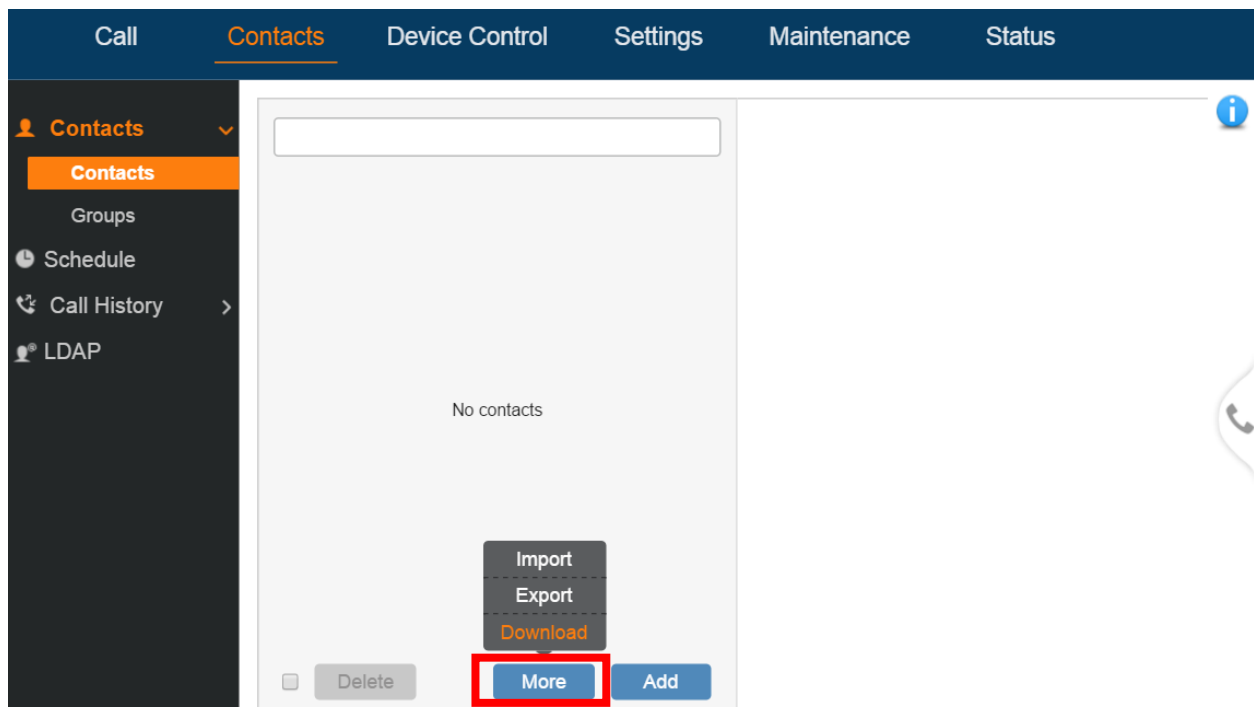
### FIRMWARE

Before the XML phone book is used on GVC3200/GVC3202, 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

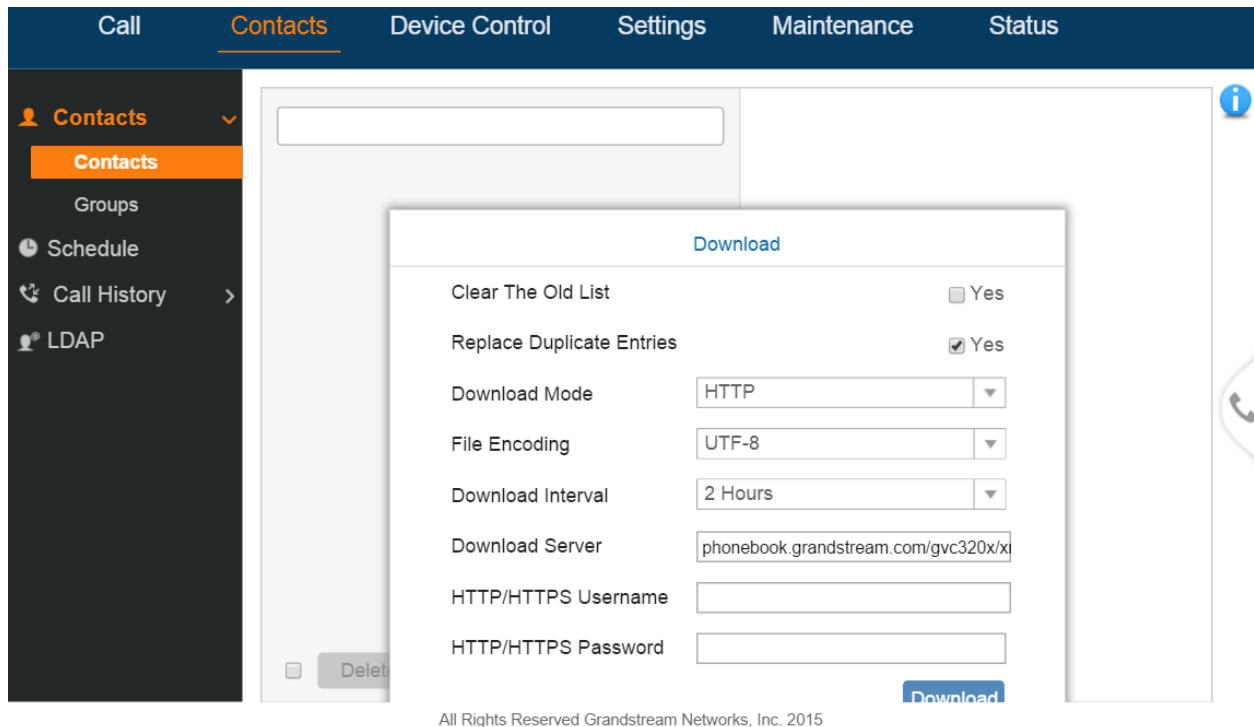
To configure XML phone book file download on GVC3200/GVC3202, go to **web UI -> Contacts**, click on **“More”** icon on the bottom and select **“Download”**. This will open the XML Phone Book download interface in a new window.



