

Grandstream Networks, Inc.

GRP26xx Series - CTI Guide



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CTI (Computer-Telephony Integration) provides the ability to manage phone calls from a computer including basic call operations such as making and answering calls, and advanced call operations such as call forward, conference, call hold, and more.

Grandstream GRP26XX series supports CTI operations and commands providing complete control over phone calls from a desktop computer. CTI commands can be integrated with a 3rd party application to control the interaction between the customer's phone and desk computer or can be run using a web browser on the customer's computer.

This guide describes available operations and commands with examples how to run them from a web browser.

BENEFITS OF CTI

The significant benefits of using Computer Telephony Integration (CTI) are the following:

- Complete control over calls (answer, hang-up, call on hold, manage "do not disturb", call forward, conference, call transfer and etc...).
- Incoming call notifications on the desk computer allow caller numbers to be screened against a database to collect or provide more information related to the caller.
- Initiate outbound calls from the computer directly with the possibility of automatic and pre-dial calls commonly used for telemarketing.
- Increase productivity and improve customer service.

ENABLING CTI FEATURE

To enable the CTI feature on the GRP26XX series, follow the steps below:

1. Access GRP26XX web GUI as administrator.
2. Navigate to **Network → Remote Control** (on GRP261x/GRP2624/GRP2634) or **Network Settings → Advanced Settings → Remote Control** (on GRP260x).
3. Enable **Action URI Support** by checking "Enabled".
4. On field **Action**, URI Allowed IP List, put the remote party's IP address. If the IP address is unknown, add "any".
5. Set Remote Control Pop-up **Window Support** to "Disabled" to allow remote control without confirmation on the physical phone.
6. Press the Save and Apply button.

| Remote Control

Action URI Support  ☒

Remote Control Popup Window Support  ☐

Action URI Allowed IP List 

CSTA Control  ☐

The "Click-To-Dial Feature" should be enabled under Phone Settings → Call Settings (on GRP260x), to be able to run the "Make Call" Command.

CTI COMMANDS FORMAT DEFINITION

Request format

The general CTI commands request format is:

`http://{Phone_IP_Address}/cgi-bin/function?passcode=PASSWORD&param=value`

"Function" is one of CTI functions as described in next chapter (api-get_line_status for example)

"Password" is the phone's admin/user level password

"Param=value" is the parameter for specific CTI function type

Response format

Positive answer with no returned value
<code>{"response": "success", "body": "complete"}</code>
Negative answer
<code>{"response": "error", "body": "failed"}</code>
Positive answer with returned values
<code>{"response": "success", "body": [{"line": 1, "state": "idle", "acct": "", "remotename": "", "remotenum": "", "active": 0}, {"line": 2, "state": "idle", "acct": "", "remotename": "", "remotenum": "", "active": 0}, {"line": 3, "state": "idle", "acct": "", "remotename": "", "remotenum": "", "active": 0}]}</code>

TYPE OF CTI FUNCTIONS

Please refer to following table describing type of CTI functions supported:

Type	Function	Description
Line Status	api-get_line_status	Retrieves line status of the phone
Phone Status	api-get_phone_status	Retrieves phone status
Phone Operations	api-phone_operation	Sends phone operations commands (hang up, answer call, reject call...)
Account Status	api-get_accounts	retrieve the account status: (registred, not registered...)
Send Keys	api-send_key	Sends keys functions (speaker, volume up, volume down, mute, hold, 0-9...)
System Operations	api-sys_operation	Sends system operations commands (reset, reboot...)

CTI COMMANDS AND EXAMPLES

Following commands have been run in a web browser on computer in same phone's network. In the examples below, a GRP26XX phone is used with IP address 192.168.5.135 and admin/user level password set to (passcode=admin).

Functions used on GRP26XX

Line Status Function

General Format

The general format of CTI command to retrieve the line status is:

```
http://{Phone_IP_Address}/cgi-bin/api-get_line_status?passcode=PASSWORD
```

Example

Request	http://192.168.5.135/cgi-bin/api-get_line_status?passcode=admin
Response	{ "response": "success", "body": [{ "line": 1, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }, { "line": 2, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }, { "line": 3, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }, { "line": 4, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }, { "line": 5, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }, { "line": 6, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }, { "line": 7, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }, { "line": 8, "conf": 1, "state": "idle", "acct": 0, "active": 0, "remotename": "", "remotenum": "" }] }

In this example, the phone shows that only one account is available on line 1; other lines are not registered.

