SIP Feature Server Administration Guide

Devices

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Devices

You manage SIP desk phones from Polycom, AudioCodes, Genesys, and Yealink using the SIP Device Management area of Genesys Administrator Extension (GAX).

Device management supports dynamic model configurations through which phone models running on the certified firmware are supported by device management dynamically.

For the list of certified firmware, refer Genesys Supported Media Interfaces Guide.

The following are tested and recommended models:

- Polycom: SPIP_3xx, SPIP_4xx, SPIP_5xx, SPIP_6xx,VVX_3xx, VVX_4xx,VVX_5xx, VVX_6xx, VVX_15xx
- AudioCodes: 4xxHD, 4xx
- Genesys: 4xxHD, 4xx
- Yealink: SIP-TxxP

To add a model other than the models listed above, configure the model name in the **[dm]** section of the Master Feature Server Application object.
For example:

Option Name	Option Value
yealink	SIP-T48G
polycom	SSIP_7000

Important

- If the newly-added model has a UA Header Pattern that is different from the default supported matcher patterns, then you must configure the custom UA Headers in the **[dm]** section of all Feature Server Application objects.
- If you remove the model names that are configured in the **[dm]** section of the Master Feature Server Application object, the existing device with the corresponding model is supported as long as the device is present in Device Management.

Before you begin, verify that you have implemented device management.

Feature Server supports devices behind Session Border Controllers (SBCs) and firewalls. For these phones, you must set the configuration option **sip-preserve-contact** to `true`. For a single phone, set the option for its extension DN. If all phones on a site are behind an SBC or firewall, you can set the option at the application level.

Agents can change their ACD Agent State on desktop phones made by Polycom, AudioCodes/Genesys

(420HD model with firmware version 2.2.2 or higher only), and Yealink.

<tabber> Device profiles=

Device profiles are typically a collection of settings tied to a specific switch, enabling you to assign common settings to multiple devices. Create at least one profile for each SIP switch.

To create and manage device profiles:

1. Log into GAX as an administrator (***GAX IP address*:*port*/gax**). Under **Administration > SIP Device Management**, select **Profiles**.
2. To create a new profile, select **New**. To edit an existing profile, select it from the list. To create a new profile based on an existing profile, select a profile from the list (by clicking anywhere in the row other than the check box), then click **Clone** on the profile page.
3. Enter the profile details.

Tab	Field	Value
General	Profile Name	Because profiles are switch-specific, use the switch name as part of the profile name.
	Feature Server Application	Select the Feature Server application instance for the site this profile applies to.
	Default	Optionally, set this profile as the default profile when you use Interactive Voice Response (IVR) to provision new phones associated with the switch. If you set no default profile, IVR-provisioned phones use the most recent profile created.
SIP Server	Address and Port	Set the IP address (or FQDN) and port number of the SIP Server (or SBC address and port, for devices behind an SBC) associated with this profile.
	Transport	Select the transport protocol of your choice.
	Register	Specify whether phones need to register with the SIP Server.
	Registration Timeout	The duration, in seconds, of the registration, which is automatically renewed if the phone remains in service.
Outbound Proxy	Address, Port, Transport	Set the IP address (or FQDN) and port number of the Proxy Server (or SBC address and port, for devices behind an SBC) used in outbound calls. Select a transport type for outbound calls.

Tab	Field	Value
Voicemail	Voicemail Access Number	The phone number that a user dials to access voicemail.
Date and Time	NTP Server Address	Set the IP address (or FQDN) of your preferred NTP Server. Port number is not required.
	Time Zone	Select the time zone for all phones using this profile.
	Update Interval	The frequency, in hours, of synchronization of all phones using this profile. The default value is 24 hours, the maximum is 72.
Corporate Directory	LDAP Server Address and Port	Set the IP address (or FQDN) and port number of your LDAP server.
	Username and Password	The credentials needed to log into the LDAP server.
	Base Domain Name	The top level of the LDAP directory tree.
	Display Name	The display format of the returned search result.
	Name and Number Attributes	The name and number attributes of the LDAP records to be returned.
	Name and Number Filters	The search criteria for name and number lookups, respectively.
Call Settings		These options control a user's ability to set Do Not Disturb and call forwarding using the functions built into the phone itself. Even with these options set to `Disable`, your users can still control similar functions from within Feature Server. See Setting up your user profile.
	Do Not Disturb	Enables users to set their phones to Do Not Disturb.
	Call Forwarding	Enables users to set their phones to forward calls.
Logging	Syslog Server Address and Port	Set the IP address (or FQDN) and port number of your syslog server.
Security	Directory Path for Trusted Certificate	Set the path to the trusted certificate required for https and for secure communication between the phones and SIP Server.
License	Vendor	Select Polycom. Only Polycom phones that use LDAP, and have