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**Figure 4: Contacts->More->Download**





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**Figure 5: XML Phone Book Download**

- **Clear The Old List**

If this option is set to "ON", all the existed entries in the GVC3200/GVC3202 Contacts will be automatically removed when the XML phone book is downloaded to the device. The default value is "OFF".
- **Replace Duplicate Entries**

If this option is set to "ON", the duplicate entries in the GVC3200/GVC3202 Contacts will be automatically replaced with the ones in the downloaded XML phone book. The default value is "OFF".
- **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**

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**

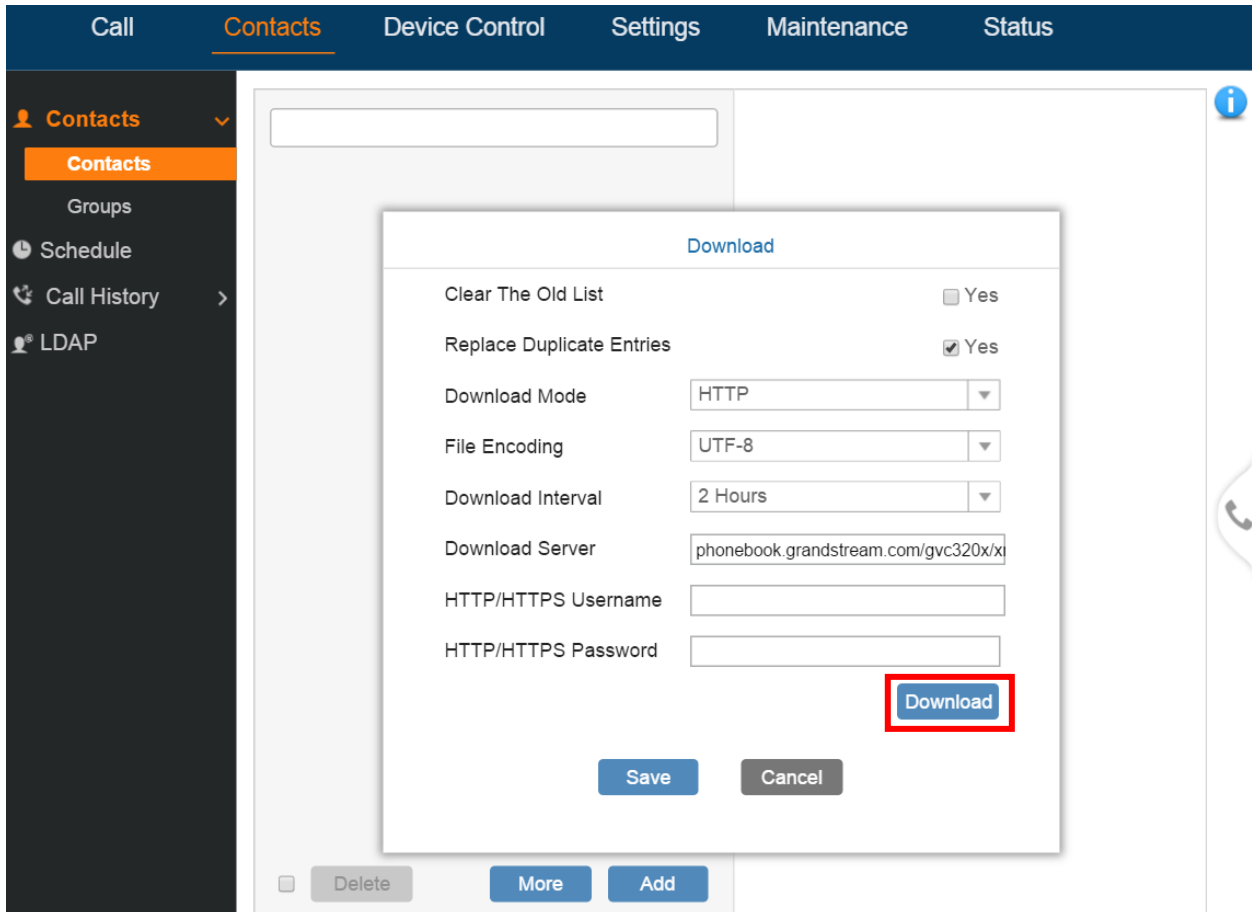
If the HTTP/HTTPS server has access control set up that requires HTTP/HTTPS authentication, the user needs to fill up the HTTP/HTTPS password here.



**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 GVC3200/GVC3202 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.



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**Figure 6: Download XML Phone Book**

## LCD CONFIGURATION

Besides using the web UI to configure XML phone book download, the users could also achieve the same configuration via GVC3200/GVC3202 LCD display using the GVC remote control.

