

MITEL – SIP CoE  
**Technical**  
Configuration Note



Configure MCD for use with Intelepeer  
Service provider SIP Trunking

SIP CoE 14-4940-00313

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Mitel Technical Configuration Notes – Configure MCD for use with Intelepeer SIP Trunking

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## Overview

This document provides a reference to Mitel Authorized Solutions providers for configuring the Mitel 3300 MCD to connect to Intelepeer SIP Trunking. 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	02/03/2014	Initial Interop with Mitel 3300 MCD 6.0 and Intelepeer SIP trunk

## Interop Status

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

	The most common certification which means Intelepeer SIP Trunking 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.
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## Software & Hardware Setup

This was the test setup to generate a basic SIP call between Intelepeer SIP Trunking and the 3300 MCD.

Manufacturer	Variant	Software Version
Mitel	3300 MCD – Mxe Platform	6.0 PR1 12.0.0.52
Mitel	MBG – Teleworker	8.0.12.0
Service Provider	Intelepeer	

## Tested Features

This 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 Trunk Side Interoperability Test Plans (08-4940-00034) for detailed test cases.

Feature	Feature Description	Issues
Basic Call	Making and receiving a call through Intelepeer and their PSTN gateway, call holding, transferring, conferencing, busy calls, long calls durations, variable codec.	☑
Automatic Call Distribution	Making calls to an ACD environment with RAD treatments, Interflow and Overflow call scenarios and DTMF detection.	☑
NuPoint Voicemail	Terminating calls to a NuPoint voicemail boxes and DTMF detection.	☑
Packetization	Forcing the Mitel 3300 MCD to stream RTP packets through its E2T card at different intervals, from 10ms to 90ms	☑
Personal Ring Groups	Receiving calls through Intelepeer and their PSTN gateway to a personal ring group. Also moving calls to/from the prime member and group members.	☑
External Hot Desking	Receiving calls through Intelepeer and their PSTN gateway to PRG with EHDU . Including moving calls to/from the prime member of the PRG with the EHDU. Also placing calls from the EHDU and using mid call features with EHDU.	☑
Teleworker	Making and receiving a call Intelepeer and their PSTN gateway to and from Teleworker extensions.	☑
Video	Making and receiving a call through Intelepeer with video capable devices.	n/a
Fax	T.38 and G711Fax Calls	n/a

☑ - 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 Intelepeer SIP Trunking is connected to the MCD.

Feature	Problem Description
Authentication	Service provider uses trusted IP's <b>Recommendation:</b> Follow the setup described herein.
Session Timers	The calls worked on every session timer that I set. <b>Recommendation:</b> Disable session timers in the SIP peer profile. Follow the configuration shown in thus guide.
Video	Currently not supported. <b>Recommendation:</b> Contact Intelepeer for updates for supporting Video calling.
Fax	Currently not supported. <b>Recommendation:</b> Contact Intelepeer for updates for supporting G.711 fax calling.

## Network Topology

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

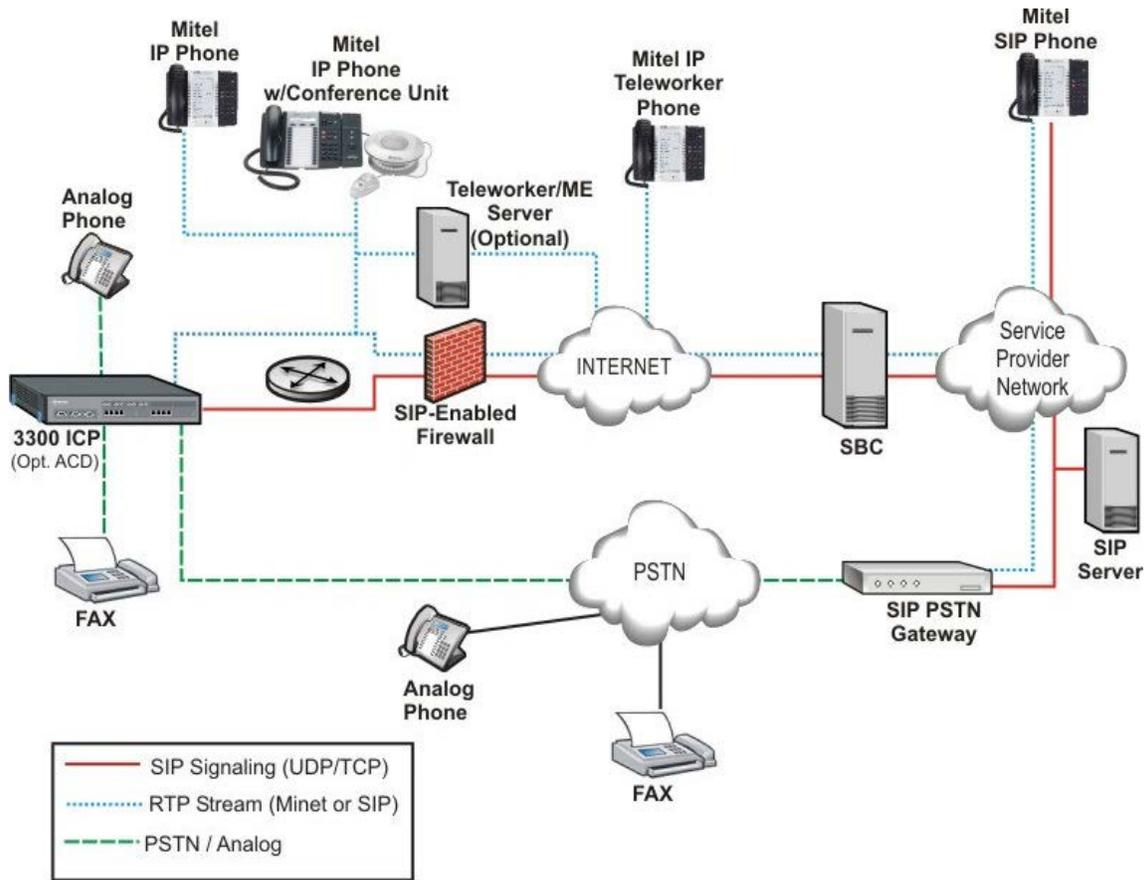


Figure 1 – Network Topology

## 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 Intelepeer SIP Trunking 3300 programming was configured in our test environment.

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**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.**

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## MCD Configuration Notes

The following steps show how to program a 3300 MCD to interconnect with Intelepeer 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 MCD 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 MCD Programming

The SIP signaling connection uses UDP on Port 5060.

### Licensing and Option Selection – SIP Licensing

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

Enter the total number of licenses in the SIP Trunk Licences 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.