Tab	Field	Value
		firmware below version 4.x, require a license.
	Directory Path For License File	Use the specified format to set the path to the license file provided by the phone vendor.
Business Continuity	Peer Switch	If your environment uses Business Continuity, select the peer switch of the secondary SIP Server.
	Peer SIP Server Address and Port	Set the IP address (or FQDN) and port number of the secondary SIP Server (or SBC address and port, for devices behind an SBC).
	Registration Mode	`Dual` is the default. You must change the value to `Single` when the ACD feature is enabled.
	Registration Timeout	The duration, in seconds, of the registration, which is automatically renewed if the phone remains in service.
	\Retransmission Timer	Modify this timer for quicker retransmission of SIP INVITE messages to a peer SIP server when the preferred SIP Server is down. Valid values: `20-200` milliseconds. Default: `50`. Enabled only in dual registration mode, and supported only in AudioCodes/ Genesys phones firmware version 2.2.8 or higher DONE.
Custom Configuration	Vendor	Select the vendor associated with the custom configuration.
	Configuration File	Upload a custom configuration file to set additional parameters for phones using this profile. The options set in this file are supplemental only, because the values explicitly set for the profile override the values for the same options in the configuration file. Whenever the custom files for the profile and the device contain the same parameter, the device values override the profile values. You must use the vendor-specific format for any parameters you enter in this file. Feature Server does not validate these parameters but does ignore all improperly formatted parameters.

Tab	Field	Value
	Override Profile configuration	To override the profile configurations in GAX, in the **Custom Configuration** tab of a profile, select **Override**. Important The order of precedence for the configuration file parameters sent to the device is as follows: 1. Device configuration 2. Profile custom configuration 3. Profile configuration
ACD (Automatic Call Distribution)	ACD	You can enable or disable the ability of all devices assigned to this profile to control agent login and logout access to the ACD queue, and allow agents to change their state to Ready, Not Ready, or After Call Work. You can also override this value for individual devices. For more information, see the **Devices** tab in this page. Enabling ACD in a profile automatically enables ACD for the first line in each device. To enable ACD for a different line, you must manually disable ACD on the first line and then enable ACD on the other line. See the notes following this table. Agent Login and State Update on SIP Phones details the related SIP Server functionality.
	Reason Codes	Not Ready reason codes let agents specify a reason (such as Lunch or Away) for setting themselves to Not Ready. You can create up to 50 codes of up to 5 digits each. **Important:** To ensure that your devices and Agent Desktop use the same Not Ready reason codes, you must use the same codes both here and in Workspace Desktop Edition (formerly Interaction Workspace).
Supplementary Services (Supported only in AudioCodes/Genesys phones firmware version 2.2.8 or higher)	Default Ringing Device	You can configure the phone to ring on the speaker, the headset, both speaker and headset, or not to ring at all.

Tab	Field	Value
	Hands Free Speaker Phone Mode	Enabled by default. When disabled, pressing the speaker button has no effect.
	Supervisor Listen In	Disabled by default. Enable to allow Supervisors to access an agent's handset (in Mute only mode), to listen in on a conversation that the agent is conducting on headphones with the customer.
	Agent Greeting	Disabled by default. Enable to allow Agents to record personal voice greetings directly on their phones, which are played to the customer and the agent when the agent attends the call.
	Override Device Configurations	By default, supplementary services configured in the device level takes higher priority (the disabled setting). Enable to give higher priority to the supplementary services configured in the profile level.

Important Notes about the ACD Feature (Agents can change their ACD Agent State on desktop phones)

- Not supported during bulk uploading.
- AudioCodes/Genesys phones require model 420HD and firmware version 2.2.2 or higher.
- Supported only on first line of AudioCodes/Genesys phones.
- For Business Continuity deployments:
  - Supported only in single registration mode.
  - For Polycom phones, configure single registration using an Fully Qualified Domain Name (FQDN) that resolves to 2 addresses that point to 2 separate SIP Servers (primary and peer). The FQDN must be configured in the SIP Server address field of the profile associated to the device, and the peer server's FQDN must *not* be configured in the profile.

|-| Devices=

Managing existing devices

1. Log into GAX as an administrator (***GAX IP address*:*port*/gax**). Under **Administration > SIP Device Management**, select **Devices**.
2. Select the devices you want to manage. To narrow your device list, you can search on the DN name, use **Advanced Search** to search on other attributes, or click **List Provisioned/List Unprovisioned** to toggle between the two lists.

