



BroadSoft Partner Configuration Guide

Grandstream GDS37xx Door System

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BroadSoft® Guide

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Document Revision History

Version	Reason for Change
1.1	Introduced document for Grandstream GDS37xx Door System version 1.0.0.26 (GDS3705) and 1.0.3.23 (GDS3710) validation with BroadWorks Release 22.0.
1.2	Edited and published document.

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1 Overview

This guide describes the configuration procedures required for the Grandstream GDS37xx Door System for interoperability with BroadWorks. This includes the following models:

- GDS3705 (support audio only)
- GDS3710 (support both video and audio)

The GDS37xx Door System is a video door system that uses the Session Initiation Protocol (SIP) to communicate with BroadWorks for call control.

This guide describes the specific configuration items that are important for use with BroadWorks. It does not describe the purpose and use of all configuration items on the GDS37xx Door System. For those details, see the *Grandstream GDS37xx User Manual* [1] supplied by Grandstream.

2 Interoperability Status

This section provides the known interoperability status of the Grandstream GDS37xx Door System with BroadWorks. This includes the version(s) tested, the capabilities supported, and known issues.

Interoperability testing validates that the device interfaces properly with BroadWorks via the SIP interface. Qualitative aspects of the device or device capabilities not affecting the SIP interface such as display features, performance, and audio qualities are not covered by interoperability testing. Requests for information and/or issues regarding these aspects should be directed to Grandstream.

2.1 Verified Versions

The following table identifies the verified Grandstream GDS37xx Door System and BroadWorks versions and the month/year the testing occurred. If the device has undergone more than one test cycle, versions for each test cycle are listed, with the most recent listed first.

Compatible Versions in the following table identify specific GDS37xx Door System versions that the partner has identified as compatible so should interface properly with BroadWorks. Generally, maintenance releases of the validated version are considered compatible and may not be specifically listed here. For any questions concerning maintenance and compatible releases, contact Grandstream.

NOTE: Interoperability testing is usually performed with the latest generally available (GA) device firmware/software and the latest GA BroadWorks release and service pack at the time the testing occurs. If there is a need to use a non-verified mix of BroadWorks and device software versions, customers can mitigate their risk by self-testing the combination themselves using the *BroadWorks SIP Access Device Interoperability Test Plan* [5].

Verified Versions			
Date (mm/yyyy)	BroadWorks Release	GDS37xx Door System Verified Version	GDS37xx Door System Compatible Versions
06/2018	Release 22.0	GDS3705: 1.0.0.26 GDS3710: 1.0.3.23	Any maintenance release of the verified versions.

2.2 Interface Capabilities Supported

The Grandstream GDS37xx Door System has completed interoperability testing with BroadWorks using the *BroadWorks SIP Access Device Interoperability Test Plan* [5]. The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas, such as “Basic” call scenarios and “Redundancy” scenarios. Each package is composed of one or more test items, which in turn, are composed of one or more test cases. The test plan exercises the SIP interface between the device and BroadWorks with the intent to ensure interoperability sufficient to support the BroadWorks feature set.

The *Supported* column in the tables in this section identifies the Grandstream GDS37xx Door System's support for each of the items covered in the test plan, with the following designations:

- Yes Test item is supported
- No Test item is not supported
- NA Test item is not applicable to the device type
- NT Test item was not tested

Caveats and clarifications are identified in the *Comments* column.

NOTE: *DUT* in the following table refers to the *Device Under Test*, which in this case is the Grandstream GDS37xx Door System.

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
Basic	Call Origination	Yes	
	Call Termination	Yes	
	Session Audit	Yes	
	Session Timer	Yes	
	Ringback	Yes	
	Forked Dialog	Yes	
	Early UPDATE	No	
	Early-Session	No	
	181 Call Being Forwarded	Yes	
	Dial Plan	Yes	
	DTMF – Inband	No	
	DTMF – RFC 2833	Yes	
	DTMF – DTMF Relay	Yes	
	Codec Negotiation	Yes	
	Codec Renegotiation	No	
BroadWorks Services	Third-Party Call Control – Basic	Yes	
	Voice Message Deposit and Retrieval	Yes	
	Message Waiting Indicator – Unsolicited	No	
	Message Waiting Indicator – Solicited	No	
	Voice Portal Outcall	Yes	
	Advanced Alerting – Ringing	No	
	Advanced Alerting – Call Waiting	No	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
	Advanced Alerting – Ring Splash	No	
	Calling Line ID	No	
	Calling Line ID with Unicode Characters	No	
	Connected Line ID	No	
	Connected Line ID with Unicode Characters	No	
	Connected Line ID on UPDATE	No	
	Connected Line ID on Re-INVITE	No	
	Diversion Header	Yes	
	History-Info Header	Yes	
	Advice of Charge	No	
	Meet-Me Conferencing	Yes	
	Meet-Me Conferencing – G722	Yes	
	Meet-Me Conferencing – AMR-WB	No	
	Meet-Me Conferencing – Opus	No	
	Collaborate – Audio	Yes	
	Collaborate – Audio – G722	Yes	
	Collaborate – Audio – Opus	No	
DUT Services – Call Control Services	Call Waiting	Yes	Only supported by GDS3710.
	Call Hold	No	
	Call Transfer	No	
	Three-Way Calling	No	
	Network-Based Conference	No	
DUT Services – Registration and Authentication	Register Authentication	Yes	
	Maximum Registration	Yes	
	Minimum Registration	Yes	
	Invite Authentication	Yes	
	Re-Invite/Update Authentication	No	
	Refer Authentication	No	
	Device Authenticating BroadWorks	No	
DUT Services – Fax	G711 Fax Passthrough	NA	
	G711 Fax Fallback	NA	
	T38 Fax Peer-to-Peer	NA	
	T38 Fax Messaging	NA	
	Emergency Call	No	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
DUT Services – Emergency Call	Emergency Call with Ringback	No	
DUT Services – P-Access-Network-Info Header	REGISTER with P-Access-Network-Info Header	No	
	INVITE with P-Access-Network-Info Header	No	
DUT Services – Miscellaneous	Do Not Disturb	No	
	Call Forwarding Always	No	
	Call Forwarding Always Diversion Inhibitor	No	
	Anonymous Call	No	
	Anonymous Call Block	No	
	Remote Restart Via Notify	Yes	
Redundancy	DNS SRV Lookup	Yes	
	Register Failover/Failback	Yes	
	Invite Failover/Failback	Yes	
	Bye Failover	Yes	
SBC/ALG – Basic	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
SBC/ALG – Failover/Failback	Register Failover/Failback	Yes	
	Invite Failover/Failback	Yes	
TCP	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	
IPV6	Call Origination	No	
	Call Termination	No	
	Session Audit	No	
	Ringback	No	
	Codec Negotiation/Renegotiation	No	
	Voice Message Deposit/Retrieval	No	
	Call Control	No	
	Registration with Authentication	No	
	T38 Fax Messaging	No	
	Redundancy	No	
	SBC	No	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
	Dual Stack with Alternate Connectivity	No	

2.3 Known Issues

This section lists the known interoperability issues between BroadWorks and specific partner release(s). Issues identified during interoperability testing and known issues identified in the field are listed.

