

January 21, 2020

Configuration of Algo 8301 Paging Adapter Scheduler with MiVoice Business 9.0 SP3

Description: This document provides a reference to Mitel Authorized Solutions Providers for configuring the MiVoice Business with Algo 8301 Paging Adapter.

Environment: MiVoice Business 9.0 SP3 (9.0.3.15), Algo 8301 Paging Adapter (1.7.9)

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Mitel Technical Configuration Notes – Configuration of Algo 8301 Paging Adapter Scheduler with MiVoice Business 9.0 SP3.

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Table of Contents

| | |
|---|-----------|
| Overview | 1 |
| Interop History | 1 |
| Interop Status..... | 1 |
| Software & Hardware Setup | 2 |
| Tested Features..... | 3 |
| Resiliency..... | 4 |
| Device Limitations | 5 |
| Network Topology..... | 6 |
| MiVoice Business - Configuration Notes..... | 7 |
| Network Requirements | 7 |
| Assumptions for the MiVoice Business Programming | 7 |
| Software License – SIP Licensing..... | 8 |
| Multiline IP Set Configuration | 9 |
| Class of Service Assignment | 10 |
| SIP Device Capabilities | 15 |
| Station Attributes..... | 18 |
| Enabling Voice Encryption in MIVB..... | 19 |
| Algo 8301 Paging Adapter Configuration Notes | 20 |
| Algo 8301 Paging Adapter Software Setup Notes | 20 |
| Home Page Login..... | 20 |
| Configuration details..... | 21 |
| Glossary..... | 23 |

Overview


This document provides a reference to Mitel Authorized Solutions Providers for configuring the MiVoice Business to host the Algo 8301 Paging Adapter. The different devices can be configured in various configurations depending on your VoIP solution. This document covers a basic Algo 8301 Paging Adapter setup as Endpoint with required options setup.

Interop History

| Version | Date | Reason |
|---------|----------------|---|
| 1 | November, 2019 | Algo 8301 Paging Adapter with MiVB 9.0 SP3 (9.0.3.15) |

Interop Status

The Interop of the Algo 8301 Paging Adapter has been given a Certification status. This device will be included in the SIP CoE Reference Guide. The status Algo 8301 Paging Adapter achieved is:

| | |
|---|--|
|  COMPATIBLE | The most common certification which means the device/service has been tested and/or validated by the Mitel SIP CoE team. Product support will provide all necessary support related to the interop, but issues unique or specific to the 3rd party will be referred to the 3rd party as appropriate. |
|---|--|

Algo 8301 Paging Adapter with MiCloud Flex/MiVoice Business has been certified under Tertiary category. The three levels of certification corresponding to different deployment models are explained below –

BRONZE – Bronze status indicates the device is interoperable with MiVB on-premise deployments and MiCloud Flex MPLS/SD-WAN solution, but UDP/TCP as the primary transport protocol as primary and with minimal coverage for TLS. Corresponds to the Tertiary Topology Diagram

SILVER - Silver is the next level of compliance where the device can only be used against MPLS and SD-WAN variants of Flex but not as OTT Teleworker. Both UDP/TCP and TLS can be used as transport protocols. And the device is also compatible with MiVB on-premise solution. Corresponds to the Secondary and Tertiary Topology Diagrams

GOLD – Gold is the premium level of compliance that the device can be used across MiVB on-premise and MiCloud Flex deployments (OTT Teleworker, MPLS, SD-WAN). Corresponds to the Primary, Secondary and Tertiary Topology Diagram.

Software & Hardware Setup

The test setup generated basic SIP calls between Algo 8301 Paging Adapter and the MiVoice Business.

Note: Although this testing was performed on the below tested variants, the scope of this testing can be extended to other product variants that work with the same firmware. The list of components for which this testing can be considered applicable is given in the “Additional Applicable Variants” column of the following table –

| Manufacturer | Tested Variant | Software Version | Additional Applicable Variants |
|--------------|---------------------------|-------------------------|--|
| Mitel | MiVoice Business Platform | 9.0 SP3 (9.0.3.15) | NA |
| Algo | Algo 8301 Paging Adapter | 1.7.9 | 8201,8180,8186,8188,8189,8190,8190S,8301,8373, 8180(G2), 8128, 8128(G2), 8028, 8028(G2) and 8138 |
| Mitel | 68xx/69xx Mode | 5.1.0.2051/01.05.00.075 | NA |

Tested Features




Listed below is an overview of the features tested during the Interop test cycle and not a detailed view of the test cases. Please see the SIP Line Side Interoperability Test Plans for detailed test cases.

| Feature | Feature Description | Issues |
|-------------------|---|-------------------------------------|
| Basic Call | Making and receiving a call | <input checked="" type="checkbox"/> |
| Codec | G711 and G722 codec | <input checked="" type="checkbox"/> |
| TLS/SRTP | Basic incoming/outgoing call. | <input checked="" type="checkbox"/> |
| Resiliency | Device able to handle resiliency when primary MiVB goes down. | <input checked="" type="checkbox"/> |

- No issues found - Issues found, cannot recommend to use  - Issues found

Resiliency

The following table lists the scenarios of resilience supported by this device when connected to the Mitel MiVoice Business.

| Device | Basic | Advanced |
|---|--|--|
| Algo 8301 Paging Adapter | <input checked="" type="checkbox"/> |  |
| <input checked="" type="checkbox"/> - No issues found |  - Issues found, cannot recommend use |  - Issues found |

Note: Refer to list of device limitations and known issues later in the document for recommendations.

The various scenarios are described below. The scenario names are a convenience for understanding this section of the configuration guide.

