# Grandstream Networks, Inc.

## Grandstream GXV3370/GXV3380/GXV3350/WP820

### WEB API User Guide

# COPYRIGHT

## CAUTION

Changes or modifications to this product not expressly approved by Grandstream, or operation of this product in any way other than as detailed by this guide, could void your manufacturer warranty.

## WARNING

Please do not use a different power adapter with devices as it may cause damage to the products and void the manufacturer warranty.

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# OVERVIEW

This document explains in detail the external HTTP-based application programming interface and parameters of functions via the supported method. The HTTP API is firmware dependent. Please refer to the related firmware Release Note for the supported functions.

The implemented web APIs abide by RESTful API style, supporting GET and POST HTTP request types that provide access and control over phone's related data. Operations such as checking account status, adding/editing/deleting a contact number, making a phone call, and so on can be performed with correct API requests.

Web authentication and credentials might be required for certain API requests. To successfully perform API requests, please follow the formats and rules as shown in Web API Definitions.

# WEB AUTHENTICATION GUIDE

This section discusses the available authorization methods that are used by Web API.

## Web API Base URL

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

## Request for Random Number

### Endpoint

GET loginrealm

### Usage

Get the random number from server for authentication.

### Parameters

| Query Parameter | Value |
|---|---|
| N/A | |

### Response

| Response | Value Type | Description |
|---|---|---|
| Random number | String | The random number requests from the server which would be used for only once. |

## Password Token Authentication

### Endpoint

GET login

### Usage

Use username and encrypted password to pass the authentication.

### Parameters

The request must contain the following parameters in query string:

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| Query Parameter | Value |
|---|---|
| Username | The default username is "gmiadmin". |
| Secret | Using MD5 algorithm to encrypt the string that is connected by username, random number and password. The default passcode is "admin". MD5("gmiadmin" + ":" + ${random} + ":" + password) |

## Authentication Validate Prototype

The following figure shows an illustration of the authentication validation process:
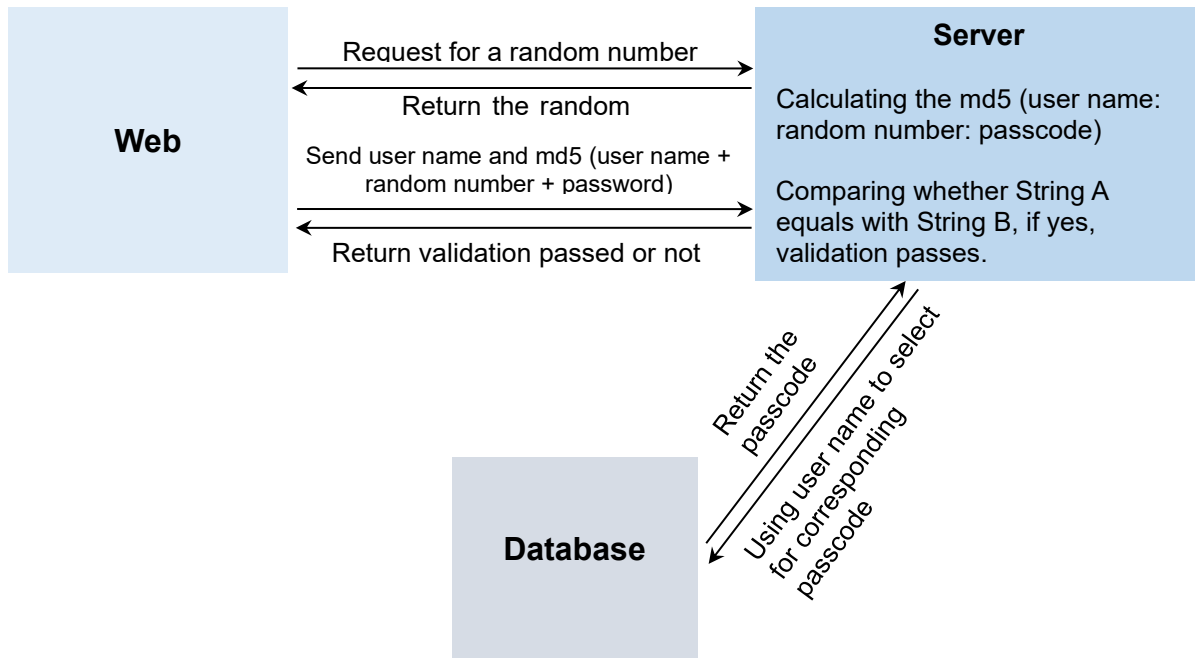


**Figure 1: Authentication validation process**

# WEB API DEFINITIONS

This section provides the definition of the GXV32XX/33XX Web API.