The following table provides a description of each issue and, where possible, identifies a workaround. The verified partner device versions are listed with an “X” indicating that the issue occurs in the specific release. The issues identified are device deficiencies or bugs and are typically not BroadWorks release dependent.

The *Issue Number* is a tracking number for the issue. If it is a Grandstream issue, the issue number is from Grandstream’s tracking system. If it is a BroadWorks issue, the issue number is from BroadSoft’s tracking system.

For more information on any issues related to the particular partner device release, see the partner release notes.

Issue Number	Issue Description	Partner Version		
		1.0.0.26 (GDS3705) 1.0.3.23 (GDS3710)		
	No issue is identified.			

3 BroadWorks Configuration

This section identifies the required BroadWorks device profile type for the Grandstream GDS37xx Door System as well as any other unique BroadWorks configuration required for interoperability with the GDS37xx Door System.

3.1 BroadWorks Device Profile Type Configuration

This section identifies the device profile type settings to use when deploying the Grandstream GDS37xx Door System with BroadWorks.

Create a device profile type for the Grandstream GDS37xx Door System as shown in the following example. A separate device profile type could be created for each Grandstream GDS37xx Door System model. The settings shown are recommended for use when deploying the Grandstream GDS37xx Door System with BroadWorks. For an explanation of the profile parameters, see the *BroadWorks Device Management Configuration Guide* [2].

The following device profile type shown provides the *Number of Ports* (number of SIP lines) setting for Grandstream GDS37xx Door System.

Model	Number of Lines
GDS3705	1
GDS3710	1

Identity/Device Profile Type: Grandstream-GDS37xx
 Signaling Address Type: Intelligent Proxy Addressing
 Obsolete

Standard Options

Number of Ports: Unlimited Limited To

Ringback Tone/Early Media Support: RTP - Session
 RTP - Early Session
 Local Ringback - No Early Media

Authentication: Enabled
 Disabled

Hold Normalization: Unspecified Address
 Inactive
 RFC3264

Registration Capable Authenticate REFER
 Static Registration Capable Video Capable
 E164 Capable Use History Info Header
 Trusted

Advanced Options

Route Advance Forwarding Override
 Wireless Integration Conference Device
 PBX Integration Mobility Manager Device
 Add P-Called-Party-ID Music On Hold Device
 Auto Configuration Soft Client Requires BroadWorks Digit Collection
 Requires BroadWorks Call Waiting Tone Requires MWI Subscription
 Advice of Charge Capable Support Call Center MIME Type
 Support Emergency Disconnect Control Support Identity In UPDATE and Re-INVITE
 Enable Monitoring Support RFC 3398
 Static Line/Port Ordering Support Client Session Info
 Support Call Info Conference Subscription URI Support Remote Party Info
 Support Visual Device Management Bypass Media Treatment
 Support Cause Parameter

Reset Event: reSync checkSync Not Supported
 Trunk Mode: User Pilot Proxy
 Hold Announcement Method: Inactive Bandwidth Attributes

Unscreened Presentation Identity Policy: Profile Presentation Identity
 Unscreened Presentation Identity
 Unscreened Presentation Identity With Profile Domain

Web Based Configuration URL Extension:

Device Configuration Options: Not Supported Device Management Legacy

Figure 1 Identity/Device Profile Modify Page

3.2 BroadWorks Configuration Steps

There are no additional BroadWorks configuration steps required.

4 GDS37xx Door System Configuration

This section describes the configuration settings required for the GDS37xx Door System integration with BroadWorks, primarily focusing on the SIP interface configuration. The GDS37xx Door System configuration settings identified in this section have been derived and verified through interoperability testing with BroadWorks. For configuration details not covered in this section, see the *Grandstream GDS37xx User Manual* [1] for GDS37xx Door System.

4.1 Configuration Method

Grandstream GDS3705/GDS3710 can be configured via web GUI as well as via the Configuration File through TFTP or HTTP/HTTPS.

GDS3705/GDS3710 accepts configuration file in XML format in addition to the legacy proprietary binary format.

When Grandstream device boots up or reboots, it issues a request for a configuration file named “cfgMAC.xml”, where “MAC” is the MAC address of the device, for example *cfg000b820102ab.xml*. The configuration file name should be in lower case.

The following examples describe how to set the parameters using a configuration file. The GDS3705/GDS3710 device should be configured to load the configuration file each time it resets or re-synchronizes. For detailed information on automated provisioning, see the *GDS37XX User Manual* [1] and the *Grandstream XML Provisioning Guide* [8].

The capabilities of the GDS3705/GDS3710 have been verified for use with BroadWorks based on the settings described in the following table. For more information on the meaning, purpose, and applicability of the individual configuration items see the *GDS3705/GDS3710 Grandstream Configuration Tool and Template* [9].

Configuration Files

GDS37xx Door System Configuration Files	Level	Description
<i>cfgMAC.xml</i> Example: <i>cfg000b82000000.xml</i>	System and Subscriber	Contains configurable parameters that apply to an individual device in a deployment.
Configuration Template Examples: <i>gds3705_config_1.0.0.26.txt</i> <i>gds3710_config_1.0.3.23.txt</i>	System and Subscriber	These files contain a complete list of configurable parameters for Grandstream devices. Different device models have their own configuration templates. They are available for download from Grandstream web site. For more information, see the <i>Grandstream Configuration Tool and Template</i> [9]. Note that these files are not configuration files that apply to the devices.

4.2 System Level Configuration

This section describes system-wide configuration items that are generally required for each GDS37xx Door System to work with BroadWorks. Subscriber-specific settings are described in the next section.

