

MITEL – SIP CoE

Technical Configuration Notes



**Configure MCD 6.X for use with
Cloudli SIP trunks**

SIP CoE 13-4940-00266



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Mitel Technical Configuration Notes – Configure MCD for use with Cloudli (formerly babyTEL)
SIP trunks
September 2013, 13-4940-00266

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Overview


This document provides a reference to Mitel Authorized Solutions providers for configuring the Mitel 3300 MCD to connect to Cloudli SIP trunks. The different devices can be configured in various configurations depending on your VoIP solution. This document covers a basic setup with required option setup.

Interop History

Version	Date	Reason
1	September 2013	Interop with Mitel 3300 6.0 and Cloudli (formerly babyTEL)

Interop Status

The Interop of Cloudli trunk line has been given a Certification status. This service provider or trunking device will be included in the SIP CoE Reference Guide. The status Cloudli trunk line achieved is:

	<p>The most common certification which means Cloudli SIP trunk 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.</p>
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Software & Hardware Setup

This was the test setup to generate a basic SIP call between Cloudli trunk line and the 3300ICP.

Manufacturer	Variant	Software Version
Mitel	3300ICP MXe	12.0.1.24
Mitel	Minet sets: 5340, 5220, 5330	05.02.01.07
Mitel	MBG - Teleworker	8.0.12.0
Mitel	MBG - Gateway	8.0.12.0

Tested Features

This is an overview of the features tested during the Interop test cycle and not a detailed view of the test cases. Mitel Interop Test plan was executed during this testing

Feature	Feature Description	Issues
Basic Call	Making and receiving a call through the Cloudli SIP trunk, call holding, transferring, conferencing, busy calls, long calls durations, variable codec.	
PRACK	Reliable Provisional Response	N/S
NuPoint Voicemail	Terminating calls to a NuPoint voicemail boxes and DTMF detection.	
Packetization	Forcing the 3300 ICP to stream RTP packets through its E2T card at different intervals, from 10ms to 60ms	
Personal Ring Groups	Receiving calls through Cloudli SIP trunk to a personal ring group. Also moving calls to/from the prime member and group members.	
Teleworker	Making and receiving a call through Cloudli SIP trunk to and from Teleworker extensions.	
Video	Making and receiving a call through Cloudli SIP trunk with video capable devices.	N/S
G 711 Faxing	Fax transmission with G 711 codec.	
T.38 Faxing	Fax transmission with protocol T.38	



- No issues found



- Issues found, cannot recommend to use



- Issues found

Device Limitations and Known Issues

This is a list of problems or not supported features when the Cloudli SIP trunk is connected to Mitel 3300ICP.

Feature	Problem Description
Multiple M-lines	Multiple M-lines is not supported.
PRACK	Provisional Response is not supported on Cloudli SIP trunk

Network Topology

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

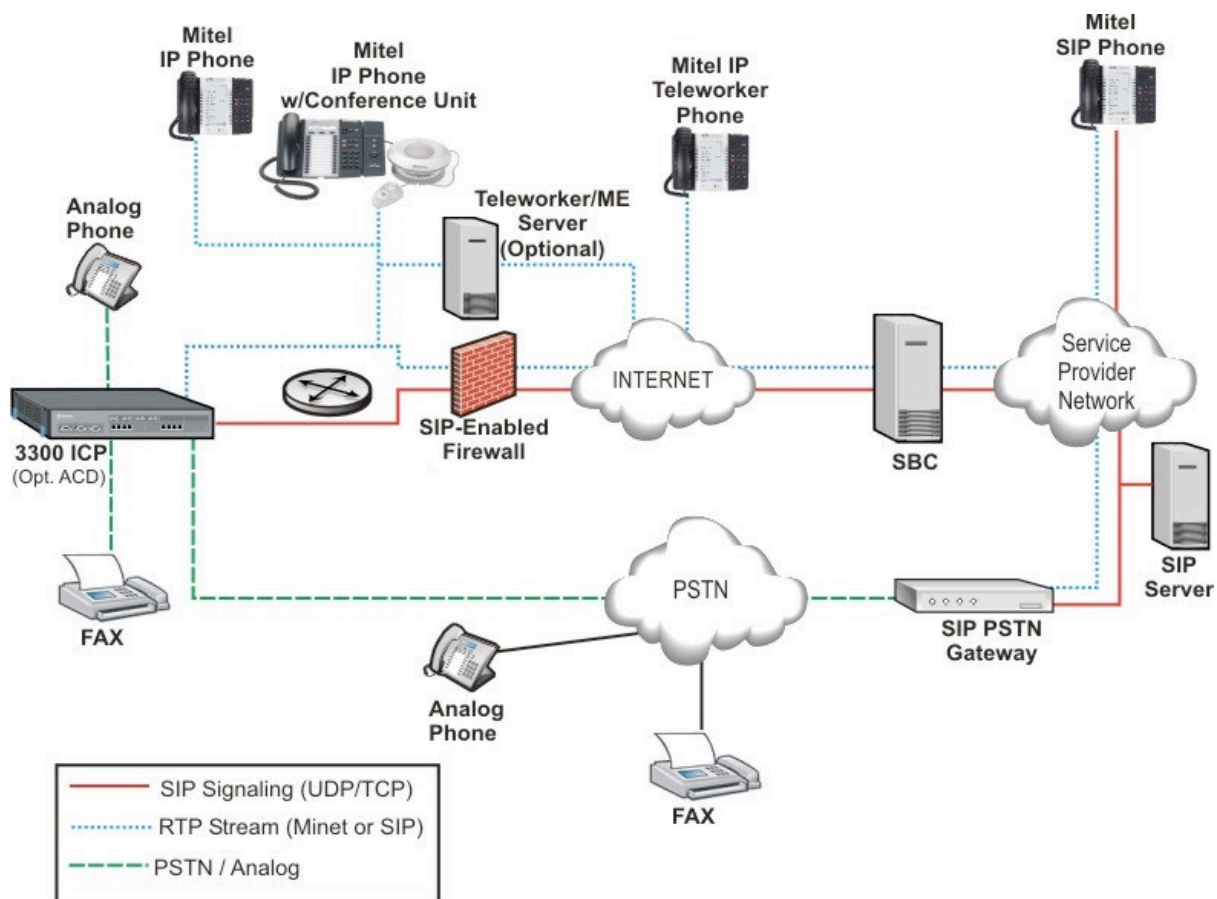


Figure 1 – Network Topology

Configuration Notes

This section is a description of how the SIP Interop was configured. These notes should give a guideline how a device can be configured in a customer environment and how the 3300ICP programming was configured in our test environment.