Phone Status Function

General Format

The general format of CTI command to retrieve phone status is:

```
http://{Phone_IP_Address}/cgi-bin/api-get_phone_status?passcode=PASSWORD
```

Example

Request	http://192.168.5.135/cgi-bin/api-get_phone_status?passcode=admin
Response	Phone available { "response": "success", "body": "available", "misc": "0" } Phone busy { "response": "success", "body": "busy", "misc": "0" }

Phone Operations Functions

General format

The general format of CTI command to send phone operations is:

```
http://{Phone_IP_Address}/cgi-bin/api-phone_operation?passcode=PASSWORD&cmd=OPERATION
```

Examples

Operation	Function	Examples
endcall	End established call	http://192.168.5.135/cgi-bin/api-phone_operation?passcode=admin&cmd=endcall
holdcall	Put the established call on Hold	http://192.168.5.135/cgi-bin/api-phone_operation?passcode=admin&cmd=holdcall
acceptcall	Accept incoming call	http://192.168.5.135/cgi-bin/api-phone_operation?passcode=admin&cmd=acceptcall
rejectcall	Reject incoming call	http://192.168.5.135/cgi-bin/api-phone_operation?passcode=admin&cmd=rejectcall
cancel	Reject or cancel calls	http://192.168.5.135/cgi-bin/api-phone_operation?passcode=admin&cmd=cancel

Positive answer

If accepted, the command will be run instantly on the phone and below positive answer can be returned:

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

Negative answer

If not accepted, the phone will not react to it and below negative answer can be returned:

```
{"response": "error", "body": false}
```

Account Status Function

General Format

The general format of CTI command to retrieve account status is:

```
http://{Phone_IP_Address}/cgi-bin/api-get_accounts?passcode=PASSWORD
```

Example

Request	http://192.168.5.135/cgi-bin/api-get_accounts?passcode=admin
Response	<pre>{"response": "success", "body": [{"id": 1, "sip_server": "testsipserver.com", "sip_id": "1234", "name": "test_account", "reg": 1}, {"id": 2, "sip_server": "", "sip_id": "", "name": "", "reg": 0}]}</pre>

In this example, the phone shows account 1's basic SIP information and that account 1 is registered.

BLF Mode and Label

This command allows checking VPK modes and retrieve the label configured for the VPK.

- This command is supported only on the following IP phone models: GR261X non-legacy hardware, GRP2624, GRP2634, GRP2636, GRP2650, and GRP2670 starting from firmware version 1.0.15.19.
- If no VPKs are configured, the response will return "Not found".

General format

The general format of CTI command to retrieve BLF mode and label is:

```
http://{Phone_IP_Address}/cgi-bin/api-get_vpk_status
```

Example

Request	http://192.168.5.135/cgi-bin/api-get_vpk_status
Response	<pre>{ "vpk_result": [{ "VKID": 1, "Mode": "Line", "Label": "415" }, { "VKID": 2, "Mode": "Line", "Label": "3014" }, { "VKID": 3, "Mode": "Line", "Label": "503" }, { "VKID": 4, "Mode": "Line", "Label": "1007" }], "mpk_result": [{ "VKID": 17, "Mode": "Record", "Label": "" }, { "VKID": 18, "Mode": "Eventlist BLF", "Label": "502" }, { "VKID": 19, "Mode": "Eventlist BLF", "Label": "504" }, { "VKID": 20, "Mode": "Eventlist BLF", "Label": "501" }, { "VKID": 21, "Mode": "Eventlist BLF", "Label": "503" }, { "VKID": 22, "Mode": "None", "Label": "" }, { "VKID": 23, "Mode": "None", "Label": "" }, { "VKID": 24, "Mode": "None", "Label": "" }, { "VKID": 25, "Mode": "None", "Label": "" }, { "VKID": 26, "Mode": "None", "Label": "" }, { "VKID": 27, "Mode": "None", "Label": "" }, { "VKID": 28, "Mode": "None", "Label": "" }, { "VKID": 29, "Mode": "None", "Label": "" }, { "VKID": 30, "Mode": "None", "Label": "" }, { "VKID": 31, "Mode": "None", "Label": "" }, { "VKID": 32, "Mode": "None", "Label": "" }, { "VKID": 33, "Mode": "None", "Label": "" }, { "VKID": 34, "Mode": "None", "Label": "" }, { "VKID": 35, "Mode": "None", "Label": "" }, { "VKID": 36, "Mode": "None", "Label": "" }, { "VKID": 37, "Mode": "None", "Label": "" }, { "VKID": 38, "Mode": "None", "Label": "" }, { "VKID": 39, "Mode": "None", "Label": "" }, { "VKID": 40, "Mode": "None", "Label": "" }, "numkey_result": [{ "VKID": 51, "Mode": "None", "Label": "" }, { "VKID": 52, "Mode": "None", "Label": "" }, { "VKID": 53, "Mode": "None", "Label": "" }, { "VKID": 54, "Mode": "None", "Label": "" }, { "VKID": 55, "Mode": "None", "Label": "" }, { "VKID": 56, "Mode": "None", "Label": "" }, { "VKID": 57, "Mode": "None", "Label": "" }, { "VKID": 58, "Mode": "None", "Label": "" }, { "VKID": 59, "Mode": "None", "Label": "" }, { "VKID": 60, "Mode": "None", "Label": "" }] }</pre>

- VPK Status Monitoring

The general format of CTI command to retrieve BLF mode, label, and BLF/SCA is:

```
http://{Phone_IP_Address}/cgi-bin/api-get_vpk_status?type=monitor
```