4.2.1 Configure Network Settings

Step	Command	Description
Step 1	Set the Address Type used. Address Type = DHCP/PPPoE/Static	Set the GDS3705/GDS3710 address type. If "DHCP" is used, IPv4 address is automatically assigned to the device by the DHCP server.
Step 2	Static IP Address = 192.168.0.160	Set the GDS3705/GDS3710 static IP address if the Address Type is "Static".
Step 3	Static Subnet Mask = 255.255.0.0	Set the GDS3705/GDS3710 static subnet mask if the "Address Type" is "Static".
Step 4	Static Default Gateway = 192.168.0.1	Set the GDS3705/GDS3710 static default gateway if the Address Type is "Static".
Step 5	Static DNS Server 1 = 4.2.2.2 Static DNS Server 2 = 4.2.2.1 Preferred DNS Server = 4.2.2.2	Set the GDS3705/GDS3710 static DNS Server if the Address Type is "Static".
Step 6	SIP Transport = UDP/TCP/TLS	Set the GDS3705/GDS3710 SIP Transport protocol.
Step 7	NTP Server = us.pool.ntp.org	Set the GDS3705/GDS3710 NTP server address.

4.2.2 Configure SIP Interface Settings

Step	Command	Description
Step 1	Set SIP Proxy/Domain. SIP Server = as.broadworks.net	Set the GDS3705/GDS3710 SIP server to the Fully Qualified Domain Name (FQDN) for the BroadWorks Application Server cluster. The domain must match the domain configured for the BroadWorks subscriber's line/port domain.
Step 2	Set Outbound Proxy. Outbound Proxy = sbc.broadworks.net	Set the Outbound Proxy to the session border controller (SBC) if one is deployed between the GDS3705/GDS3710 device and BroadWorks. If there are redundant SBCs, set it to the FQDN for the SBC cluster.
Step 3	Enable DNS SRV lookup. DNS Mode = "SRV"	Enable DNS SRV lookups.
Step 4	Set register mode. SIP Registration = "Yes"	Enable SIP register.
Step 5	Set SIP Timers. Register Expiration = 60	The default registration period is 60 minutes.
Step 6	Enable negotiated DTMF type. Send DTMF = "via RTP (RFC 2833)"	Set the GDS3705/GDS3710 device to enable inband or RFC 2833 negotiated DTMF.

4.2.3 Configure Service Settings

Step	Command	Description
Step 1	Enable BroadSoft mode. Special Feature = "Broadsoft"	Set the GDS3705/GDS3710 in BroadSoft mode.
Step 2	Configure the device to disable Auto Answer. Disable Auto Answer = 1	Disable Auto Answer on GDS3705/GDS3710. Auto Answer is on by default.
Step 3	Enable Doorbell Button to Hang Up Call. Enable Doorbell Button to Hang Up Call = 1	Configure GDS3705/GDS3710 Doorbell button to end calls when pressed.
Step 4	Set up Call Mode Call Mode = 1	Configure GDS3705/GDS3710 to make SIP calls.

4.3 Subscriber Level Configuration

This section identifies the device-specific parameters, including registration and authentication. These settings must be unique across devices to be matched with the settings for a BroadWorks SIP trunk or subscriber. SIP registration requires that a unique address of record (AoR) be provisioned on BroadWorks and the device.

Grandstream GDS3705/GDS3710 supports one SIP account. The following example shows how to configure subscriber elements for an account.

Step	Command	Description
Step 1	Set display name. Example: Account Name = "BroadSoft" ;	Configure the SIP Account Name to be displayed on the device.
Step 2	Set Register User ID. Example: SIP User_ID = "2405551111" ;	The Register User ID must correspond with the line/port setting on BroadWorks.
Step 3	Enable SIP Authentication. Example: Authenticate ID = "1111@as.mycompany.com" ; Authenticate Password = "welcome" ;	If the Authentication service is configured on BroadWorks, these parameters must be configured to match the BroadWorks settings.

4.4 SIP Feature Configuration

This section provides configuration instructions for SIP features supported by the device such as Advice of Charge, Emergency Call, and Fax.

4.4.1 Emergency Call Configuration

GDS37xx Door System currently does not support this feature.

4.4.2 Advice of Charge Configuration

GDS37xx Door System currently does not support this feature.

4.4.3 Fax Configuration

GDS37xx Door System currently does not support this feature.

5 Device Management

The BroadWorks Device Management feature provides the capability to automate generation of device configuration files to support mass deployment of devices. This section identifies the Device Management capabilities supported by the Grandstream GDS37xx Door System and the configuration steps required. For Device Management configuration details not covered here, see the *BroadWorks Device Management Configuration Guide* [2] and the *BroadWorks CPE Kit Usage Guide* [7].

5.1 Device Management Capabilities Supported

The Grandstream GDS37xx Door System has completed Device Management interoperability testing with BroadWorks using the *BroadWorks Device Management Interoperability Test Plan* [6]. The results are summarized in the following table.

The BroadWorks test plan is composed of packages, each covering distinct interoperability areas. Each package is composed of one or more test items, which in turn, are composed of one or more test cases. The test plan exercises the Device Management interface between the device and BroadWorks with the intent to ensure interoperability.

The *Supported* column in the following table identifies the Grandstream GDS37xx Door System's support for each of the items covered in the test plan packages, with the following designations:

- Yes Test item is supported
- No Test item is not supported
- NA Test item is not applicable
- NT Test item was not tested

Caveats and clarifications are identified in the *Comments* column.

NOTE: *DUT* in the following table refers to the *Device Under Test*, which in this case is the Grandstream GDS37xx Door System.

BroadWorks Device Management Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
HTTP File Download	HTTP Download Using XSP IP Address	Yes	
	HTTP Download Using XSP FQDN	Yes	
	HTTP Download Using XSP Cluster FQDN	Yes	
	HTTP Download With Double Slash	Yes	
HTTPS File Download	HTTPS Download Using XSP IP Address	Yes	
	HTTPS Download Using XSP FQDN	Yes	
	HTTPS Download Using XSP Cluster FQDN	Yes	
HTTPS File Download with	HTTPS Download with Client Authentication Using XSP FQDN	No	

BroadWorks Device Management Interoperability Test Plan Support Table			
Test Plan Package	Test Plan Package Items	Supported	Comments
Client Authentication	HTTPS Download with Client Authentication Using XSP Cluster FQDN	No	
Time Zone Mapping	Inspect Time Zone Setting	Yes	
Language Mapping	Inspect Language Setting	No	
File Inspection	Inspect System Config File	Yes	
	Inspect Device-Specific Config File	Yes	
	Inspect Other Config Files	No	
	Inspect Static Files	Yes	
Device Inspection	Inspect SIP Settings	Yes	
	Inspect Line Settings	Yes	
	Inspect Service Settings	Yes	
HTTP File Upload	HTTP Upload Using XSP IP Address	No	
	HTTP Upload Using XSP FQDN	No	
	HTTP Upload Using XSP Cluster FQDN	No	
Call Processing Sanity Tests	Register with Authentication	Yes	
	Call Origination	Yes	
	Call Termination	Yes	
	Remote Restart	Yes	
	Shared Line Origination	No	
	Shared Line Termination	No	
	Shared Line Status	No	
	Busy Lamp Field	No	
Flexible Seating	Association via Voice Portal	NA	
	Association via Phone	NA	
No Touch Provisioning	Provision via DHCP Options Field	No	
	No Touch Provision via DM redirect	No	
	No Touch Provision via Vendor redirect	Yes	

5.2 Device Management Configuration

This section identifies the steps required to enable the Grandstream GDS37xx Door System for device management. For Device Management configuration details not covered here, see the *BroadWorks Device Management Configuration Guide* [2] and the *BroadWorks CPE Kit Usage Guide* [7].