Disclaimer: Although Mitel has attempted to setup the interop testing facility as closely as possible to a customer premise environment, implementation setup could be different onsite. YOU MUST EXERCISE YOUR OWN DUE DILIGENCE IN REVIEWING, planning, implementing, and testing a customer configuration.

3300ICP Configuration Notes

The following steps show how to program a 3300 ICP to interconnect with Cloudli SIP Trunking.

Configuration Template

A configuration template can be found in the same MOL Knowledge Base article as this document. The template is a Microsoft Excel spreadsheet (.csv format) **solely** consisting of the SIP Peer profile option settings used during Interop testing. All other forms should be programmed as indicated below. Importing the template can save you considerable configuration time and reduce the likelihood of data-entry errors. Refer to the ICP documentation on how the Import functionality is used.

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 3300 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 3300ICP Programming

- The SIP signaling connection uses UDP on Port 5060.

Licensing and Option Selection – SIP Licensing

Ensure that the 3300ICP is equipped with enough SIP trunking licenses for the connection to the Cloudli. This can be verified within the License and Option Selection form.

Enter the total number of licenses in the SIP Trunk Licenses field. This is the maximum number of SIP trunk sessions that can be configured in the 3300 to be used with all service providers, applications and SIP trunking devices.

MITEL Node "Sipint2" Alarm Status: Major 2012-Jul-19 14:39:23 Message Board | About | Help | Logout

Sipint2 View Alphabetically SDS Share

License and Option Selection on Sipint2 DN to search Show form on Exceeded Max Nodes Go

Change Print... Import... Export... Data Refresh

License and Option Selection

Application Record ID 35798030

System Type License Sharing Hardware Identifier

Enterprise No 000002f9ee1

Licensed Options	Locally Consumed	Locally Allocated	Available for Allocation	Purchased	Local Limits	
					Licenses Allowed	Can be Over Allocated
Users						
IP Users	44	2000	100	2100	Unrestricted	Yes
External Hot Desk Users	2	20	80	100	Unrestricted	Yes
ACD Active Agents	1	100	0	100	Unrestricted	Yes
HTML Applications	0	100	400	500	Unrestricted	Yes
Analog Lines	0	10	0	10	Unrestricted	Yes
IP Console Active Operators	0	0	1	0	Unrestricted	Yes
Multi-device Users	0	0	20	0	Unrestricted	Yes
Multi-device Suites	0	0	20	0	Unrestricted	Yes
Messaging						
Embedded Voice Mail	18	100	0	100	Unrestricted	Yes
Embedded Voice Mail PMS	1	Yes	0	1	Unrestricted	Yes
Trunking/Networking						
Digital Links	0	2	14	16	Unrestricted	Yes
Compression		16	112	128	Unrestricted	Yes
FAX Over IP (T.38)		16	48	64	Unrestricted	Yes
SIP Trunks	146	1000	0	1000	Unrestricted	Yes

Figure 2 – License and Option Selection form

Class of Service Assignment

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

Many different options may be required for your site deployment, but ensure that “Public Network Access via DPNSS” Class of Service Option is configured for all devices that make outgoing calls through the SIP trunks in the 3300ICP.

Also, under General tab, ensure that the following options are enabled (see **Figure 3**):

- Busy Override Security (in Busy Override section) set to **Yes**
- Campon Tone Security (in Fax section) set to **Yes**
- Public Network Access via DPNSS (in Trunk section) set to **Yes**
- Fax Capable if a Fax device is connected to this port or uses this trunk **YES**

The screenshot shows the 'Class of Service Options' form in the Sipint2 web interface. The form is for Class of Service Number 1, with the General tab selected. The 'Busy Override Security' option is highlighted with a red box and set to 'Yes'.

Class Of Service Number	Comment
1	General

General | Advanced

Class Of Service Number: 1
Comment: SIP Trunk

ACD

ACD Logout Agent No Answer Timer: 15
ACD Make Busy on Login: ☒ No ☐ Yes
ACD Silent Monitor Accept: ☒ No ☐ Yes
ACD Silent Monitor Allowed: ☒ No ☐ Yes
ACD Silent Monitor Notification: ☒ No ☐ Yes
Follow 2nd Alternate Reroute for Recall to Busy ACD Agent: ☒ No ☐ Yes
Work Timer: 0

Announce

Call Announce Line: ☒ No ☐ Yes
Off-Hook Voice Announce Allowed: ☒ No ☐ Yes
Handsfree AnswerBack Allowed: ☒ No ☐ Yes

Busy Override

Busy Override Security: ☐ No ☒ Yes
Disable Executive Busy Override Tone: ☒ No ☐ Yes
Executive Busy Override: ☒ No ☐ Yes

Figure 3 – Class of Service form

Network Elements

Create a network element for a SIP Peer (Cloudli) as shown in **Figure 4**.

If you want to use compression set the Zone to be a different value than that of the ICP. If no compression is required you can set the zone to that of the ICP, 1 by default.

Our setup uses an external proxy. Set the address for your installation appropriately.

In our setup the SIP trunks used authentication.

Set the transport to Default or UDP and port to 5060.