1. On the GVC3200/GVC3202 LCD main screen, click on "Contacts".

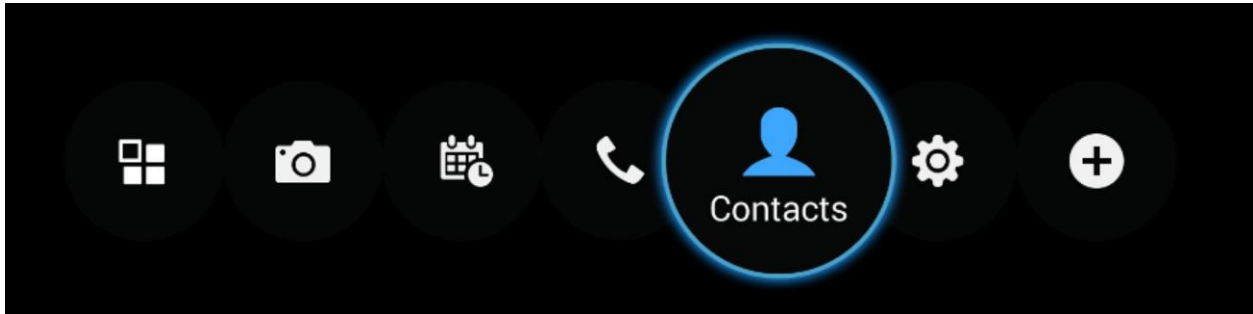



Figure 7: LCD Main Screen->Contacts

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

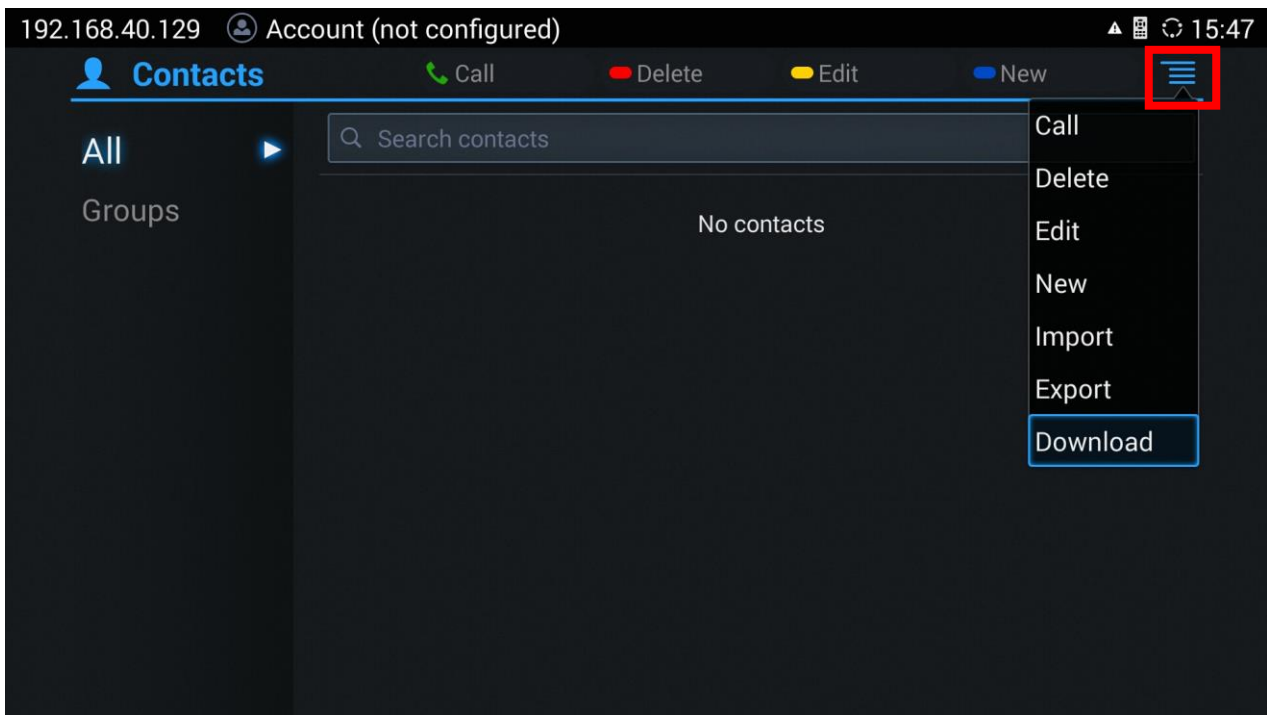
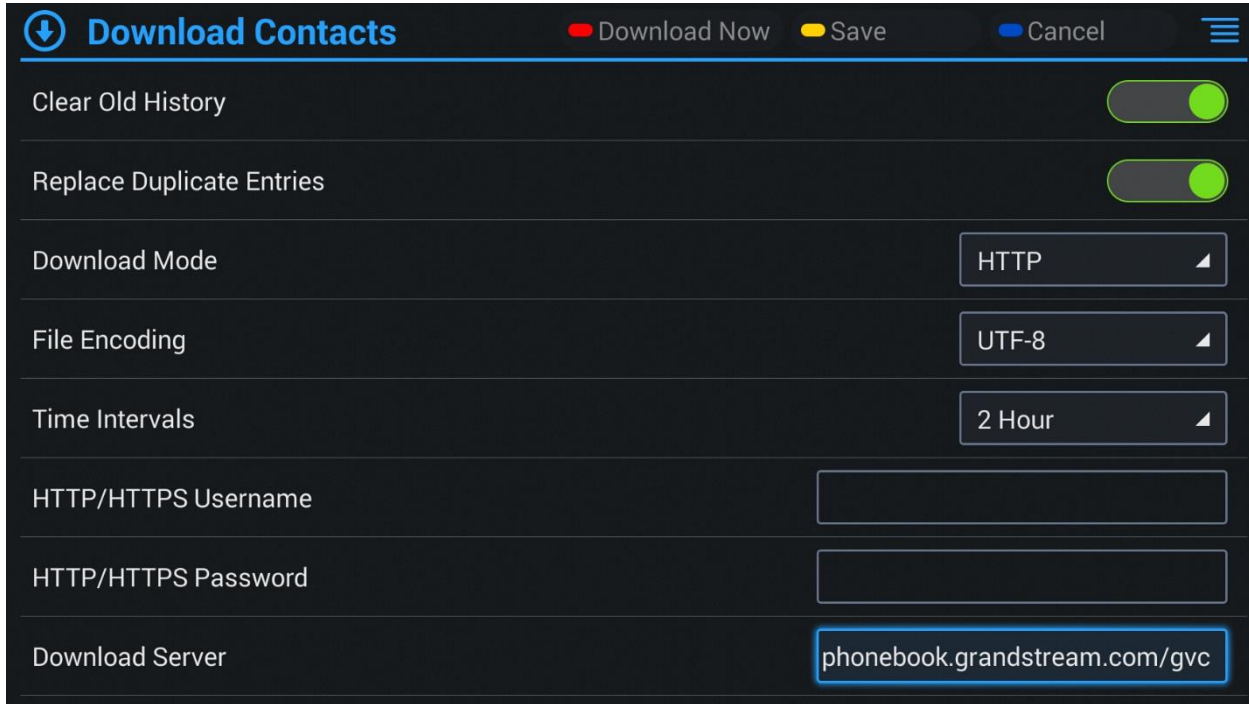