Basic: Resiliency is achieved by utilizing the ability of DNS servers to provide multiple IP addresses against a single FQDN. This is generally achieved by using DNS SRV or A records. This scenario requires nothing from a SIP Endpoint except that it supports standard DNS behavior. It can also be done by manually setting up back proxy on the phone.

Using REGISTER-301 Moved Permanently message to redirect registration to an alternate MiVoice Business element.

At a minimum, a 32-second timeout for the REGISTER, SUBSCRIBE, INVITE or OPTIONS messages should trigger a Failover

After Failover/Failback – the device must restart all subscriptions (message-summary

Advanced: There are different ways to detect the failure in this category.

P-Alternate-Server:

Use the P-Alternate-Server header in the REGISTER-200 OK message to store the HE and SE addresses.
Heartbeat

Use a light-weight heartbeat to periodically monitor the health of the MiVoice Business element to which the device is connected. This allows for the device to recover from failures faster without overloading the controlling element.

Survival Mode

Continue existing conversations when a failure is detected until at least the Session Timer expires or the user takes an action which causes termination. Displaying a message on the set is also recommended.

First Call after Failure

Implement a policy to time out a new call early if no 18x/2xx message is received.

Note: ALGO uses SIP NOTIFY & OPTIONS method to detect the failure between the servers.

While testing resiliency, we have used SIP OPTIONS method to poll servers in order to detect their availability.

For example, Initially Algo is registered to primary server and calls are working fine. Now we make primary server down, SIP OPTIONS method will poll from Algo (OPTIONS will be sent by Algo every 2 mins) and detect the available server. From the time we make primary down and next SIP OPTION method sent in-between if we make calls, calls will fail. Once SIP OPTIONS get success response from active server, calls will work immediately and on register expire Algo will directly send register to the active server.

Device Limitations

This is a list of problems or not supported features when the Algo 8301 Paging Adapter is connected to MiVoice Business.

| Feature | Problem Description |
|---|---|
| Call transfer/forward/conference | The Algo 8301 Paging adapter fully supports transfer/forward, and conference scenarios performed by the other phone involved in the call. Calls may be transferred to it and it can be brought into a conference. Note, however, that the 8301 cannot initiate these actions, as it is not a telephone and does not have a keypad information. Recommendation: Contact Algo for further information. |
| FAX | Algo 8301 Paging Adapter does not support FAX. Recommendation: Contact Algo Support for further information. |
| G729 Codec | Algo 8301 does not support G729 codec. Recommendation: Contact Algo Support for further information. |
| Resiliency | Initially Algo will be registered to Primary MiVB. During resiliency testing when primary is down and make call immediately call will fail. Since SIP OPTIONS will be sent by Algo every 2 mins (minimum value) which is used to poll the active server. With in this time gap calls will fail. Once OPTIONS sent and got success response, calls will work. Note that the primary resiliency method of SRV Record is fully supported. Recommendation: Contact Algo Support for further information. |

Network Topology

This diagram shows how the testing network is configured for reference.

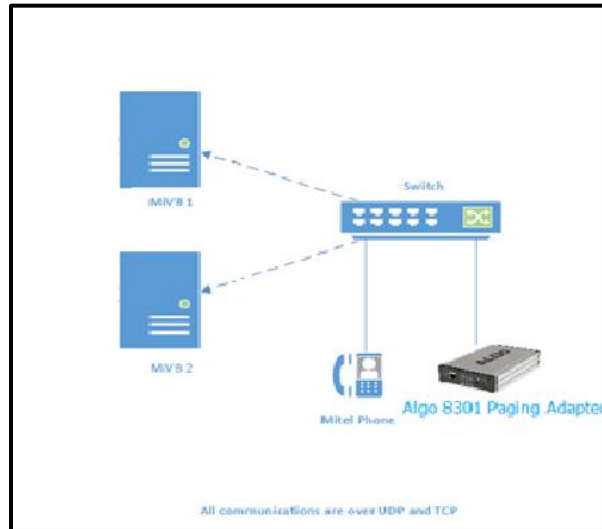


Figure 1 – Network Topology

The Algo 8301 Paging Adapter is configured as a SIP endpoint where a persistent connection is created for each SIP user. Each connected device has a separate SIP connection to the SIP server.

MiVoice Business - Configuration Notes

The following steps show how to program a MiVoice Business to connect with the Algo 8301 Paging Adapter.

Network Requirements

- There must be adequate bandwidth to support the voice over IP. As a guide, the Ethernet bandwidth is approx 85 Kb/s per G.711 voice session and 29 Kb/s per G.729 voice session (assumes 20ms packetization). As an example, for 20 simultaneous SIP sessions, the Ethernet bandwidth consumption will be approx 1.7 Mb/s for G.711 and 0.6Mb/s. Almost all Enterprise LAN networks can support this level of traffic without any special engineering. Please refer to the MiVoice Business Engineering guidelines for further information.
- For high quality voice, the network connectivity must support a voice-quality grade of service (packet loss <1%, jitter < 30ms, one-way delay < 80ms).

Assumptions for the MiVoice Business Programming

- The SIP signaling connection uses UDP on Port 5060.

Software License – SIP Licensing

Ensure that the MiVoice Business is equipped with enough Mode licenses for the connection of SIP end points. This can be verified within the Software License Feature section form.