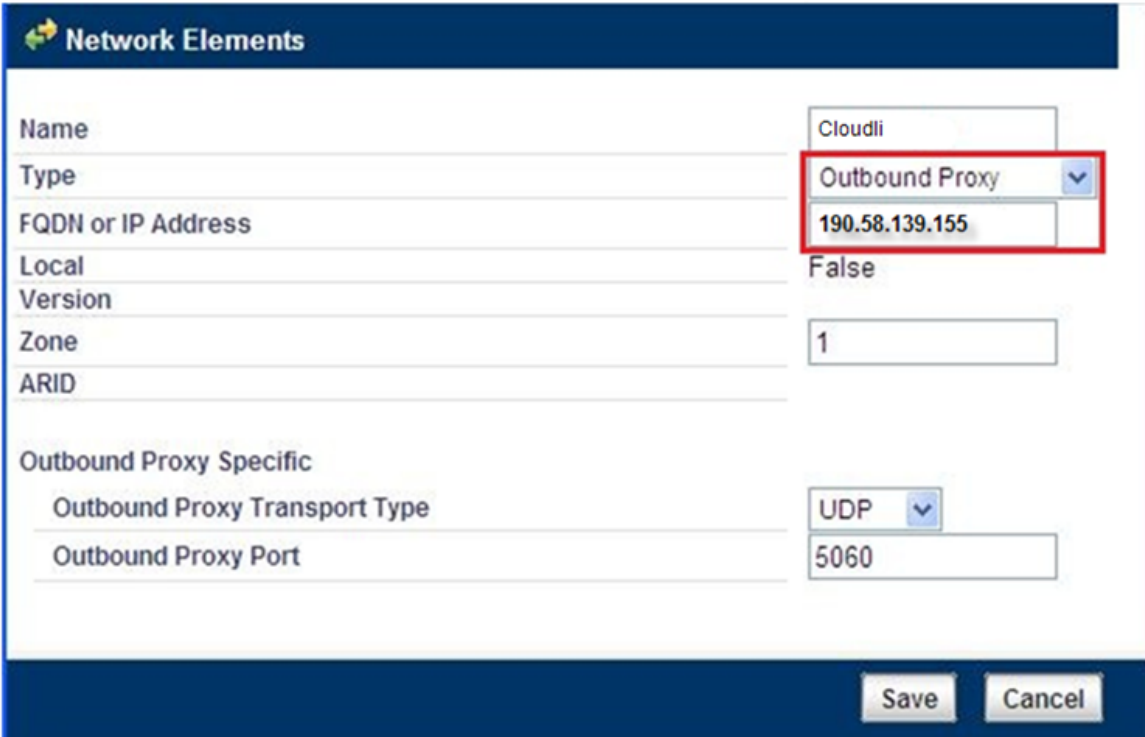
Name	Cloudli
Type	Other
FQDN or IP Address	sip.babytel.ca
Local	False
Version	
Zone	2
ARID	
SIP Peer	<input checked="" type="checkbox"/>
SIP Peer Specific	
SIP Peer Transport	UDP
SIP Peer Port	5060
External SIP Proxy FQDN or IP Address	cae2.sbc.babytel.net
External SIP Proxy Transport	UDP
External SIP Proxy Port	5065
SIP Registrar FQDN or IP Address	sip.babytel.ca
SIP Registrar Transport	UDP
SIP Registrar Port	5060
SIP Peer Status	Auto-Detect/Normal

Save Cancel

Figure 4 – Network Element form

Network Element Assignment (Proxy)

In addition, depending on your configuration, a Proxy may need to be configured to route SIP data to the service provider. If you have a Proxy server installed in your network, the 3300ICP will require knowledge of this by programming the Proxy as a network element then referencing this proxy in the SIP Peer Profile form (later in this document).



The screenshot shows a web-based configuration form titled "Network Elements". The form contains several fields for configuring a network element. The "Name" field is set to "Cloudli". The "Type" field is a dropdown menu set to "Outbound Proxy", which is highlighted with a red rectangle. The "FQDN or IP Address" field is set to "190.58.139.155", also highlighted with a red rectangle. The "Local" field is set to "False". The "Version" field is empty. The "Zone" field is set to "1". The "ARID" field is empty. Below these fields is a section titled "Outbound Proxy Specific" containing two fields: "Outbound Proxy Transport Type" set to "UDP" and "Outbound Proxy Port" set to "5060". At the bottom right of the form are "Save" and "Cancel" buttons.

Name	Cloudli
Type	Outbound Proxy
FQDN or IP Address	190.58.139.155
Local	False
Version	
Zone	1
ARID	
Outbound Proxy Specific	
Outbound Proxy Transport Type	UDP
Outbound Proxy Port	5060

Save Cancel

Figure 5 – Network Element (Proxy)

Trunk Attributes (trunk service number)

The Trunk Attributes is defined for Trunk Service Number (**15**), which will be used to direct incoming calls to an answer point in the 3300ICP.

Set the number of Class of Service that was configured in the section above (**7**).

Program the Non-dial In Trunks Answer Point according to the site requirements and what type of service was ordered from your service provider.

The figure below shows configuration for incoming DID calls. The 3300ICP will absorb the first 7 digits of the DID number received from the Cloudli SIP trunk leaving 4 digits for the 3300 to translate and ring the 4-digit extension.

For example, the Cloudli SIP trunk delivers number 1-613-592-5660 to the 3300. The 3300 will absorb the first 6 digits (613-592) leaving the Mitel 3300 to ring extension 5660. Extension 5660 must be programmed as a valid dialable number in the 3300ICP. As an alternative way, you can create a System Speed Call number to associate number 5660 with the real telephone extension on 3300ICP. Please refer to the 3300 System Administration documentation for further programming information.

Trunk Attributes	
Trunk Service Number	15
Release Link Trunk	No
Call Recognition Service	Off
Class of Service	7
Class of Restriction	1
Baud Rate	300
Intercept Number	1
Non-dial In Trunks Answer Point - Day	
Non-dial In Trunks Answer Point - Night 1	
Non-dial In Trunks Answer Point - Night 2	
Dial In Trunks Incoming Digit Modification - Absorb	7
Dial In Trunks Incoming Digit Modification - Insert	
Trunk Label	Cloudli

Save Cancel

Figure 6 – Trunk Attributes (trunk service number)

SIP Peer Profile

The recommended connectivity via SIP Trunking does not require additional physical interfaces. IP/Ethernet connectivity is the part of the 3300ICP platform. The SIP Peer Profile should be configured as shown in **Figures 7 through 12**.