## Web API Base URL:

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

## Return Values Request

### Endpoint

GET api-values.get

### Usage

Get stored values on a device.

### Authentication

None (limited return), Forms of authentication [admin|user]

### Parameters

| Query Parameter | Value |
|---|---|
| **request** | The request value names separated by ":".<br>**Example:**<br>request=2:68:vendor_name |

**Example of Request URI:** http://172.16.2.127/cgi-bin/api-values.get?request=2:68:vendor_name

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

```
{
    "response":"success",
    "body":{
        "68":"11.16.8.20",
        "1561":"",
        "7033":"1.0.1.7",
        "vendor_name":"Grandstream",
        "vendor_fullname":"Grandstream Networks, Inc.",
```

```
        "hw_rev":"V2.2A",
        "tp_fw_version":"22"
    }
}
```

## Response object

| Key | Value Type | Description |
|-----|-----------|-------------|
| **response** | String | The status of the response. |
| **body** | Object of the request values | Request values being bound to an object using key and value pair. |

## Post Values Request

### Endpoint

GET api-values.post

### Usage

Modify/update values on a device

### Authentication

Forms Authentication [admin|user]

### Parameters

| Body Parameter | Value |
|----------------|-------|
| **PVALUE_NAME** | Value of given PVALUE.<br>**NOTE:** name must start with P<br>**Example:** P2=admin |

**Example of Request URI:** http://172.16.2.127/cgi-bin/api-values.post?P2=admin&P196=123

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

## Response object

| Key | Value Type | Description |
|---|---|---|
| **response** | String | The status of the response. |
| **body** | Object of the request values | Object contains the update status |

## Change Password

### Endpoint

GET api-change_password

### Usage

Change admin or user password

### Authentication

Forms Authentication [admin|user]

NOTE: user account is only allowed to change his/her own password

### Parameters

| Body Parameter | Value |
|---|---|
| **oldadmin** | Current admin password |
| **P2** | New admin password. Must include valid "oldadmin" password when intended to change admin password |
| **olduser** | Current user password |
| **P196** | New user password. Must include valid "olduser" password when intend to change user password |

**Example of Request URI:** http://172.16.2.127/cgi-bin/api-change_password?oldadmin=admin&P2=newadmin&olduser=123&P196=123456

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## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

## Response object

| Key | Value Type | Description |
|---|---|---|
| response | String | The status of the response. |
| body | Object of the request values | Object contains the update status. |

# Get Contact

## Endpoint

GET api-get_contacts

## Usage

Query the existing contacts.

## Authentication

Forms Authentication [admin|user]

## Parameters

| Body Parameter | Value |
|---|---|
| contactid | [OPTIONAL] Set contactid as an existing id will get the corresponding details for the contact. |
| contactname | [OPTIONAL] Use contactname as keyword to search if contact name in database contain the keyword, if yes, it will be returned. |
| groupid | [OPTIONAL] Returns the contacts information in the corresponding group. |

**Note:** Leaving contactid, contactname and groupid blank will return all data for contacts.

**Examples of Request URI:**

http://172.16.2.127/cgi-bin/api-get_contacts?contactid=1
http://172.16.2.127/cgi-bin/api-get_contacts?contactname=abc
http://172.16.2.127/cgi-bin/api-get_contacts?groupid=2
http://172.16.2.127/cgi-bin/api-get_contacts