Figure 8: Contacts->Download



**Figure 9: XML Phone Book Download Configurations in LCD**

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

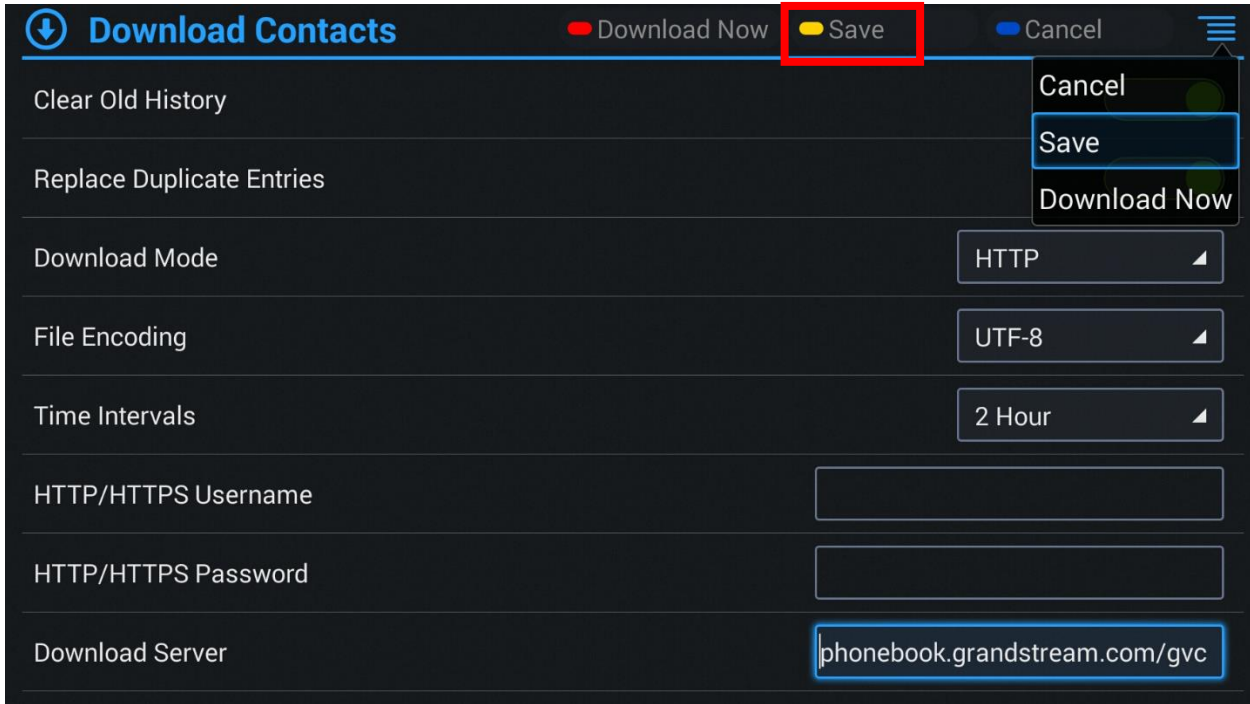



Figure 10: Save Configuration

- 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/GVC3202.

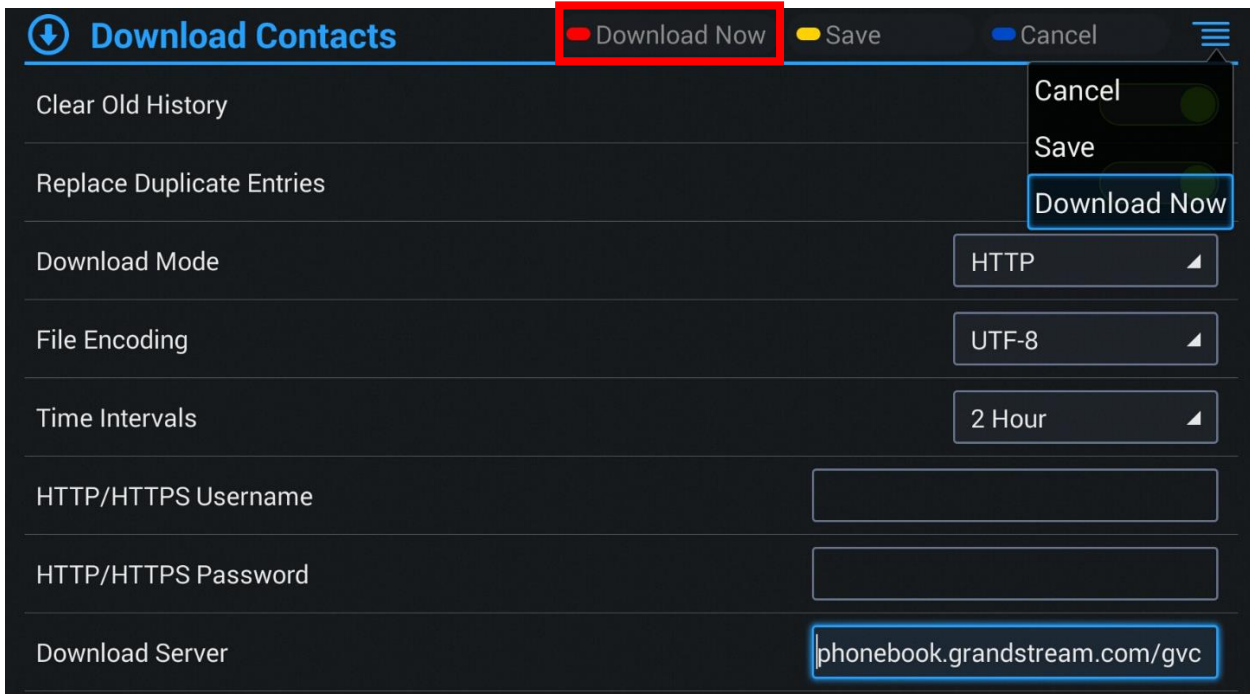


Figure 11: Download Now

## PROVISIONING

Users may also use the config file to provision GVC3200/GVC3202 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

GVC3200/GVC3202 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 GVC3200/GVC3202 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**.