Basic (Figure 7):

Network Element: The selected SIP Peer Profile needs to be associated with previously created "Cloudli" Network Element.

Registration User Name: Leave this field blank.

Address Type: Select the IP Address of your Mitel 3300ICP.

Maximum Simultaneous Calls: This entry should be configured to maximum number of SIP trunks provided by Cloudli.

Outbound Proxy Server: Select the Network Element previously configured for the Outbound Proxy Server ("MBG Trunk" in our test environment).

SMDR Tag: If Call Detail Records are required for SIP Trunking, the SMDR Tag should be configured (by default there is no SMDR and this field is left blank).

Trunk Service: Enter the trunk attributes number that was previously configured – **15** in this configuration.

Authentication Options: In this example proxy server authentication was used therefore the user name and password must be filled in. This should not be confused with incoming call authentication.

SIP Peer Profile					
Inactive	XCCM	MBGTrunk No	24	90	1
Cloudli	Cloudli	MBGTrunk No	15	180	2
new MAS	new MAS	No	1	90	1
Basic	Call Routing	Calling Line ID	SDP Options	Signaling and Header Manipulation	Timers
Outgoing DID Ranges	Profile Information				
SIP Peer Profile Label		Cloudli			
Network Element		Cloudli			
Local Account Information					
Registration User Name		16136861719			
Address Type		IP Address: 192.168.101.11			
Administration Options					
Interconnect Restriction		1			
Maximum Simultaneous Calls		5			
Minimum Reserved Call Licenses		0			
Administration Options					
Outbound Proxy Server		MBGTrunk			
SMDR Tag		0			
Trunk Service		15			
Zone		2			
User Name		16136861719			
Password		*****			
Confirm Password		*****			
Authentication Option for Incoming Calls		No Authentication			
Subscription User Name					
Subscription Password		*****			
Subscription Confirm Password		*****			

Figure 7 – SIP Peer Profile form

Call Routing (Figure 8):

Leave the default settings intact, as shown.

SIP Peer Profile																				
Cloudli	Cloudli	MBGTrunk	No	28	180	2														
new_MAS	new_MAS		No	1	90	1														
<div> <div>Basic</div> <div>Call Routing</div> <div>Calling Line ID</div> <div>SDP Options</div> <div>Signaling and Header Manipulation</div> <div>Timers</div> </div>																				
<div> <div>Key Press Event</div> <div>Outgoing DID Ranges</div> <div>Profile Information</div> </div>																				
<table> <tr> <td>Alternate Destination Domain Enabled</td> <td>No</td> </tr> <tr> <td>Alternate Destination Domain FQDN or IP Address</td> <td></td> </tr> <tr> <td>Enable Special Re-invite Collision Handling</td> <td>No</td> </tr> <tr> <td>Only Allow Outgoing Calls</td> <td>No</td> </tr> <tr> <td>Private SIP Trunk</td> <td>No</td> </tr> <tr> <td>Reject Incoming Anonymous Calls</td> <td>No</td> </tr> <tr> <td>Route Call Using To Header</td> <td>No</td> </tr> </table>							Alternate Destination Domain Enabled	No	Alternate Destination Domain FQDN or IP Address		Enable Special Re-invite Collision Handling	No	Only Allow Outgoing Calls	No	Private SIP Trunk	No	Reject Incoming Anonymous Calls	No	Route Call Using To Header	No
Alternate Destination Domain Enabled	No																			
Alternate Destination Domain FQDN or IP Address																				
Enable Special Re-invite Collision Handling	No																			
Only Allow Outgoing Calls	No																			
Private SIP Trunk	No																			
Reject Incoming Anonymous Calls	No																			
Route Call Using To Header	No																			

Figure 8 – SIP Peer Profile form (continues)

Calling Line ID (Figure 9):

The **Default CPN** (Calling Party Number) is applied to all outgoing calls. You can use the one of DID numbers assigned on the trunk by the provider.

CPN Restriction: By default, this parameter is set to “**No**” to not hide the caller’s number. You can enable it if required.

SIP Peer Profile						
Cloudli	Cloudli	MBGTrunk	No	28	180	2
new_MAS	new_MAS		No	1	90	1
Basic	Call Routing	Calling Line ID	SDP Options	Signaling and Header Manipulation	Timers	
Key Press Event	Outgoing DID Ranges	Profile Information				
Default CPN				16136861719		
Default CPN Name						
CPN Restriction				No		
Public Calling Party Number Passthrough				No		
Strip PNI				No		
Use Diverting Party Number as Calling Party Number				No		
Use Original Calling Party Number If Available				No		

Figure 9 – SIP Peer Profile form (continues)

SDP Options (Figure 10):

Allow Peer to use Multiple Active M-Lines “No”

Avoid Signaling Hold to the PEER to “YES”

Enable Mitel Proprietary SDP to “NO”

Limit to one Offer/Answer per INVITE to “YES”

NAT Keepalive to “YES”

Prevent the Use of IP Address 0.0.0.0 in SDP Messages to “YES”

Leave the other options at the default settings unless there is a specific reason to change them.