5.2.1 Configure BroadWorks Tags

The template files in Device Management use tags to represent the data stored on BroadWorks. When a configuration changes for a user, Device Management parses the template files and replaces the Device Management tags with the associated data stored on BroadWorks. There are default tags defined in the Device Management software and there are custom tags that the service provider can create and define via the web portal for use by Device Management. There are two types of custom tags that can be defined: system-default tags that are common to all devices on the system and device type-specific tags that are common to Grandstream device models only.

The Grandstream GDS37xx Door System makes use of custom tags which can be configured by a BroadWorks administrator as either system default or device type-specific tags. This section identifies the required tags.

5.2.1.1 Create System Default Tags

Browse to *System* → *Resources* → *Device Management Tag Sets* and select the *System Default* tag set. The Grandstream configuration templates make use of the tags in the following table. Add the tags if they do not already exist.

Tag Name	Valid Settings	Description
%SNTP_SERVER%	IP address/FQDN	Network Time Protocol (NTP) server address.
%SBC_ADDRESS%	IP address/FQDN	SBC SIP address.

Example System Default Tag Settings

The screenshot shows the 'Device Management Tag Sets Modify' page for the 'System Default' tag set. The interface includes a navigation sidebar on the left with options like Profile, Resources, Services, Communication Barring, and Utilities. The main content area displays a table of tags with columns for Delete, Tag Name, Tag Value, and Edit. Below the table is a search bar with 'Tag Name' and 'Starts With' dropdowns, and 'Find' and 'Find All' buttons. At the bottom, there are 'OK', 'Apply', 'Add', and 'Cancel' buttons.

Delete	Tag Name	Tag Value	Edit
<input type="checkbox"/>	%APPLICATION_DOMAIN%	as.iop1.broadworks.net	Edit
<input type="checkbox"/>	%DNS_SERVER_1%	199.19.193.12	Edit
<input type="checkbox"/>	%DNS_SERVER_2%	199.19.193.39	Edit
<input type="checkbox"/>	%DNS_SERVER%	199.19.193.12	Edit
<input type="checkbox"/>	%SBC_ADDRESS%	sbc1.iop1.broadworks.net	Edit
<input type="checkbox"/>	%SBC_PORT%	5060	Edit
<input type="checkbox"/>	%SNTP_SERVER_1%	time-a.nist.gov	Edit
<input type="checkbox"/>	%SNTP_SERVER_2%	time-b.nist.gov	Edit
<input type="checkbox"/>	%SNTP_SERVER%	time-b.nist.gov	Edit
<input type="checkbox"/>	%USE_SBC_BOOLEAN%	1	Edit

Figure 2 System Default Tag Settings

5.2.1.2 Create Device Type-specific Tags

Browse to *System* → *Resources* → *Device Management Tag Sets* and then click **Add** to add a new tag set. Configure the tag set name using the device name appended by *Tags: Grandstream GDS37xx Door System Tags*. Add the device type specific tags in the following table to the device tag set. If the tag set already exists, make sure the following tags are defined.

Tag Name	Valid Settings	Description
%DNS_ADDRESS_O1%	DNS IP address's 1 st octet Example: 199	DNS IP address's 1 st octet.
%DNS_ADDRESS_O2%	DNS IP address's 2 nd octet Example: 19	DNS IP address's 2 nd octet.
%DNS_ADDRESS_O3%	DNS IP address's 3 rd octet Example: 193	DNS IP address's 3 rd octet.
%DNS_ADDRESS_O4%	DNS IP address's 4 th octet Example: 12	DNS IP address's 4 th octet.
%DNS2_ADDRESS_O1%	Second DNS IP address's 1st octet Example: 199	Second DNS IP address's 1st octet.
%DNS2_ADDRESS_O2%	Second DNS IP address's 2nd octet Example: 19	Second DNS IP address's 2nd octet.
%DNS2_ADDRESS_O3%	Second DNS IP address's 3rd octet Example: 193	Second DNS IP address's 3rd octet.
%DNS2_ADDRESS_O4%	Second DNS IP address's 4th octet Example: 12	Second DNS IP address's 4th octet.

Example Device Type-specific Tag Settings

* Tag Set Name: <input type="text" value="Grandstream-GDS37xx_Tags"/>			
Delete	Tag Name	Tag Value	Edit
<input type="checkbox"/>	%DNS_ADDRESS_O1%	199	Edit
<input type="checkbox"/>	%DNS_ADDRESS_O2%	19	Edit
<input type="checkbox"/>	%DNS_ADDRESS_O3%	193	Edit
<input type="checkbox"/>	%DNS_ADDRESS_O4%	12	Edit
<input type="checkbox"/>	%DNS2_ADDRESS_O1%	8	Edit
<input type="checkbox"/>	%DNS2_ADDRESS_O2%	8	Edit
<input type="checkbox"/>	%DNS2_ADDRESS_O3%	8	Edit
<input type="checkbox"/>	%DNS2_ADDRESS_O4%	8	Edit

[Page 1 of 1]

Figure 3 Device Type-specific Tag Settings

5.2.2 Configure BroadWorks Device Profile Type

The device profile type is a system-level structure that defines how the device interfaces with BroadWorks. It also identifies the default configuration files and other files, such as firmware, which are required for the device to operate correctly. The device profile type is created by the system administrator. Group administrators use the device profile type to create a device profile. The device profile is an instance of the device profile type that is associated with a physical device.

There are two BroadWorks device profile configuration methods described: import and manual. The import method takes a DTAF as input and builds the BroadWorks device

profile type(s) automatically. The manual method takes the administrator through the steps to manually add and configure the device profile type(s).

The import method should be used if all of the following prerequisites are met:

- The BroadWorks Release is 17.0 or later.
- The device profile type(s) being imported do not already exist on the system. (If either a previous import or manual configuration was done, then the import fails.)
- There is a DTAF file available for import with a BroadWorks release level that is the same as or prior to the release to which it is being imported. If the DTAF file is at a release level later than the release being imported to, then the import can fail.