License and Option Selection									
System Type	License Sharing	Hardware Identifier							
Enterprise	No	0000003a4cbf							
				<b>Local Limits</b>					
Licensed Options				Locally Consumed	Locally Allocated	Available for Allocation	Purchased	Licenses Allowed	Can be Over Allocated
<b>Users</b>									
IP Users				32	34	0	34	Unrestricted	Yes
External Hot Desk Users				11	14	0	14	Unrestricted	Yes
ACD Active Agents				0	5	0	5	Unrestricted	Yes
HTML Applications				0	0	20	0	Unrestricted	Yes
Analog Lines				0	16	0	16	Unrestricted	Yes
IP Console Active Operators				0	0	1	0	Unrestricted	Yes
Multi-device Users				3	5	0	5	Unrestricted	Yes
Multi-device Suites				0	5	0	5	Unrestricted	Yes
<b>Messaging</b>									
Embedded Voice Mail				2	16	0	16	Unrestricted	Yes
Embedded Voice Mail PMS				1	Yes	0	1	Unrestricted	Yes
<b>Trunking/Networking</b>									
Digital Links				0	1	0	1	Unrestricted	Yes
Compression					0	8	0	Unrestricted	Yes
FAX Over IP (T.38)					0	8	0	Unrestricted	Yes
SIP Trunks				11	13	0	13	Unrestricted	Yes
<b>Others</b>									
MCD IDS Connection				1	Yes	0	1	Unrestricted	Yes
MLPP				0	No	1	0	Unrestricted	Yes
<b>Configuration Options</b>									
Country				North America					
Extended Agent Skill Group				No					
Maximum Elements per Cluster				30					
Maximum Configurable IP Users and Devices				700					
Extended Hunt Group				No					
5560 IPT Device Extended Key Lines				No					

Figure 2 – License and Option Selection

## 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 Service Assignment 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 3300.

- Public Network Access via DPNSS set to **Yes**
- Campon Tone Security/FAX Machine set to **Yes**
- Busy Override Security set to **Yes**

The screenshot shows the MITEL SIPint1 web interface. At the top, there is a navigation bar with the MITEL logo, a system status indicator (Major alarm), and links for Message Board, About, Help, and Logout. Below this is a breadcrumb trail: Sipint1 > Class of Service Options on Sipint1. There are search and display options: 'DN to search' dropdown, 'Show form on Sipint1 (Login Node)' dropdown, and 'Go' button. A left sidebar contains a list of configuration categories, with 'Class of Service Options' selected. The main content area has a search section: 'Class of Service Options Search:' followed by a search form: 'Find a field named: Class Of Service Number that has a value of: [input] Search'. Below the search are buttons for 'Change', 'Copy', 'Print...', 'Import...', 'Export...', and 'Data Refresh'. A table titled 'Class of Service Options' is displayed with the following data:

Class Of Service Number	Comment
1	
2	IP Sets
3	NPM VM Ports
4	NPM MWI
5	IP Sets DND

Figure 3 – Class of Service

## Network Element Assignment

Create a network element for Intelepeer SIP Trunking. In this example, the softswitch is reachable by an IP Address and is defined as “Intelepeer” in the network element assignment form. **The FQDN or IP addresses of the SIP Peer (Network Element), the External SIP Proxy and Registrar are provided by your service provider.**

If your service provider trusts your network connection by asking for your gateway external IP address, then programming the IP address for the SIP Peer, Outbound Proxy and Registrar is not required for SIP trunk integration. This will need to be verified with your service provider. Set the transport to UDP and port to 5060.

Name	Intell
Type	Other
FQDN or IP Address	68.68.118.39
Local	False
Version	
Zone	1
ARID	
SIP Peer	<input checked="" type="checkbox"/>
<b>SIP Peer Specific</b>	
SIP Peer Transport	UDP
SIP Peer Port	5060
External SIP Proxy FQDN or IP Address	
External SIP Proxy Transport	default
External SIP Proxy Port	0
SIP Registrar FQDN or IP Address	
SIP Registrar Transport	default
SIP Registrar Port	0
SIP Peer Status	Auto-Detect/Normal

Figure 4 – Network Element Assignment

### Network Element Assignment (Proxy)

In addition, depending in 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 3300 MCD will require knowledge of this by programming the Proxy as a network element then referencing this proxy in the SIP Peer profile assignment (later in this document).

