

Grandstream Networks, Inc.

GXV34xx - WEB API User Guide



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Overview

The GXV34x0 IP Video Phone series for Android provides an external, HTTP-based Application Programming Interface (API) that enables applications and external systems to interact with and control supported phone functions.

The implemented Web APIs are based on RESTful API principles and support **GET** and **POST** HTTP request methods. These APIs provide programmatic access to supported phone data and functions without requiring interaction through the phone's Web UI.

Each API request must use the appropriate HTTP method, endpoint, parameters, and request format defined in this guide. The phone processes valid requests and returns an HTTP response containing the requested data or the result of the operation.

The available API functions and parameters are firmware dependent and may vary between firmware versions.

Operations

The Web API provides access to various phone functions through HTTP requests. Each operation is accessed using a specific API URL based on the Web API Base URL and supports the HTTP method and parameters defined for that operation.

The following sections describe the available API operations in detail, including their URLs, supported HTTP methods, parameters, request formats, and response information.

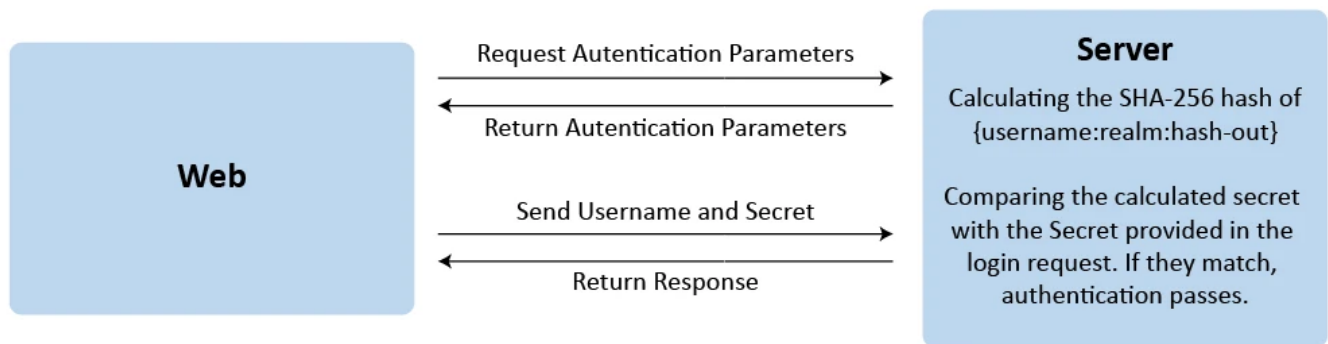
Web API Base URL:

In the Base URL, **[http/https]** represents the protocol supported by the phone, and **{ipaddress}** represents the IP address of the phone.

```
[http/https]://{ipaddress}/cgi-bin/
```

Authentication

The Web API authentication process consists of two steps. First, the phone provides the values required to generate the login secret. The generated secret is then used together with the username to authenticate with the phone.



GXV34x0 2 Step Authentication

Step 1: Retrieve Authentication Parameters

Request Format

To retrieve the authentication parameters required to generate the login secret, send a request to the following URL:

```
[http/https]://{ipaddress}/cgi-bin/loginrealm
```

Example

For this guide, the phone has the IP address 192.168.5.52. The authentication parameters request is:

```
https://192.168.5.52/cgi-bin/loginrealm
```

Response

This request returns the realm, rand, and mac values required to generate the login secret in the next step.

```
{
  "realm": "xxxxxxxxxxxxxxxx",
  "rand": "xxxxxxxxxxxxxxxx",
  "mac": "xx:xx:xx:xx:xx:xx"
}
```

Step 2: Authenticate

Request Format

To authenticate to the phone, generate the login secret using the password and the parameters returned in Step 1. The generated secret is then included in the login request together with the username.