Otherwise, use the manual method.

For more detailed instructions, refer to the *BroadWorks CPE Kit Usage Guide* [7] and the *BroadWorks Device Management Configuration Guide* [2].

5.2.2.1 Configuration Method 1: Import

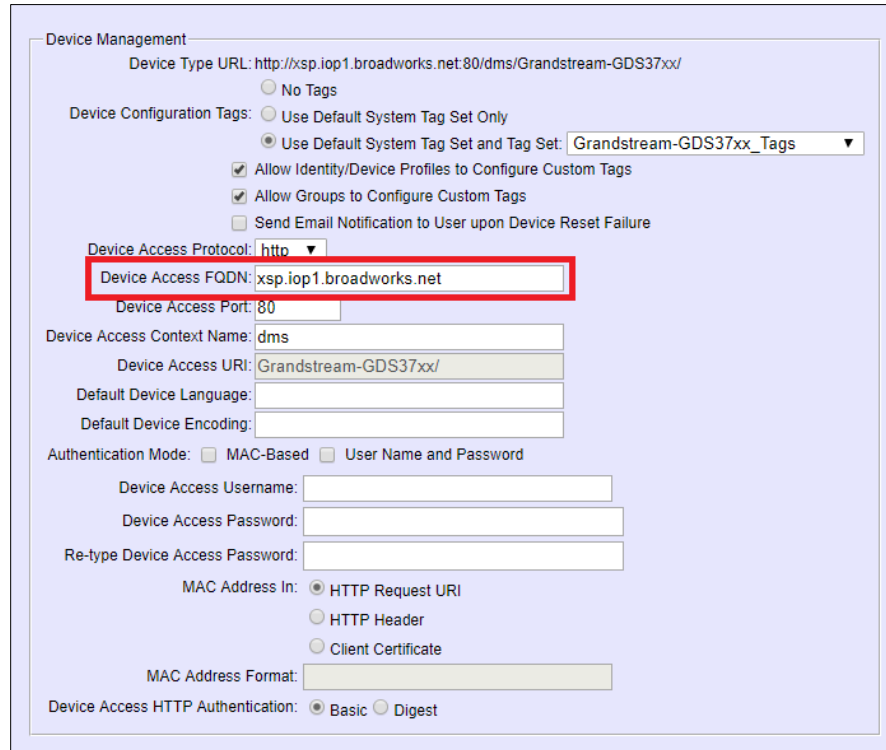
This section identifies the steps necessary to make use of the Device Management import feature to configure BroadWorks to add the Grandstream GDS37xx Door System as a Device Management-enabled device type. Also, see the *BroadWorks CPE Kit Usage Guide* [7].

Download the Grandstream GDS37xx Door System CPE kit from BroadSoft at xchange.broadsoft.com. Extract the DTAF file(s) from the CPE kit. These are the import files. Repeat the following steps for each model you wish to import.

- 1) Log in to BroadWorks as an administrator.
- 2) Browse to *System* → *Resources* → *Identity/Device Profile Types* and then click **Import**.
- 3) Select *Browse* to find the extracted DTAF file for the model and then click **OK** to start the import.

After the import finishes, complete the following post-import configuration steps:

- 4) Browse to *System* → *Resources* → *Identity/Device Profile Types*.
- 5) Perform a search to find the imported Grandstream device profile type, *Grandstream-GDS37xx*.
- 6) Browse to the *Profile* page and change the Device Management Device Access FQDN to your Xtended Services Platform (XSP) or XSP cluster address.



The screenshot shows the 'Device Management' configuration page. The 'Device Access FQDN' field is highlighted with a red box and contains the value 'xsp.iop1.broadworks.net'. Other visible fields include 'Device Access Protocol' (http), 'Device Access Port' (80), 'Device Access Context Name' (dms), 'Device Access URI' (Grandstream-GDS37xx/), 'Authentication Mode' (User Name and Password), and 'Device Access HTTP Authentication' (Basic).

Figure 4 Device Access FQDN

- 7) Click the **Files and Authentication** link and then select the option to rebuild all the system files.
- 8) Firmware files must be obtained from Grandstream. These files are not included in the import. Complete the steps in section [5.2.2.2 Define Device Profile Type Files](#) to define the static firmware files and to upload the firmware.

NOTE: The non-firmware static files in section [5.2.2.2 Define Device Profile Type Files](#) are normally included in the import.

- 9) After importing the DTAFs, restart the Application Server to load the *TimeZoneAlias* files.

5.2.2.2 Configuration Method 2: Manual

This section identifies the basic steps necessary for an administrator to manually configure BroadWorks to add the Grandstream GDS37xx Door System as a Device Management-enabled device type. This method should not be used except in special cases as described in the opening to section [5.2.2 Configure BroadWorks Device Profile Type](#).

For more detailed instruction on manual configuration, see the *BroadWorks CPE Kit Usage Guide* and the *BroadWorks Device Management Configuration Guide* [2].

The steps in this section can also be followed to update previously imported or configured device profile type(s) with new configuration files and firmware.

If there are DTAFs for more than one device model, these steps must be completed for each model.

5.2.2.2.1 Create or Modify Device Profile Type

This section identifies the BroadWorks device profile type settings relevant to Device Management for the Grandstream GDS37xx Door System.

Browse to *System* → *Resources* → *Identity/Device Profile Types* and perform a search to find the Grandstream device profile type(s) created in section [3.1 BroadWorks Device Profile Type Configuration](#) or add the device profile type for each model using the settings from section [3.1 BroadWorks Device Profile Type Configuration](#) if they do not exist.

Configure the device profile type *Signaling Address Type*, *Standard* and *Advanced* options settings to match the settings in section [3.1 BroadWorks Device Profile Type Configuration](#).

Configure the device profile type *Device Management* options as shown in section [5.2.2.1 Configuration Method 1: Import](#).

The following subsections identify the required settings specific to Device Management.

5.2.2.2.2 Define Device Profile Type Files

This section describes the BroadWorks Device Management configuration necessary to identify the configuration files and other files that the Grandstream GDS37xx Door System downloads.

Configuration templates, firmware, and other files the GDS37xx Door System uses must be uploaded to BroadWorks. Download the Grandstream GDS37xx Door System CPE kit from BroadSoft Xchange at xchange.broadsoft.com. Extract the configuration files from the *Configuration Files* folder of CPE kit. Obtain the firmware files directly from Grandstream.

The following table identifies the Grandstream configuration files distributed with the 1.0.0.26 /1.0.3.23 CPE kit.