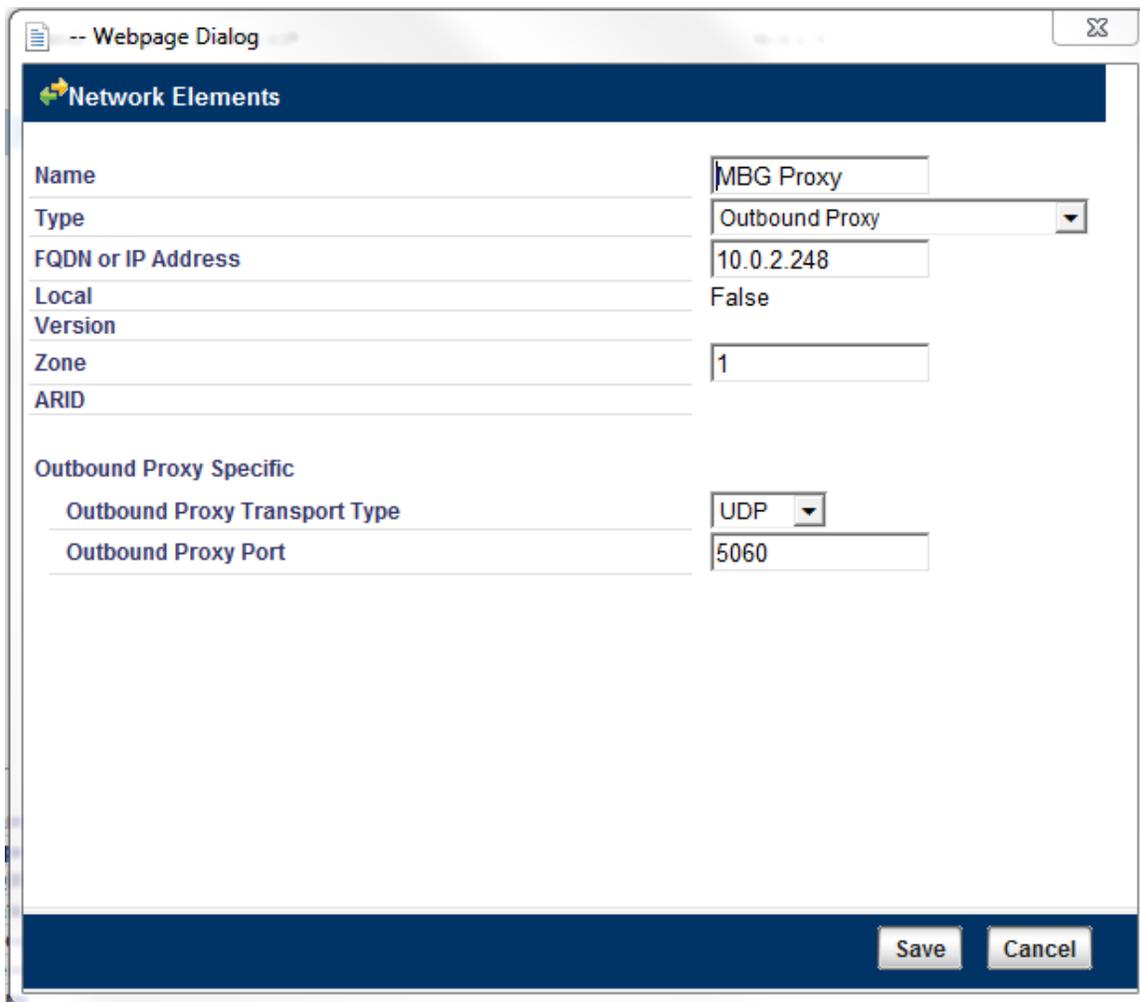


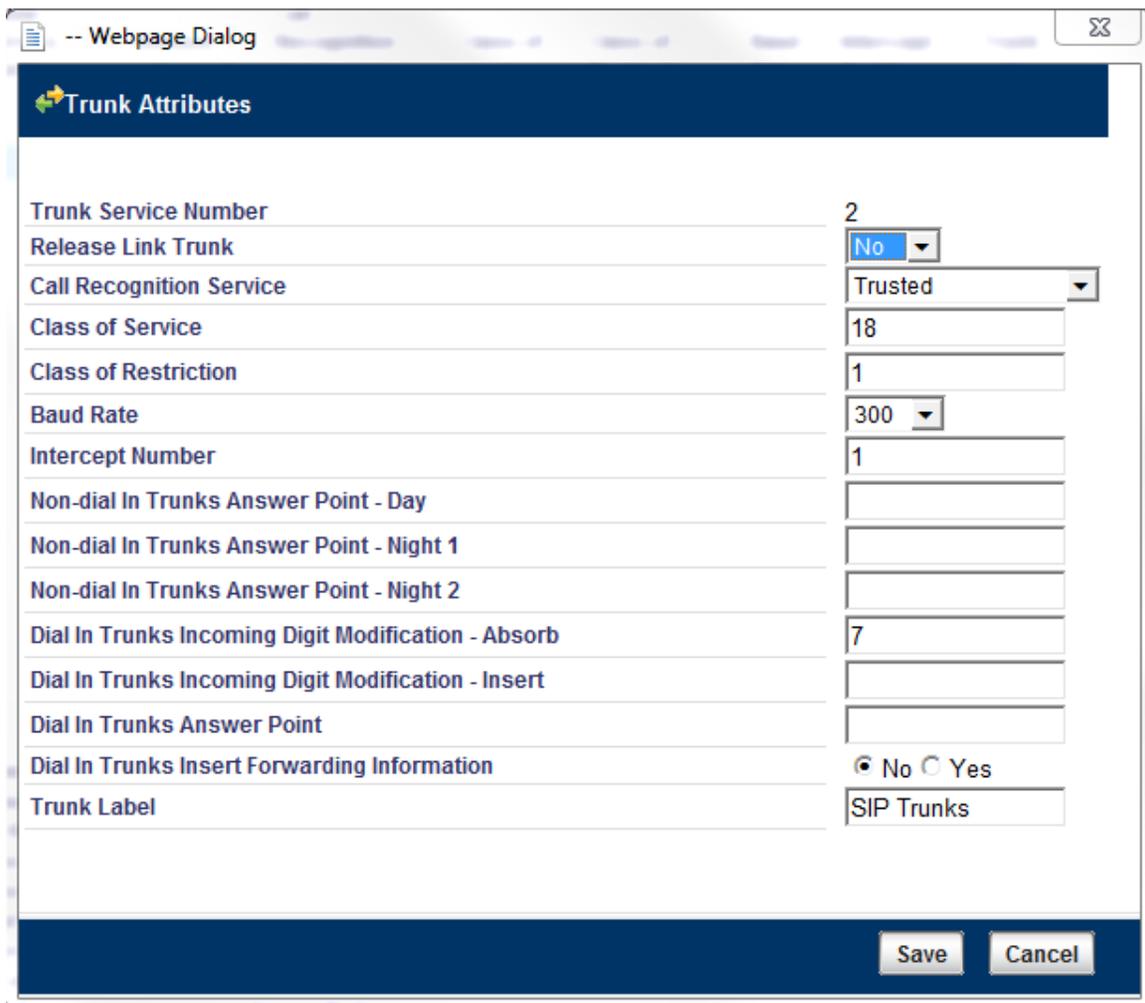
Figure 5 – Network Element Assignment (Proxy)

## Trunk Attributes

This is configured in the Trunk Attributes form. In this example the Trunk Attributes is defined for Trunk Service Number 20 which will be used to direct incoming calls to an answer point in the Mitel 3300 MCD.

Program the Non-dial In or Dial In Trunks (DID) according to the site requirements and what type of service was ordered from your service provider.

The example below shows configuration for incoming DID calls. The Mitel 3300 MCD will absorb the first 7 digits of the DID number from Intelepeer.



The screenshot shows a web browser window titled "-- Webpage Dialog" with a tab icon and a refresh icon. The main content area is titled "Trunk Attributes" with a small icon. The form contains the following fields and values:

Trunk Service Number	2
Release Link Trunk	No
Call Recognition Service	Trusted
Class of Service	18
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	
Dial In Trunks Answer Point	
Dial In Trunks Insert Forwarding Information	<input checked="" type="radio"/> No <input type="radio"/> Yes
Trunk Label	SIP Trunks

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

Figure 6 – Trunk Attributes

## SIP Peer Profile

The recommended connectivity via SIP Trunking does not require additional physical interfaces. IP/Ethernet connectivity is part of the base 3300 MCD Platform. The SIP Peer Profile should be configured with the following options:

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

**Registration User Name:** The Mitel 3300 MCD does not support Bulk Registration; therefore trunks will have to be registered individually. Enter the DIDs assigned by Intelepeer. Enter one or more numbers. The field has a maximum of 60 characters. The maximum number of digits per number is 26. You can enter a mix of ranges and single numbers (for example, "6135554000-6135554400, 6135554500"). Use a comma to separate telephone numbers and ranges. Use a dash (-) to indicate a range of telephone numbers. The first and last characters cannot be a comma or a dash.

