BroadSoft Partner Configuration Guide

Algo 8036/8039/8201/8203 Intercom Devices

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BroadWorks® Guide

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Document Revision History

Version	Reason for Change
1.1	Introduced document for Algo Intercom Devices version 1.5.5 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 Algo Intercom Devices for interoperability with BroadWorks. This includes the following models:

- Algo 8036 SIP Multimedia Intercom

- Algo 8039 SIP Video Intercom

- Algo 8201 SIP PoE Intercom

- Algo 8203 SIP PoE Intercom Vandal Proof

The Intercom Devices are SIP device that use 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 Intercom Devices. For those details, see the *8036 SIP Multimedia Intercom Installation & Configuration Guide* [1], *8039 SIP Video Intercom Installation & Configuration Guide* [2]. For Algo 8201 and Algo 8203 see the *8201 SIP PoE Intercom Installation & Configuration Guide* [3] supplied by Algo.

2 Interoperability Status

This section provides the known interoperability status of the Algo 8036/8039/8201/8203 Intercom Devices 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 Algo.

2.1 Verified Versions

The following table identifies the verified Algo Intercom Devices and BroadWorks versions and the month/year the testing occurred. If the devices have 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 Intercom Device 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 Algo.

> **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* [7].

Verified Versions

Date (mm/yyyy)	BroadWorks Release	Intercom Devices Verified Version	Intercom Devices Compatible Versions
12/2017	Release 22.0	1.5.5	None

2.2 Interface Capabilities Supported

The Algo Intercom Devices have completed interoperability testing with BroadWorks using the *BroadWorks SIP Access Device Interoperability Test Plan* [7]. 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 Algo Intercom Devices' 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 Algo Intercom Devices.

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	No	
	Ringback	Yes	Only support Local Ringback.
	Forked Dialog	No	
	Early UPDATE	No	
	Early-Session	No	
	181 Call Being Forwarded	Yes	
	Dial Plan	Yes	Does not support Casual Access Dialing.
	DTMF – Inband	NA	
	DTMF – RFC 2833	NA	
	DTMF – DTMF Relay	NA	
	Codec Negotiation	NA	
	Codec Renegotiation	Yes	
BroadWorks Services	Third-Party Call Control – Basic	Yes	Only support Click to Dial.
	Voice Message Deposit and Retrieval	NA	
	Message Waiting Indicator - Unsolicited	NA	
	Message Waiting Indicator - Solicited	NA	
	Voice Portal Outcall	NA	
	Advanced Alerting – Ringing	No	
	Advanced Alerting – Call Waiting	No	
	Advanced Alerting – Ring Splash	No	
	Calling Line ID	NA	
	Calling Line ID with Unicode Characters	NA	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
	Connected Line ID	NA	
	Connected Line ID with Unicode Characters	NA	
	Connected Line ID on UPDATE	NA	
	Connected Line ID on Re-INVITE	NA	
	Diversion Header	Yes	
	History-Info Header	Yes	
	Advice of Charge	NA	
	Meet-Me Conferencing	NA	
	Meet-Me Conferencing – G722	NA	
	Meet-Me Conferencing – AMR-WB	NA	
	Meet-Me Conferencing – Opus	NA	
	Collaborate – Audio	NA	
	Collaborate – Audio – G722	NA	
	Collaborate – Audio – Opus	NA	
DUT Services – Call Control Services	Call Waiting	NA	
	Call Hold	NA	
	Call Transfer	NA	
	Three-Way Calling	NA	
	Network-Based Conference	NA	
DUT Services – Registration and Authentication	Register Authentication	Yes	
	Maximum Registration	Yes	
	Minimum Registration	No	
	Invite Authentication	Yes	
	Re-Invite/Update Authentication	NA	
	Refer Authentication	NA	
	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	
DUT Services – Emergency Call	Emergency Call	NA	
	Emergency Call with Ringback	NA	
	REGISTER with P-Access-Network-Info Header	No	

BroadWorks SIP Access Device Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
DUT Services – P-Access-Network-Info Header	INVITE with P-Access-Network-Info Header	No	
DUT Services – Miscellaneous	Do Not Disturb	Yes	
	Call Forwarding Always	NA	
	Call Forwarding Always Diversion Inhibitor	NA	
	Anonymous Call	No	
	Anonymous Call Block	No	
	Remote Restart Via Notify	Yes	
Redundancy	DNS SRV Lookup	No	
	Register Failover/Failback	No	
	Invite Failover/Failback	No	
	Bye Failover	No	
SBC/ALG – Basic	Register	Yes	
	Outgoing Invite	Yes	
	Incoming Invite	Yes	.
SBC/ALG – Failover/Failback	Register Failover/Failback	No	
	Invite Failover/Failback	No	
TCP	Register	No	
	Outgoing Invite	No	
	Incoming Invite	No	
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	
	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 an Algo issue, the issue number is from Algo'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			
		1.5.5			
	None				

3 BroadWorks Configuration

This section identifies the required BroadWorks device profile type for the Algo 8036/8039/8201/8203 Intercom Devices as well as any other unique BroadWorks configuration required for interoperability with the Algo Intercom Devices.