The screenshot shows the Mitel MiVoice Business software license configuration interface for MN22. The interface includes a sidebar with navigation options such as Licenses, System Capacity, Dimension Selection, Application Group Licensing, LAN/WAN Configuration, Voice Network, System Properties, Hardware, Trunks, Users and Devices, Integrated Directory Services, Voice Mail, Call Routing, Music On Hold, Emergency Services Management, Property Management, and Maintenance and Diagnostics. The main area displays the 'License and Option Selection' table, which lists various features and their current counts. The table has columns for feature names, current counts, and various status indicators.

| Feature | Current Count | Max Count | Unit | License Type | Option |
|---|---------------|-----------|------|--------------|--------|
| MiVoice Business Console Active Operators | 0 | 0 | 20 | Unrestricted | No |
| Multi-device Users | 0 | 0 | 20 | Unrestricted | Yes |
| Multi-device Suites | 0 | 0 | 0 | 0 | No |
| Embedded Voice Mail | 20 | 20 | 0 | Unrestricted | Yes |
| Embedded Voice Mail PMS | 0 | No | 1 | Unrestricted | Yes |
| Digital Links | 0 | 0 | 2 | Unrestricted | Yes |
| Compression | | 0 | 8 | Unrestricted | Yes |
| FAX Over IP (T.38) | | 0 | 8 | Unrestricted | Yes |
| SIP Trunks | 0 | 5 | 0 | Unrestricted | Yes |
| Others | | | | | |

Figure 2 – Software License

Multiline IP Set Configuration

On the MiVoice Business, a SIP device can be programmed either in the User Configuration form or the Multiline IP Set Configuration form and are programmed as a “Generic SIP Phone”.

The User PIN is the SIP authentication password and the Number is the Directory Number (DN is a telephone number). All other field names should be programmed according to the site requirements or left at default.

The screenshot shows the Mitel MiVoice Business configuration interface. The left sidebar contains a navigation menu with categories like Licenses, LAN/WAN Configuration, Voice Network, System Properties, Hardware, Trunks, Users and Devices, Attendants, ACD, Group Programming, Telephone Directory Management, Advanced Configuration, Templates, Integrated Directory Services, Voice Mail, Call Routing, Music On Hold, Emergency Services Management, Property Management, and Maintenance and Diagnostics. The 'Users and Devices' section is expanded, and 'User and Services Configuration' is selected. The main area shows a search for '1010' with 30 matches. The 'Keys' tab is active, displaying a table of button configurations for the selected device.

| Button Number | Label | Line Type | URL | Button Directory Number | Ring Type | Copy Keys | Clear All Keys | Clear Key |
|---------------|-----------|-----------|------|-------------------------|-----------|--------------|----------------|-----------|
| 1 | Multicall | | 1010 | | Ring | Not Assigned | | |
| 2 | Multicall | | 1010 | | Ring | Not Assigned | | |
| 3 | | | | | | Not Assigned | | |
| 4 | | | | | | Not Assigned | | |
| 5 | | | | | | Not Assigned | | |
| 6 | | | | | | Not Assigned | | |
| 7 | | | | | | Not Assigned | | |
| 8 | | | | | | Not Assigned | | |
| 9 | | | | | | Not Assigned | | |
| 10 | | | | | | Not Assigned | | |
| 11 | | | | | | Not Assigned | | |
| 12 | | | | | | Not Assigned | | |
| 13 | | | | | | Not Assigned | | |
| 14 | | | | | | Not Assigned | | |
| 15 | | | | | | Not Assigned | | |
| 16 | | | | | | Not Assigned | | |
| 17 | | | | | | Not Assigned | | |
| 18 | | | | | | Not Assigned | | |
| 19 | | | | | | Not Assigned | | |
| 20 | | | | | | Not Assigned | | |

Figure 3 – Create SIP Extension

Class of Service Assignment

The Class of Service Options form is used to create or edit the Class of Service and specify its options. Classes of Service, identified by Class of Service numbers, are referenced by the Station Attributes form for the SIP device.

Many different options may be required for your site deployment, but the options below are required to be changed from the default for a Generic SIP Device to work with the 3300 ICP.

Local_132 | Class of Service Options on Local_132 | Search DN | Show form on Not Accessible

Change Copy | Print... Import... Export... Data Refresh

Page 4 of 11 | Go to [Class Of Service] Value 31 | Go

| Class Of Service Number | Comment |
|-------------------------|---------|
| 31 | General |
| 32 | IP Sets |
| 33 | |
| 34 | |
| 35 | |

General | Advanced

Class Of Service Number: 31
Comment: General

ACD

ACD Agent Behavior on No Answer: Logout
ACD Agent No Answer Timer: 15
ACD Make Busy on Login: No
ACD Silent Monitor Accept: No
ACD Silent Monitor Accept Monitoring Non-Prime Lines: No
ACD Silent Monitor Allowed: No
ACD Silent Monitor Notification: No
Follow 2nd Alternate Route for Recall to Busy ACD Agent: No

General | Advanced

Call Hold

| | |
|------------------------------------|-----|
| Call Hold | Yes |
| Call Hold - Retrieve with Hold Key | No |
| Call Hold Remote Retrieve | Yes |
| Call Hold Timer | 30 |
| Local Music On Hold source | No |
| Music on Hold on Transfer | No |
| Use Called Party Call Hold Timer | No |

Call Park

| | |
|---------------------------|-----|
| Call Park Timer | 180 |
| Call Park-Allowed To Park | No |