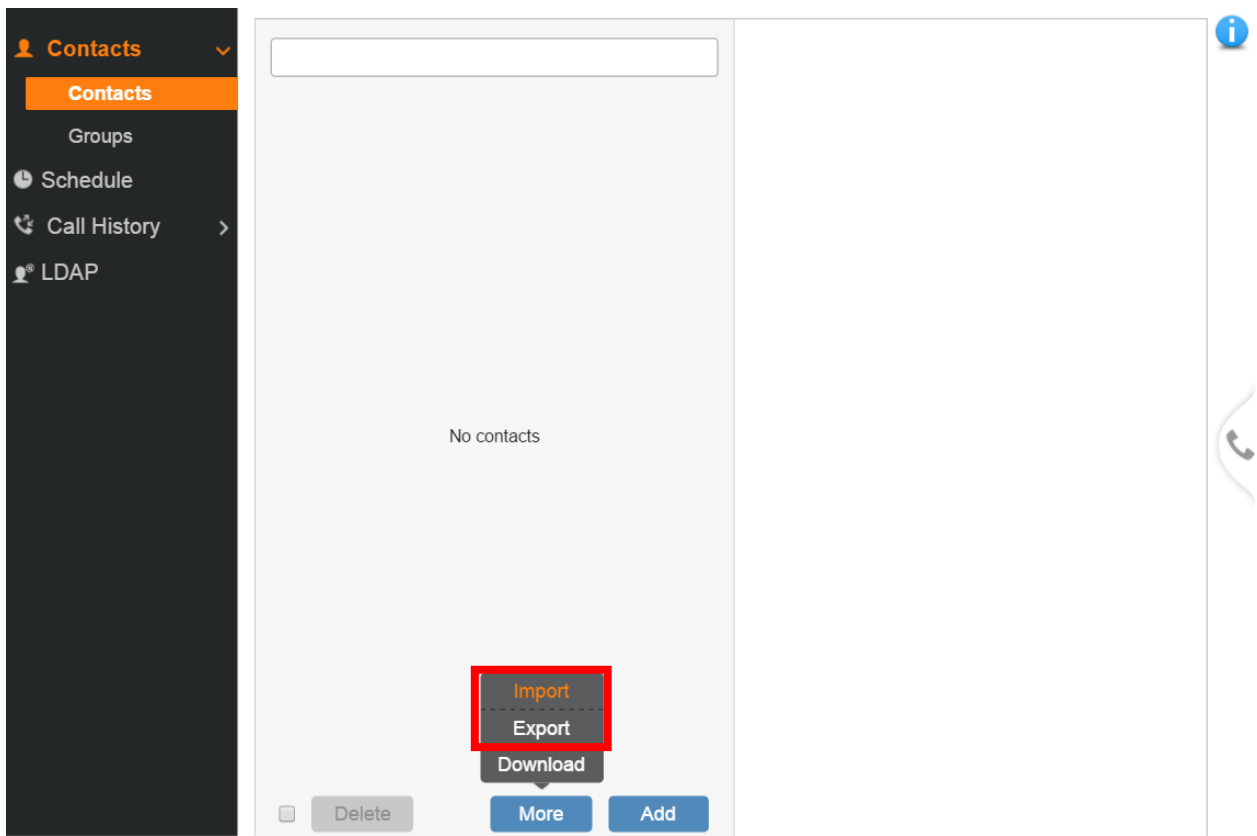
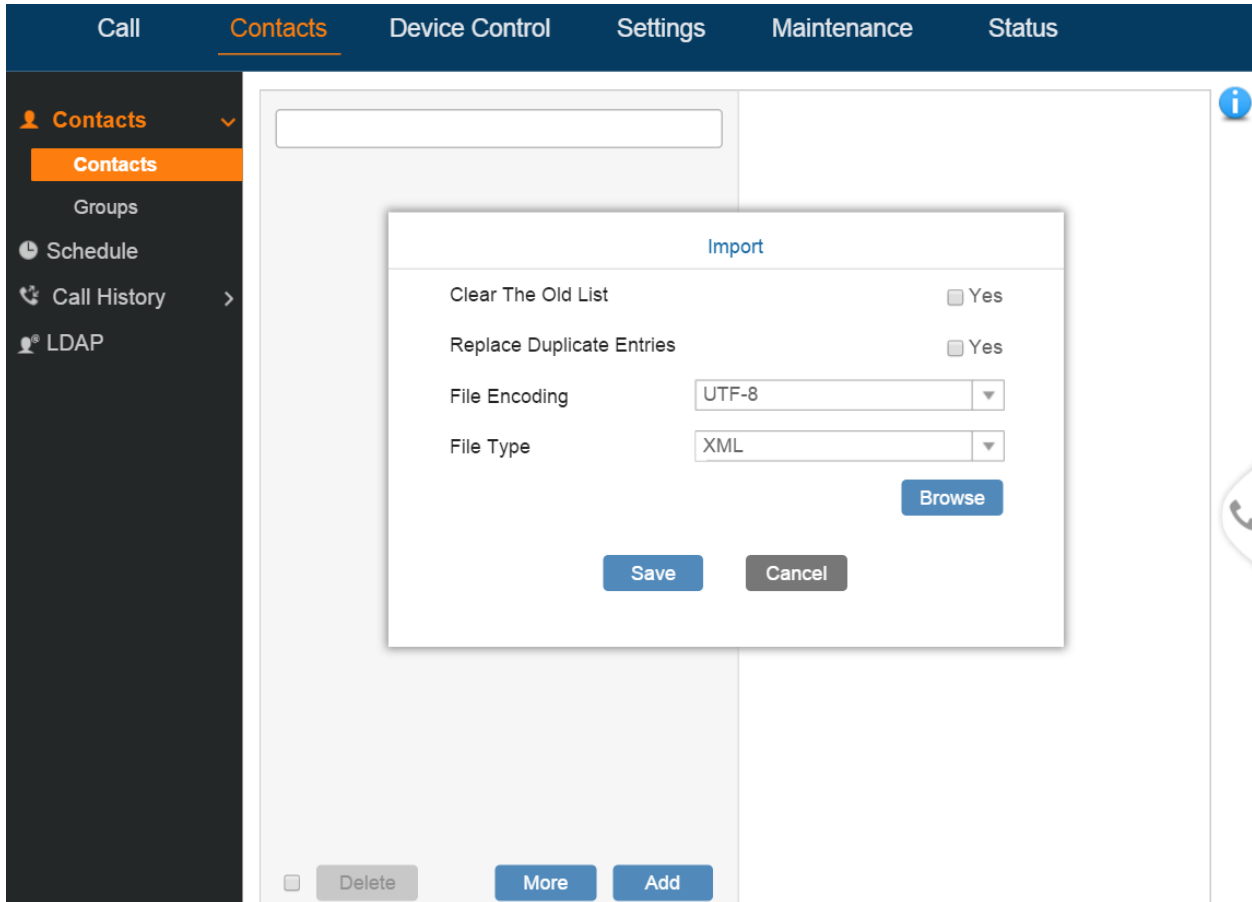