3.1 BroadWorks Device Profile Type Configuration

This section identifies the device profile type settings to use when deploying the Algo Intercom Devices with BroadWorks.

Create a device profile type for an Algo Intercom Device as shown in the following example. A separate device profile type should be created for each Algo Intercom Device model. The settings shown are recommended for use when deploying the Algo Intercom Devices with BroadWorks. For an explanation of the profile parameters, see the *BroadWorks Device Management Configuration Guide* [1].

The following device profile type shown provides the *Number of Ports* (number of SIP lines) setting for Algo 8201 SIP PoE Intercom. For other Intercom Devices models, create a new device profile type and set the *Number of Ports* to match the available number of SIP lines per model according to the following table.

Model	Number of Lines
8036	1
8039	1
8201	1
8203	1

Figure 1 Identity/Device Profile Modify Page

3.2   BroadWorks Configuration Steps

There are no additional BroadWorks configuration steps required.

4   Algo 8036/8039/8201/8203 Configuration

The Algo Intercom Devices can be configured through the Algo web interface or provisioning.

This section describes the configuration settings required for the Algo Intercom Devices integration with BroadWorks, primarily focusing on the SIP interface configuration. The Algo 8036/8039/8201/8203 Intercom Devices 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 *8036 SIP Multimedia Intercom Installation & Configuration Guide* [1], *8039 SIP Video Intercom Installation & Configuration Guide* [2], and for Algo 8201 and 8203 see the *8201 SIP PoE Intercom Installation & Configuration Guide* [3] supplied by Algo.

4.1   Configuration Method

During a reboot, the Algo Intercom Devices will download a device specific configuration file and the firmware/base files if the system level files require an upgrade.

> **NOTE**: Algo devices may require additional system file upgrades or instructions. Algo 1.5.5 firmware will require system file version r1.5.5. For more details when downloading firmware/base upgrades, see the www.algosolutions.com.

Configuration Files

Intercom Devices Configuration Files	Level	Description
algo-<model>-<release version>.fw and algo-<model>- <release version>.md5 Example: algo-8201-1.5.5.fw	System	Contains the device firmware load. The firmware files are unique to each Algo Intercom Device model (8036/8039/8201/8203).
algo-<platform>-base-<release version>.fw and algo-<platform>-base-<release version>.md5 Example: algo-pb-base-r1.5.fw	System	Contains the device base load. Device specific base platforms are as follow: 8036: pd 8039: pc 8201 and 8203: pb
algom<MAC address>.conf Example: algom0022ee020009.conf	Subscriber	Contains configurable parameters that apply to an individual device in a deployment.

4.2   System Level Configuration

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

4.2.1 Configure Network Settings

By default, the Algo Intercom Devices are set for DHCP to make administration of IP addresses simpler. The devices can be set to a static IP address, if desired, with specified DNS server information. For more information, see the Algo 8036/8039/8201/8203 user guides.

Step	Command	Description
Step 1	**Set Protocol** net.dhcp.use = 0	Set the configuration to 0, to enable Static IP option. (By default, the configuration is set to 1 (DHCP)).
Step 2	**Set IP Address** net.ip = 192.16.10.29	Configure a desired static IP for the device used.
Step 3	**Set Netmask** net.mask = 255.0.0.0	Set an appropriate Netmask.
Step 4	**Set Gateway** net.gateway = 10.0.0.1	Set an appropriate Gateway.
Step 5	**Set DNS Server** net.dns1 = 199.19.193.12 and optional: net.dns2 = <DNS Server 2>	Set an appropriate DNS server. A second DNS server can also be set.

4.2.2 Configure SIP Interface Settings

Step	Command	Description
Step 1	**Set SIP Proxy/Domain** sip.proxy = as.broadworks.net	Set the 8036/8039/8201/8203 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** sip.obproxy = sbc.broadworks.net	Set the outbound proxy to the SBC if one is deployed between the Algo device and BroadWorks. If there are redundant SBCs, set it to the FQDN for the SBC cluster.

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.

Step	Command	Description
Step 1	**Set SIP Extension** sip.u1.auth = SIP Authentication ID sip.u1.pwd = SIP Authentication Password sip.u1.user = phone number	If the Authentication service is configured on BroadWorks, the *sip.u1.auth* and *sip.u1.pwd* fields must be configured to match the BroadWorks authentication settings. *sip.u1.user* field must be configured to match the user part of BroadWorks line/port setting.

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

This feature is not supported by the Algo Intercom Devices.

4.4.2 Advice of Charge Configuration

This feature is not supported by the Algo Intercom Devices.

4.4.3 Fax Configuration

This feature is not supported by the Algo Intercom Devices.

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 Algo 8036/8039/8201/8203 Intercom Devices and the configuration steps required. For Device Management configuration details not covered here, see the *BroadWorks Device Management Configuration Guide* [1] and the *BroadWorks CPE Kit Usage Guide* [9].

