Grandstream Networks, Inc.

GAPS – QUICK USER GUIDE for Company Manager

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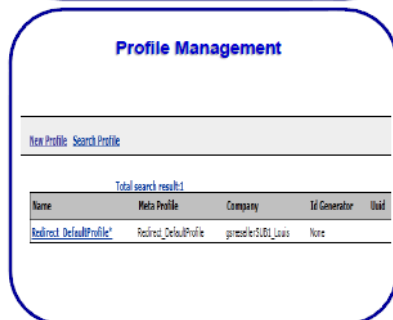GAPS QUICK USER GUIDE

OVERVIEW

Grandstream's automated provisioning technology enables service providers and enterprise IT administrators to massively and automatically deploy Grandstream SIP CPE devices from a central location, whether the devices are deployed over the Internet behind firewall/NAT or within a corporate network environment. Grandstream's automated provisioning technologies not only allow "zero" configuration, plug-and-dial for end users, but also make it possible for system administrator to remotely control, modify settings and upgrade firmware in an automatic and secure fashion.

Grandstream Automated Provisioning System, aka GAPS, is the server side software application designed this purpose. Written in Java using multi-threading technology, GAPS is designed using a high performance enterprise platform. On the database access front, it supports a JDBC compliant database interface.
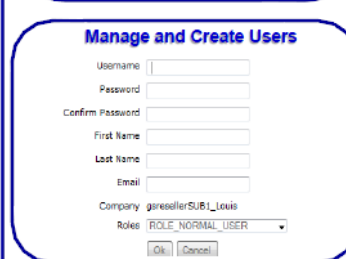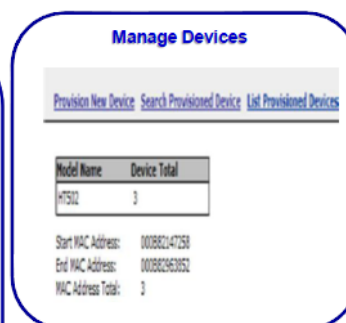
GAPS
(Grandstream Automatic Provisioning System)

GAPS Web Portal

Profile Management

New Profile Search Profile

Total search result:1

Name	Meta Profile	Company	Id Generator	Uuid
Redirect_DefaultProfile*	Redirect_DefaultProfile	gsreseller SUB1_Louis	None	

Why GAPS?

- ITSP's and enterprise IT administrators can massively and automatically deploy and provision Grandstream devices from any central location by accessing GAPS and redirecting devices to their own provisioning server

- Allows for ZERO configuration, plug-and-dial for end users

- Allows system administrators to remotely control/modify settings/upgrade firmware automatically and securely

Manage Devices

Provision New Device Search Provisioned Device List Provisioned Devices

Model Name	Device Total
HT502	3

Start MAC Address: 003B62147258
End MAC Address: 0038626630652
MAC Address Total: 3

Manage and Create Users

Username
Password
Confirm Password
First Name
Last Name
Email
Company gsreseller SUB1_Louis
Roles ROLE_NORMAL_USER

Ok   Cancel

(GAPS Overview)

AVAILABILITY

GAPS is also designed for high-availability and failover redundancy. A cluster of servers, both physical and virtual, are deployed in multiple locations ensuring optimal uptime and availability. All GAPS servers are configured with a minimum of quad-core Xeon processors, 4GB memory, dual NICs, and 64-bit Linux/Unix operating systems. They are placed in hosted data centers that provide 100% power uptime guarantees and 99.99% service guarantees. Each server is configured so that the average load capacity averages around 33%. This leaves a large enough cushion so that during times of heavy utilization, there would be enough resources available to process the load.

Devices access GAPS via DNS, which is linked to a single virtual IP. In the event of a server failure, the high-availability and failover redundancy configuration allows another server in the cluster to become active, providing transparent, uninterruptible service. Data integrity is ensured by live duplication and replication processes, as well as secure onsite and offsite backups. In the event of total service interruption in which all servers are unavailable, Grandstream has on-call technicians available 24/7.

## EMBEDDED DEVICE SUPPORT FOR REMOTE AND SECURE PROVISIONING

Grandstream SIP device supports remote automated provisioning via TFTP, HTTP, and HTTPS. The device will contact the specified TFTP/HTTP/HTTPS server at boot time to check for configuration changes and/or new firmware upgrade. Devices are also capable of polling for configuration changes and/or firmware upgrades periodically at pre-scheduled intervals.