Request	http://192.168.5.135/cgi-bin/api-get_vpk_status?type=monitor
Response	<pre>{ "vpk_result": [], "mpk_result": [{ "VKID": 18, "Mode": "Eventlist BLF", "Label": "502", "State": "None" }, { "VKID": 19, "Mode": "Eventlist BLF", "Label": "504", "State": "None" }, { "VKID": 20, "Mode": "Eventlist BLF", "Label": "501", "State": "None" }, { "VKID": 21, "Mode": "Eventlist BLF", "Label": "503", "State": "None" }], "numkey_result": [] }</pre>

Make Call

General format

The general format of CTI command to initiate a call is:

```
http://{Phone_IP_Address}/cgi-bin/api-make_call?passcode=PASSWORD&phonenumber=NUMBER
```

Example

Request	http://192.168.5.135/cgi-bin/api-make_call?passcode=admin&phonenumber=3501
Response	<pre>{ "response": "success", "body": true }</pre>

System Operations Functions

General Format

The general CTI command to send phone system operations is:

```
http://{Phone_IP_Address}/cgi-bin/api-sys_operation?passcode=PASSWORD&request=OPERATION
```

Examples

Operation	Function	Example
REBOOT	Reboot the phone	<code>http://192.168.5.135/cgi-bin/api-sys_operation?passcode=admin&request=REBOOT</code>
RESET	Reset the phone to default settings	<code>http://192.168.5.135/cgi-bin/api-sys_operation?passcode=admin&request=RESET</code>

Positive answer

If accepted, the command will be run instantly on the phone and below positive answer can be returned:

Reboot: {"response": "success", "body": "savereboot"}

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

Negative answer

If not accepted, the phone will not react to it and below negative answer can be returned:

{"response": "error", "body": "unknown"}

The Reset Command requires the Admin level password in the passcode field.

Sending Keys Functions

General format

The general format of CTI command to send keys functions is:

```
http://{Phone_IP_Address}/cgi-bin/api-send_key?passcode=PASSWORD&keys=KEY
```

Examples

Key	Function	Examples
SPEAKER	Enable or Disable Speaker	<code>http://192.168.5.135/cgi-bin/apisend_key?passcode=admin&keys=SPEAKER</code>
XFER	Enable Transfer	<code>http://192.168.5.135/cgi-bin/api-send_key?passcode=admin&keys=XFER</code> Note: This command works only during established call
VUP	Volume UP	<code>http://192.168.5.135/cgi-bin/api-send_key?passcode=admin&keys=VUP</code>
VDOWN	Volume Down	<code>http://192.168.5.135/cgi-bin/api-send_key?passcode=admin&keys=VDOWN</code>

MUTE	Enable / Disable Mute	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=MUTE Note: For this to work please set the "Mute Key Functions while idle" under Phone settings => Call Settings => General to Idle Mute.
HOLD	Put the call on Hold	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=HOLD Note: This command works only during established call
0-9,*,#	Send standard keypad keys	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=1:0:0:0 Note: The phone will send number 1000
LINE[1-X]	Select phone line	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=LINE1
CONF	Enable conference mode	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=CONF Note: This command works only during established call
VM	Access to Voice mail	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=VM
HEADSET	Enable Headset Mode	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=HEADSET
DND	Enable / Disable DND mode	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=MUTE Note: For this to work please set the "Mute Key Functions while idle" under Phone settings => Call Settings => General to DND.
SEND	Send call	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=SEND
SOFT[1-X]	Select soft keys	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=SOFT1
MPK[1-X]	Select MPK keys	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=MPK1
STAR	Press star key	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=STAR
ONHOOK	Reject call	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=ONHOOK
OFFHOOK	Answer call	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=OFFHOOK
OK	Press OK	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=OK
LOCK	Lock keypad	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=LOCK
UNLOCK	Unlock keypad	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=UNLOCK
UP	Press UP	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=UP
DOWN	Press DOWN	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=DOWN
LEFT	Press LEFT	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=LEFT
RIGHT	Press RIGHT	http://192.168.5.135/cgi-bin/api-send_key?pascode=admin&keys=RIGHT

Positive answer

If accepted, the command will be run instantly on the phone, and the below positive answer can be returned:

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

Negative answer

If not accepted, the phone will not react to it and the below negative answer can be returned:

```
{"response": "error", "body": "unknown"}
```

SUPPORTED DEVICES

The following table shows Grandstream products supporting CTI commands:

Model	Supported	Firmware
GRP2612/GRP2612W/GRP2612P	Yes	1.0.9.22+
GRP2613(W)	Yes	1.0.9.22+
GRP2614	Yes	1.0.9.22+
GRP2615	Yes	1.0.9.22+
GRP2616	Yes	1.0.9.22+
GRP2624	Yes	1.0.9.22+
GRP2634	Yes	1.0.9.22+
GRP2636	Yes	1.0.9.22+
GRP2670	Yes	1.0.9.22+
GRP2650	Yes	1.0.9.22+
GRP2601/P/W	Yes	1.0.3.18+
GRP2602/P/W/G	Yes	1.0.3.18+
GRP2603/P	Yes	1.0.3.18+
GRP2604/P	Yes	1.0.3.18+