5.1   Device Management Capabilities Supported

The Algo Intercom Devices have completed Device Management interoperability testing with BroadWorks using the *BroadWorks Device Management Interoperability Test Plan* [8]. 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 Algo Intercom Devices' 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 Algo Intercom Devices.

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 FQDN		
	HTTPS Download Using XSP Cluster FQDN	Yes	
HTTPS File Download with Client Authentication	HTTPS Download with Client Authentication Using XSP FQDN	No	
	HTTPS Download with Client Authentication Using XSP Cluster FQDN	No	

BroadWorks Device Management Interoperability Test Plan Support Table			
Test Plan Package	**Test Plan Package Items**	**Supported**	**Comments**
Time Zone Mapping	Inspect Time Zone Setting	Yes	
Language Mapping	Inspect Language Setting	No	
File Inspection	Inspect System Config File	No	
	Inspect Device-Specific Config File	Yes	
	Inspect Other Config Files	No	
	Inspect Static Files	Yes	
Device Inspection	Inspect SIP Settings	Yes	
	Inspect Line Settings	No	
	Inspect Service Settings	NA	
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	NA	
	Shared Line Termination	NA	
	Shared Line Status	NA	
	Busy Lamp Field	NA	
	Network-Based Conference	NA	
Flexible Seating	Association via Voice Portal	NA	
	Association via Phone	NA	
No Touch Provisioning	Provision via DHCP Options Field	Yes	
	No Touch Provision via DM redirect	No	
	No Touch Provision via Vendor redirect	No	

5.2 Device Management Configuration

This section identifies the steps required to enable the Algo Intercom Devices for Device Management. For Device Management configuration details not covered here, see the *BroadWorks Device Management Configuration Guide* [1] and the *BroadWorks CPE Kit Usage Guide* [9].

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 Algo Intercom Devices only.

The Algo Intercom Devices make 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 Algo 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
%SBC_ADDRESS%	IP address/FQDN	SBC SIP address.
%SBC_PORT%	Port	SBC SIP port. The port should be set if the defined session border controller (SBC) address is an IP address. If the SBC address is an FQDN, then the SBC port should not be set.

Example System Default Tag Settings

Tag Set: System Default

Delete	Tag Name ▲	Tag Value	Edit
☐	%APPLICATION_DOMAIN%	as.iop1.broadworks.net	Edit
☐	%DNS_SERVER_1%	8.8.8.8	Edit
☐	%DNS_SERVER_2%	8.8.4.4	Edit
☐	%DNS_SERVER%	8.8.8.8	Edit
☐	%KWS300_XSP_PATH%	http://xsp.broadsoft.com/dms/kws300	Edit
☐	%OUTBOUNDPROXYADDRESS%	199.19.193.9	Edit
☐	%OUTBOUNDPROXYPORT%	5060	Edit
☐	%OUTBOUNDPROXYTRANSPORT%	UDP	Edit
☐	%SBC_ADDRESS%	199.19.193.9	Edit
☐	%SBC_PORT%	5060	Edit
☐	%SBC_TRANSPORT%	UDP	Edit
☐	%SIP_TRANSPORT_PROTO%	UDP	Edit
☐	%SIP_TRANSPORT%	0	Edit
☐	%SNTP_SERVER_1%	time.nist.gov	Edit
☐	%SNTP_SERVER_2%	time.windows.com	Edit
☐	%SNTP_SERVER%	time-b.nist.gov	Edit
☐	%SNTP_SERVERIP%	192.5.41.41	Edit
☐	%USE_SBC_BOOL%	true	Edit
☐	%USE_SBC_BOOLEAN%	1	Edit
☐	%XSP_ADDRESS_XSI_ACTIONS%	xsp1.iop1.broadworks.net	Edit

[Page 1 of 2]   Next   Last
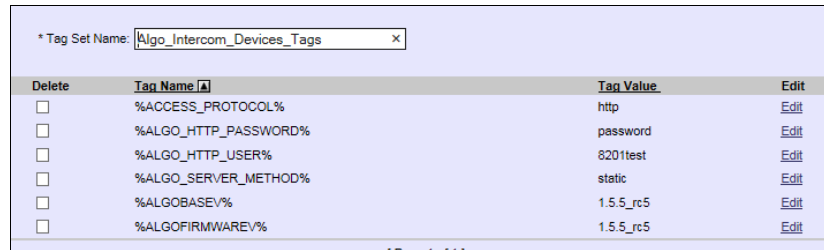
Figure 2 System Default Tag Settings

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*: *Algo_Intercom Devices_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
%ALGO_HTTP_USER%	Example: 8201test	Must match the "Device Access User Name" setting for the device profile configured on BroadWorks.
%ALGO_HTTP_PASSWORD%	Example: password	Must match the "Device Access Password" setting for the device profile configured on BroadWorks.
%ACCESS_PROTOCOL%	Example: http	Choose the provisioning method (http or https).
%ALGO_SERVER_METHOD%	Example: static	Choose the provisioning server method (static or option66).
%ALGOBASEV%	Example: r1.5	Specify the device base load. The version number is always preceded with an "r".
%ALGOFIRMWAREV%	Example: 1.5.5	Specify the device firmware load.