Configuration information is encrypted using 128-bit AES algorithm and a private key that is shared between GAPS and the device.

SECURITY PROTECTION OF PROVISIONING INFORMATION

Security protection of service provisioning is handled at multiple levels:

- digital signature of firmware files for upgrade to protect against unauthorized firmware file content manipulation
- MD5 checksum verification of control messages from authenticated server to the device using SIP password and other private information shared between the server and the client
- 128-bit AES encryption of configuration information transmitted from the server to the device using private key
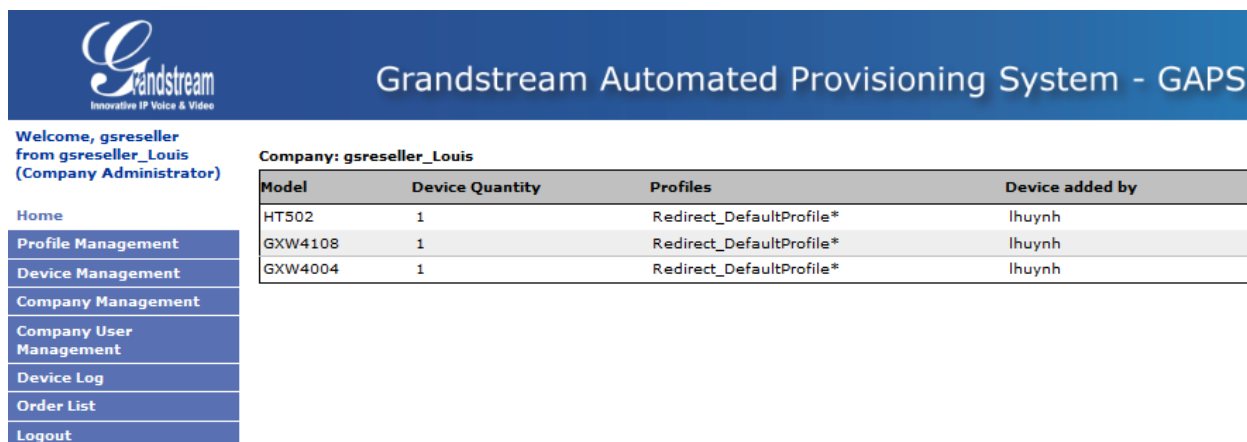