## Response Format

```
{
    "res":"success",
    "msg":[
{
    "contactID":"0",
    "contactName":"xxx",
    "groupID":"0",
    "work":"8819",
    "home":"",
    "mobile":"",
    "fax":"",
    "email":""
},
{
    "contactID":"1",
    "contactName":"grandstream",
    "groupID":"0",
    "work":"3587",
    "home":"",
    "mobile":"",
    "fax":"",
    "email":""
}
    ]
}
```

## Response object

| Key | Value Type | Description |
|---|---|---|
| res | String | The status of the response |
| msg | Array of contact object | Return of the contact objects |

## Contact object

| Key | Value Type | Description |
|---|---|---|
| contactID | Integer | Contact's ID |
| contactName | String | Contact's name |
| groupID | Integer | The group id for the contact |

| | | |
|---|---|---|
| **work** | String | Work phone number |
| **home** | String | Home phone number |
| **mobile** | String | Mobile phone number |
| **fax** | String | Fax number |
| **email** | String | Email address |

## Save/Edit Contact

### Endpoint

GET api-save_edit_contact

### Usage

Save phone book contact.

### Authentication

Forms Authentication [admin|user]

### Parameters

| Body Parameter | Value |
|---|---|
| **id** | [OPTIONAL] Contact ID number. Leave id blank will insert a new contact record, and wen set as an exist id will edit the corresponding contact information. |
| **firstname** | Contact's first name |
| **lastname** | Contact's last name |
| **group** | [OPTIONAL] Contact's group ID |
| **newphone1** | [OPTIONAL] Contact's new phone number (Work) |
| **newphone2** | [OPTIONAL] Contact's new phone number (Home) |
| **newphone3** | [OPTIONAL] Contact's new phone number (Mobile) |
| **newphone4** | [OPTIONAL] Contact's new phone number (Work Fax) |
| **email** | [OPTIONAL] Contact's Email |

**Example of Request URI:**

http://172.16.2.127/cgi-bin/api-save_edit_contact?firstname=Jack&lastname=Brown&newphone1=123456

## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

### Response object

| Key | Value Type | Description |
|---|---|---|
| response | String | The status of the response |
| body | String | <Empty> |

## Delete All Contacts

### Endpoint

GET api-delete_all_contact

### Usage

Delete all phonebook contacts.

### Authentication

Forms Authentication [admin|user]

### Parameters

| Body Parameter | Value |
|---|---|
| N/A | |

**Example of Request URI**

http://172.16.2.127/cgi-bin/api-delete_all_contact

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

## Response object

| Key | Value Type | Description |
| --- | --- | --- |
| response | String | The status of the response |
| body | String | <Empty> |

## Delete Contact

### Endpoint

GET api-delete_contact

### Usage

Delete phone book contact.

### Authentication

Forms Authentication [admin|user]

### Parameters

| Body Parameter | Value |
| --- | --- |
| id | Contact ID number. The contact id can be obtained from Get Contact API. |

### Example of Request URI

E.g.: http://172.16.2.127/cgi-bin/api-delete_contact?id=1

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

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## Response object

| Key | Value Type | Description |
|---|---|---|
| **response** | String | The status of the response |
| **body** | String | <Empty> |

## Add Contact Group

### Endpoint

GET api-add_group

### Usage

Add new contact group.

### Authentication

Forms Authentication [admin|user]

### Parameters

| Body Parameter | Value |
|---|---|
| **name** | Name of the new contact group. |

**Example of Request URI :** http://172.16.2.127/cgi-bin/api-add_group?name=newGroup

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

### Response object

| Key | Value Type | Description |
|---|---|---|
| **response** | String | The status of the response |
| **body** | String | <Empty> |

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# Get Contact Group

## Endpoint

Get api-get_groups

## Usage

Query the existing groups.

## Authentication

Forms Authentication [admin|user]

## Parameters

| Body Parameter | Value |
|---|---|
| Id | [OPTIONAL]. Leaving id blank will get all records of groups. Setting it as an existing id will get the corresponding details for the group. |

**Example of Request URI :** http://172.16.2.127/cgi-bin/api-get_groups

## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

```
{
   "res":"success",
   "msg":[
{
        "groupID":"0",
   "groupName":"default"
},
{
        "groupID":"100",
   "groupName":"blacklist"
}
   ]
}
```

## Response object

| Key | Value Type | Description |
|---|---|---|
| res | String | The status of the response. |
| msg | Array of group object | Return of the group objects. |

## Group object

| Key | Value Type | Description |
|---|---|---|
| **goupID** | Integer | The group ID. |
| **body** | String | The group Name. |

## Edit/delete Contact Group

### Endpoint

GET api-edit_delete_group

### Usage

Edit or delete existing contact group.