**Address Type:** Select IP address.

**Outbound Proxy Server:** Select the Network Element previously configured for the Outbound Proxy Server.

**Calling Line ID:** The default CPN is applied to all calls unless there is a match in the "Outgoing DID Ranges" of the SIP Peer Profile. **This number will be provided by Intelepeer.** Do not use a Default CPN if you want public numbers to be preserved through the SIP interface. Add private numbers into the DID ranges for CPN Substitution form (see [DID Ranges for CPN Substitution](#)). Then select the appropriate numbers in the Outgoing DID Ranges in this form (SIP Peer Profile).

**Trunk Service Assignment:** Enter the trunk service assignment previously configured.

**SMDR:** 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).

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

**NOTE:** Ensure the remaining SIP Peer profile policy options are similar the screen capture below.

Basic	Call Routing	Calling Line ID	SDP Options	Signaling and Header Manipulation	Timers	Key Press Event	Outgoing DID Ranges
Profile Information							
SIP Peer Profile Label		Intell					
Network Element		Intell					
<b>Local Account Information</b>							
Registration User Name							
Address Type		IP Address: 10.0.2.5					
<b>Administration Options</b>							
Interconnect Restriction		1					
Maximum Simultaneous Calls		4					
Outbound Proxy Server							
SMDR Tag		0					
Trunk Service		4					
Zone		1					
<b>Authentication Options</b>							
User Name							
Password		*****					
Confirm Password		*****					
Authentication Option for Incoming Calls		No Authentication					
Subscription User Name							
Subscription Password		*****					
Subscription Confirm Password		*****					

Figure 7 – SIP Peer Profile Assignment- Basic

Basic	Call Routing	Calling Line ID	SDP Options	Signaling and Header Manipulation	Timers	Key Press Event
Profile Information						
Alternate Destination Domain Enabled			<input checked="" type="radio"/> No <input type="radio"/> Yes			
Alternate Destination Domain FQDN or IP Address			<input type="text"/>			
Enable Special Re-invite Collision Handling			<input checked="" type="radio"/> No <input type="radio"/> Yes			
Only Allow Outgoing Calls			<input checked="" type="radio"/> No <input type="radio"/> Yes			
Private SIP Trunk			<input checked="" type="radio"/> No <input type="radio"/> Yes			
Reject Incoming Anonymous Calls			<input checked="" type="radio"/> No <input type="radio"/> Yes			
Route Call Using To Header			<input checked="" type="radio"/> No <input type="radio"/> Yes			

Figure 8 – SIP Peer Profile Assignment- Call Routing

SIP Peer Profile						
Basic	Call Routing	Calling Line ID	SDP Options	Signaling and Header Manipulation	Timers	Key Press Event
Profile Information						
Default CPN	3179646100					
Default CPN Name	BD Managed Servic					
CPN Restriction	<input checked="" type="radio"/> No <input type="radio"/> Yes					
Public Calling Party Number Passthrough	<input type="radio"/> No <input checked="" type="radio"/> Yes					
Strip PNI	<input checked="" type="radio"/> No <input type="radio"/> Yes					
Use Diverting Party Number as Calling Party Number	<input checked="" type="radio"/> No <input type="radio"/> Yes					

Figure 9 – SIP Peer Profile Assignment- Calling Line ID

Basic	Call Routing	Calling Line ID	SDP Options	Signaling and H
Profile Information				
Allow Peer To Use Multiple Active M-Lines	<input type="radio"/> No <input checked="" type="radio"/> Yes			
Allow Using UPDATE For Early Media Renegotiation	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Avoid Signaling Hold to the Peer	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Enable Mitel Proprietary SDP	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Force sending SDP in initial Invite message	<input type="radio"/> No <input checked="" type="radio"/> Yes			
Force sending SDP in initial Invite - Early Answer	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Limit to one Offer/Answer per INVITE	<input checked="" type="radio"/> No <input type="radio"/> Yes			
NAT Keepalive	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Prevent the Use of IP Address 0.0.0.0 in SDP Messages	<input type="radio"/> No <input checked="" type="radio"/> Yes			
Renegotiate SDP To Enforce Symmetric Codec	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Repeat SDP Answer If Duplicate Offer Is Received	<input checked="" type="radio"/> No <input type="radio"/> Yes			
RTP Packetization Rate Override	<input type="radio"/> No <input checked="" type="radio"/> Yes			
RTP Packetization Rate	30ms ▾			
Special handling of Offers in 2XX responses (INVITE)	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Suppress Use of SDP Inactive Media Streams	<input checked="" type="radio"/> No <input type="radio"/> Yes			

Figure 10 – SIP Peer Profile Assignment- SDP Options

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

Figure 11 – SIP Peer Profile Assignment- Signaling and Header Manipulation

Basic	Call Routing	Calling Line ID	SDP Options	Signaling and Header Manipulation	Timers	Key Press Event
Profile Information						
Keep-Alive (OPTIONS) Period	<input type="text" value="120"/>					
Registration Period	<input type="text" value="3600"/>					
Registration Period Refresh (%)	<input type="text" value="50"/>					
Registration Maximum Timeout	<input type="text" value="90"/>					
Session Timer	<input type="text" value="8000"/>					
Subscription Period	<input type="text" value="3600"/>					
Subscription Period Minimum	<input type="text" value="300"/>					
Subscription Period Refresh (%)	<input type="text" value="80"/>					
Invite Ringing Response Timer	<input type="text" value="0"/>					

Figure 12 – SIP Peer Profile Assignment- Timers

**SIP Peer Profile**

Basic | Call Routing | Calling Line ID | SDP Options | Signaling and Header Manipulation | Timers | Key Press Event

Profile Information

Allow Inc Subscriptions for Local Digit Monitoring  No  Yes

Allow Out Subscriptions for Remote Digit Monitoring  No  Yes

Force Out Subscriptions for Remote Digit Monitoring  No  Yes

Request Outbound Proxy to Handle Out Subscriptions  No  Yes

KPML Transport default

KPML Port 0

Figure 13 – SIP Peer Profile Assignment- Key Press Event

Basic | Call Routing | Calling Line ID | SDP Options | Signaling and Header Manipulation | Timers | Key Press Event

Outgoing DID Ranges | Profile Information

Add Member Delete Member

Index	DID Range	CPN Substitution
-------	-----------	------------------

Figure 14 – SIP Peer Profile Assignment- Outgoing DID Ranges

**SIP Peer Profile**

Basic | Call Routing | Calling Line ID | SDP Options | Signaling and Header Manipulation | Timers | Key Press Event

Profile Information

Load File Save File

Creator

Date Created

Created on MCD Version

Service Provider

Vendor Notes

Figure 15 – SIP Peer Profile Assignment- Profile Information



### ARS Digit Modification Plans

Ensure that Digit Modification for outgoing calls on the SIP trunk to Intelepeer absorbs or inject additional digits according to your dialling plan.