Tag Name	Valid Settings	Description
%DIALING_EXTENSION%	Example: 7227	Specify the target extension/phone number the intercom should call. *Setting only applicable to Algo 8039, 8201, and 8203. To configure 8036 User Interface and the Dialing Extension please see section 5.2.6.1.1 Algo 8036: Configure One (Button) Dialing Extension.*

Example Device Type-specific Tag Settings

Figure 3 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, see the *BroadWorks CPE Kit Usage Guide* [9] and *BroadWorks Device Management Configuration Guide* [1].

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 Algo Intercom Devices as a Device Management-enabled device type. Also, see the *BroadWorks CPE Kit Usage Guide* [9].
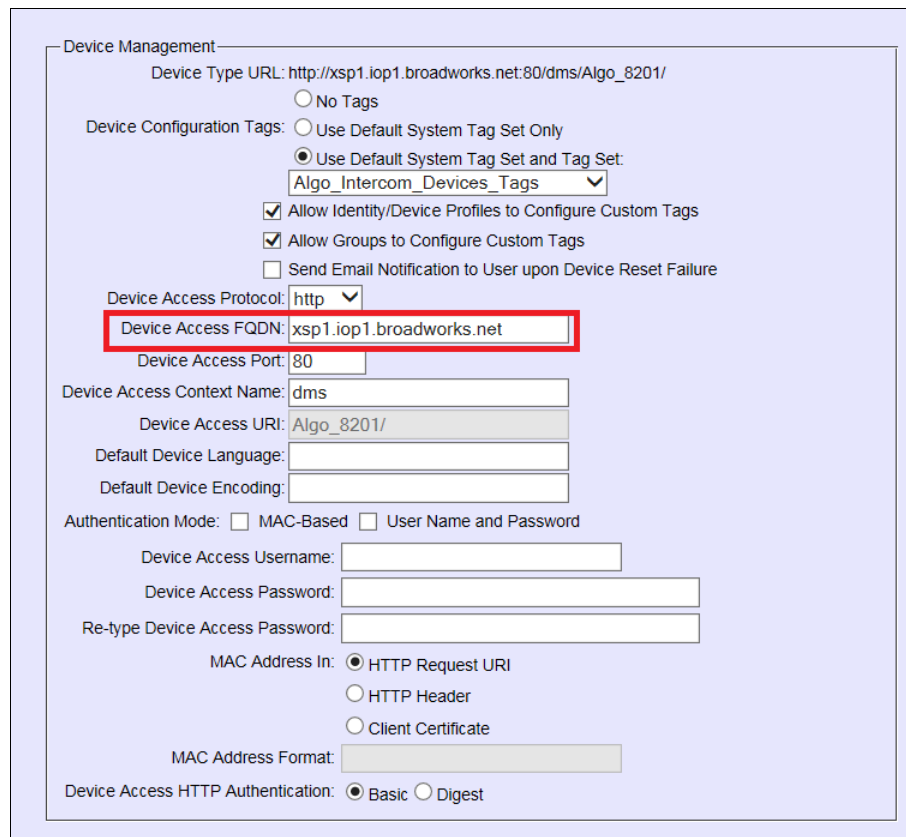
Download the Algo Intercom Devices CPE kit from BroadSoft Xchange at xchange.broadsoft.com. Extract the DTAF file(s) from the CPE kit.

The DTAF files are the import files. Use the following steps to import the DTAF files.

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 Intercom Devices DTAF files 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 Algo device profile type for Algo Intercom Devices, such as *Algo_8201*.

6) Browse to the *Profile* page and change the Device Management Device Access FQDN to your Xtended Services Platform (Xsp) or Xtended Services Platform cluster address.

Device Management

Device Type URL: http://xsp1.iop1.broadworks.net:80/dms/Algo_8201/

Device Configuration Tags:
- ○ No Tags
- ○ Use Default System Tag Set Only
- ⦿ Use Default System Tag Set and Tag Set:
  Algo_Intercom_Devices_Tags
- ☑ Allow Identity/Device Profiles to Configure Custom Tags
- ☑ Allow Groups to Configure Custom Tags
- ☐ Send Email Notification to User upon Device Reset Failure

Device Access Protocol: http
Device Access FQDN: xsp1.iop1.broadworks.net
Device Access Port: 80
Device Access Context Name: dms
Device Access URI: Algo_8201/
Default Device Language:
Default Device Encoding:

Authentication Mode: ☐ MAC-Based ☐ User Name and Password

Device Access Username:
Device Access Password:
Re-type Device Access Password:

MAC Address In:
- ⦿ HTTP Request URI
- ○ HTTP Header
- ○ Client Certificate

MAC Address Format:

Device Access HTTP Authentication: ⦿ Basic ○ Digest

Figure 4 Device Access FQDN

7) Click the **Files and Authentication** link and then select the option to rebuild all the system files.

Firmware files must be obtained from Algo's website. These files are not included in the import. Complete the steps in section *5.2.2.2.2 Define Device Profile Type Files* to define the static firmware files and to upload the firmware.