Figure 12: Import/Export Phone Book

- **Import**

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





**Figure 13: Import Phone Book XML File: Settings**

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

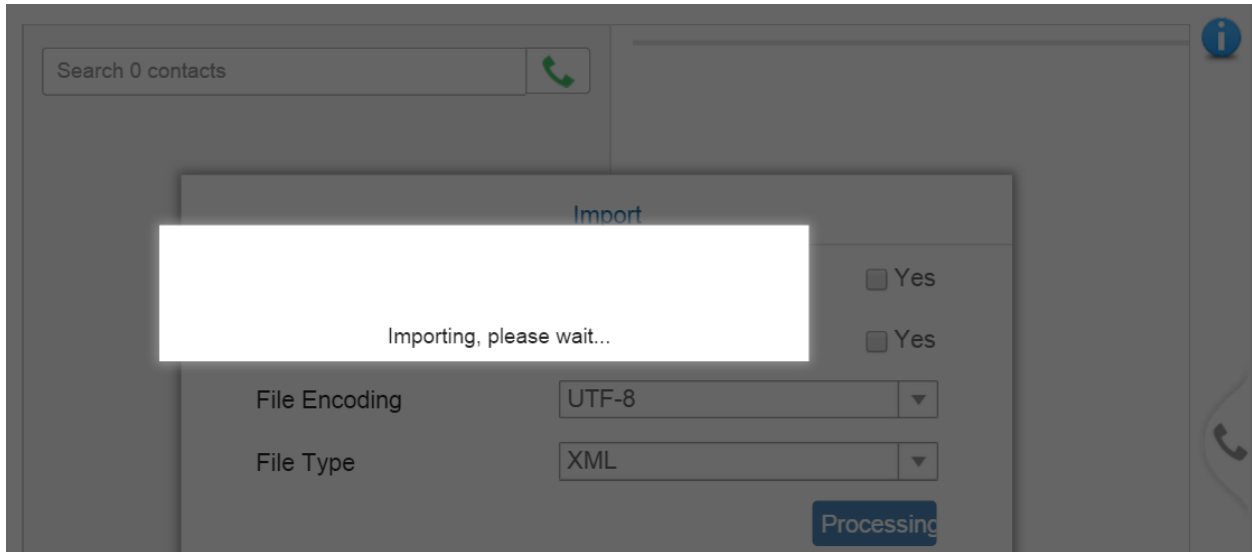