ARS Digit Modification Plans			
Digit Modification Number	Number of Digits to Absorb	Digits to be Inserted	Final Tone Plan/Information Marker
1	1		
2	1		
3	1	1	
4	0		
5	0		
6	0		
7	0		
8	0		
9	0		
10	0		
11	0		
12	0		
13	0		
14	0		
15	0		

Figure 17 – Digit Modification Assignment

## ARS Routes

Create a route for SIP Trunks connecting a trunk to Intelepeer.

ARS Routes										
Route Number	Routing Medium	Trunk Group Number	SIP Peer Profile	PBX Number / Cluster Element ID	COR Group Number	Digit Modification Number	Digits Before Outpulsing	Route Type	Compression	
1					1	1			Off	
2	SIP Trunk		Intell		1	1			Off	
3	SIP Trunk		Intell		1	2			Off	
4	SIP Trunk		Intell		1	3			Off	
5	SIP Trunk		Intell		2	4		Emergency	Off	
6	SIP Trunk		Intell		3	2		Emergency	Off	
7					1	1			Off	
8					1	1			Off	
9					1	1			Off	
10	SIP Trunk		Intell		1	1			Off	
11					1	1			Off	
12					1	1			Off	
13					1	1			Off	
14					1	1			Off	
15					1	1			Off	

Figure 18 – SIP Trunk Route Assignment

### ARS Digits Dialed

ARS initiates the routing of trunk calls when certain digits are dialed from a station.

ARS Digits Dialed			
Digits Dialed	Number of Digits to Follow	Termination Type	Termination Number
911	0	Route	5
914809616931	0	Route	10
91800	7	Route	2
9911	0	Route	6
9933	0	Route	6
9XXXXXXX	0	Route	3
9XXXXXXXXXX	0	Route	4
9XXXXXXXXXXXX	0	Route	2

Figure 19 – ARS Digit Dialed Assignment

## T.38 Fax Configuration

Intelepeer uses the inter-zone FAX profile. 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).

The screenshot shows the MITELE configuration interface for Node 'Sipint4'. The main configuration area is titled 'Fax Configuration on Sipint4' and includes the following settings:

- Maximum Fax Rate:** 14400 (V.17, 14400bps)
- High Speed Redundancy:** 1
- Low Speed Redundancy:** 3
- Error Correction Mode (ECM):** Disabled
- Override Non-Standard Facilities (NSF):** Disabled
- Label:** Inter-zone

Below the main configuration is a table for 'Intra-Zone Fax Profiles' with the following data:

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

Figure 20 - 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”. Intelepeer uses the Intra-zone FAX Profile 2

Inter-Zone Fax Profile

Maximum Fax Rate	14400 (V.17, 14400bps)
High Speed Redundancy	1
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:

Intra-Zone Fax Service Profiles

Profile	Maximum Fax Rate	High Speed Redundancy	Low Speed Redundancy	Error Correction Mode	NSF Override	NSF Vendor Code Value	NSF Country Code Value	Label
1	-	-	-	-	-	-	-	G.711
2	14400 (V.17, 14400bps)	1	3	Disabled	Disabled	.	.	T.38
3	-	-	-	-	-	-	-	

Figure 21 – Zone Assignment

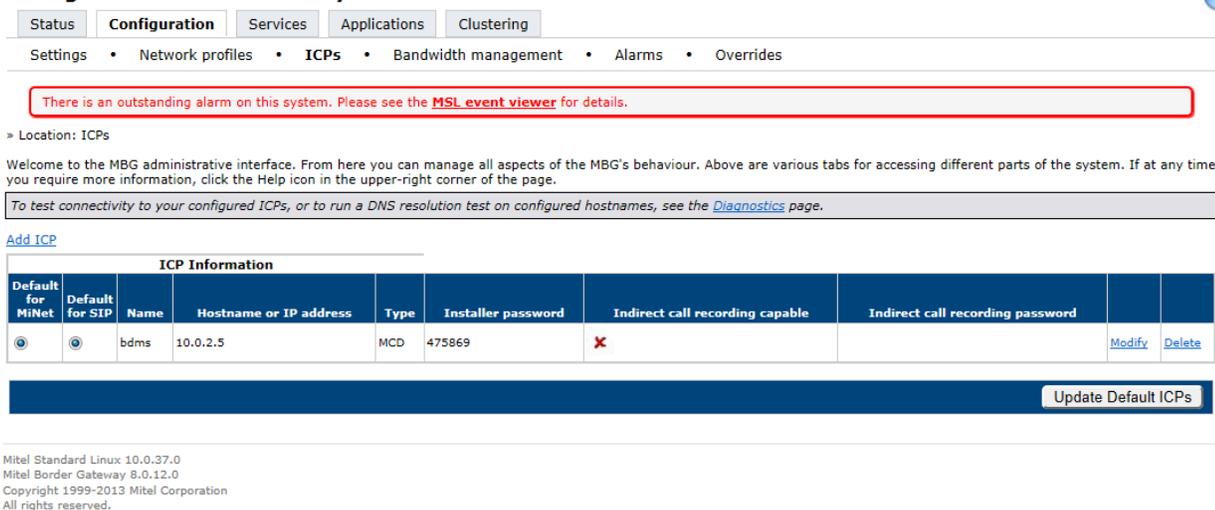
## Mitel Border Gateway Configuration Notes (Optional)

When configuring Mitel Border Gateway (MBG), you need to identify the working 3300 ICP where to forward SIP messages to and then to configure the SIP trunk.

To do this:

- Login to MBG and click **Mitel Border Gateway**
- In right pane, click **Configuration** tab and then **ICPs** (see Figure 18 for details)

### Manage Mitel Border Gateway



Settings • Network profiles • **ICPs** • Bandwidth management • Alarms • Overrides

There is an outstanding alarm on this system. Please see the [MSL event viewer](#) for details.

» 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](#)

ICP Information									
Default for MiNet	Default for SIP	Name	Hostname or IP address	Type	Installer password	Indirect call recording capable	Indirect call recording password	Modify	Delete
<input checked="" type="radio"/>	<input checked="" type="radio"/>	bdms	10.0.2.5	MCD	475869	X		<a href="#">Modify</a>	<a href="#">Delete</a>

[Update Default ICPs](#)

Mitel Standard Linux 10.0.37.0  
 Mitel Border Gateway 8.0.12.0  
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**Figure 22 – MBG's Configuration page**

- On **ICPs** page, ensure that the “working” 3300ICP is configured. If needed, click **Add ICP** link and add a new Mitel switch.
- Click **Update** button

To add a new SIP trunk:

- Click **Services** tab and then click **SIP trunking**
- Click **Add a SIP trunk** link (see Figure 22)

### Manage Mitel Border Gateway

Status
Configuration
Services
Applications
Clustering

MiNet devices
Device settings by DN
SIP devices
SIP trunking
Recording status

» Location: [SIP Trunks](#) / View SIP Trunk - Intelepeer

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.