### Authentication

Forms Authentication [admin|user]

### Parameters

| Body Parameter | Value |
|---|---|
| **id** | Group ID, which can be obtained from get groups API. |
| **name** | New group name. Leaving the name blank will delete the group. |

**Example of Request URI**

http://172.16.2.127/cgi-bin/api-edit_delete_group?id=1&name=

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

### Response object

| Key | Value Type | Description |
|---|---|---|
| **Response** | String | The status of the response |
| **body** | String | <Empty> |

# Get Account Status

## Endpoint

GET api-get_accounts

## Usage

Get device account status.

## Authentication

Forms Authentication [admin|user]

## Parameters

| Body Parameter | Value |
|---|---|
| **registered** | **[OPTIONAL]** Filter only to return the registered accounts. Can be set to "1" or "true" to enable. |

## Example of Request URI

http://172.16.2.127/cgi-bin/api-get_accounts?registered=true

## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

```
{
    "response":"success",
    "body":[
        {
            "id":1,
            "sip_server":"pbx.grandstream.com",
            "sip_id":"699",
            "name":"John Somebody",
            "reg":1
        },
        {
            "id":2,
            "sip_server":"96.31.248.32",
            "sip_id":"9064",
            "name":"9064 (openser)",
            "reg":1
        },
        {
            "id":3,
            "sip_server":"172.18.26.124",
            "sip_id":"1025",
```

```
        "name":"1025",
        "reg":1
    },
    {
        "id":4,
        "sip_server":"as.iop1.broadworks.net",
        "sip_id":"1016",
        "name":"1016 (BS)",
        "reg":0
    }
  ]
}
```

## Response object

| Key | Value Type | Description |
|---|---|---|
| Response | String | The status of the response |
| body | Array of account status object | Return of the account's status objects |

## Account Status object

| Key | Value Type | Description |
|---|---|---|
| Id | Integer | Account ID. |
| sip_server | String | Account SIP server address. |
| sip_id | String | Account SIP user ID. |
| name | String | Account display name. |
| reg | Integer | Account register status. |

# Get Line Status

## Endpoint

GET api-get_line_status

## Usage

Get device line status.

## Authentication

Forms Authentication [admin|user]

## Parameters

| Body Parameter | Value |
|---|---|
| line | [OPTIONAL] Filter only to return the given line status. <br> 0 to maximum available lines. |

**Example of Request URI:** http://172.16.2.127/cgi-bin/api-get_line_status?line=0

## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

```
{
    "response":"success",
    "body":[
        {
            "line":1,
            "state":"2",
            "acct":"",
            "name":"",
            "number":"",
            "active":0
        },
        {
            "line":2,
            "state":"3",
            "acct":"",
            "name":"",
            "number":"",
            "active":0
        },
        {
            "line":3,
            "state":"3",
            "acct":"",
            "name":"",
            "number":"",
            "active":0
        },
        {
            "line":4,
            "state":"8",
            "acct":"",
            "name":"",
            "number":"",
            "active":0
        }
    ]
}
```

## Response object

| Key | Value Type | Description |
|---|---|---|
| **response** | String | The status of the response |
| **body** | Array of line status object | Return of the line's status objects |

## Line Status object

| Key | Value Type | Description |
|---|---|---|
| **line** | Integer | Line ID |
| **state** | String | Line Status<br>0 = idle<br>2 = ringing<br>3 = calling<br>4 = in call<br>5 = hold<br>8 = failed |
| **acct** | String | The account that is currently used on this line |
| **name** | String | Remote party name |
| **number** | String | Remote party number |
| **active** | String | Whether the line is active or not |

# Get Phone Status

## Endpoint

GET api-get_phone_status

## Usage

Get phone/device session status.