File Name	CPE Kit Template File Name	File Type	Description
Examples			
<i>cfg%BWMACADDRESS%.xml</i>	<i>%BWMACADDRESS%.cfg.template</i>	Device-specific	This file contains all the configuration and firmware files that the device needs to load.
<i>TimeZoneAliasLabels_Grandstream-<model>.properties</i>	<i>TimeZoneAliasLabels_Grandstream-<model>.properties</i>	Time Zone Alias	The time zone alias file is a BroadWorks Device Management file used to map time zone identifiers between BroadWorks and Grandstream devices. A time zone alias file is required for each model.

The following table identifies other files that the Grandstream GDS37xx Door System downloads from the server or uploads to the server. These files are not provided in the CPE kit and must be obtained from Grandstream.

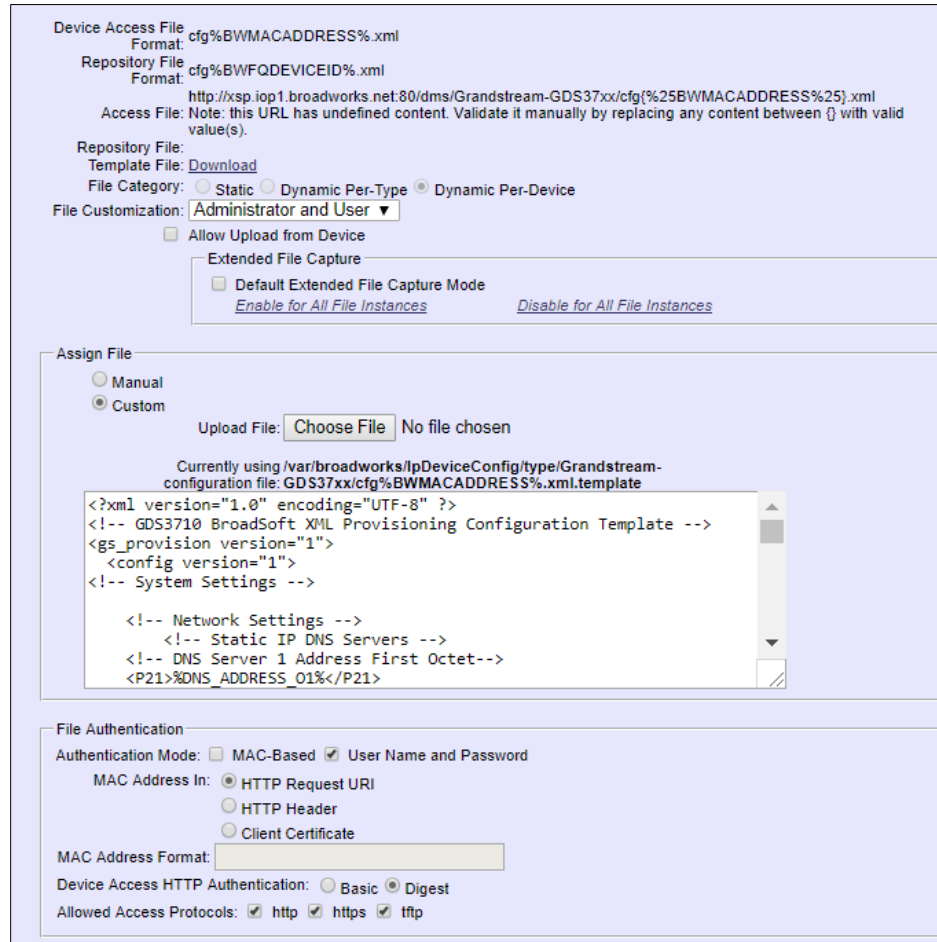
File Name	File Type	Description
<i>gds37xx_fw.bin</i> <i>gds3705fw.bin</i>	Static	Firmware file.

Browse to *System* → *Resources* → *Identity/Device Profile Types* → *Files and Authentication* to add the files as described in the following subsections.

5.2.2.2.1 cfg%BWMACADDRESS%.xml File

Add the *cfg%BWMACADDRESS%.xml* file to the device profile type with the settings shown in [Figure 5](#).

After creating the device profile type file, upload *cfg%BWMACADDRESS%.xml* extracted from the CPE kit. Use the **Browse** button on the file definition screen. Be sure to click **Apply** after uploading the file.



Device Access File: *cfg%BWMACADDRESS%.xml*
 Format: *cfg%BWMACADDRESS%.xml*

Repository File: *cfg%BWFQDEVICEID%.xml*
 Format: *cfg%BWFQDEVICEID%.xml*
 Access File: *http://xsp.iop1.broadworks.net:80/dms/Grandstream-GDS37xx/cfg{%25BWMACADDRESS%25}.xml*
 Note: this URL has undefined content. Validate it manually by replacing any content between {} with valid value(s).

Repository File:
 Template File: [Download](#)

File Category: Static Dynamic Per-Type Dynamic Per-Device

File Customization: **Administrator and User** ▼
 Allow Upload from Device

Extended File Capture
 Default Extended File Capture Mode
Enable for All File Instances Disable for All File Instances

Assign File
 Manual
 Custom
 Upload File: **Choose File** No file chosen

Currently using */var/broadworks/lpDeviceConfig/type/Grandstream-configuration file: GDS37xx/cfg%BWMACADDRESS%.xml.template*

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- GDS3710 BroadSoft XML Provisioning Configuration Template -->
<gs_provision version="1">
  <config version="1">
<!-- System Settings -->