Below is the detailed information on this SIP trunk.

SIP Trunk
Intelepeer

**Trunk status** ◆

**Remote trunk endpoint** 68.68.118.39 : 5060

**Send options keepalives** Use master setting

**Options interval** 60

**Rewrite host in PAI** True

**Remote RTP framesize (ms)** 30

**Idle timeout (s)** 3600

**Re-invite filtering** Off

**RTP address override** 207.250.47.190

**Local streaming** False

**PRACK support** Use master setting

**Log verbosity** Use master setting

**Authentication username**

**Authentication password**

Routing rules	Rule number	Header match rule	Pattern	Primary destination	Secondary destination
	1	from	*	bdms	None

Filter rules list (Pattern or destination)  Apply Clear

Calls in progress	Calls per hour	Seconds idle	Active transactions	Transaction errors
0	0	34	0	5
Max: 10	Max: 540			<a href="#">Reset metrics</a>

Modify
Delete

Mitel Standard Linux 10.0.37.0  
 Mitel Border Gateway 8.0.12.0  
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**Figure 23 – SIP trunking configuration page**

Enter the SIP trunk's details as shown in Figure 23:

**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. Intelepeer).

**Local/Remote RTP framesize (ms)** – is the packetization rate you want to set on this trunk

**PRACK** – Use master setting.

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

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

Click **Save** button

### Manage Mitel Border Gateway

Status Configuration **Services** Applications Clustering

MiNet devices • Device settings by DN • SIP devices • **SIP trunking** • Recording status

There is an outstanding alarm on this system. Please see the [MSL event viewer](#) for details.

» Location: [SIP Trunks](#) / [View SIP Trunk - Intelepeer](#) / Edit SIP Trunk - Intelepeer

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.

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.

<b>Name:</b>	Intelepeer
<b>Remote trunk endpoint address:</b>	68.68.118.39
<b>Remote trunk endpoint port:</b>	5060
<b>Options keepalives:</b>	Use master setting
<b>Options interval:</b>	60
<b>Rewrite host in PAI:</b>	<input checked="" type="checkbox"/>
<b>Remote RTP framesize (ms):</b>	30ms
<b>Idle timeout (s):</b>	3600
<b>Re-invite filtering:</b>	Off
<b>RTP address override:</b>	WAN Interface - 207.250.47.190
<b>Local streaming:</b>	<input type="checkbox"/>
<b>PRACK support:</b>	Use master setting
<b>Log verbosity:</b>	Use master setting
<b>Authentication username:</b>	
<b>Authentication password:</b>	
<b>Confirm authentication password:</b>	

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

<b>Routing rules:</b>	<b>Rules per page</b> 10								
	Page 1 of 1 Jump to page 1								
	First Prev Next Last								
	Match	Rule	Primary	Secondary		1 From header URI	*	bdms	-----
Match	Rule	Primary	Secondary						
1 From header URI	*	bdms	-----	<a href="#">Raise</a> <a href="#">Prepend</a> <a href="#">Delete</a> <a href="#">Lower</a> <a href="#">Append</a>					

Save

e

Figure 24 – SIP Trunk configuration settings

## External Hot Desking Users and Personal Ring Groups Configuration

The following are the basic steps to program EHDU and PRG with Intelepeer. For more detailed programming please refer to the Mitel 3300 MCD System Admin Help:

[http://edocs.mitel.com/TechDocs/Platforms/3300ICP/MCD-5.0\\_SP1/sysadmin/sysadminhelpmain.htm](http://edocs.mitel.com/TechDocs/Platforms/3300ICP/MCD-5.0_SP1/sysadmin/sysadminhelpmain.htm)

For end user capabilities with EHDU and PRG please refer to the following end user document:

[http://edocs.mitel.com/UG/EN/3300ICP\\_EHDU\\_QRC\\_MCD4.0\\_EN.pdf](http://edocs.mitel.com/UG/EN/3300ICP_EHDU_QRC_MCD4.0_EN.pdf)

The following options for an EDHU should be enabled and programmed for proper operation:

Class of Service Options	
14	UC M-VM (RAC)
15	Dyn Extn User
16	Dyn Extn VM RAC
17	Ext. Hot Desk
18	SIP Trunks
19	MCA
20	UC M Monitor

General	Advanced
---------	----------

HCI	
HCI/CTI/TAPI Call Control Allowed	Yes
HCI/CTI/TAPI Monitor Allowed	Yes

Hot Desk	
Green BLF Lamp for Logged in Hotdesk User	No
Hot Desk External User - Allow Mid-Call Features	Yes
Hot Desk External User - Answer Confirmation	No
Hot Desk External User - Dial Tone on Call Complete	Yes
Hot Desk External User - Permanent Login	Yes
Hot Desk External User - Remote MWI Enable Feature Access Code	
Hot Desk External User - Remote MWI Disable Feature Access Code	
Hot Desk External User - Reseize Timer	180
Hot Desk Login Accept	Yes
Hot Desk Remote Logout Enabled	Yes

Figure 25 – EHDU Class of Service Options

In Users and Devices Configuration for the directory number that is going to be used as an EHDU select Hot Desking User and set the service level to Full or Multi-Device.

Add		Change		Copy		Delete		Print...		Import...		Export...		Data Refresh	
Number: 2000		Name: Seth Cell		Hot Desking User: Yes		Preferred Set: No Device		Apply		Save		Cancel			
Profile		Device Details		Service Details		Voice Mail		Access and Authentication		Phone Applications		Keys			
<b>User Profile</b>															
Last Name		Cell				Role		Ext. Hot Desk							
First Name		Seth				Language		English							
Department						Email									
Location						IDS-Manageable		<input checked="" type="checkbox"/>							
<b>Service Profile</b>															
Number		2000				Directory Name		Cell,Seth							
Hot Desking User		<input checked="" type="checkbox"/>				Prime Name		<input checked="" type="radio"/> No <input type="radio"/> Yes							
Preferred Set		No Device				Privacy		<input checked="" type="radio"/> No <input type="radio"/> Yes							
Service Level		Full				Home Element		Bdms							
Local-only DN		<input type="checkbox"/>				Secondary Element		Not Assigned							
ACD Agent		<input type="checkbox"/>													

Figure 26 – User and Devices Configuration for EHDU - Profile

In Users and Devices Configuration for the directory number that is going to be used as an EHDU enter in the External Hot Desking Dialing Prefix and External Hot Desking Number.