After importing the DTAF, 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 Algo Intercom Devices as a Device Management-enabled device type. This method should be used only special cases as described in section *5.2.2 Configure BroadWorks Device Profile Type*.

For more information on manual configuration, see the *BroadWorks CPE Kit Usage Guide* [9] and the *BroadWorks Device Management Configuration Guide* [4].

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.

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 Algo Intercom Devices.

Browse to *System → Resources → Identity/Device Profile Types* and perform a search to find the Algo device profile type(s) created in section *3.1 BroadWorks Device Profile Type Configuration* or add the device profile types 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 Algo Intercom Devices download.

Configuration templates, firmware, and other files the Algo Intercom Devices uses must be uploaded to BroadWorks. Download the Algo Intercom Devices 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 Algo.

The following table identifies Algo configuration files distributed with version 1.5.5 CPE kit.

File Name	CPE Kit Template File Name	File Type	Description
algom%BWMACADDRESS%.conf	algom%BWMACADDRESS%.conf.template	Device-specific	This file contains device level configuration.

The following table identifies firmware and MD5 files that the Algo Intercom Devices downloads from the server. These files are not provided in the CPE kit and must be obtained from Algo.
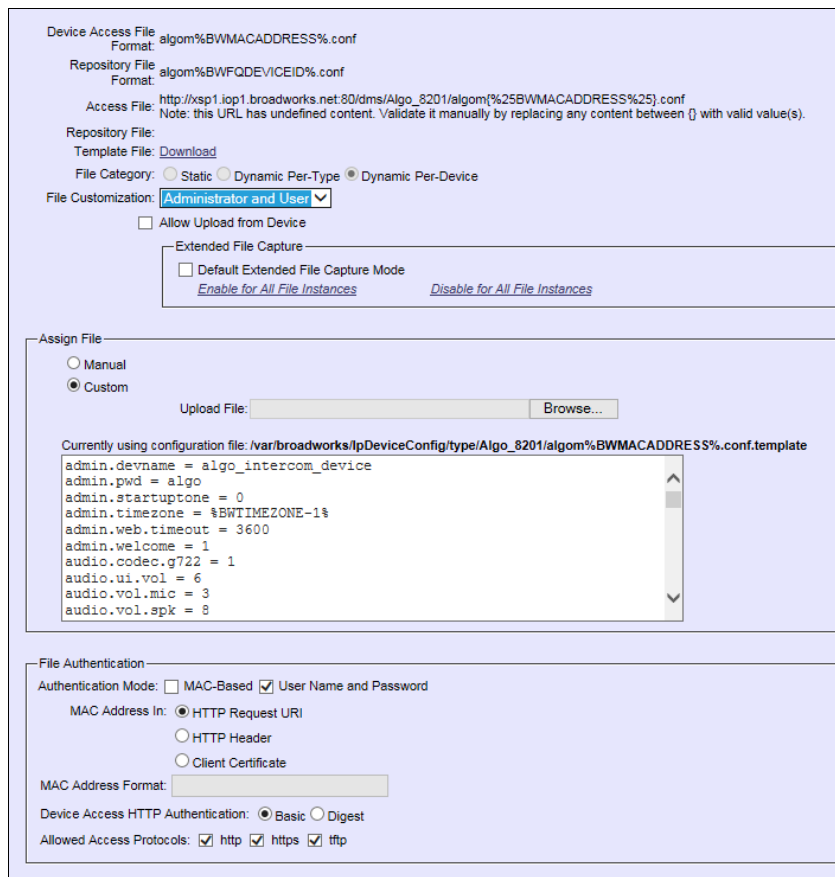
File Name	File Type	Description
Algo-<platform>-base-<release version>.fw	Static	Contains the device base load. Device specific base platforms are as follow:
algo-<platform>-base-<release version>.md5	Static	8036: pd 8039: pc 8201 & 8203: pb

File Name	File Type	Description
algo-<Model>-<release version>.fw	Static	Contains the device firmware load. The firmware files are unique to each Algo Intercom Device model.
algo-<Model>- <release versión>.md5	Static	

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

5.2.2.2.2.1   *algom%BWMACADDRESS%.conf*

Add the *algom%BWMACADDRESS%.conf* file to the device profile type with the settings shown in the following screen capture. After creating the device profile type file, upload the *algom%BWMACADDRESS%.conf* extracted from the CPE kit. Be sure to click **Apply** after uploading the file.