Query Parameter	Description
Username	The username used for authentication. The default username is gmiadmin.
Secret	The login secret generated using the following steps: Generate a PBKDF2-HMAC-SHA256 derived key using the password and rand. Generate a SHA-256 hash of mac. Generate an HMAC-SHA256 hash-out using the results from the first two steps. Generate a SHA-256 hash of username:realm:hash-out to obtain the secret.

The following Python 3 code can be used to generate the login secret. The code uses the built-in hashlib and hmac modules.

```

import hashlib
import hmac

# ENTER THE AUTHENTICATION PARAMETERS HERE

password = "xxxxxxx"
rand = "xxxxxxxxxxxxxxxx"
mac = "xx:xx:xx:xx:xx:xx"
realm = "xxxxxxxxxxxxxxxx"

# HASHING PROCESS

# 1. PBKDF2-HMAC-SHA256
dk = hashlib.pbkdf2_hmac(
    "sha256",
    password.encode("utf-8"),
    bytes.fromhex(rand),
    10000
)

# 2. SHA256 hash of MAC
mac_hash = hashlib.sha256(mac.encode("utf-8")).hexdigest()

# 3. HMAC-SHA256
hash_out = hmac.new(
    bytes.fromhex(mac_hash),
    dk,
    hashlib.sha256
).hexdigest()

# 4. SHA256(username:realm:hash_out)
username = "gmiadmin"
secret_str = username + ":" + realm + ":" + hash_out

secret = hashlib.sha256(secret_str.encode("utf-8")).hexdigest()

# OUTPUT

print("The secret:")
print(secret)

```

- For PBKDF2-HMAC-SHA256, use 10,000 iterations, a derived key length of 32 bytes, and rand as the salt.
- Ensure that the colon (:) characters in the MAC address are preserved.
- Ensure that the colon (:) separators are preserved in username:realm:hash-out when generating the secret.
- Alternatively, online tools can be used to perform the required hashing operations instead of using the Python code.

After the secret is generated, send the following request to authenticate with the phone:

```
[http/https]://{ipaddress}/cgi-bin/login?Username={username}&Secret={generated-secret}
```

Example

For this guide, the phone has the IP address 192.168.5.52. The authentication request is:

```
https://192.168.5.52/cgi-bin/login?Username=gmiadmin&Secret=6a8.....
```

Response Format

If the authentication is successful, the phone accepts the request and returns the corresponding success response, as shown in the image below.



GXV34x0 API Authentication Response

Return Values Request

Request Format

To retrieve stored values or status information from the phone using a **GET** request. Multiple request values can be specified by separating the value names with a colon (:). **This request requires authentication.**

Query Parameter	Description
Request Values	The request values for the stored values or status information on the phone.

```
[http/https]://{ipaddress}/cgi-bin/api-values.get?request={request-value1}:{request-value2}:...
```

Example

The following request retrieves the System Version, Language, Vendor Name and Hardware Version:

```
https://192.168.5.52/cgi-bin/api-values.get?request=68:vendor_name:hw_rev:1362
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and the requested values in JSON format. For the example above, the response is:

```
{
  "response": "success",
  "body": {
    "68": "1.0.5.35",
    "1362": "en",
    "vendor_name": "Grandstream",
    "hw_rev": "V1.2A"
  }
}
```

Post Values Request

Request Format

To configure P-values on the phone using a **POST** request. Multiple P-values can be set in a single request by separating them with an ampersand (&). **This request requires authentication.**

Query Parameter	Description
P-value	The unique identifier used to reference specific configuration parameters within a phone's settings.

```
[http/https]://{ipaddress}/cgi-bin/api-values.post?Pvalue1={value1}&Pvalue2={value2}...
```

Example

The following request sets the Account Name of Account 1 to John:

```
https://192.168.5.52/cgi-bin/api-values.post?P270=John
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": {
    "status": "right"
  }
}
```

- To view all available P-values, download the Configuration Template.

Change Password

Request Format

To change the administrator and user passwords on the phone. **This request requires authentication.**

Query Parameter	Description
oldadmin	The current administrator password.
P2	The new administrator password. A valid oldadmin password must be provided to change the administrator password.
olduser	The current user password.
P196	The new user password. A valid olduser password must be provided to change the user password.