<input type="button" value="Add"/> <input type="button" value="Change"/> <input type="button" value="Copy"/> <input type="button" value="Delete"/>				<input type="button" value="Print..."/> <input type="button" value="Import..."/> <input type="button" value="Export..."/> <input type="button" value="Data Refresh"/>					
Number: 2000		Name: Seth Cell		Hot Desking User: Yes		Preferred Set: No Device		<input type="button" value="Apply"/> <input type="button" value="Save"/> <input type="button" value="Cancel"/>	
<input type="button" value="Profile"/>	<input type="button" value="Device Details"/>	<input type="button" value="Service Details"/>	<input type="button" value="Voice Mail"/>	<input type="button" value="Access and Authentication"/>	<input type="button" value="Phone Applications"/>	<input type="button" value="Keys"/>			
<b>Service Details</b>									
		Day	Night 1	Night 2					
Class of Service		17	17	17					
Class of Restriction		1	1	1					
External Hot Desking Enabled		<input type="radio"/> No	<input checked="" type="radio"/> Yes						
External Hot Desking Dialing Prefix		9							
External Hot Desking Number		13173710523							
Personal Speedcall Allocation									
SIP Device Capabilities		1							
Interconnect Number		1							
Tenant Number		1							
Lock Default Configuration		<input checked="" type="radio"/> No	<input type="radio"/> Yes						
Max Call History Records		0							
Non-Busy Extension		<input type="radio"/> No	<input type="radio"/> Yes						
Call Coverage Service Number		1							

Figure 27 – User and Devices Configuration for EHDU – Service Details

In Users and Devices Configuration for the directory number that is going to be used as an EHDU enter in User PIN. This PIN will be used by the EHDU User to login into access Mitel 3300 MCD call features.

The screenshot displays a web-based configuration interface for a user profile. At the top, there are buttons for 'Add', 'Change', 'Copy', and 'Delete'. On the right side, there are buttons for 'Print...', 'Import...', 'Export...', and 'Data Refresh'. Below these, a header bar shows the user's details: 'Number: 2000', 'Name: Seth Cell', 'Hot Desking User: Yes', and 'Preferred Set: No Device'. To the right of this header are 'Apply', 'Save', and 'Cancel' buttons. A navigation bar below the header contains tabs for 'Profile', 'Device Details', 'Service Details', 'Voice Mail', 'Access and Authentication', 'Phone Applications', and 'Keys'. The 'Access and Authentication' tab is currently selected and contains the following fields:

- User PIN:** A text input field with 10 black dots.
- Confirm User PIN:** A text input field with 10 black dots.
- Wireless PIN:** A greyed-out text input field.
- Confirm Wireless PIN:** A greyed-out text input field.
- Desktop Admin:** A checkbox that is currently unchecked.
- Login ID:** A text input field.
- Password:** A text input field.
- Confirm Password:** A text input field.

**Figure 28 – User and Devices Configuration for EHDU – Access and Authentication**

The EDHU can be added as part of PRG.

Page 1 of 2 
Go to:  value:

**Personal Ring Groups**

Personal Ring Group	One Busy All Busy	Prime Member Name	Home Element	Secondary Element
1601	Yes	Pugliese,Chris	Bdms	Not Assigned
1603	Yes	Bonin,Paul	Bdms	Not Assigned
1605	Yes	Hausz,Tim	Bdms	Not Assigned
1607	Yes	Harter,Todd	Bdms	Not Assigned
1608	Yes	Stohr,Nathan	Bdms	Not Assigned
1611	Yes	Sego,Scott	Bdms	Not Assigned
1613	No	Smitherman,Seth	Bdms	Not Assigned

Personal Ring Group: 1613  
 Local-only DN: False  
 One Busy All Busy: No  
 Prime Member Name: Smitherman,Seth  
 Home Element: Bdms  
 Secondary Element: Not Assigned

**Personal Ring Group Members**

Member Index	Number	Presence	Name	Home Element	Secondary Element
1	1613	Present	Smitherman,Seth	Bdms	Not Assigned
2	2000	Present	Cell,Seth	Bdms	Not Assigned

Figure 29 – PRG

Enter the DN that terminates the DID number dialed by external hot desking users to access system resources, including extensions, voice mail, outgoing trunks etc.

System Access Points	
Night Bell Directory Number	
DISA Forced Account Code - Directory Number	
DISA Directory Number	
Music Source	Embedded
Music Source Port - Location ID	
Message Center - Directory Number	
Milliwatt Test Directory Number	
Balance Test Directory Number	
100 Test Directory Number	
MNMS: Event Indication Routing Number	
MNMS: Event Indication Number	
Administrative Directory Number	
Voice Dialler Access Number	
Hot Desking Access Number	8000
Hot Desking Callback After Digit Collection Number	
Hot Desking Callback Before Digit Collection Number	

Figure 30 – System Access Points

If a EHDU user calls into the system and the trunk is not Trusted they will have to authenticate every time. You can change the Call Recognition Service in the Trunk Attributes to “trusted” and if the 3300 recognizes that the Calling number is associated with the EHDU no authentication will be required.

Attribute	Value
Trunk Service Number	2
Release Link Trunk	No
Call Recognition Service	Trusted
Class of Service	18
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	
Dial In Trunks Answer Point	
Dial In Trunks Insert Forwarding Information	<input checked="" type="radio"/> No <input type="radio"/> Yes
Trunk Label	SIP Trunks

Figure 31 – Trunk Attributes for Trusting EHDU

To confirm if a calling number will be trusted view the Call Recognition Service form and check that it is associated here with the EHDU.