Figure 5 %BWMACADDRESS%.xml File Settings

5.2.2.2.2.2   Firmware and MD5 Files

Add all firmware and MD5 files listed in section *5.2.2.2.2 Define Device Profile Type Files* to each Intercom Devices device profile type with the settings example shown in *Figure 8*. After creating the device profile type file, upload the firmware and MD5 files received from Algo, then click **Apply**.
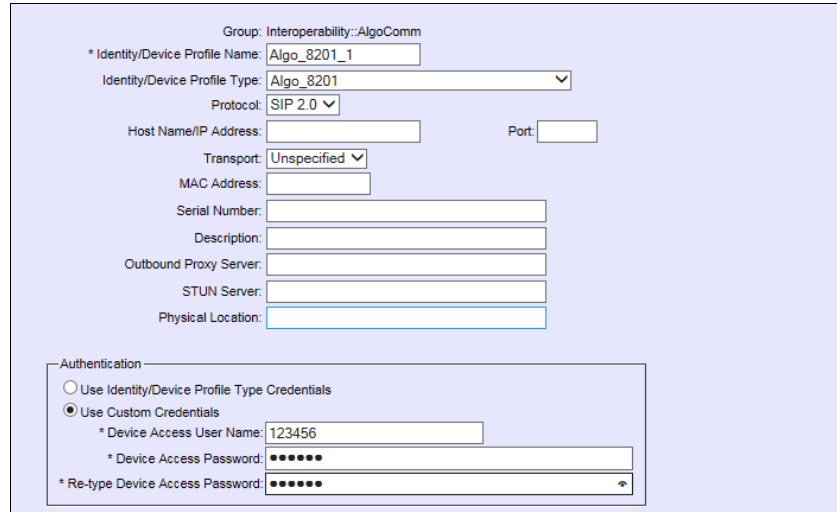
Figure 6 algo-8201-%ALGOFIRMWAREV%.fw

5.2.2.2.3   Time Zone Mapping

The CPE kit contains time zone properties files for Intercom Devices. This files map the BroadWorks user's time zone settings to the device's time zone settings.

This time zone mapping files must be added to the */usr/local/broadworks/bw_base/conf/dms* directory on the Application Server for each Intercom Devices using the following file name format: *TimeZoneAliasLabels_<device profile type name>.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 Algo device.

Browse to the BroadWorks *<group>* → *Resources* → *Identity/Device Profiles* page and then select **Add** to add a new Algo Intercom Devices 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 Intercom Devices 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 following customization 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 that following steps.

1) At the *Group → Utilities → Configure Device* page, select the Algo Intercom Devices 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's LAN IP address.

6)   To save the tag data, click **OK**.

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

5.2.6   Configure Algo 8036/8039/8201/8203 Intercom Devices

This section describes the steps necessary to configure the Algo Intercom Devices to integrate with BroadWorks Device Management.

5.2.6.1   Manually Configure Intercom Devices

Manually configured Algo 8036/8039/8201/8203 through its web interface http://<device IP>. The default password is "algo". The browsers supported by the Intercom Devices are Google Chrome, Firefox, and Internet Explorer (other than IE9).

After logging in to the device, go to the *Advanced Settings → Provisioning* tab in the Algo Intercom Device web interface to set the BroadWorks Device Management information.

1)   Make sure that the *Provisioning Mode* is Enabled.

2)   Select *Static* for the *Server Method* field and enter the *Static Server* in the following field.

3)   Choose *HTTP* or *HTTPS* for the *Download Method*.

4)   Enter the BroadWorks "Device Profile Name" in the *Auth User Name* field and the corresponding password in the *Auth Password* field

5)   For the *Config Download Path* and *Firmware Download Path* specify the download path of the device, from BroadWorks *Device Type URL*.

6)   Click **Save**. A prompt to reboot the device will appear at the top. Click **Reboot** for the provisioning to complete.
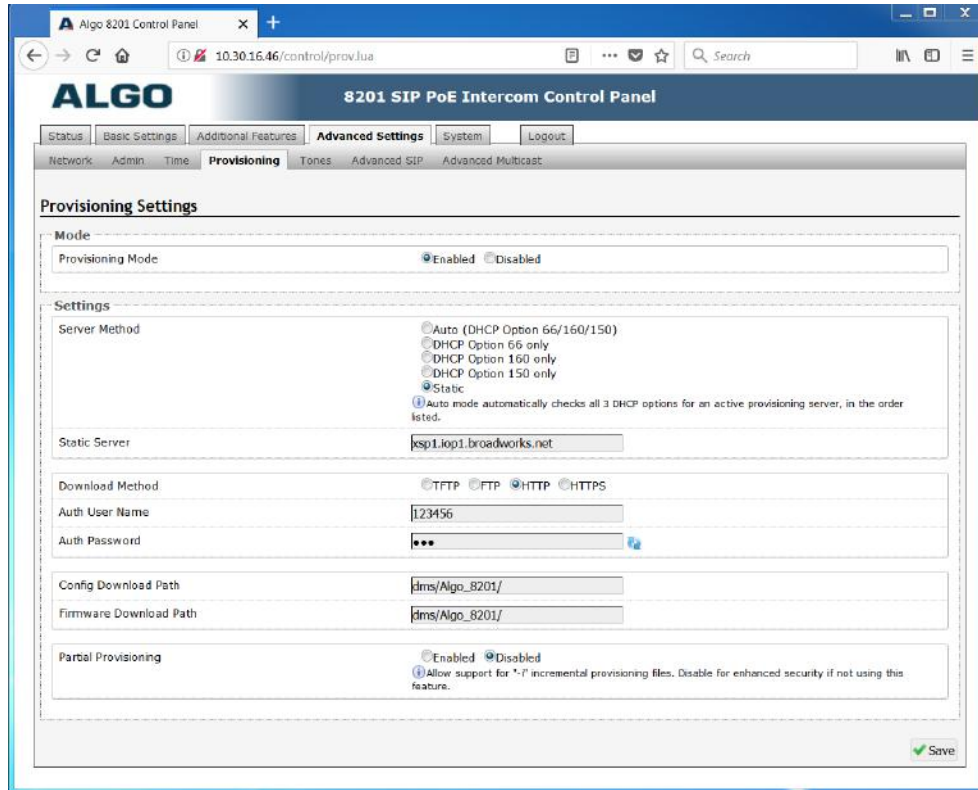
Figure 8 Intercom Devices Provisioning Screen