```
[http/https]://{ipaddress}/cgi-bin/api-change_password?oldadmin={oldpassword}&P2={newpassword}&olduser={olduserpassword}&P196={newuserpassword}
```

Example

The following request changes the administrator password from admin123 to newadmin456 :

```
https://192.168.5.52/cgi-bin/api-change_password?oldadmin=admin123&P2=newadmin456
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": {
    "status": "right"
  }
}
```

Get Contact

Request Format

To retrieve contacts from the phone using a **GET** request. Use the basic request to retrieve all contacts or specify parameters for more specific contact retrieval. **This request requires authentication.**

Query Parameter	Description
contactid	The contact ID. If an existing ID is specified, the corresponding contact details are returned.
contactname	The contact name used to search for contacts. Contacts with matching names are returned.
groupid	The group ID. The contacts in the corresponding group are returned.

```
[http/https]://{ipaddress}/cgi-bin/api-get_contacts?contactid={cid}
[http/https]://{ipaddress}/cgi-bin/api-get_contacts?contactname={name}
[http/https]://{ipaddress}/cgi-bin/api-get_contacts?groupid={gid}
[http/https]://{ipaddress}/cgi-bin/api-get_contacts
```

Example

The following request returns the contact named Mark:

```
https://192.168.5.52/cgi-bin/api-get_contacts?contactname=mark
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response containing the contact information. For the example above, the response is:

```
{
  "res": "success",
  "msg": [
    {
      "contactID": "1",
      "contactName": "Mark Jones",
      "groupID": "1",
      "email": "",
      "mobile": "1212",
      "home": "",
      "work": "",
      "fax": ""
    }
  ]
}
```

```
}
```

Save/Edit Contact

Request Format

To Save/Edit contacts on the phone. **This request requires authentication.**

Query Parameter	Description
id	The contact ID number. Leave ID blank to add a new contact record, or specify an existing contact ID to edit the corresponding contact information. The contact ID can be obtained from the Get Contact request. This parameter is optional.
firstname	The contact's first name.
lastname	The contact's last name.
group	The group assigned to the contact. This parameter is optional.
newphone1	The contact's first phone number. This parameter is optional.
newphone2	The contact's second phone number. This parameter is optional.
newphone3	The contact's third phone number. This parameter is optional.
newphone4	The contact's fourth phone number. This parameter is optional.
email	The contact's email address. This parameter is optional.

```
[http/https]://{ipaddress}/cgi-bin/api-save_edit_contact?id={id}&group={groupid}&firstname={firstna  
me}&lastname={lastname}...
```

Example

The following request saves two phone numbers, 1010 and 1414, to an existing contact:

```
https://192.168.5.52/cgi-bin/api-save_edit_contact?id=1&firstname=Mark&lastname=Jones&newphone1=101  
0&newphone2=1414
```

- If the contact already has a phone number, specifying a newphone parameter replaces the existing phone number. For example, specifying only newphone2 does not add a second phone number to a contact that already has a number in newphone1; instead, it replaces the saved phone number.
- To save multiple phone numbers, specify them in order using newphone1, newphone2, newphone3, and newphone4.

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{  
  "response": "success",  
  "body": "true"  
}
```

Delete All Contacts

Request Format

To delete all contacts saved on the phone. **This request requires authentication.**

```
[http/https]://{ipaddress}/cgi-bin/api-delete_all_contact
```

Example

The following request deletes all the contacts saved on the phone:

```
https://192.168.5.52/cgi-bin/api-delete_all_contact
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": "true"
}
```

Delete Contact

Request Format

To delete a specific contact saved on the phone using the contact ID. **This request requires authentication.**

Query Parameter	Description
id	The contact ID number, which can be obtained from the Get Contact request.