Call Pickup

| | |
|--|-----|
| Allow Directed Call Pickup Of Attendant Call | No |
| Call Pickup Dialed Accept | Yes |
| Call Pickup Directed Accept | Yes |
| Call Pickup Display | No |

| General | Advanced |
|---|----------|
| Call Privacy | |
| Call Privacy | No |
| Calling Party Name Substitution | No |
| Name Suppression on outgoing Trunk Call | No |
| Privacy Released | No |
| Public Network Identity Provided | No |
| Call Waiting | |
| Call Waiting Swap | No |
| ONS CLASS/CLIP: Visual Call Waiting | Yes |
| Campon | |
| Auto Campon Timer | 10 |
| Campon Recall Timer | 10 |
| Direct Voice Call | |
| Direct Voice Call - Accept | No |
| Direct Voice Call - Allow | No |
| Direct Voice Call - Maximize Volume | No |

| General | Advanced |
|---|----------|
| Display | |
| After Answer Display Time | |
| Calling Name Display - Internal - ONS | Yes |
| Calling Number Display - Internal - ONS | Yes |
| Display ANI/DNIS/SDN Calling/Called Number | No |
| Display ANI/SDN Calling Number Only | No |
| Display Caller ID on multicall/keylines | No |
| Display Caller ID On Multicall/Keylines Timer | 5 |
| Display Caller ID On Single Line Displays For Forwarded Calls | No |
| Display Dialed Digits during Outgoing Calls | No |
| Display DNIS/Called Number Before Digit Modification | No |
| Display DNIS on Key Label | No |
| Display Held Call ID on Transfer | No |
| Display Transfer Destination on Recall | No |
| Hot Desk External User - Display Internal Calling ID | No |
| Maintain Ringing Party During Recall | No |
| Non-Prime Public Network Identiv | No |

| General | Advanced |
|--|----------|
| Originator's Display Update In Call Forwarding/Rerouting | No |
| Prefer Call Forwarding/Rerouting Information | No |
| Prefer Name for Call Information | No |
| Suppress Delivery of Caller ID Display between Sets | No |
| Suppress Delivery of Caller ID Display between Sets - Override | No |
| Suppress Display Of Account Code Numbers | No |
| Suppress Redial Display | No |
| Fax | |
| Campon Tone Security | No |
| External Trunk Standard Ringback | No |
| Fax Capable | No |
| Return Disconnect Tone When Far End Party Clears | No |
| HCI | |
| HCI/CTI/TAPI Call Control Allowed | Yes |
| HCI/CTI/TAPI Monitor Allowed | Yes |

| General | Advanced |
|---|----------|
| Hot Desk | |
| Green BLF Lamp for Logged in Hotdesk User | No |
| Hot Desk Auto Logout Timer | 0 |
| Hot Desk External User - Allow DTMF Dialing | Yes |
| Hot Desk External User - Allow Mid-Call Features | Yes |
| Hot Desk External User - Answer Confirmation | Yes |
| Hot Desk External User - Dial Tone on Call Complete | Yes |
| Hot Desk External User - Permanent Login | No |
| Hot Desk External User - Remote MWI Enable Feature Access Code | |
| Hot Desk External User - Remote MWI Disable Feature Access Code | |
| Hot Desk Login Accept | Yes |
| Hot Desk Remote Logout Enabled | No |
| Miscellaneous | |
| Backlighting - Enabled | Yes |
| Clear All Features Remote | No |
| Enbloc Dialing - Enabled | No |

| General | Advanced |
|---|----------|
| Handset Volume Adjustment Saved | No |
| Head Set Switch Mute | No |
| Integrated DECT High Power - Enabled | Yes |
| Integrated DECT Wideband - Enabled | Yes |
| Enable Device Configuration | 0 |
| Multi-Color LED Support - Disable | No |
| Phone Lock | No |
| Reseize Timer | 180 |
| Timed Reminder Allowed | Yes |
| User Inactivity Timer | 0 |
| Paging | |
| Group Page Accept | No |
| Group Page Allow | No |
| Loudspeaker Pager Equivalent Zone Override Security | No |
| Loudspeaker Pager Override | Yes |
| Pager Access All Zones | Yes |

| General | Advanced |
|---|----------|
| Pager Access Individual Zones | No |
| PC Port | |
| PC Port On IP Device - Disable | No |
| RAD | |
| Answer Plus Delay To Message Timer | 20 |
| Answer Plus Expected Off-hook Timer | 30 |
| Answer Plus Message Length Timer | 10 |
| Answer Plus System Reroute Timer | 0 |
| Recorded Announcement Device | No |
| Recorded Announcement Device - Advanced | No |
| Ringling | |
| Allow Recall after Transfer | No |
| Delay Ring Timer | 10 |
| No Answer Recall Timer | 17 |
| Ringling Line Select | No |
| Ringling Timer | 180 |

| General | Advanced |
|---|----------|
| SMDR | |
| SMDR External | No |
| SMDR Internal | No |
| Trunk | |
| ANI/DNIS/ISDN Number Delivery Trunk | No |
| DASS II OLI/TLI Provided | No |
| Public Network Access via DPNSS | Yes |
| Public Network To Public Network Connection Allowed | Yes |
| Public Trunk | Yes |
| R2 Call Progress Tone | No |
| Suppress Simulated CCM after ISDN Progress | No |
| Trunk Calling Party Identification | Yes |
| Trunk Flash Allowed | No |
| Two B-Channel Transfer Allowed | No |
| Voice Mail | |
| COV/ONS/E&M Voice Mail Port | No |
| ONS VMail-Delay Dial Tone Timer | 5 |

| General | Advanced |
|-------------------------------------|----------|
| Account Code | |
| Account Code Length | 12 |
| Account Code Verified | No |
| Forced Non-Verified Account Code | No |
| Forced Verified Account Code | No |
| Non Verified Account Code | Yes |
| Attendant | |
| Attendant Busy Out Timer | 10 |
| SC1000 Attendant Basic Function Key | No |
| Call Screening | |
| BLF Screening Allow | No |
| BLF Screening Accept | No |
| Conference | |
| Conference Call | Yes |
| Disable Conference Join Tone | No |