SIP Peer Profile																																					
Cloudli	Cloudli	MBGTrunk	No	28	180 2																																
new_MAS	new_MAS	No	1	90	1																																
<div> <div>Basic</div> <div>Call Routing</div> <div>Calling Line ID</div> <div>SDP Options</div> <div>Signaling and Header Manipulation</div> <div>Timers</div> </div>																																					
<div> <div>Key Press Event</div> <div>Outgoing DID Ranges</div> <div>Profile Information</div> </div>																																					
<table> <tr> <td>Allow Peer To Use Multiple Active M-Lines</td> <td>No</td> </tr> <tr> <td>Allow Using UPDATE For Early Media Renegotiation</td> <td>Yes</td> </tr> <tr> <td>Avoid Signaling Hold to the Peer</td> <td>Yes</td> </tr> <tr> <td>Enable Mitel Proprietary SDP</td> <td>No</td> </tr> <tr> <td>Force sending SDP in initial Invite message</td> <td>No</td> </tr> <tr> <td>Force sending SDP in initial Invite - Early Answer</td> <td>No</td> </tr> <tr> <td>Ignore SDP in Unreliable Provisional Responses</td> <td>No</td> </tr> <tr> <td>Limit to one Offer/Answer per INVITE</td> <td>Yes</td> </tr> <tr> <td>NAT Keepalive</td> <td>Yes</td> </tr> <tr> <td>Prevent the Use of IP Address 0.0.0.0 in SDP Messages</td> <td>No</td> </tr> <tr> <td>Renegotiate SDP To Enforce Symmetric Codec</td> <td>No</td> </tr> <tr> <td>Repeat SDP Answer If Duplicate Offer Is Received</td> <td>No</td> </tr> <tr> <td>RTP Packetization Rate Override</td> <td>Yes</td> </tr> <tr> <td>RTP Packetization Rate</td> <td>20ms</td> </tr> <tr> <td>Special handling of Offers in 2XX responses (INVITE)</td> <td>No</td> </tr> <tr> <td>Suppress Use of SDP Inactive Media Streams</td> <td>No</td> </tr> </table>						Allow Peer To Use Multiple Active M-Lines	No	Allow Using UPDATE For Early Media Renegotiation	Yes	Avoid Signaling Hold to the Peer	Yes	Enable Mitel Proprietary SDP	No	Force sending SDP in initial Invite message	No	Force sending SDP in initial Invite - Early Answer	No	Ignore SDP in Unreliable Provisional Responses	No	Limit to one Offer/Answer per INVITE	Yes	NAT Keepalive	Yes	Prevent the Use of IP Address 0.0.0.0 in SDP Messages	No	Renegotiate SDP To Enforce Symmetric Codec	No	Repeat SDP Answer If Duplicate Offer Is Received	No	RTP Packetization Rate Override	Yes	RTP Packetization Rate	20ms	Special handling of Offers in 2XX responses (INVITE)	No	Suppress Use of SDP Inactive Media Streams	No
Allow Peer To Use Multiple Active M-Lines	No																																				
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Avoid Signaling Hold to the Peer	Yes																																				
Enable Mitel Proprietary SDP	No																																				
Force sending SDP in initial Invite message	No																																				
Force sending SDP in initial Invite - Early Answer	No																																				
Ignore SDP in Unreliable Provisional Responses	No																																				
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Special handling of Offers in 2XX responses (INVITE)	No																																				
Suppress Use of SDP Inactive Media Streams	No																																				

Figure 10 – SIP Peer Profile form (continues)

Signaling and Header Manipulation (Figure 11):

Since Cloudli SIP trunk do not supports PRACK, ensure that option **Disable Reliable Provisional Responses** is set to “YES”.

Leave all other options at their default settings, as shown.

SIP Peer Profile	
Cloudli	Cloudli MBGTrunk No 28 180 2
Basic	Call Routing
Calling Line ID	SDP Options
Signaling and Header Manipulation	Timers
Key Press Event	
Outgoing DID Ranges	Profile Information
Trunk Group Label Allow Display Update No Build Contact Using Request URI Address No De-register Using Contact Address not ' No Disable Reliable Provisional Responses Yes Disable Use of User-Agent and Server Headers No E.164: Enable sending '+' No E.164: Add '+' if digit length > N digits 0 E.164: Do not add '+' to Emergency Called Party No E.164: Do not add '+' to Called Party No Force Max-Forward: 70 on Outgoing Calls No If TLS use 'sips:' Scheme No Ignore Incoming Loose Routing Indication No Only use SDP to decide 180 or 183 Yes Prefer From Header for Caller ID No Require Reliable Provisional Responses on Outgoing Calls No Use Fixed Retry Time for 491 No Use Privacy: none No Use P-Asserted Identity Header No Use P-Asserted Identity for Billing No Use P-Preferred Identity Header No Use Restricted Character Set For Authentication No Use To Address in From Header on Outgoing Calls No Use user=phone No	

Figure 11 – SIP Peer Profile form

Timers (Figure 12):

Session Timers: Figure 12 is how the timers were set for our test environment. These may vary for other installations.

SIP Peer Profile					
Cloudli	Cloudli	MBGTrunk No	28	180	2
new_MAS	new_MAS	No	1	90	1
<div> <div>Basic</div> <div>Call Routing</div> <div>Calling Line ID</div> <div>SDP Options</div> <div>Signaling and Header Manipulation</div> <div>Timers</div> </div>					
<div> <div>Key Press Event</div> <div>Outgoing DID Ranges</div> <div>Profile Information</div> </div>					
<div> <div>Keep-Alive (OPTIONS) Period</div> <div>Registration Period</div> <div>Registration Period Refresh (%)</div> <div>Registration Maximum Timeout</div> <div>Session Timer</div> <div>Subscription Period</div> <div>Subscription Period Minimum</div> <div>Subscription Period Refresh (%)</div> <div>Invite Ringing Response Timer</div> </div> <div> <div>120</div> <div>3600</div> <div>50</div> <div>90</div> <div>180</div> <div>3600</div> <div>300</div> <div>80</div> <div>0</div> </div>					

Figure 12 – SIP Peer Profile form (continues)

For Key Press Event and Profile Information tabs, leave the default settings intact.

Click Save button (see **Figure 12**) when SIP Peer Profile configuration is completed.

SIP Peer Profile Assignment by Incoming DID

In some situations calls from anonymous PSTN callers may be rejected at 3300 ICP with Not Found message.

To deliver such calls to Mitel's extensions, make sure to associate Cloudli's DID number(s) with the SIP Peer Profile we configured earlier. See **Figure 13** as a guide.