(GAPS flow process)
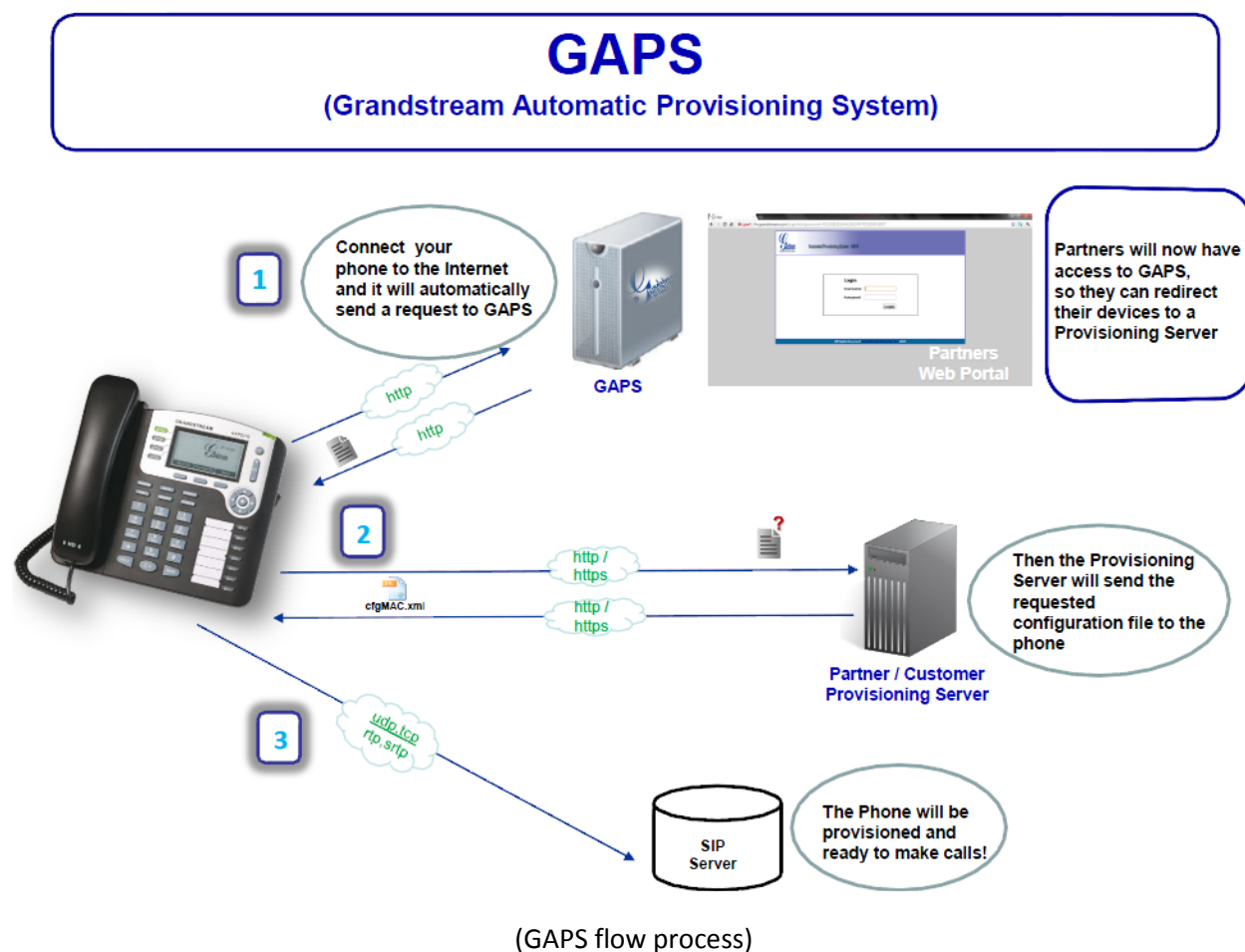
GETTING STARTED

HOW TO LOGIN TO GAPS:

1. Browse to https://fm.grandstream.com
2. Login with username and password provided by Grandstream system administrator

HOME PAGE

From the Home page you have the following options:

- Profile Management
- Device Management
- Company Management
- Company User Management
- Device Log
- Order List
- Logout

PROFILE MANAGEMENT

New Profile   Search Profile

Total search result:5

Name	Meta Profile	Company	Id Generator
Redirect_DefaultProfile*	Redirect_DefaultProfile	gsreseller_Louis	None
HT5XX	HT5XX	gsreseller_Louis	None
Provider_Lock	Provider_Lock	gsreseller_Louis	None
GXV3000	GXV3000	gsreseller_Louis	com.pwf.spi.SimpleIdGen
GXV3504_test_provision	GXV3504_test_provision	gsreseller_Louis	None

HOW TO CREATE A PROFILE

In Profile Management, you can create a profile that is fine tuned for a specific model. These profiles are used when provisioning devices. From the figure above, after clicking 'Next' you are taken to a section that shows parameters used for this specific profile. This screen should remind you of the web-gui that's used for most Grandstream products. In this example, we used the basic redirection profile, which allows the ability of plug and play.

Note: The profiles are not limited to just redirection, but could also be used for specific configurations based on model. Every option you see in the web-GUI are also options you can add in the profile. Please contact support@grandstream.com for further assistance.

DEVICE MANAGEMENT

This part of GAPS is where the Company Manager has the ability to provision a new device, search for an already provisioned device, list all provisioned devices, and also see the total of devices that are allowed to be provisioned.

We'll first take a look at the 'Allowed Provision Devices'. These MAC addresses have been added by Grandstream system admin or parent company and only within these MACs will you be able to provision devices or allocate to your own sub company. The *MAC*, is the MAC address of the device. *Owner* is the company that the MAC addresses currently belong to. *Create Time* is the time that the units have been added to GAPS. *Provisioned* shows wheter or not the unit has been provisioned.

HOW TO PROVISION A DEVICE

In the following example we are going to work on how to provision a MAC address that is in our 'Allowed Provision Device' section that has a status of Provisioned=N.

From the above list, we'll use the MAC 000b8233333 as our example.   From the 'Allowed Provision Device' page, you will need to click on the 'Device Management' (top), navigate to 'Provision New Device'.