| General | Advanced |
|---|----------|
| DND | |
| Do Not Disturb | Yes |
| Do Not Disturb - Access to Remote Phones | Yes |
| Do Not Disturb Permanent | No |
| Emergency | |
| Emergency Call - Audio Level for Set | Ringer |
| Emergency Call Notification - Audio | No |
| Emergency Call Notification - Visual | No |
| Group Presence | |
| Group Presence Control | No |
| Group Presence Third Party Control | No |
| Hotel | |
| Display VIP | No |
| Hotel Room Monitor Setup Allowed | No |
| Hotel Room Monitoring Allowed | No |
| Hotel/Motel Room Personal Wakeup Call Allowed | No |
| Hotel/Motel Room Remote Wakeup Call Allowed | No |

| General | Advanced | |
|---|----------|-----|
| Message Waiting | | |
| Message Waiting | | Yes |
| Message Waiting - Disable Ringing Lamp Notification | | No |
| Message Waiting Audible Tone Notification | | No |
| Message Waiting Deactivate On Off-Hook | | Yes |
| Message Waiting Inquire | | Yes |
| Message Waiting Ringing Start Time Hour | | |
| Message Waiting Ringing Start Time Minute | | |
| Message Waiting Ringing Stop Time Hour | | |
| Message Waiting Ringing Stop Time Minute | | |
| Multiline Set Voice Mail Callback Message Erasure Allowed | | Yes |
| ONS CLASS/CLIP: Message Waiting Activate/Deactivate | | Yes |
| Miscellaneous | | |
| Auto Answer Allowed | | Yes |
| Auto Answer Disconnect Tone - Enable | | Yes |
| Auto Release on Key Select | | No |

| General | Advanced | |
|--|----------|-----|
| Brokers Call | | No |
| Called Party Features Override | | No |
| Check COR after PSTN Dial Tone | | No |
| Dialled Night Service | | Yes |
| Disable Send Message | | No |
| Flexible Answer Point | | No |
| Individual Trunk Access | | Yes |
| Key A | | |
| Key B | | |
| Key C | | |
| Key D | | |
| Multiline Set Loop Test | | No |
| Multiline Set Message Center Remote Read Allowed | | No |
| Multiline Set Music | | No |
| Multiline Set On-hook Dialing | | Yes |
| Multiline Set Phonebook Allowed | | Yes |

| General | Advanced | |
|--|----------|-----|
| Non DID Extension | | No |
| ONS CLASS/CLIP: Set | | No |
| ONS/OPS Internal Ring Cadence for External Callers | | No |
| Override Interconnect Restriction on Transfer | | No |
| Recall If Transferred to Original Call Destination | | No |
| Redial Facilities | | Yes |
| Use Default Billable Number For Trunk Calls | | No |
| Voice Dial Preferred | | No |
| Voice Mail Softkey | | No |
| Phonebook | | |
| Phonebook Lookup - Default to User Location | | No |
| Phonebook Lookup - Display User Location | | No |
| Record A Call | | |
| Record-A.Call - Save Recording on Hang-up | | No |
| Record-A.Call - Start Automatic Incoming Call Recording | | No |
| Record-A.Call - Start Automatic Outgoing External Call Recording | | No |
| Record-A.Call Active | | No |

Figure 4 – Class of Service Options

SIP Device Capabilities

This form provides configuration options that can be applied to various types of SIP devices. The association between the SIP device and the form is like how the Class of Service options work. The SIP Device Capabilities number provides a SIP profile that can be applied to SIP devices to allow for alternate capabilities as recommended through the Mitel interop process.

In the SIP Device Capabilities form, program a SIP Device Capabilities Number for the Algo 8301 Paging Adapter. Ensure that “Replace System based with Device based In-Call Features” is set to ‘Yes’.

The screenshot shows the Mitel MiVoice Business configuration interface. The left sidebar contains a navigation tree with the following items: Licenses, LAN/WAN Configuration, Voice Network, System Properties (highlighted), System Settings, System Feature Settings (highlighted), System Options, Shared System Options, Class of Service Options, SIP Device Capabilities (highlighted), Class of Restriction Groups, System Access Points, Feature Access Codes, Independent Account Codes, Default Account Codes, System Account Codes, System Speed Calls, Tenants, SMDR Options, and Traffic Report Options. The main area displays the 'SIP Device Capabilities' form for 'Local_132'. The form has a search bar and buttons for 'Change', 'Copy', 'Print...', 'Import...', 'Export...', and 'Data Refresh'. A table lists capabilities with '31' selected. Below the table, the 'Basic' tab is active, showing the following configuration options:

| | |
|---|---------|
| SIP Device Capabilities Number | 31 |
| Comment | Default |
| Outbound Proxy Server | |
| Replace System based with Device based In-Call Features | Yes |
| Allow MWI Notifications without Subscription | No |
| Enable Digit Collection in Busy Or Alerting State | Yes |
| TLs Only | No |