SIP Peer Profile Assignment by Incoming DID

Incoming DID Range	SIP Peer Profile Label	Comment
0482341011-0482341014	Jaguar	Jaguar
16136861719	Cloudli	
24940941100-24940941103	Telnet	Telnet

Add New Assignment Form:

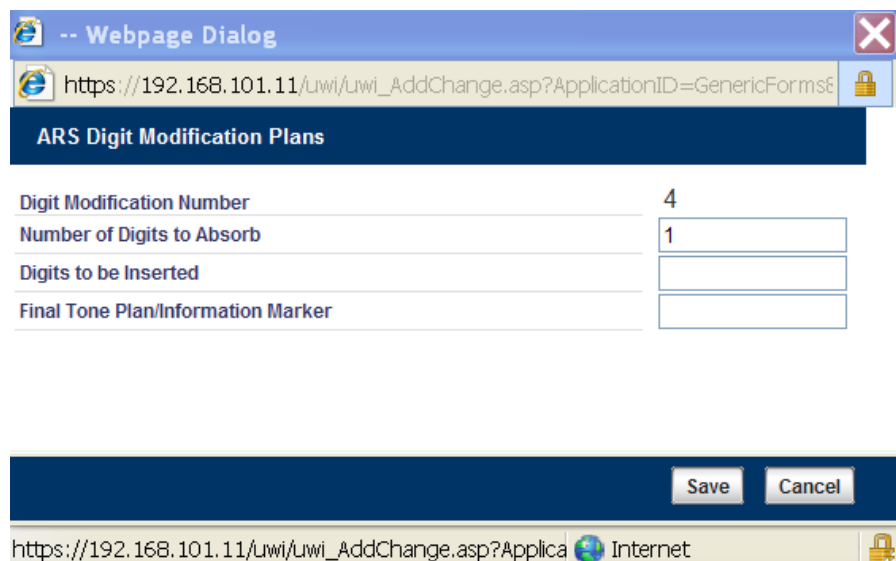
Incoming DID Range	16136861719
SIP Peer Profile Label	Cloudli
Comment	

Figure 13 – SIP Peer Profile Assignment by Incoming DID form

ARS Digit Modification Plan

Ensure that Digit Modification for outgoing calls to Cloudli SIP trunk absorbs or inject additional digits according to your dialling plan. In our test environment, we will be absorbing 1 digit and will not inject any digits, as shown in **Figure 14**.

As per our test environment, we need to dial **9** to access Cloudli SIP trunk; thus, digit 9 will be absorbed and no digits will be preceding the dialled number. For instance, if caller dials 96135555660, 3300 ICP will send to the SIP trunk the following: 6135555660.



The screenshot shows a web browser window titled "-- Webpage Dialog" with a URL bar displaying "https://192.168.101.11/uwi/uwi_AddChange.asp?ApplicationID=GenericFormsE". The main content area is titled "ARS Digit Modification Plans" and contains the following fields:

Digit Modification Number	4
Number of Digits to Absorb	<input type="text" value="1"/>
Digits to be Inserted	<input type="text"/>
Final Tone Plan/Information Marker	<input type="text"/>

At the bottom of the form, there are "Save" and "Cancel" buttons. The browser's status bar at the bottom shows the URL "https://192.168.101.11/uwi/uwi_AddChange.asp?Applica" and the "Internet" icon.

Figure 14 – ARS Digit Modification form

ARS Routes

Create a route to Cloudli SIP trunk. In this test environment, the SIP trunk is assigned to Route Number **18**. Choose **SIP Trunk** as a routing medium and choose the SIP Peer Profile and ARS Digit Modification entry created earlier.

The image shows a web form titled "ARS Routes" with a dark blue header. The form contains several fields, some of which are highlighted with red rectangles. The fields and their values are as follows:

Field	Value
Route Number	18
Routing Medium	SIP Trunk
Trunk Group Number	
SIP Peer Profile	Cloudli
PBX Number / Cluster Element ID	
COR Group Number	1
Digit Modification Number	4
Digits Before Outpulsing	
Route Type	
Compression	Off

At the bottom right of the form, there are two buttons: "Save" and "Cancel".

Figure 15 – ARS Route form

ARS Digits Dialed

ARS initiates the routing of trunk calls when certain digits are dialed from an extension. In this test environment, when user dials 905, the call will be routed to Cloudli SIP trunk (i.e. to Route 18). For outbound calling, 3300 ICP expects 10 digits to be dialed after dialing of 905. See **Figure 16** for details.

Change Range Programming - ARS Digits Dialed Help

This form allows you to change one or more records, starting at the following record:

Digits Dialed	Number of Digits to Follow	Termination Type	Termination Number
905	10	Route	18

1. Enter the number of records to change:

2. Define the Change Range Programming Pattern:

Field Name	Change action	Value to change	Increment by
Digits Dialed	Change to	9	
Number of Digits to Follow	Change to	10	-
Termination Type	Change to	Route	-
Termination Number	Change to	18	

Preview Save Cancel

Figure 16 – ARS Digit Dialed form

Fax Service Profiles

This form allows you to define the settings for FAX communication over the IP network. You can modify the default settings for the:

Inter-zone FAX profile: defines the FAX settings between different zones in the network. There is only one Inter-zone FAX profile; it applies to all inter-zone FAX communication. It defaults to V.29, 7200bps. It defines the settings for FAX Relay (T.38) FAX communication.

Intra-zone FAX profile: defines the FAX settings within each zone in the network.

- Profile 1 defines the settings for G.711 pass through communication.
- Profile 2 to 64 define the settings for FAX Relay (T.38) FAX communication.
- All zones default to G.711 pass through communication (Profile 1).

Mitel Node 'sipint3' Alarm Status: Major 2009-Dec-03 06:26:06 Logout About Help

Selection: (sipint3) DN to search Show form on: Not Accessible Go

All forms (alphabetical)

- DHCP Options
- DHCP Server
- DHCP Static IP
- DHCP Subnet
- DID Ranges for CPN Sub
- Digit Modification Assign
- Digital Link Assignment
- Digital Trunk Assignment
- Dimension Selection
- Distribution List Configur
- DNI Console Configuration
- DTS Service Assignment
- Dual T1/E1 Framing Confi
- E and M Trunk Assignme
- Embedded Media Source
- External FTP Server
- Fax Configuration
- Fax Detection Assignmen
- Feature Access Code As
- Firewall Control
- Form Comparison
- Greetings Assignment
- Greetings Definition
- Guest Room Assignment
- High Layer Compatibility
- Hotel Options Assignment
- Hourly Historical Bandwid
- Hunt Group Assignment
- ICP/PBX Assignment
- Idle Softkey Assignment
- Independent Account Co
- Intercept Handling Assign
- Interconnect Restriction
- Inward Dialing Configur