Figure 14: Importing Phone Book XML

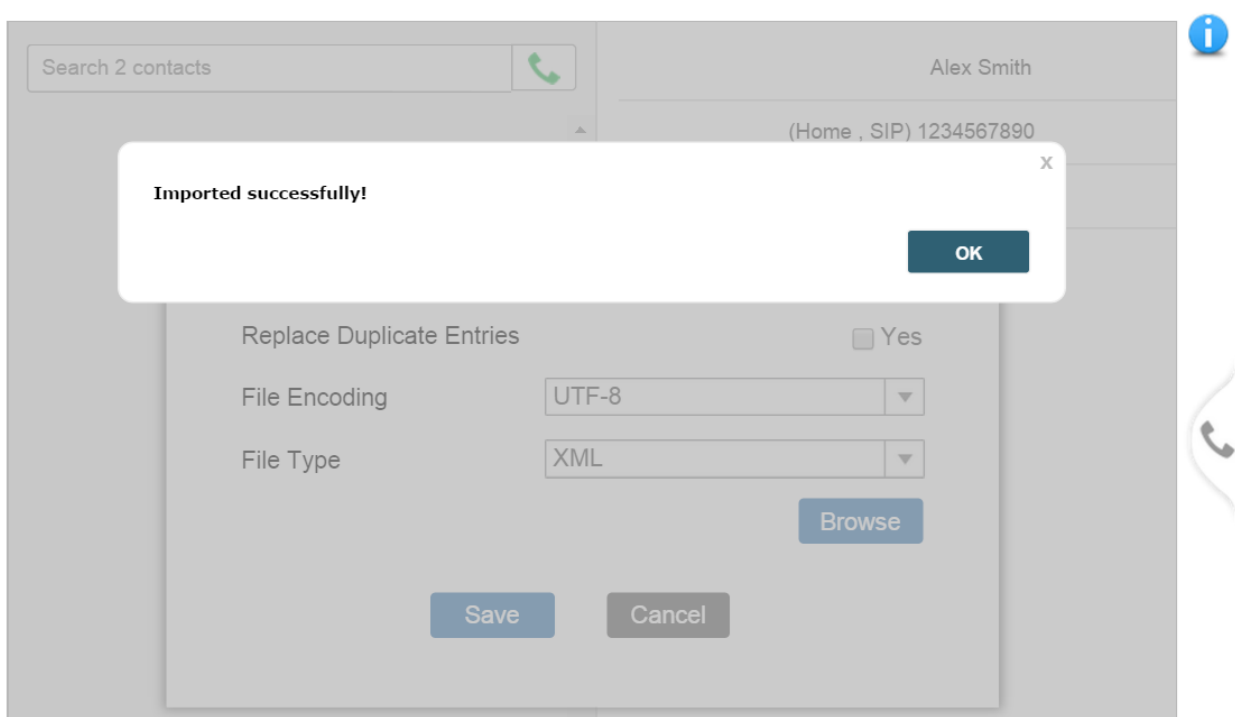
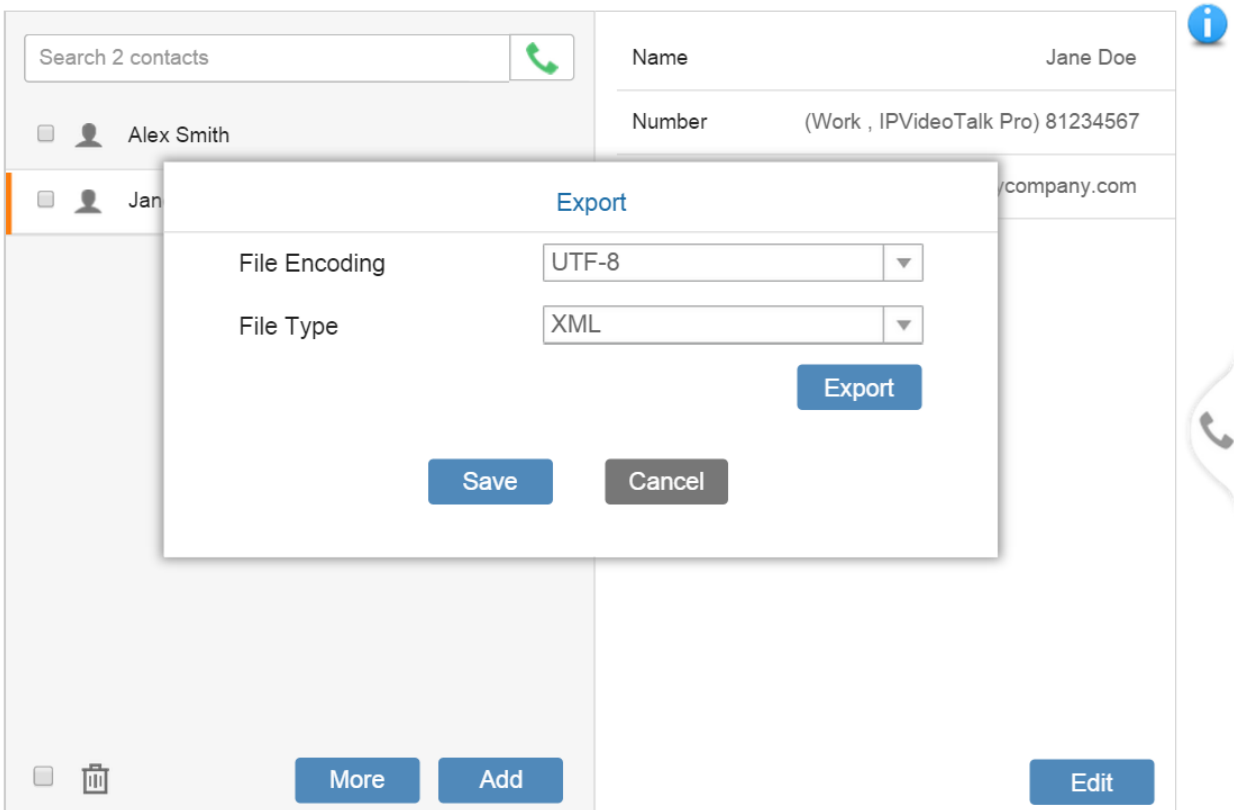


Figure 15: Import Phone Book XML Successfully

After selecting the file, GVC3200/GVC3202 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.