The screenshot shows the 'SDP Options' tab in the SIP Device Capabilities form. The options and their values are as follows:

| | |
|---|-------|
| Allow Device To Use Multiple Active M-Lines | Yes |
| Allow Using UPDATE For Early Media Renegotiation | No |
| AVP Only Device | No |
| Enable Mitel Proprietary SDP | No |
| Force sending SDP in initial Invite message | Yes |
| Ignore SDP Answers in Provisional Responses | Yes |
| IP Media Default | ip/v4 |
| Limit to one Offer/Answer per INVITE | No |
| Prevent SDP Renegotiation If Peer Initiated Hold | No |
| Prevent the Use of IP Address 0.0.0.0 in SDP Messages | Yes |
| Renegotiate SDP To Enforce Symmetric Codec | No |
| Repeat SDP Answer If Duplicate Offer Is Received | No |
| Send Answer only after renegotiation is complete | No |
| Support CTI Hold/Retrieve | No |
| Suppress Use of SDP Inactive Media Streams | Yes |

| Basic | SDP Options | Signaling and Header Manipulation | Distinctive Ring Tones | Timers | Key Press Event | Called Party Inward Dialing Modification | Record Information | Advanced |
|--|-------------|-----------------------------------|------------------------|--------|-----------------|--|--------------------|---------------|
| Allow Display Update | | | | | | | | Yes |
| Allow FQDN for Resiliency | | | | | | | | No |
| Disable Reliable Provisional Responses | | | | | | | | Yes |
| Disable Use of User-Agent and Server Headers | | | | | | | | No |
| Fail REFER To Keep Call Active On Mid-Call Feature | | | | | | | | No |
| If TLS use 'sips:' Scheme | | | | | | | | No |
| Mode for Out-of-Band DTMF | | | | | | | | RFC 4733 DTMF |
| Multilingual Name Display | | | | | | | | No |
| Override Auto-Answer Headers | | | | | | | | No |
| Override Auto-Answer Headers With | | | | | | | | |
| Q.850 Reason Headers | | | | | | | | No |
| Remove Anonymous User | | | | | | | | No |
| Require Reliable Provisional Responses on Outgoing Calls | | | | | | | | No |
| Suppress Redirection Headers | | | | | | | | No |
| Use P-Asserted Identity Header | | | | | | | | Yes |
| Use user=phone | | | | | | | | No |

| Basic | SDP Options | Signaling and Header Manipulation | Distinctive Ring Tones | Timers | Key Press Event | Called Party Inward Dialing Modification | Record Information | Advanced |
|----------------------------|-------------|-----------------------------------|------------------------|--------|-----------------|--|--------------------|--|
| Enable Distinctive Ringing | | | | | | | | No |
| Internal Ring | | | | | | | | <http://www.notused.com>;info=alert-internal |
| External Ring | | | | | | | | <http://www.notused.com>;info=alert-external |
| Callback Ring | | | | | | | | <http://www.notused.com>;info=alert-community1 |

| Basic | SDP Options | Signaling and Header Manipulation | Distinctive Ring Tones | Timers | Key Press Event | Called Party Inward Dialing Modification | Record Information | Advanced |
|-----------------------------------|-------------|-----------------------------------|------------------------|--------|-----------------|--|--------------------|----------|
| Registration Period Minimum | | | | | | | | 300 |
| Session Timer | | | | | | | | 3600 |
| Session Timer: Local as Refresher | | | | | | | | No |
| Subscription Period | | | | | | | | 3600 |
| Subscription Period Minimum | | | | | | | | 300 |
| Subscription Period Refresh (%) | | | | | | | | 80 |
| Invite Ringing Response Timer | | | | | | | | 0 |

| Basic | SDP Options | Signaling and Header Manipulation | Distinctive Ring Tones | Timers | Key Press Event | Called Party Inward Dialing Modification | Record Information | Advanced |
|---|-------------|-----------------------------------|------------------------|--------|-----------------|--|--------------------|----------|
| Allow Out Subscriptions for Remote Digit Monitoring | | | | | | | | No |
| Force Out Subscriptions for Remote Digit Monitoring | | | | | | | | No |

| Basic | SDP Options | Signaling and Header Manipulation | Distinctive Ring Tones | Timers | Key Press Event | Called Party Inward Dialing Modification | Record Information | Advanced | |
|-------|-----------------|-----------------------------------|------------------------|----------------------------|-----------------------|--|--------------------|----------------------------|-------------------------------|
| | | | | | | | | Add Member | Delete Member |
| Index | Digits to Match | Digit Length Operator | Digit Length | Number of Digits to Absorb | Digits to be Inserted | | | | |

| | | | | | | | | |
|----------------------|-------------|-----------------------------------|------------------------|--------|-----------------|--|---------------------------|----------|
| Basic | SDP Options | Signaling and Header Manipulation | Distinctive Ring Tones | Timers | Key Press Event | Called Party Inward Dialing Modification | Record Information | Advanced |
| Creator | | | | | | | | |
| Date Created | | | | | | | | |
| Created with Version | | | | | | | | |
| SIP Device | | | | | | | | |
| Vendor Notes | | | | | | | | |

| | | | | | | | | |
|-----------|-------------|-----------------------------------|------------------------|--------|-----------------|--|--------------------|-----------------|
| Basic | SDP Options | Signaling and Header Manipulation | Distinctive Ring Tones | Timers | Key Press Event | Called Party Inward Dialing Modification | Record Information | Advanced |
| Dial Plan | | | | | | | | |

Figure 5 – SIP Device Capabilities

Station Attributes

Use the Station Attributes form to assign the previously configured Class of Service and SIP Device Capability number to each of the Algo 8301 Paging Adapter in the MiVoice Business. This form utilizes Range Programming.