Fax Configuration on sipint3

Change Print... Import... Export... Data Refresh

Inter-Zone Fax Profile

Maximum Fax Rate: 14400 (V.17, 14400bps)
 High Speed Redundancy: 0
 Low Speed Redundancy: 3
 Error Correction Mode (ECM): Disabled

Override Non-Standard Facilities (NSF): Disabled

Label: Inter-zone

Page 1 of 7 Go to: value: Change Change Page Change All Clear

Intra-Zone Fax Profiles

Profile	Maximum Fax Rate	High Speed Redundancy	Low Speed Redundancy	Error Correction Mode	NSF Override	NSF Vendor Code Value	NSF Country Code Value
1	-	-	-	-	-	-	-
2	14400 (V.17, 14400bps)	0	3	Disabled	Disabled	-	-
3	7200 (V.29, 7200bps)	0	3	Disabled	Disabled	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-

Figure 22 – Fax Configuration

Zone Assignment

By default, all zones are set to Intra-zone FAX Profile 1.

Based on your network diagram, assign the Intra-zone FAX Profiles to the Zone IDs of the zones. If audio compression is required within the same zone, set Intra-Zone Compression to “Yes”. Cloudli uses the Inter-zone FAX Profile.

The screenshot shows the Sipint2 - Mitel Communications Director web interface. The left sidebar contains navigation options: Licenses, LAN/WAN Configuration, and Voice Network. Under Voice Network, the following options are listed: Network Elements, Cluster Elements, Admin Groups, Fax Service Profiles, Fax Advanced Settings, Network Zones (highlighted), Network Zone Topology, Bandwidth Management, and Codec Settings. The main content area is titled 'Network Zones' and displays a table with the following data:

Zone ID	Intra-zone Compression	Intra-zone Fax Profile	Label	SMDR Tag	Time Zone	LBN Prefix	Zone CESID	Default Billing Number	Default CPN
1	No	1							
2	Yes	2	T.38 faxing						
3	Yes	1							
4	No	2							
5	No	1							
6	No	1							
7	No	1							

Figure 23 – Zone Assignment

Mitel Border Gateway Configuration Notes (Optional)

This section explains how to configure Mitel Border Gateway (MBG) if you use it as a SIP-aware gateway.

Firstly, you need to identify or add “the working” 3300 MCD where MBG will forward SIP messages to and then to configure the SIP trunk.

To do this:

- Login to the MBG and click Mitel Border Gateway.
- In the right pane, click the **Configure** tab and then **ICP's** (see **Figure 17** for details).
- On the **ICP's** page ensure that the “working” 3300ICP is configured. If needed, click the **Add ICP** link and add a new Mitel switch.
- Click the **Update** button when complete.

Mitel Standard Linux

admin@mbgJuly2012.mitel.com Logout

Applications
Mitel Border Gateway
Remote proxy services

ServiceLink
Blades
Status

Administration
Backup
View log files
Event viewer
System information
System monitoring
System users
Shutdown or reconfigure

Security
Remote access
Local networks
Port forwarding
Web Server Certificate
Certificate Management

Configuration
E-mail settings
DHCP
Date and time
Hostnames and addresses
Domains
SNMP
Ethernet Cards

Manage Mitel Border Gateway

Status **Configuration** Services Applications Clustering

Settings • Network profiles • **ICPs** • IP Translations • Bandwidth management • Alarms

» Location: ICPs

Welcome to the MBG administrative interface. From here you can manage all aspects of the MBG's behaviour. Above are various tabs for accessing different parts of the system. If at any time you require more information, click the Help icon in the upper-right corner of the page.

To test connectivity to your configured ICPs, or to run a DNS resolution test on configured hostnames, see the [Diagnostics](#) page.

Add ICP

Default for MiNet	Default for SIP	Name	Hostname or IP address	Type	Installer password	Indirect call recording capable	Indirect call recording password		
+	+	sipint2	192.168.101.11	MCD		✗		Modify	Delete

Update Default ICPs

Mitel Standard Linux 9.4.28.0
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Figure 17 – ICP's Configuration page

To add a new SIP trunk:

- Click **Services** tab and then click **SIP trunking**
- Click **Add a SIP trunk** link (see **Figure 18**)

SIP Trunk Cloudli_nat																
Trunk status	●															
Remote trunk endpoint	cae2.sbc.babytel.net:5065															
Send options keepalives	Use master setting															
Options interval	60															
Rewrite host in PAI	True															
Remote RTP framesize (ms)	20															
Idle timeout (s)	3600															
Re-invite filtering	Off															
RTP address override																
Local streaming	False															
PRACK support	Use master setting															
Log verbosity	Use master setting															
Authentication username	16136861719															
Authentication password	*****															
Routing rules	<table border="1"> <thead> <tr> <th>Rule number</th> <th>Header match rule</th> <th>Pattern</th> <th>Primary destination</th> <th>Secondary destination</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>req</td> <td>*</td> <td>sipint2</td> <td>None</td> </tr> </tbody> </table>	Rule number	Header match rule	Pattern	Primary destination	Secondary destination	1	req	*	sipint2	None					
Rule number	Header match rule	Pattern	Primary destination	Secondary destination												
1	req	*	sipint2	None												
Filter rules list (Pattern or destination)	<input type="text"/> <input type="button" value="Apply"/> <input type="button" value="Clear"/>															
Metrics	<table border="1"> <thead> <tr> <th>Calls in progress</th> <th>Calls per hour</th> <th>Seconds idle</th> <th>Active transactions</th> <th>Transaction errors</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Max: 0</td> <td>Max: 0</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Reset metrics	Calls in progress	Calls per hour	Seconds idle	Active transactions	Transaction errors	0	0	0	0	0	Max: 0	Max: 0			
Calls in progress	Calls per hour	Seconds idle	Active transactions	Transaction errors												
0	0	0	0	0												
Max: 0	Max: 0															
<input type="button" value="Modify"/> <input type="button" value="Delete"/>																

Figure 18 – SIP Trunking Configuration Page

Enter the SIP trunk's details as shown in **Figure 19**:

Name – is the name of the trunk

Remote trunk endpoint address – the public IP address of the provider's switch or gateway (this address should be given to you by the provider, e.g. Cloudli).