```
[http/https]://{ipaddress}/cgi-bin/api-delete_contact?id={id}
```

Example

The following request deletes the contact with the contact ID 2:

```
https://192.168.5.52/cgi-bin/api-delete_contact?id=2
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": "true"
}
```

Add Contact Group

Request Format

To add a new contact group on the phone. **This request requires authentication.**

Query Parameter	Description
name	The name of the new contact group.

```
[http/https]://{ipaddress}/cgi-bin/api-add_group?&name={groupname}
```

Example

The following request adds a contact group named whitelist:

```
https://192.168.5.52/cgi-bin/api-add_group?name=whitelist
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": "true"
}
```

Get Contact Group

Request Format

To retrieve the saved contact groups from the phone using a **GET** request. **This request requires authentication.**

Query Parameter	Description
id	The Contact Group ID. Leaving ID blank retrieves all group records. Specifying an existing ID retrieves the corresponding group details. This parameter is optional.

```
[http/https]://{ipaddress}/cgi-bin/api-get_groups?id={groupid}
```

Example

The following request retrieves all the saved contact groups:

```
https://192.168.5.52/cgi-bin/api-get_groups
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and the requested contact groups in JSON format. For the example above, the response is:

```
{
  "res": "success",
  "msg": [
    {
      "groupID": "2",
      "groupName": "whitelist"
    },
    {
      "groupID": "1",
      "groupName": "blacklist"
    },
    {
      "groupID": "0",
      "groupName": "Default"
    }
  ]
}
```

```
}
```

Edit/Delete Contact Group

Request Format

To edit or delete a contact group. **This request requires authentication.**

Query Parameter	Description
id	The group ID, which can be obtained from the Get Contact Group request.
name	The new group name. Leaving the name blank deletes the group. Note: This function does not work.

```
[http/https]://{ipaddress}/cgi-bin/api-edit_delete_group?id={id}
```

Example

The following request deletes the contact group with the Contact Group ID 2:

```
https://192.168.5.52/cgi-bin/api-edit_delete_group?id=2
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": "true"
}
```

Get Account Status

Request Format

To retrieve the account status from the phone using a **GET** request. **This request requires authentication.**

Query Parameter	Description
registered	Filters the results based on account registration status. This parameter is optional. Set to 1 or true to return registered accounts. Set to 0 or false to return unregistered accounts. If not specified, all accounts are returned.

```
[http/https]://{ipaddress}/cgi-bin/api-get_accounts?registered={filter}
```

Example

The following request retrieves all the registered account:

```
https://192.168.5.52/cgi-bin/api-get_accounts?registered=1
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and the requested account information in JSON format. For the example above, the response is:

```
{
  "result": "success",
  "body": [
```

```
{
  "id": 1,
  "sip_server": "192.168.6.76",
  "sip_id": "1000",
  "name": "gxx",
  "reg": 1
}
```

Get Line Status

Request Format

To retrieve the line status from the phone using a **GET** request. **This request requires authentication.**

Query Parameter	Description
line	Filters the results to return the status of the specified line. Set to a line number from 0 to the maximum available line number to return the status of the specified line indicated by state. 2 -> When the phone is ringing 3 -> When the phone is calling 4 -> When the phone is in a call 5 -> When the call is on hold 8 -> When the call fails

```
[http/https]://{ipaddress}/cgi-bin/api-get_line_status?line={filter}
```

Example

The following request retrieves the status of line 0 while dialing extension 1010:

```
https://192.168.5.52/cgi-bin/api-get_line_status?line=0
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and the status of line 0 in JSON format. For the example above, the response is:

```
{
  "response": "success",
  "body": {
    "line": "0",
    "state": "",
    "acct": "0",
    "name": "Mark Jones",
    "number": "1010",
    "active": "1"
  }
}
```

Get Phone Status

Request Format

To retrieve the phone status from the phone using a **GET** request. **This request requires authentication.**

```
[http/https]://{ipaddress}/cgi-bin/api-get_phone_status
```

