

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:

 COMPATIBLE	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 Recommendation: Follow the setup described herein.
Session Timers	The calls worked on every session timer that I set. Recommendation: Disable session timers in the SIP peer profile. Follow the configuration shown in thus guide.
Video	Currently not supported. Recommendation: Contact Intelepeer for updates for supporting Video calling.
Fax	Currently not supported. Recommendation: Contact Intelepeer for updates for supporting G.711 fax calling.

Network Topology

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

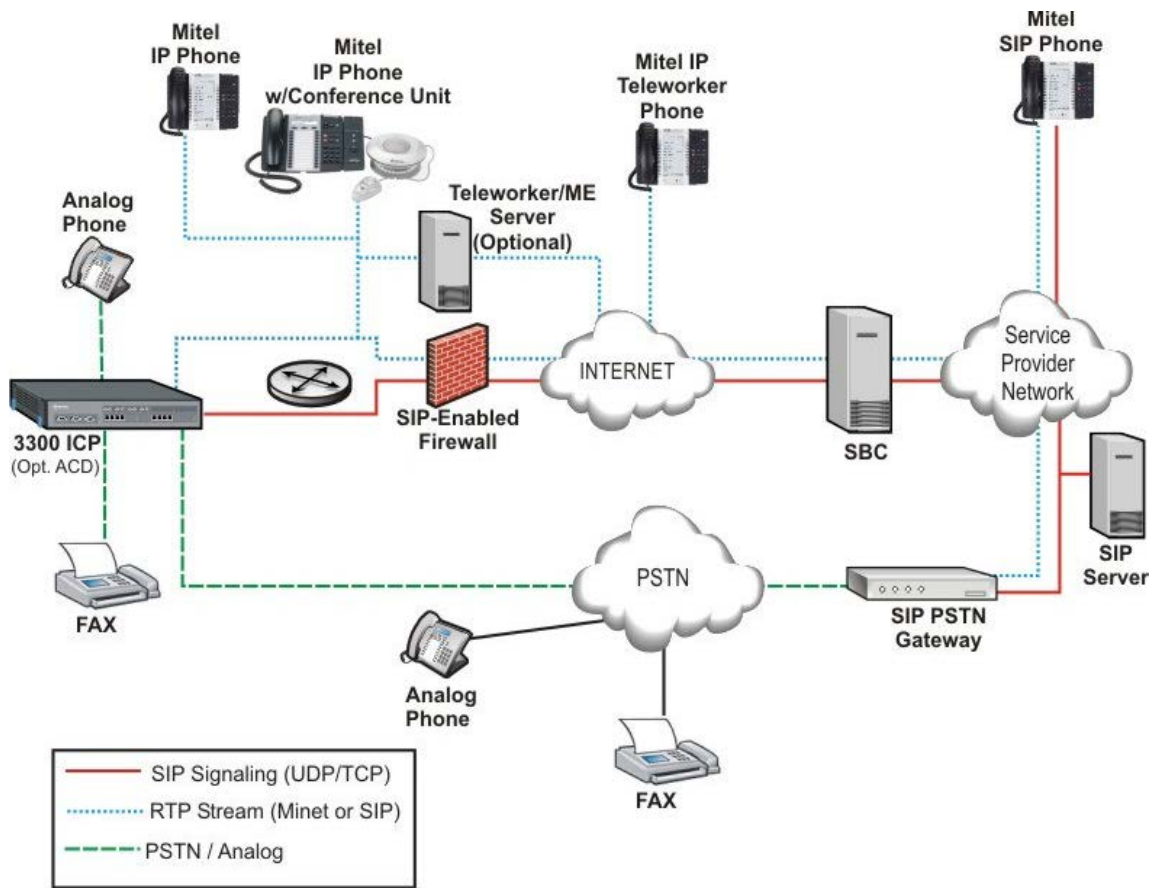


Figure 1 – Network Topology

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.

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.

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					
						Local Limits	
Licensed Options						Licenses Allowed	Can be Over Allocated
	Locally Consumed	Locally Allocated	Available for Allocation	Purchased			
Users							
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	
Messaging							
Embedded Voice Mail	2	16	0	16	Unrestricted	Yes	
Embedded Voice Mail PMS	1	Yes	0	1	Unrestricted	Yes	
Trunking/Networking							
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	
Others							
MCD IDS Connection	1	Yes	0	1	Unrestricted	Yes	
MLPP	0	No	1	0	Unrestricted	Yes	
Configuration Options							
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. The top navigation bar includes the MITEL logo, a status message "Group 'System Defaulted' Alarm Status: Major", and links for "Message Board", "About", "Help", and "Logout". The main header area displays "Sipint1" and "Class of Service Options on Sipint1". Below this, there are links for "View Alphabetically", "SDS Share", and a search bar. The left sidebar contains a list of navigation links, with "Class of Service Options" highlighted. The main content area features a search bar and a table of Class of Service Options.