    <!-- Network Settings -->
      <!-- Static IP DNS Servers -->
      <!-- DNS Server 1 Address First Octet-->
      <P21>%DNS_ADDRESS_01%</P21>
```

File Authentication
 Authentication Mode: MAC-Based User Name and Password
 MAC Address In: HTTP Request URI
 HTTP Header
 Client Certificate
 MAC Address Format:
 Device Access HTTP Authentication: Basic Digest
 Allowed Access Protocols: http https tftp

Figure 5 *cfg%BWMACADDRESS%.xml* File Settings

5.2.2.2.2 Firmware File

Add the Firmware file, for example, *gds3705fw.bin*, to the device profile type with the settings shown in [Figure 6](#).

After creating the device profile type file, upload firmware gotten from Grandstream. Use the **Browse** button on the file definition screen. Be sure to click **Apply** after uploading the file.



Figure 6 *gds3705fw.bin* File Settings

5.2.2.2.3 Time Zone Mapping

The CPE kit contains a time zone properties file for each device model. This file maps the BroadWorks user's time zone settings to the device's time zone settings.

This time zone mapping file must be added to the */usr/local/broadworks/bw_base/conf/dms* directory on the Application Server using the following file name format: *TimeZoneAliasLabels_Grandstream-GDS37xx.properties*.

You must restart the Application Server for the *TimeZoneAlias* files to be picked up by the system.

5.2.3 Create Device Profile Instance

The previous sections defined the device profile type such that the system is ready to mass deploy device profiles. A device profile is an instance of the device profile type and defines the BroadWorks interface to an individual Grandstream device.

Browse to the BroadWorks <group> → Resources → Identity/Device Profiles page and then select **Add** to add a new *Grandstream-GDS37xx* device profile. Configure the device profile as shown in the *Figure 7* example.

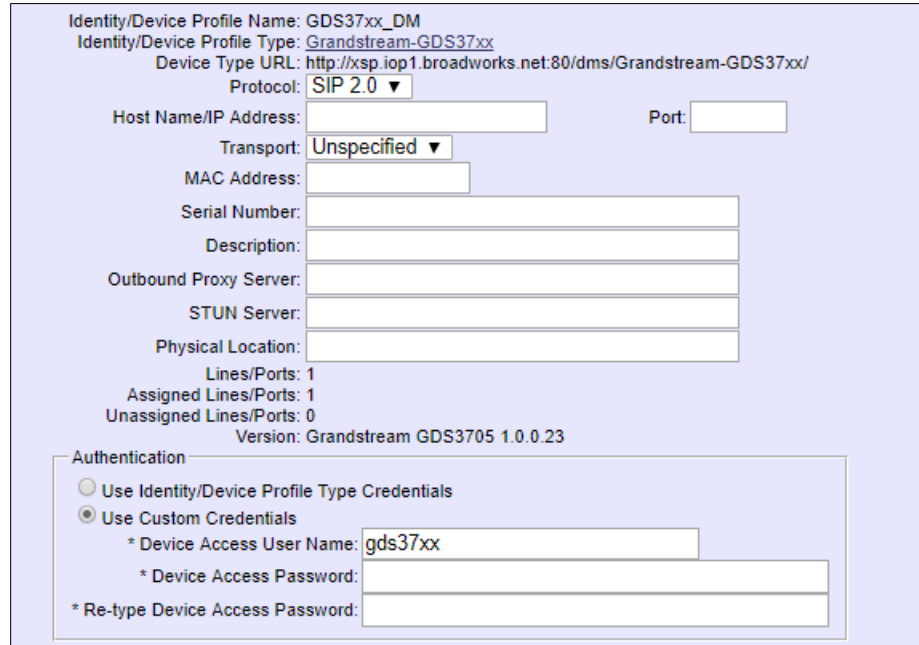


Figure 7 Device Profile Instance

5.2.4 Configure BroadWorks User

Configure the user with the desired BroadWorks configuration and services. Any services that require a specific configuration on the device are managed via Device Management and are defined in the device configuration files, if the template files are created with the correct Device Management tags.

The device profile created in the previous section must be assigned to the BroadWorks user. Assigning the device profile to the user automatically causes the Device Management feature to generate the device configuration files for this user's device.

To assign the device profile to the user, browse to the BroadWorks <user> → Addresses.

5.2.5 Customize Tags

This section identifies custom tags used by the GDS37xx Door System that may need to be customized at the group or device profile. Customizing a tag at the group level overrides the setting on the device profile type for the device profiles created within the group. Customizing a tag at the device profile level overrides the setting at the device profile type and/or group level for the individual device profile.

5.2.5.1 SBC Address Customization for Edge Device

In many deployments, an edge device, such as an enterprise SBC or application layer gateway, is deployed on the enterprise edge. The edge device's SIP server or outbound proxy setting is configured with the service provider's SBC IP address or FQDN. If there is no edge device, the customization below does not apply.

To integrate the edge device with Device Management, the SBC address tag (%SBC_ADDRESS%) defined in section 5.2.1.1 *Create System Default Tags* must be overridden at the group level with the LAN address of the edge device. To do so, perform the following steps.

- 1) At the *Group* → *Utilities* → *Configure Device* page, select the *Grandstream-GDS37xx* device profile.
- 2) Click on the *Custom Tags* tab.
- 3) Click **Add**.
- 4) For the tag, enter "SBC_ADDRESS".
- 5) For the value, enter the edge device LAN IP address.
- 6) To save the tag data, click **OK**.

Repeat these steps for each Grandstream model provisioned in the group.

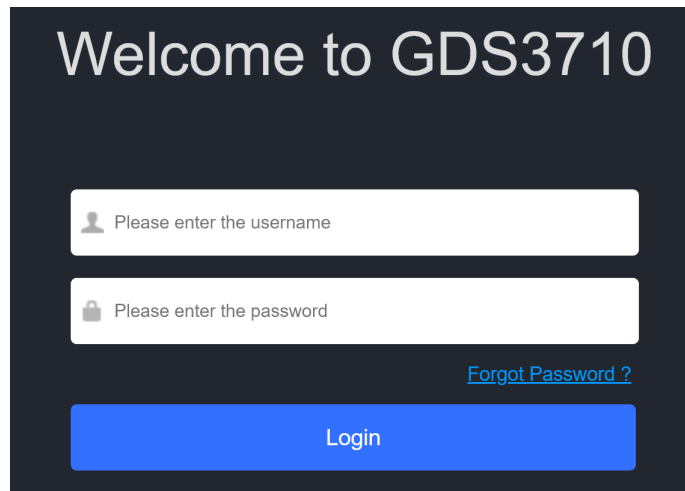
5.2.6 Configure Grandstream GDS37xx Door System

This section describes the steps necessary to configure the Grandstream GDS37xx Door System to integrate with BroadWorks Device Management.

Perform the following steps to manually define the Device Management file access URL:

- 1) Log in to the phone's web user interface via http://phone_IP_address. (The default login credential is admin/admin.)
- 2) Browse to the *Maintenance* → *Upgrade*. Under *Config* section set the following:
 - Upgrade Via: HTTP (or HTTPS)
 - Config Server Path: Device Management server (Xsp) device address URL
Example: *xsp1.broadworks.net:80/dms/Grandstream-GDS37xx/*
 - HTTP/HTTPS User Name: BroadWorks Device Access User Name
Example: *gds3710*
 - HTTP/HTTPS Password: BroadWorks Device Access Password
Example: *admin*
- 3) Click **Save** and then **Reboot**.

Example Login Screen



Welcome to GDS3710

Please enter the username

Please enter the password

[Forgot Password ?](#)

Login

Figure 8 Example Login Screen

Example Upgrade Screen



Config

Upgrade Via	HTTP
Config Server Path	xsp.iop1.broadworks.net:80/dms/Grandstrear
HTTP/HTTPS User Name	gds3710
HTTP/HTTPS Password

Figure 9 Example Upgrade Screen

5.3 Upgrade from Previous CPE Kits

The previous configuration sections are primarily structured around importing or manually configuring the Grandstream device profile types for the first time. Many of the steps are unnecessary when upgrading to a new firmware release or CPE kit version.

For general instructions on upgrading, see the *BroadWorks CPE Kit Usage Guide* [7].

Appendix A: Reference GDS37xx Door System Configuration Files

The following is a reference configuration for the GDS37xx Door System configured for use with BroadWorks.

Device-specific File: `cfg%BWMACADDRESS%.xml`

NOTE: This is an example file and it should be used for reference only.

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- GDS3710 BroadSoft XML Provisioning Configuration Template -->
<gs_provision version="1">
  <config version="1">
    <!-- System Settings -->

    <!-- Network Settings -->
    <!-- Static IP DNS Servers -->
    <!-- DNS Server 1 Address First Octet-->
    <P21>%DNS_ADDRESS_01%/P21>
    <!-- DNS Server 1 Address Second Octet-->
    <P22>%DNS_ADDRESS_02%/P22>
    <!-- DNS Server 1 Address Third Octet-->
    <P23>%DNS_ADDRESS_03%/P23>
    <!-- DNS Server 1 Address Fourth Octet-->
    <P24>%DNS_ADDRESS_04%/P24>
    <!-- DNS Server 2 Address First Octet-->
    <P25>%DNS2_ADDRESS_01%/P25>
    <!-- DNS Server 2 Address Second Octet-->
    <P26>%DNS2_ADDRESS_02%/P26>
    <!-- DNS2 Server 2 Address Third Octet-->
    <P27>%DNS2_ADDRESS_03%/P27>
    <!-- DNS Server 2 Address Fourth Octet-->
    <P28>%DNS2_ADDRESS_04%/P28>

    <!-- Firmware Upgrade and Provisioning Settings -->
    <!-- Provisioning Via: 0 - TFTP, 1 - HTTP, 2 - HTTPS -->
    <P212>1</P212>
    <!-- Config Server Path -->
    <P237>%BWDEVICEACCESSFQDN%:%BWDEVICEACCESSPORT%/%BWDMSCONTEXT%/%BWDEV
ICEACCESSURI%/P237>
    <!-- Config File HTTP/HTTPS User Name/ Device Access User Name -->
    <P1360>%BWDEVICEUSERNAME%/P1360>
    <!-- Firmware Upgrade Via: 0 - TFTP, 1 - HTTP, 2 - HTTPS -->
    <P6767>1</P6767>
    <!-- Firmware Upgrade Server -->

    <P192>%BWDEVICEACCESSFQDN%:%BWDEVICEACCESSPORT%/%BWDMSCONTEXT%/%BWDEVICEAC
CESSURI%/P192>

    <!-- Date and Time Settings -->
    <!-- NTP Server -->
    <P30>%SNTP_SERVER%/P30>
    <!-- Time Zone -->
    <P64>%BWTIMEZONE-1%/P64>

    <!-- SIP Settings -->
    <!-- SIP Server -->
    <P402>%BWHOST-1%/P402>
    <!-- OutBound Proxy -->
```

```
<P403>%SBC_ADDRESS%/P403>
<!-- SIP USER ID -->
<P404>%BWLINPORT-1%/P404>
<!-- Authenticate ID -->
<P405>%BWAUTHUSER-1%/P405>
<!-- Authenticate password -->
<P406>%BWAUTHPASSWORD-1%/P406>
<!-- Account/Display Name -->
<P407>%BWCLID-1%/P407>
<!-- SIP Transport. 0 - UDP, 1 - TCP, 2 - TLS -->
<P448>0</P448>
<!-- DNS Mode. 0 - A Record, 1 - SRV, 2 - NAPTR/SRV. -->
<P408>1</P408>
<!-- DTMF method. RFC2833, 102 - SIP INFO -->
<!-- Enable RFC2833. 0 - No, 1 - Yes -->
<P2402>1</P2402>
<!-- Enable SIP INFO. 0 - No, 1 - Yes -->
<P2403>0</P2403>
<!-- Ring Timeout(s). value: 0 - 90 Seconds -->
<P14847>30</P14847>
<!-- Enable Session Timer. 0 - No, 1 - Yes -->
<P2495>1</P2495>
<!-- Call Mode. 0 - Virtual Number, 1 - SIP Number -->
<P14856>1</P14856>
<!-- Disable Auto Answer. 0 - No, 1 - Yes -->
<P14580>1</P14580>
<!-- Enable Doorbell Button to Hang Up Call. 0 - No, 1 - Yes -->
<P14582>1</P14582>
<!-- Special Feature. 102 - BroadSoft -->
<P424>102</P424>

</config>
</gs_provision>
```