After reboot, if the device registered with BroadWorks, the *SIP Registration*, on the *Status* tab should be "Successful" for the Intercom extension configured and the extension details should be autocompleted under *Basic Settings → SIP tab → Outbound Proxy → Advanced Settings → Advanced SIP* tab should also be filled in.

- **HTTP/HTTPS:**

  – URL: Set to match the BroadWorks Device Management Access URL, for example, *http://xsp1.iop1.broadworks.net:80/dms/Algo_8201/.*

  – ID: Set to match BroadWorks Device Management username.

  – Password: Set to match BroadWorks Device Management password.

5.2.6.1.1   Algo 8036: Configure One (Button) Dialing Extension

After logging in to the 8036 web interface, go to the *User Interface → General* tab in the Algo 8036 web interface to set create a UI page on the 8036.

1) Select 1 for the *Number of Active Pages.*

2) Set *Home Page* to *Page 1.*

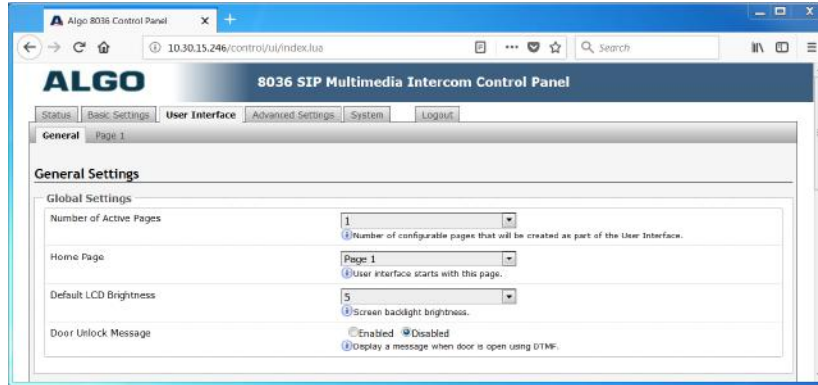3) Click **Save**. The "Page 1" tab will appear in the Algo 8036 web interface.

Figure 9 Algo 8036 UI Settings

4) Go to the *Page 1* tab to create a button.

5) Select *Button* for the *Template* field. More settings will appear.

6) Select *Single Button* for the *Button Layout* field. Settings to configure the button will appear.

7) *Enable* the *Button 1* and enter optional label for the button on the 8036 UI *Text* field.

8) Choose *Call* for the *Action* field and enter the *Action – Call Destination* that you would like the 8036 to call when the button is pressed on the 8036 UI.

9) Click **Save**. The 8036 interface will reboot and the new button should be visible on the 8036 screen.
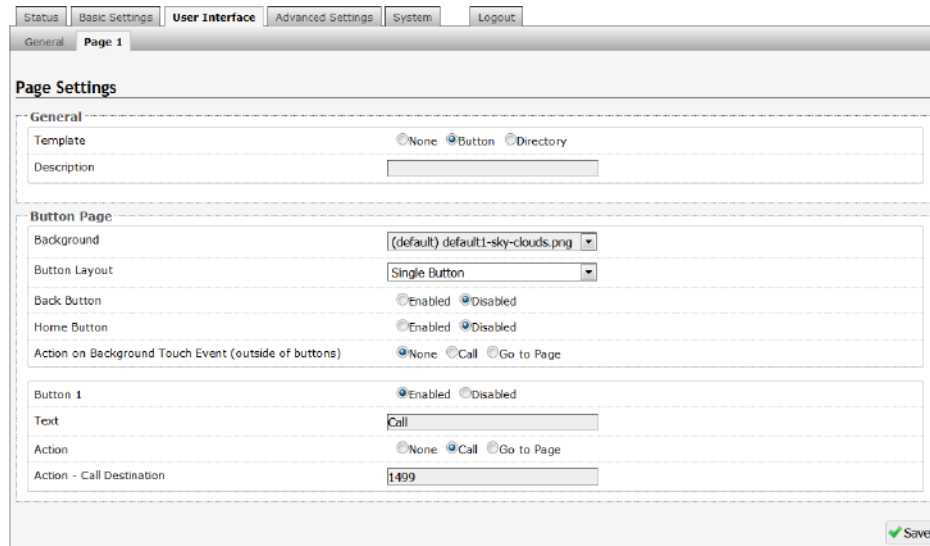

Figure 10 Algo 8036 Configuring Dialing Extension

For more information on how to add more buttons and configure the Algo 8036 touch screen user interface, see the *8036 SIP Multimedia Intercom Installation & Configuration Guide* [1].