Device Management -> New Device

Alias	
Starting SIP User ID	
Device MAC address	000B82333333
Model	GXP2110
Profile	Redirect_DefaultProfile

Submit   Reset

Here you can either provision one MAC or you can provision a list of MACs. There are also options to specify the *Model* and the *Profile*(Please see Profile Management on how to create a Profile)

Here are the results after the provisioning has completed. There are a several options on this screen.

Device Management -> List Provisioned Devices

Total search result:1

MAC Address	SIP User ID	Device Model	Configuration	Profile	□ All
000B82333333		GXP2110	GAPS	Redirect_DefaultProfile*	□

Remove Selected   Remove All   Update Devices   Update All Devices

Tips: Click 'Remove Selected' Button, to remove the selected devices; click 'Remove All' Button, to remove total search devices.

Options that are available on this screen:

- MAC - Click on the MAC address to download the encrypted config file which is named cfg000b82333333.
- GAPS button under *Configuration* - When you click on GAPS, you will see your Profile that was created in Profile Management. Users can then make changes to specific units if needed.
- Update Devices/Update All Devices - If users decide that the profile that was used was incorrect the user can either choose Update Devices/Update All Devices. This option allows you to select a different Model/Profile.
- Remove All – by selecting Remove All it will remove the devices from provisioned list, but they will not be removed from the 'Allowed Provision Device' section. This option simply removes the config file from the GAPS server.

HOW TO ALLOCATE MAC TO SUB COMPANY

Company Management -> Device Management -> Allowed Provision Devices

Search MAC

List Macs

Total search result:7

MAC	Owner	Create Time	Provisioned	☐ All
000B82293972	GS Morocco	2011-11-22 12:28:56.0	Y	☐
000B822A8E14	GS Morocco	2011-11-23 03:30:58.0	N	☐
000B822A8E15	GS Morocco	2011-11-23 03:48:04.0	N	☐
000B822A8E16	GS Morocco	2011-11-23 03:48:04.0	N	☐
000B822A8E17	GS Morocco	2011-11-23 03:48:04.0	N	☐
000B822A8E18	GS Morocco	2011-11-23 03:48:04.0	N	☐
000B822A8E19	GS Morocco	2011-11-23 03:48:04.0	N	☐

GSLab1 ▾ [Allocate MACs] [Allocate All MACs]

As a Company Manager you have the ability to create sub companies (go to "How to Create a Sub Company") and also be able to allocate MAC addresses from your 'Allowed Provision Device' list. In order to allocate MAC addresses to a sub company go to 'Device Management' then click on 'Allowed Provision Device'. At the bottom of the list you will see a drop down list that shows the sub companies you've created. Select the company and then click Allocate MACs, for selected MACs, or select Allocate All MACS to push all MACS to the sub company. By allocating the MACs to a sub company you will be removing the MACs from your 'Allowed Provision Devices' and they will now appear in your sub company's 'Allowed Provision Devices'.

HOW TO SEARCH PROVISIONED DEVICES

Device Management -> Search Device

Search Device

Mac		Tip: Support multiple MAC addresses matching criteria, including: 1) single MAC address, e.g. 000B82000001 2) address range, e.g. 000B82000001-000B82010001 3) combination of the above two, e.g. (separated by enter) 000B82000001 000B82000010-000B82000020 000B82000030
Alias		
Model	ALL ▼	
Profile	ALL ▼	
	Search	

Under 'Search Provisioned Devices' you have the ability to search for a single or a list of MACS. You can also filter by alias, model, and even profile.

COMPANY MANAGEMENT

HOW TO CREATE A SUB COMPANY

New Company   Search Company

List Companies

Total search result:2

Name ▼	Email	Phone	Contact Name
GSLab1	lab1@grandstream.com	+212522672535	Lab Morocco
GSLab2	lab2@grandstream.com	+2126615236	Lab 2 Morocco

A great feature in GAPS is that you are able to be a parent company of many sub companies. By click on Company Management, you can see a list of existing companies that have already been created. Click on 'New Company' to start creating your new sub company.

HOW TO REALLOCATE MAC ADDRESSES FROM SUB COMPANY TO PARENT COMPANY

While logged in as the parent company manager you have the option to take back MAC addresses that have been allocated to a sub company. In order to do this, click on 'Company Management', select the sub company, then click on 'Allowed Provision Devices'. You should see the following screen:

In this screenshot, you can see at the top left that I'm logged in as Company Admin for GS Morocco, but at the right of that you can see that I'm accessing '(Company:GSLab1)'. The MAC address that is listed here was previously allocated from the GS Morocco. To reallocate this MAC you can select unit, select the parent company from the dropdown list, then select Allocate MACs for selected unit, or select Allocate MACs for all listed units.