## Authentication

None | Forms Authentication [admin|user] | Password Token Authentication

## Parameters

| Query Parameter | Value |
|---|---|
| **N/A** | |

**Example of Request URI**

http://172.16.2.127/cgi-bin/api-get_phone_status

## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

```
{
    "response":"success",
    "body":"available",
    "misc":"0"
}
```

## Response object

| Key | Value Type | Description |
|---|---|---|
| Response | String | The status of the response |
| body | String | Status of the device:<br>**unauthorized** = the session is expired or the given credential is invalid.<br>**available** = the device is registered and idle.<br>**ringing** = the device has at least one line is currently ringing. |
| | | **busy** = the device is currently in busy state. |
| misc | | Misc. information.<br>1 = Click to dial is currently enabled |

# Get System Time

## Endpoint

GET api-get_time

## Usage

Get system time.

## Authentication

Forms Authentication [admin|user]

## Parameters

| Query Parameter | Value |
|:---:|:---:|
| N/A | |

**Example of Request URI :** http://172.16.2.127/cgi-bin/api-get_time

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

```
{
    "date":"Tue 08/30/2016",
    "time":" 11:30AM",
    "uptime":" 21 days, 1 hour, 50 minutes, 23seconds"
}
```

### Response object

| Key | Value Type | Description |
|---|---|---|
| date | String | Current system date |
| time | String | Current system time |
| uptime | String | System uptime |

## Make Call

### Endpoint

GET api-make_call

### Usage

Dial an outgoing call.

### Authentication

Forms Authentication [admin|user] | Password Token Authentication

### Parameters

| Query Parameter | Value |
|:---:|:---:|
| phonenumber | Dialed number |

| | |
|---|---|
| **account** | Account used for this call |

**Example of Request URI**

http://172.16.2.127/cgi-bin/api-make_call?phonenumber=123456&account=0

**Response Format**

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

**Response object**

| Key | Value Type | Description |
|---|---|---|
| **response** | String | The status of the response |
| **body** | String | <Empty> |

# Phone/Call Operations

### Endpoint:

GET api-phone_operation

### Usage

Perform a phone operation.

### Authentication

Forms Authentication [admin|user] | Password Token Authentication

### Parameters:

| Query Parameter | Value |
|---|---|
| **cmd** | Operation command:<br><br>**endcall** = end the call on the given line (needs arg).<br>**holdcall** = hold the call on the given line (needs arg). |

| | |
|---|---|
| | **acceptcall** = Accept the call on the given line (needs arg).<br>**rejectcall** = Reject the call on the given line (needs arg). |
| **Line** | Line ID. |

**Example of Request URI:** http://172.16.2.127/cgi-bin/api-phone_operation?cmd=endcall&line=0

### Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

### Response object

| Key | Value Type | Description |
|---|---|---|
| **response** | String | The status of the response. |
| **body** | String | "true" when the command is handled |

## System Operations

### Endpoint

GET api-sys_operation

### Usage

Perform a system operation.

### Authentication

Forms Authentication [admin|user] | Password Token Authentication

### Parameters

| Query Parameter | Value |
|---|---|
| **request** | Request Operation:<br><br>**REBOOT** = reboot the device<br>**RESET** = factory reset the device (required admin)<br>**PROV** = provision the device (required admin) |

**Example of Request URI:** http://172.16.2.127/cgi-bin/api-sys_operation?request=REBOOT

## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body in JSON format

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

## Response object

| Key | Value Type | Description |
|---|---|---|
| **response** | String | The status of the response |
| **body** | String | Operation handle status |

# Phonebook Download

## Endpoint

GET phonebook_download

## Usage

Download the phonebook XML

## Authentication

Forms Authentication [admin|user]

## Parameters

| Query Parameter | Value |
|---|---|
| **N/A** | |

**Example of Request URI:** http://172.16.2.127/cgi-bin/phonebook_download

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## Response Format

On SUCCESS, the HTTP status code in the response header is 200 OK and the response body is in Phonebook XML format (Please refer to GXP2200 XML Based Downloadable Phonebook Guide for detailed format description)