> **Important**
>
> Advanced search displays the list of devices based on the provisioned or unprovisioned page. The MAC Address filter in Advanced search provides search results from both the provisioned and unprovisioned pages. combined.

3. Click **More** and select one of these actions:
   - **Associate Profile** associates the devices with an available profile, which you select from the **Select Profile** window.
   - **Resync** pushes settings to the devices.
   - **Restart** restarts the devices.
   - **Disable** disables the devices, effectively preventing their use.
   - **Enable** reactivates the devices.
   - **Clear Alerts** clears existing alerts from the device.

Deleting devices

1. Log into GAX as an administrator (***GAX IP address*:*port*/gax**). Under **Administration > SIP Device Management**, select **Devices**.
2. Select the devices you want to delete.
3. Click **Delete** to delete the selected devices.

Adding and modifying multiple devices

1. Log into GAX as an administrator (***GAX IP address*:*port*/gax**). Under **Administration > SIP Device Management**, select **Devices**.
2. To add and/or modify multiple devices simultaneously, click **Bulk Upload**.
3. Following the instructions in the **Bulk Upload** window, create and select a CSV file. Note these restrictions:
   - Limit each device to a maximum of four phone lines.
   - Limit each CSV file to a maximum of 5000 devices.
4. Select **Overwrite** to replace the settings of any existing devices that the CSV file includes. If you do not select overwrite, the upload ignores the CSV file's values for any existing devices.
5. Select **Resync** to resync the device once overwriting the devices are completed.
   Note that Resync option is enabled for the first line by default.
6. Click **OK**.

Adding and modifying individual devices

1. Log into GAX as an administrator (*GAX IP address*:*port*/gax). Under **Administration > SIP Device Management**, select **Devices**.
2. To create a new device, select **New**. To edit an existing device, select it from the list. To create a new device based on an existing device, select a device from the list (by clicking anywhere in the row other than the check box), then click **Clone** on the device page.
3. Enter the device details.

Tab	Field	Value
General	MAC Address	Type the device's unique MAC address.
	Vendor and Model	Select a supported device vendor and model.
	Profile Name	Type or select an appropriate device profile to associate with the device.
Logging	Logging	Enable or disable logging for the device. If enabled, **Click to view the device logs** stored in the **Syslog Directory Path** that you specify in **Settings > Logging**.
	Log Level	Select a logging level. The default is DEBUG.
License	Directory Path For License File	Use the specified format to set the path to the license file.
Custom Configuration	Configuration File	Upload a custom configuration file to set additional parameters for this device.
	Override Device configuration	Select the **Override** check box in the **Custom Configuration** tab of a device, to enable the parameters configured in the file to take precedence over the profile and the device configurations in GAX UI. Important When both profile and device configurations are set to Override, then the order of the precedence for configuration file parameters sent to the device is as follows: 1. Device custom configuration 2. Device configuration 3. Profile custom configuration

Tab	Field	Value
		4. Profile configuration
Lines	Lines	Add, remove, or modify lines for the device. Here you assign a DN to a device, and can specify a display name, typically the name of the user assigned to the line. For one line, check or clear the ACD check box to enable or disable the ability of the device to log agents into the ACD queue, log agents out, or allow agents to change their state to Ready, Not Ready, or AfterCallWork. This value overrides the ACD value set for the device profile. Enabling ACD in a profile automatically enables ACD for the first line in each device. To enable ACD for a different line, you must manually disable ACD on the first line and then enable ACD on the other line. Agent Login and State Update on SIP Phones details the related SIP Server functionality.
Supplementary Services (Supported only in AudioCodes/Genesys phones firmware version 2.2.8 or higher)	Default Ringing Device	You can configure the phone to ring on the speaker, the headset, both speaker and headset, or not to ring at all.
	Hands Free Speaker Phone Mode	Enabled by default. When disabled, pressing the speaker button has no effect.
	Supervisor Listen In	Disabled by default. Enable to allow Supervisors to access an agent's handset (in Mute only mode), to listen in on a conversation that the agent is conducting on headphones with the customer.
	Agent Greeting	Disabled by default. Enable to allow Agents to record personal voice greetings directly on their phones, which are played to the customer and the agent when the agent attends the call.

Assigning extensions (DNs) to devices

As detailed in the previous task, you can assign an extension to a device by specifying a DN for a line.

If enabled, you can also assign an extension by accessing an IVR (Interactive Voice Response) menu

from the device itself:

1. Connect the device to the network.
2. Lift the phone handset, which automatically dials the IVR number.
3. Follow the IVR prompts to assign an extension to the device.

> **Important**
> DNs must be unique across all sites (switches) in your Feature Server environment.