References

- [1] Grandstream Networks, Inc. 2018. GDS37XX User Manuals. Available from Grandstream at:
GDS3710:
User Manual

http://www.grandstream.com/sites/default/files/Resources/GDS3710_UserManual.pdf

GDS3705:
User Manual

http://www.grandstream.com/sites/default/files/Resources/GDS3705_UserManual.pdf
- [2] BroadSoft, Inc. 2018. *BroadWorks Device Management Configuration Guide, Release 22.0*. Available from BroadSoft at xchange.broadsoft.com.
- [3] BroadSoft, Inc. 2017. *BroadWorks Redundancy Guide, Release 22.0*. Available from BroadSoft at xchange.broadsoft.com.
- [4] BroadSoft, Inc. 2016. *BroadWorks SIP Access Interface Interworking Guide, Release 22.0*. Available from BroadSoft at xchange.broadsoft.com.
- [5] BroadSoft, Inc. 2018. *BroadWorks SIP Access Device Interoperability Test Plan, Release 22.0*. Available from BroadSoft at xchange.broadsoft.com.
- [6] BroadSoft, Inc. 2018. *BroadWorks Device Management Interoperability Test Plan, Release 22.0*. Available from BroadSoft at xchange.broadsoft.com.
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- [8] Grandstream Networks, Inc. 2018. *Grandstream XML Provisioning Guide*. Available from Grandstream at:
http://www.grandstream.com/sites/default/files/Resources/gs_provisioning_guide.pdf.
- [9] Grandstream Networks, Inc. 2018. *Grandstream Configuration Tool and Template*. Available from Grandstream at: <http://www.grandstream.com/support/tools>.