5.2.6.2 No Touch DHCP Configuration

Algo devices currently only support DHCP server option 66 methods. This section shows example for DHCP server and Intercom Devices configuration.

Ensure the BroadWorks' provisioning tags are set as follows:

- %ACCESS_PROTOCOL% set to "http" or "https"
- %ALGO_SERVER_METHOD% set to "option66"

5.2.6.3 DHCP Server Configuration

Configure the end customer's DHCP server with *Option 66*. The following is an example of the DHCP server configuration used for with option 66.

```
{
# DHCP BroadSoft test
option directURI code 66 = string;
subnet 10.2.0.0 netmask 255.255.255.0 {
option subnet-mask 255.255.255.0;
option domain-name-servers 10.2.0.29;
option routers 10.2.0.1;
}
host directURI {
option host-name "directURI";
hardware ethernet 00:22:ee:00:10:a7;
fixed-address 10.30.16:46
option directURI " http://<user name>:<password>@xsp1.iop1.broadworks.net/dms/Algo_8201/";
}
```

Appendix A: Reference Algo 8036/8039/8201/8203 Configuration File

The following is a reference configuration for the Intercom Devices configured for use with BroadWorks.

Device-specific File: algom<MAC address>.conf

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

```
# SIP Default Generic Configuration File
admin.devname = algo_intercom_device
admin.pwd = algo
admin.startuptone = 0
admin.timezone = %BWTIMEZONE-1%
admin.web.timeout = 3600
admin.welcome = 1
audio.codec.g722 = 1
audio.ui.vol = 6
audio.vol.mic = 3
audio.vol.spk = 8
dp.ctrl.disc = 0
dp.dest = %DIALING_EXTENSION%
dp.dtmf.act =
dp.dtmf.mopen = 6
dp.dtmf.rls =
dp.netdc.active = 1
dp.netdc1.access =
dp.netdc1.act =
dp.netdc1.addr =
dp.netdc1.mopen = 6
dp.netdc1.mto = 3000
dp.netdc1.pwd = algo
dp.netdc1.rls =
dp.netdc2.access =
dp.netdc2.act =
dp.netdc2.addr =
dp.netdc2.mopen = 6
dp.netdc2.mto = 3000
dp.netdc2.pwd = algo
dp.netdc2.rls =
dp.tone.unlock = 0
log.level = info
log.method = local
log.server =
net.dhcp.c.ntp = 0
net.dhcp.timeout = 60
net.dhcp.use = 1
net.discovery = 1
net.dns1 =
net.dns2 =
net.dscp.rtcp = 0
net.dscp.rtp = 0
net.dscp.sip = 0
net.gateway =
net.http = 1
net.ip =
net.mask =
net.srv.snmp = 0
```

```
net.ssh = 1
net.time1 = 0.debian.pool.ntp.org
net.time2 = 1.debian.pool.ntp.org
net.time3 = 2.debian.pool.ntp.org
net.time4 = 3.debian.pool.ntp.org
net.vlan.id = 0
net.vlan.priority = 0
net.vlan.use = 0
phone.timeout.ringback = 30
phone.timeout.session = 0
phone.tone.page = Default
phone.tone.ringback = Default
prov.auth.pwd = %ALGO_HTTP_PASSWORD%
prov.auth.user = %ALGO_HTTP_USER%
prov.download.cert = 0
prov.download.cfgpath = %BWDMSCONTEXT%/%BWDEVICEACCESSURI%
prov.download.fwpath = %BWDMSCONTEXT%/%BWDEVICEACCESSURI%
prov.download.method = %ACCESS_PROTOCOL%
prov.server.method = %ALGO_SERVER_METHOD%
prov.server.static = %BWDEVICEACCESSFQDN%
prov.use = 1
prov.version.base = %ALGOBASEV%
prov.version.firmware = %ALGOFIRMWAREV%
sip.diffport = 0
sip.inbound = 0
sip.ka.method = 0
sip.ka.period = 30
sip.media.bwinfo = 1
sip.obproxy = %SBC_ADDRESS%:%SBC_PORT%
sip.proxy = %BWHOST-1%
sip.regexp = 3600
sip.ssr.chkact = 0
sip.ssr.interval = 120
sip.ssr.method = 0
sip.ssr.nofb = 0
sip.ssr.use = 0
sip.stun =
sip.u1.auth = %BWAUTHUSER-1%
sip.u1.pwd = %BWAUTHPASSWORD-1%
sip.u1.user = %BWLINEPORT-1%
sip.video.stream = 1
video.call.mode = 0
video.session.passcode =
video.web.res = 2
net.telnet = 1
```

References

[1] Algo Communication Products Ltd. 2017. *8036 SIP Multimedia Intercom Installation & Configuration Guide, Document 90-00081.* Available at algosolutions.com/8036/guide.

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[5] BroadSoft, Inc. 2017. *BroadWorks Redundancy Guide, Release 22.0.* Available from BroadSoft at xchange.broadsoft.com.

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