Select the Algo 8301 Paging Adapter number then select Change. Enter the previously configured SIP Device Capability number (**31**) and Class of Service for Day, Night 1 & Night 2 (**31**). See an example in **Figure 6** below.

| Number | Intercept Number | Class of Service - Day | Class of Service - Night1 | Class of Service - Night2 | Class of Restriction - Day | Class of Restriction - Night1 | Class of Restriction - Night2 | Call Coverage Service Number | Default Acct. Code | Zone Assignment Method | Zone ID | SIP Device Capabilities |
|--------|------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------------------|-------------------------------|------------------------------|--------------------|------------------------|---------|-------------------------|
| 1000 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 1 |
| 1002 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 1 |
| 1004 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 2 |
| 1005 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 2 |
| 1006 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 2 |
| 1007 | 1 | 20 | 20 | 20 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 20 |
| 1009 | 1 | 6 | 6 | 6 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 1 |
| 1010 | 1 | 31 | 31 | 31 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 1 |
| 1011 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 2 |
| 15000 | 1 | 10 | 10 | 10 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 1 |
| 15001 | 1 | 10 | 10 | 10 | 1 | 1 | 1 | 1 | 1 | Default | 1 | 1 |

Figure 6 – Station Attributes

Enabling Voice Encryption in MIVB

Set Voice Encryption Enabled and Voice/Video SRTP Encryption Enabled to YES as in **Figure 7**

The screenshot displays the Mitel MiVoice Business configuration interface for system MN22. The left sidebar shows a navigation menu with 'System Properties' and 'System Feature Settings' highlighted. The main content area is titled 'System Options on MN22' and contains a table of configuration parameters. Two parameters are highlighted with red boxes: 'Voice Encryption Enabled' and 'Voice/Video SRTP Encryption Enabled', both of which are set to 'Yes'.

| Parameter | Value |
|--|--------------|
| Route Optimization Network Id | |
| Route Optimization Trailing Digits | 2 |
| Send Travelling Class Marks | No |
| Send Welcome Email | No |
| Set Registration Access Code | *** |
| Set Registration Auto DN Selection - Begin | |
| Set Registration Auto DN Selection - End | |
| Set Registration Auto DN Selection - Secondary | Not Assigned |
| Set Registration Security | |
| Set Replacement Access Code | ### |
| Site Preference for Hot Desk Device | 5020 IP |
| Speed Call Pause Duration | 3 |
| SUPERSET Callback Message Cancel Timer | |
| System Data Synchronization | Yes |
| System Name | MN22 |
| TFTP Block Size | 4096 |
| UK only - Standard for CLIP | |
| Voice Encryption Enabled | Yes |
| Voice/Video SRTP Encryption Enabled | Yes |

Figure 7 – System Options

Algo 8301 Paging Adapter Configuration Notes

Algo 8301 Paging Adapter Software Setup Notes

This section outlines the basic instruction on how to program Algo 8301 Paging Adapter to interconnect with MIVB. This is by no means a comprehensive guideline. We assume that Algo 8301 Paging Adapter has been upgraded to the latest software release as found in <http://www.algosolutions.com/support/firmware.html>. Please note that your phone must have been upgraded to current software release.

Home Page Login

Access the 8301 Paging Adapter & Scheduler web page by entering the IP address into a browser (Chrome, IE, Firefox etc) and login using the default password **algo**.

ALGO 8301 Paging Adapter & Scheduler Control Panel Firmware: 1.7.9

Welcome to the Algo 8301 Paging Adapter & Scheduler Control Panel

Setting up your Paging Adapter & Scheduler:

Step 1: Configure your Paging Adapter & Scheduler
Log in with the default password and use the Basic Settings pages to set up the basic information.

Step 2: Check network settings (Optional)
Use the Network page under the Advanced Settings tab to change network settings. The default setting for the device is to obtain its IP address from a DHCP server. Contact your Network System administrator if you plan to assign a static IP address, Mask, and Gateway to the device.

Step 3: Secure your Paging Adapter & Scheduler (Optional)
Use the Admin page under the Advanced Settings tab to change the administrator password.
⚠ Changing the password is extremely important if the device is directly connected to a public network.

Step 4: Register your Paging Adapter & Scheduler (Optional)
Please register your product using the link below:
<http://www.algosolutions.com/register>
Registration ensures your access to the latest upgrades to this product and important service notices.

Login

Password (default: algo) Login

| Status | |
|---------------------|--|
| Device Name | pagingadapter |
| SIP Registration | Page Successful (Extension 1010) |
| Call Status | Idle |
| Proxy Status | Active Server Primary Primary Server Up Backup Server 1 Up Backup Server 2 Not Configured |
| Security | TLS Disabled SRTP Disabled |
| Provisioning Status | None found |
| MAC | 00:22:ee:09:4f:8a |
| IP | 192.168.10.13 |
| Netmask | 255.255.255.0 |
| Gateway | 192.168.10.1 |
| Date / Time | Fri Jan 10 16:27:59 IST 2020 |

Figure 8 – Algo 8301 Paging Adapter Home page login

Configuration details

The 8301 Paging Adapter & Scheduler can be registered as a third-party SIP extension with a hosted or enterprise Communications Server supporting 3rd party SIP endpoints. To register the adapter with the SIP server, use the **Basic Settings > SIP** tab in the web interface to enter the Communication Server IP address, extension, username, and password.

This information will be available from the IT Administrator. If VLAN is used, navigate to the Advanced Settings > Network tab to set VLAN options. (Note, once the adapter is using VLAN you will need to be on the same VLAN to access the web interface). Navigate to the Status tab and ensure the extension(s) are successfully registered. The adapter may now be accessed by dialling its assigned extension from a telephone, device, or client. The adapter will auto-answer, play the default WAV pre-announce tone, and allow voice paging until disconnected.