Call Recognition Service			
Primary Node Id (PNI)	Digit String 1	Digit String 2	CRS Service Type
	2000	13173710523	EHDU
	2003	13175327844	EHDU
	2004	13172928002	EHDU
	2005	13172704450	EHDU
	2006	18123608941	EHDU
	2007	13173701270	EHDU
	2008	13173065158	EHDU
	2009	13174904823	EHDU
	2010	13177279027	EHDU
	2011	13174039986	EHDU
	21629	13174373084	EHDU
	2222	3710523	EHDU

**Figure 32 – Call Recognition Form**

In order for Mid Call features to function with KPML such as pressing 5 to handoff from the EHDU to the PRG you must program the following in the SIP Peer Profile:

Subscription User Name and Subscription Password (This has to match what is programmed in the MBG)

<b>SIP Peer Profile Label</b>	Mitel-MBG
<b>Network Element</b>	Intell
<b>Local Account Information</b>	
<b>Registration User Name</b>	
<b>Address Type</b>	IP Address: 10.0.2.5
<b>Administration Options</b>	
<b>Interconnect Restriction</b>	1
<b>Maximum Simultaneous Calls</b>	11
<b>Outbound Proxy Server</b>	MBG Proxy
<b>SMDR Tag</b>	0
<b>Trunk Service</b>	2
<b>Zone</b>	1
<b>Authentication Options</b>	
<b>User Name</b>	
<b>Password</b>	*****
<b>Confirm Password</b>	*****
<b>Authentication Option for Incoming Calls</b>	No
<b>Subscription User Name</b>	Authentication administrator
<b>Subscription Password</b>	*****
<b>Subscription Confirm Password</b>	*****

Figure 32 – SIP Peer Profile with KPML - Basic

Select Yes for Allow Inc Subscriptions and Request Outbound Proxy to Handle Out Subscriptions. Set KPML Transport to UDP and KPML port to 5060.

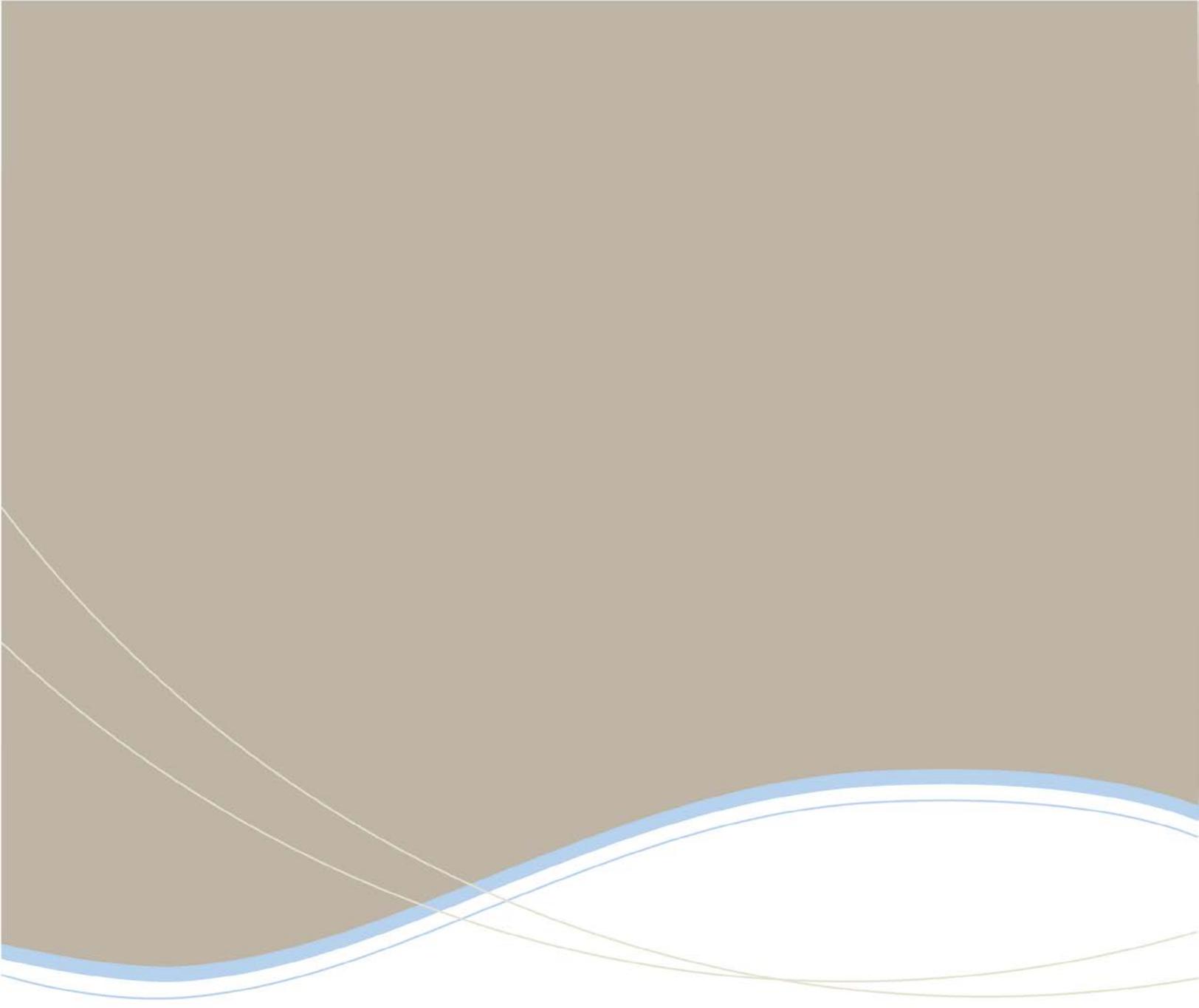
<a href="#">Allow Inc Subscriptions for Local Digit Monitoring</a>	No
<a href="#">Allow Out Subscriptions for Remote Digit Monitoring</a>	Yes
<a href="#">Force Out Subscriptions for Remote Digit Monitoring</a>	No
<a href="#">Request Outbound Proxy to Handle Out Subscriptions</a>	No
<a href="#">KPML Transport</a>	UDP
<a href="#">KPML Port</a>	5060

**Figure 33 – SIP Peer Profile with KPML – Key Press Event**

In the MBG go to Configuration>Settings>Service Parameters. Enter the KPML username and password that was previously programmed in the SIP Peer Profile.

Service parameters	
<a href="#">Security profile</a>	Legacy mode
<a href="#">SRTP starting port</a>	20000
<a href="#">SRTP ending port</a>	31000
<a href="#">DSCP setting for signaling</a>	Expedited forwarding
<a href="#">DSCP setting for voice</a>	Expedited forwarding
<a href="#">KPML credentials</a>	administrator / *****
Global device options	
<a href="#">Relax ICP RTP checks</a>	False
<a href="#">Disable SRTP</a>	False
<a href="#">Allow G.722</a>	False
<a href="#">Call recording support</a>	False
<a href="#">RTP framesize</a>	20ms
<a href="#">TFTP blocksize</a>	4096 bytes
MiNet options	
<a href="#">Restrict MiNet devices</a>	True
<a href="#">Unencrypted MiNet support</a>	Disabled
<a href="#">Local streaming</a>	False
<a href="#">G.729 transcoding</a>	False
<a href="#">Set-side codec</a>	G.729
<a href="#">Time format</a>	12 hour
<a href="#">IP console support</a>	Disabled
<a href="#">Legacy HTTP proxy support</a>	Disabled
<a href="#">Use even setside RTP ports</a>	True

**Figure 34 – MBG Configuration for KPML**



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