Local/Remote RTP framesize (ms) – is the packetization rate you want to set on this trunk. Ensure that this option is set to 20ms or Auto.

Disable PRACK – Leave this option at the default setting.

Routing rule one – it allows routing of any digits to the selected Mitel 3300 ICP

Cloudli uses Authentication - Fill in the user name and password as provided.

The rest of the settings are optional and could be configured as required.

In some installations you may require 2 SIP trunk configuration entries to handle incoming and outgoing calls differently.

Click **Save** button

MITEL MITEL STANDARD LINUX

admin@mbgtrunk.sipcoe.mitel.com Logout

Applications
 Mitel Border Gateway
 Remote proxy services

ServiceLink
 Blades
 Status

Administration
 Backup
 View log files
 Event viewer
 System information
 System monitoring
 System users
 Shutdown or reconfigure

Security
 Remote access
 Local networks
 Port forwarding
 Web Server Certificate
 Certificate Management

Configuration
 E-mail settings
 Google Apps
 DHCP
 Date and Time
 Hostnames and addresses
 Domains
 SNMP
 Ethernet Cards
 Review configuration

Miscellaneous
 Support and licensing
 Help

This interface provides the ability to edit a SIP trunk's details. Edit below, and click the "Save" button to commit the changes. If you do not wish to save, simply navigate elsewhere.

Name:

Remote trunk endpoint address:

Remote trunk endpoint port:

Options keepalives:

Options interval:

Rewrite host in PAI: ☒

Remote RTP framesize (ms):

Idle timeout (s):

Re-Invite filtering:

RTP address override:

Local streaming: ☐

PRACK support:

Log verbosity:

Authentication username:

Authentication password:

Confirm authentication password:

Note, if you modify your routing rules, you must save them before changing pages or navigating elsewhere, or those changes will be lost.

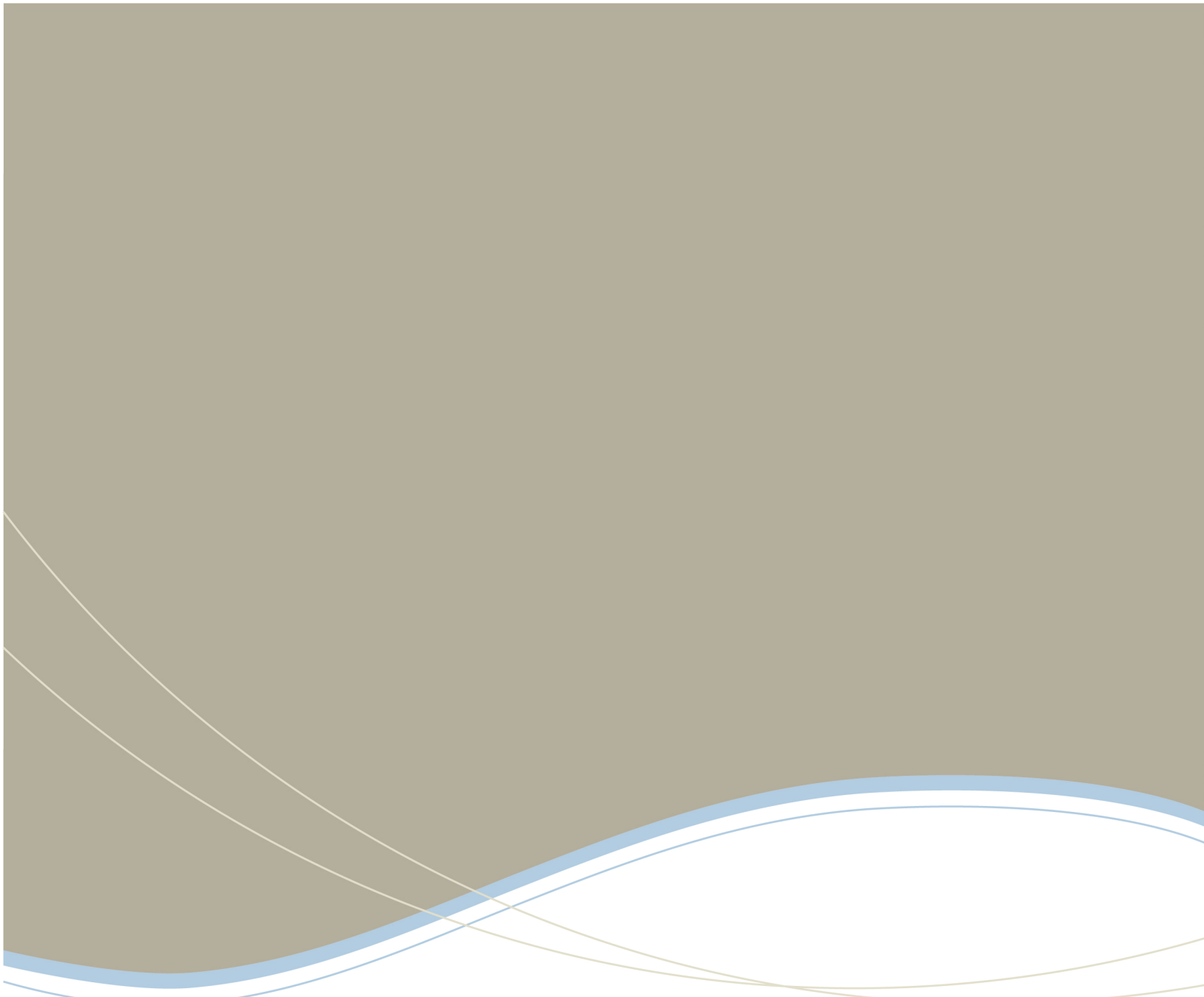
Rules per page:

Page 1 of 1
 Jump to page:

First Prev Next Last

Match	Rule	Primary	Secondary	
1 Request URI	*	sipint2	-----	Raise Prepend Delete Lower Append

Figure 18 – SIP Trunk configuration settings



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