Example

The following request retrieves all the registered account:

```
https://192.168.5.52/cgi-bin/api-get_phone_status
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and the phone status in JSON format. For the example above, the response is:

```
{
  "response": "success",
  "body": "available",
  "misc": "1"
}
```

Get System Time

Request Format

To retrieve the system time from the phone using a **GET** request. **This request requires authentication.**

```
[http/https]://{ipaddress}/cgi-bin/api-get_time
```

Example

The following request retrieves the system time:

```
https://192.168.5.52/cgi-bin/api-get_time
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and the date, time, and uptime information in JSON format. For the example above, the response is:

```
{
  "data": "Mon 14/09/2026",
  "time": " 02:59:00 PM",
  "uptime": " 0 day, 4 hours, 51 minutes, 6 seconds"
}
```

Make Call

Request Format

To initiate a call using the parameters to define the destination number and the account used for the call. **This request requires authentication.**

Query Parameter	Description
phonenumber	The destination number to be dialed.
account	The account used to initiate the call.

```
[http/https]://{ipaddress}/cgi-bin/api-make_call?phonenumber={number}&account={accountnumber}
```

Example

The following request initiates a call to 1010 using Account 1:

```
https://192.168.5.52/cgi-bin/api-make_call?phonenumber=1010&account=1
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": "true"
}
```

Phone/Call Operations

Request Format

To perform call operations on the phone, such as ending, holding, accepting, or rejecting a call. **This request requires authentication.**

Query Parameter	Description
cmd	The call operation command to be performed: endcall: Ends the call on the specified line. holdcall: Holds the call on the specified line. acceptcall: Accepts the call on the specified line. rejectcall: Rejects the call on the specified line.
Line	The line on which the operation is performed.

```
[http/https]://{ipaddress}/cgi-bin/api-phone_operation?cmd={callcmd}&line={line}
```

Example

The following request puts the call on line 0 on hold:

```
https://192.168.5.52/cgi-bin/api-phone_operation?cmd=holdcall&line=0
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": "true"
}
```

System Operations

Request Format

To perform system operations on the phone, such as rebooting or provisioning the device. **This request requires authentication.**

Query Parameter	Description
request	The system operation to be performed: REBOOT: Reboots the device. PROV: Provisions the device.

```
[http/https]://{ipaddress}/cgi-bin/api-sys_operation?request={operation}
```

Example

The following request provisions the phone:

```
https://192.168.5.52/cgi-bin/api-sys_operation?request=PROV
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and a

JSON response indicating the result of the operation. For the example above, the response is:

```
{
  "response": "success",
  "body": "provision"
}
```

Phonebook Download

Request Format

To retrieve the phonebook from the phone. **This request requires authentication.**

```
[http/https]://{ipaddress}/cgi-bin/phonebook_download
```

Example

The following request retrieves the phonebook:

```
https://192.168.5.52/cgi-bin/phonebook_download
```

Response Format

On a successful request, the phone returns an HTTP 200 OK status code in the response header and the phonebook in XML format. For the example above, the response is:

```
<AddressBook>
<version>1</version>
<pbgroup>
<id>4</id>
<name>whitelist</name>
<ringtones/>
</pbgroup>
<Contact>
<FirstName>Mark</FirstName>
<LastName>Jones</LastName>
<IsPrimary>false</IsPrimary>
<Primary>0</Primary>
<Frequent>0</Frequent>
<PhotoUrl/>
<Phone type="Home">
<phonenumber>1414</phonenumber>
<accountindex>-1</accountindex>
</Phone>
<Phone type="Mobile">
<phonenumber>1010</phonenumber>
<accountindex>-1</accountindex>
</Phone>
<Mail type="Home"/>
</Contact>
</AddressBook>
```

Supported Devices

Supported Devices	Firmware Version
GXV3480	1.0.5.35+

GXV3470	1.0.5.35+
GXV3450	