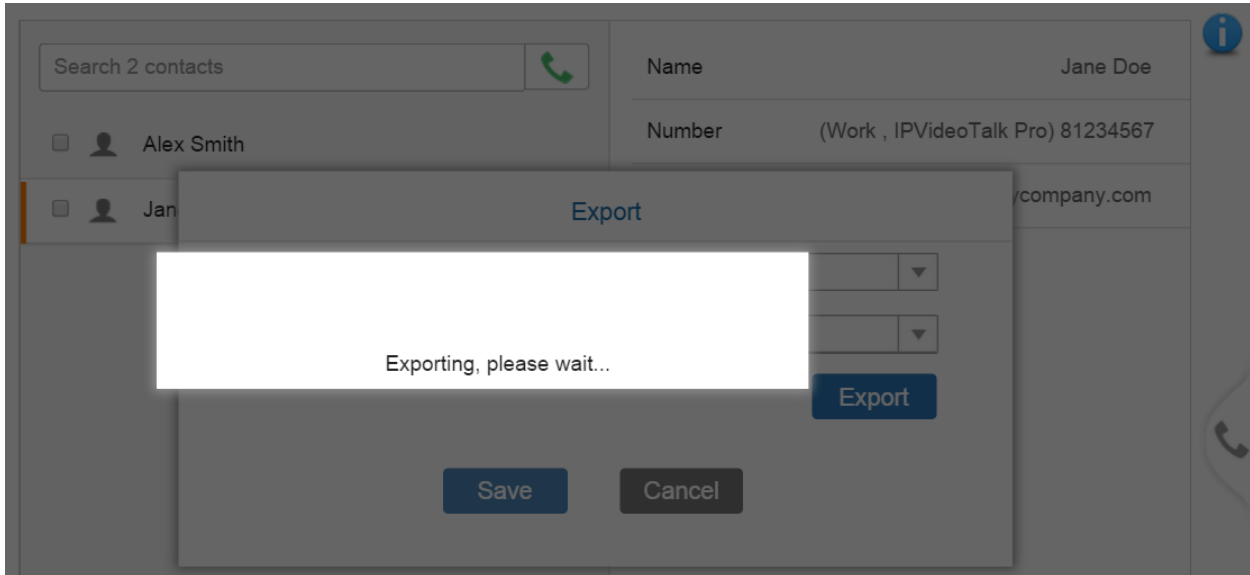
- **Export**

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



**Figure 16: 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 17: Exporting Phone Book XML File**



**Note:**

1. The Import/Export options are also available in GVC3200/GVC3202 LCD main screen->Contacts.  
Click on  -> select Import/Export.
  2. For "Import", the phone book file needs to be located in GVC3200/GVC3202 file system or SD card/USB storage plugged into the GVC3200/GVC3202 for selection; for "Export", choose the GVC3200/GVC3202 file system directory for the phone book xml file to be saved to.
  3. The users could manually add contacts to GVC3200/GVC3202 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

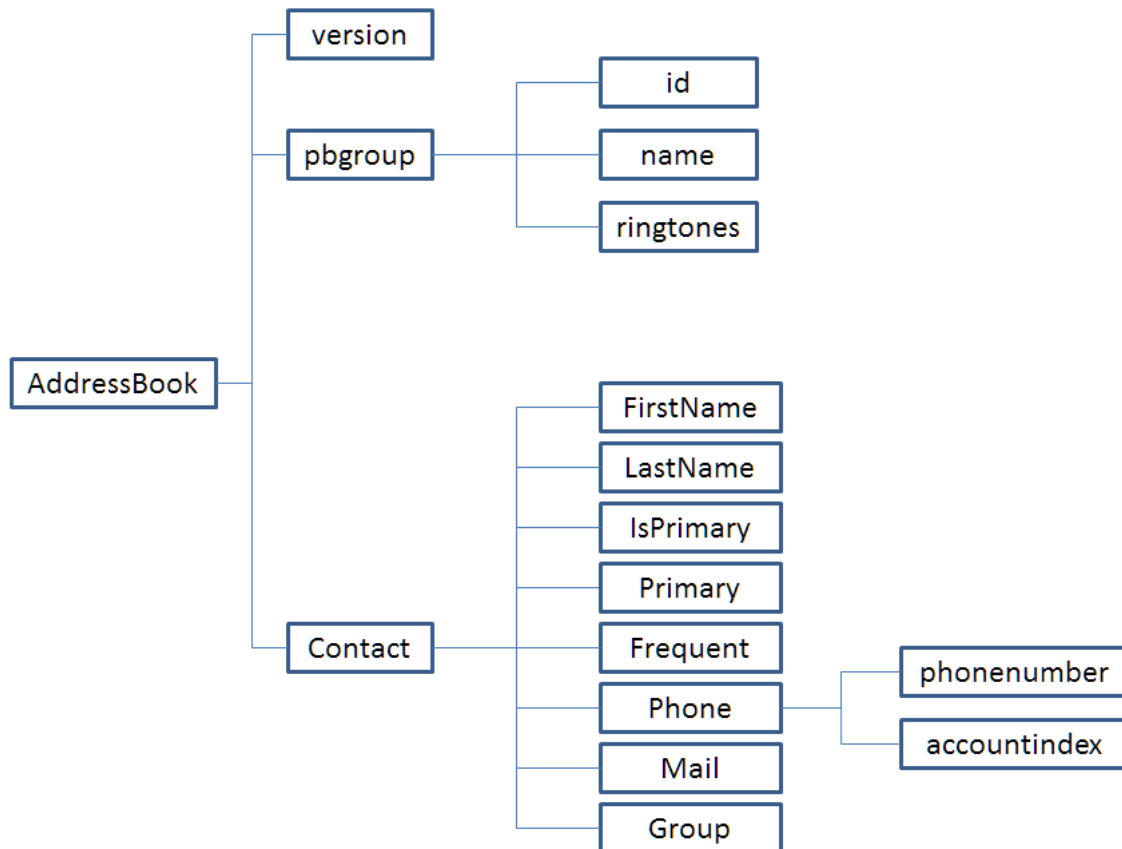
### HEADER

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 GVC3200/GVC3202, 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"?>
```

### PHONE BOOK XML STRUCTURE

An XML phone book example for GVC3200/GVC3202 can be found in the last section of this document. The main structure is represented as below. (Some of the elements are optional).



**Figure 18: 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>
    <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 GVC3200/GVC3202 XML phone book file. Please note that the element name is case-sensitive when being used in XML document.

### ROOT ELEMENT <AddressBook>

<AddressBook> is the root element of the XML document. This element is mandatory.

```
<AddressBook>
  <!-- Enter phone book information here -->
</AddressBook>
```

Table 1: <AddressBook> Element

Object	Position	Type	Values	Comments
<b>AddressBook</b>	<b>Root element</b>	<b>Mandatory</b>	-	<b>Root element of the XML document</b>
version	Child element	Optional	Number	XML format version number. Usually 1.
pbgroup	Child element	Optional	-	Define groups.
Contact	Child element	Mandatory	-	Each contact is a phone book entry.

### <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
<b>pbgroup</b>	<b>Element</b>	<b>Optional</b>	-	<b>Each pbgroup is a group. More than 1 group can be defined</b>
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 GVC3200/GVC3202.

### <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>
  <Mail type="Specify mail type here">Enter Email address here</Mail>
  <Group>Enter group ID here</Group>
</Contact>

```

Table 3: <Contact> Element

Object	Position	Type	Values	Comments
<b>Contact</b>	<b>Element</b>	<b>Mandatory</b>	-	<b>Each contact is an entry</b>
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
<b>Phone</b>	<b>Element</b>	<b>Mandatory</b>	-	<b>It has attribute "type". type: Work/Home/Mobile/Fax/Other</b>
phonenumber	Child element	Mandatory	Number	Phone number
accountindex	Child element	Mandatory	Number	From 0 to 5 for account 1 to account 6



## XML PHONEBOOK EXAMPLE

```
<?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>
```