The screenshot shows the 'SIP Settings' page in the ALGO 8301 Paging Adapter & Scheduler Control Panel. The page is titled 'SIP Settings' and includes a 'Save' button at the bottom right. The settings are organized into two main sections: 'Ring/Alert Mode' and 'Page Extension'. The 'Ring/Alert Mode' section includes a radio button for 'Monitor "Ring" event on registered SIP extension' (which is selected) and a 'None' option. The 'Page Extension' section includes fields for 'Page Extension' (010), 'Authentication ID' (010), 'Authentication Password' (masked with asterisks), and 'Display Name (Optional)' (Algo). There are also fields for 'Ring Extension' (011), 'Authentication ID' (011), 'Authentication Password' (masked), and 'Display Name (Optional)' (Algo). A 'Save' button is located at the bottom right of the form.

Figure 9 – SIP Settings

The screenshot shows the 'Advanced SIP Settings' page in the ALGO 8301 Paging Adapter & Scheduler Control Panel. The page is titled 'Advanced SIP Settings' and includes a 'Save' button at the bottom right. The settings are organized into a 'General' section. The 'SIP Transportation' dropdown is set to 'UDP'. The 'SDP SRTP Offer' dropdown is set to 'Disabled'. The 'SIP Outbound Support (RFC 5026)' section has radio buttons for 'Enabled' and 'Disabled', with 'Disabled' selected. The 'Outbound Proxy' field is empty. The 'Register Period (seconds)' field is set to '300'. There are also fields for 'Outbound Proxy' and 'Register Period (seconds)'. A 'Save' button is located at the bottom right of the form.

NAT
Media NAT None ICE STUN

Server Redundancy
Server Redundancy Feature (Multiple SIP Server Support) Enabled Disabled

Backup Server #1

Backup Server #2

Polling Interval (seconds)
(i) Time to wait between sending monitoring packets to each server. Inactive servers are always polled and the active server may optionally be polled (see below).

Poll Active Server Enabled Disabled
(i) Explicitly poll the current server to monitor its availability. Polling may also be handled automatically by other regular events, so this can be disabled to reduce network traffic.

Automatic Failback Enabled Disabled
(i) Reconnect with a higher priority server once available, even if the backup connection is still working.

Polling Method SIP NOTIFY SIP OPTIONS
(i) SIP message used to poll servers in order to monitor their availability.

Interoperability
Keep-Alive Method None Double CRLF
(i) This setting will enable sending periodic CRLF messages for both UDP and TCP connections.

Use Outgoing TLS port in SIP headers Enabled Disabled
(i) Use ephemeral port number from outgoing SIP TLS connection instead of listening port number in SIP Contact and Via headers. This is useful to connect the device to some local SIP servers, like Asterisk or FreeSWITCH.

Do Not Reuse Authorization Headers Enabled Disabled
(i) When enabled, all SIP authorization information from the last successful request will not be reused in the next request.

Allow Missing Subscription-State Headers Enabled Disabled
(i) When enabled, allow SIP NOTIFY messages that do not contain a "Subscription-State" header.

Save

Figure 10 – Advanced SIP Settings

ALGO 8301 Paging Adapter & Scheduler Control Panel Firmware: 1.7.9

Status | Basic Settings | Additional Features | Scheduler | **Advanced Settings** | System | Logout

Device Status

Welcome to the Algo 8301 Paging Adapter & Scheduler Control Panel

Setting up your Paging Adapter & Scheduler

Step 1: Configure your Paging Adapter & Scheduler
Log in with the default password and use the Basic Settings pages to set up the basic information.

Step 2: Check network settings (Optional)
Use the Network page under the Advanced Settings tab to change network settings. The default setting for the device is to obtain its IP address from a DHCP server. Contact your Network System administrator if you plan to assign a static IP address, Host, and Gateway to the device.

Step 3: Secure your Paging Adapter & Scheduler (Optional)
Use the Admin page under the Advanced Settings tab to change the administrator password.
(i) Changing the password is extremely important if the device is directly connected to a public network.

Step 4: Register your Paging Adapter & Scheduler (Optional)
Please register your product using the link below:
<http://www.algopsd.com/register>
 Registration ensures your access to the latest upgrades to this product and important service notices.

| Status | | | |
|-------------------------|--|----------------|------------------|
| Device Name | pagingadapter | | |
| SIP Registration | Page | Successful | (Extension 1010) |
| Call Status | Idle | | |
| Proxy Status | Active Server | Primary | |
| | Primary Server | Up | |
| | Backup Server 1 | SIP | |
| | Backup Server 2 | Not Configured | |
| Security | TLS | Disabled | |
| | SATP | Disabled | |
| Provisioning Status | None Found | | |
| MAC | 00:12:40:09:4f:0e | | |
| IP | 192.168.10.13 | | |
| Netmask | 255.255.255.0 | | |
| Gateway | 192.168.10.1 | | |
| Date / Time | Fri Jan 10 16:32:22 EST 2020 | | |
| Next Scheduled Event | No Events Scheduled | | |
| Multicast Mode | Master Mode: RTP transmit zone 0 active. Local audio enabled. | | |
| Volume | Page Volume: 10 (0dB), Ring Volume: 10 (0dB) | | |
| Relay Input Status | Idle | | |
| Ambient Noise Detection | Remote: Palled, Invalid Address | | |

Figure 11 – Device status

Glossary

| | |
|-----------------------------|----------|
| MiVoice Business | MiVB |
| MiCollab | MiCollab |
| MiNET Interface | MiNET |
| Mitel Solutions Alliance | MSA |
| Knowledge Management System | KMS |
| Class of Service | COS |
| Automatic Route Selection | ARS |