COMPANY USER MANAGEMENT

As a company manager you have the ability to create different type of users for not just your own company, but for your sub company as well.

**Welcome, gsreseller
from gsreseller_Louis
(Company Administrator)**

New User   Search User

Total search result:3

Username		First Name	Last Name	Role	Company	Email
gsreseller		Grand	Stream	ROLE_COMPANY_MANAGER	gsreseller_Louis	support@grandstream.com
gsresellerNORM		Grand	Stream	ROLE_NORMAL_USER	gsreseller_Louis	support@grandstream.com
gsresellerREAD		Grand	Stream	ROLE_READONLY_USER	gsreseller_Louis	support@grandstream.com

- Home
- Profile Management
- Device Management
- Company Management
- Company User Management
- Device Log
- Order List
- Logout

USERS AND PERMISSIONS

- ROLE_READONLY_USER – This user only has the abilities to read and search.
- ROLE_NORMAL_USER – This user has the same options as the Read Only user, but with provisioning rights.
- ROLE_COMPANY_MANAGER – No restrictions. This user is capable of provisioning, creating/deleting users, and profiles.

HOW TO CREATE A USER FOR PARENT COMPANY

To create a new user, go to the menu at the left; select 'Company User Management'. Then click on 'New User' at the top.

**Welcome, gsreseller
from gsreseller_Louis
(Company Administrator)**

- Home
- Profile Management
- Device Management
- Company Management
- Company User Management
- Device Log
- Order List
- Logout

Users Management -> New User

Username
Password
Confirm Password
First Name
Last Name
Email
Company gsreseller_Louis
Roles ROLE_NORMAL_USER

Ok   Remove

HOW TO CREATE A USER FOR SUB COMPANY

While logged in as the parent company manager you can create users for a sub company. Just click on 'Company Management', select the sub company, click on 'Company User Management' at the top right. Then click on 'New User' to start creating

DEVICE LOG

Device log is used to display information on configuration updates, provisioning details, and batch creations/deletions. When a Grandstream device grabs the configuration from GAPS, you will see 'Provisioning' under Operation type.

The image above shows the Device Log home screen. This screen shows all activities on a particular date and how many times GAPS was accessed and by whom. If the date '2012-04-18' was clicked the user will be presented with the following output. The information on this screen will show you when an event occurred, what Operation Type, the profile that was used to provision, the Operator/User that performed this action, and the MAC addresses that these actions were performed on.

How to Search in Device Log

Besides having a complete list of logs from every device and user, you also have the option to search for specific parameters.

- Operator User – if filtered by Operator User, you will see all changes that were made by this user
- Timestamp Range – here you can search for a specific date or range
- MAC Address – if filtered by MAC, you will only see activity from that specific MAC address
- Operation Type – here you have the option to filter by Batch_Create, Batch_Delete, Batch_Update_ProfileOrModel, Update_Associated_Devices, Update_Configuration, Provisioning, Firmware_Upgrade

Order List

Order list is used when an order has been placed and the order was marked specifically for redirection. These units will also be allocated to the 'Allowed Provision Devices' section.

Note: Please contact your Grandstream sales or Grandstream Authorized Channel Partner when you place the order and this is also under the condition that you already have an account in GAPS.

Below is a screen shot of what the Order List looks like.

Search Order

List Orders

Total search result:2

Invoice Num	Order Number	Company	Erp Code	Model Quantity	Mac Quantity	Owner	Create Time	Provision
GAPSTEST5	SF42-11110105	PhonePower	SENA0006	1	32	PhonePower	2011-11-17 17:28:10.0	false
GAPSTEST4	SF42-11110104	PhonePower	SENA0006	1	32	PhonePower	2011-11-17 16:42:01.0	false

If the Invoice number is clicked you will see the following screen which shows a summary of the order and the specific models that were purchased:

Invoice Number	GAPSTEST4
Company	PhonePower
Create Time	2011-11-17 16:42:01.0
Model Quantity	1
Mac Quantity	32

Model ▲	Mac Quantity	Macs
HT503	32	

If the Model is clicked e.g. HT503, you will be taken to the Provision New Device page with the MAC addresses populated with the Order list.