DTMF Tones Generation

AudioCodes/Genesys phones can generate DTMF tones when generation is requested by the agent through the agent desktop.

To configure SIP Server to remotely control DTMF generation on the SIP phone: In the TServer section of the DN object, configure: `sip-cti-control=dtmf`.

|-| Firmware=

Upgrading firmware

To upgrade (or downgrade) device firmware:

1. Create a shared directory in the file system, which must have read permission to the user under which Feature Server is running.
2. Copy the firmware files received from vendor to the shared directory and use this path to upgrade the firmware of the devices in GAX UI.
3. Log into GAX as an administrator (***GAX IP address*:*port*/gax**). Under **Administration > SIP Device Management**, select **Firmware**.
4. Select one or more devices to upgrade or downgrade. To narrow your device list, you can search on the DN name, use **Advanced Search** to search on other attributes, or click **List Provisioned/List Unprovisioned** to toggle between the two lists.
5. Click **Upgrade**.
6. In the **Upgrade Firmware** window, use the specified format to set the path to the upgrade file.
7. Optionally, click **Schedule Upgrade** to set a specific date and time for the upgrade. Otherwise, upgrades begin immediately.
8. Click **OK**.

|-| Settings=

To modify settings that apply across device profiles, devices, and firmware:

1. Log into GAX as an administrator (***GAX IP address*:*port*/gax**). Under **Administration > SIP Device**

Management, select **Settings**.

2. Enter the settings.

Tab	Field	Value
General	Notification Delay	To avoid overwhelming the server with numerous simultaneous NOTIFY and HTTP requests during a reboot or resync of multiple phones, you can set a notification delay, in milliseconds. Default: 0. Valid values: 0 – 1000.
IVR (Interactive Voice Response)	Enable IVR Provisioning	Enable an administrator to use an IVR system to assign an extension to a device.
	IVR Admin Passcode	Type an integer of no more than six digits.
	IVR Number	The number to be dialed to trigger the IVR provisioning system. This number must be the same as the number specified during the IVR provisioning deployment. See Implement device management.
	BC Associations	SIP Business Continuity deployment supports IVR-based device provisioning only for mirrored DNs that are associated with a Disaster Recovery profile. In the **DN List** field, enter a comma-separated list of DN ranges or single DNs (or a mix). For example: 7000-8000,9001. Select the appropriate DR profile in the **DR Profile** field, to associate your list with it. **Notes:** • Validation is not performed for DN ranges in the list; the DNs that you enter are accepted as-is. • Changes to an association are applied only to new devices that are not yet provisioned; the changes do not affect existing, provisioned devices. • If a particular DN has more than one association, only the first matching association is used during disaster recovery. • IVR Provisioning switches to

Tab	Field	Value
		the Peer site automatically if the Preferred site fails.
Firmware	Max Simultaneous Upgrades	Set the maximum number of simultaneous upgrades allowable on each Feature Server. Default: 5. Valid values: 1-100. Recommended value: 20. You can calculate maximum number of simultaneous upgrades according to this formula: `Maximum number of simultaneous upgrades = number of active Feature Server instances * maximum-simultaneous-upgrades` For example, in the case of an active-active FS, the maximum number of simultaneous upgrades is 10 (2 * 5 = 10).
	Status Reset Timer	Set the time, in minutes, after which the firmware state resets from Completed to Idle. Default: 60. Valid values: 1-1440.
	Firmware Upgrade Timeout	Set the maximum allowed completion time of a firmware upgrade, in minutes. Default: 15. Valid values: 1-300. **Polycom VVX phones only:** When upgrading from Polycom firmware 5.0.0 to 5.0.1, set the timeout to 30.
	Maximum Bandwidth	The maximum network bandwidth, in Mbps, allotted to firmware upgrades. Default value = 0, Maximum value = 8192. You can determine a sufficient maximum bandwidth based on the amount of time it takes devices to download firmware, according to this formula: `Total time needed to download firmware (seconds) = Firmware size (MB) / Maximum bandwidth (Mbps) * Number of devices to be upgraded.` For example, to download firmware to 100 devices with 25 MB of firmware in 25 seconds, you would need to allot 100 Mbps of bandwidth ((25/100)*100 = 25). Note that the installation of firmware varies by vendor, so total upgrade time varies accordingly.

Tab	Field	Value
	Firmware Request Timeout	Set the maximum time, in minutes, after a device receives a notification from Feature Server that a new firmware is available before the device is expected to request firmware. Default value: 2 Valid values: `1-300`
Logging	Syslog Directory Path	Use the specified format to set the path to the device logs. If you use the recommended NXLOG logging server, point to the **\log_deposit** directory created during the device management implementation.