Class of Service Options Search:

Find a field named: **Class Of Service Number** that has a value of:

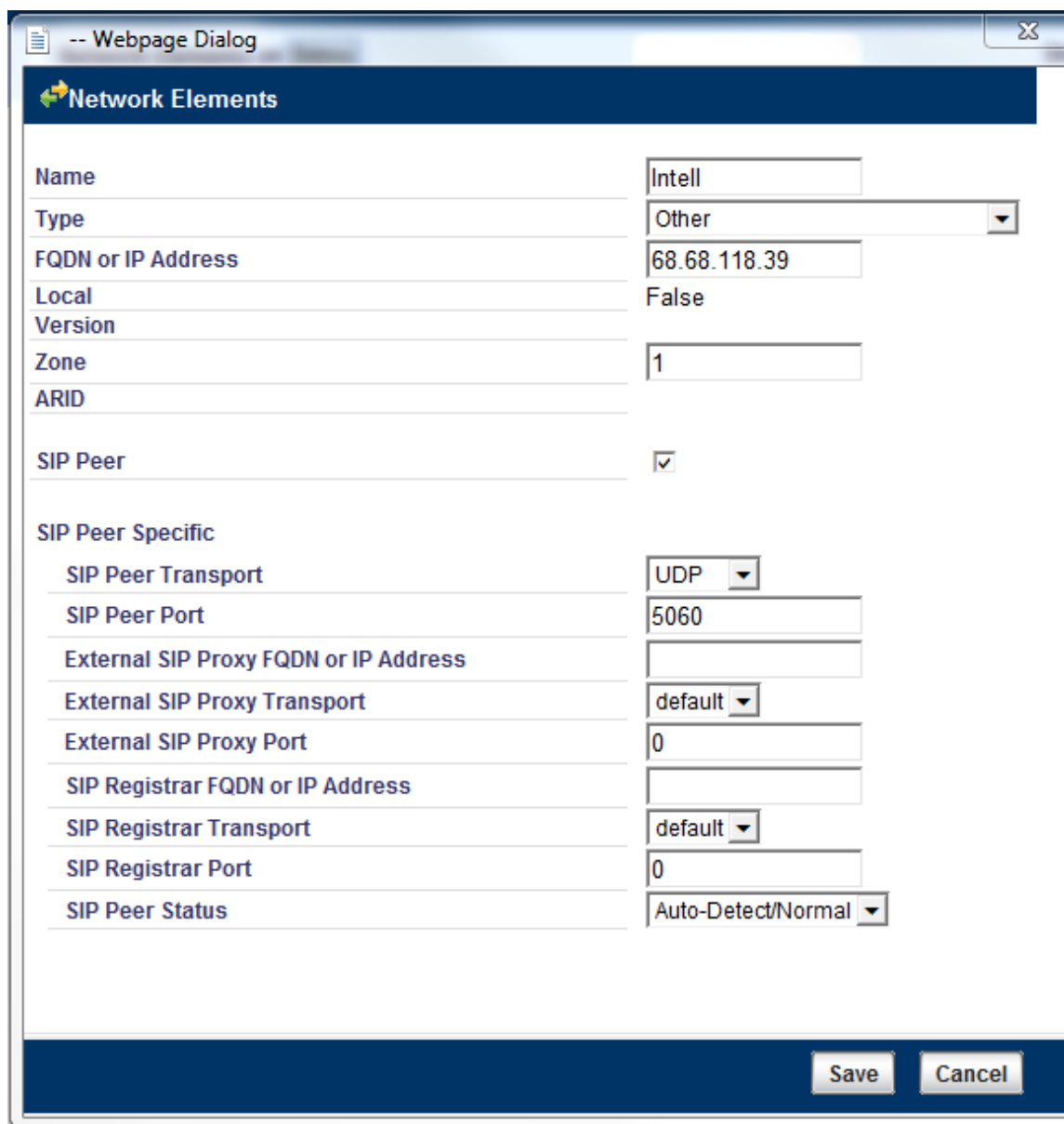
Class of Service Options	
Class Of Service Number	Comment
1	
2	IP Sets
3	NPM VM Ports
4	NPM MWI
5	IP Sets DND

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.



The screenshot shows a web browser window titled "-- Webpage Dialog" displaying the "Network Elements" configuration form. The form has a dark blue header with a left arrow icon and the text "Network Elements". Below the header, the form is organized into sections. The first section contains fields for "Name" (Intell), "Type" (Other), "FQDN or IP Address" (68.68.118.39), "Local" (False), "Version", "Zone" (1), and "ARID". The second section, "SIP Peer", has a checked checkbox. The third section, "SIP Peer Specific", contains fields for "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), and "SIP Peer Status" (Auto-Detect/Normal). At the bottom right, there are "Save" and "Cancel" buttons.

Network Elements	
Name	Intell
Type	Other
FQDN or IP Address	68.68.118.39
Local	False
Version	
Zone	1
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	
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).

The screenshot shows a 'Webpage Dialog' window titled 'Network Elements'. The form contains the following fields and values:

Field	Value
Name	MBG Proxy
Type	Outbound Proxy
FQDN or IP Address	10.0.2.248
Local	False
Version	
Zone	1
ARID	
Outbound Proxy Specific	
Outbound Proxy Transport Type	UDP
Outbound Proxy Port	5060

At the bottom right of the dialog are 'Save' and 'Cancel' buttons.

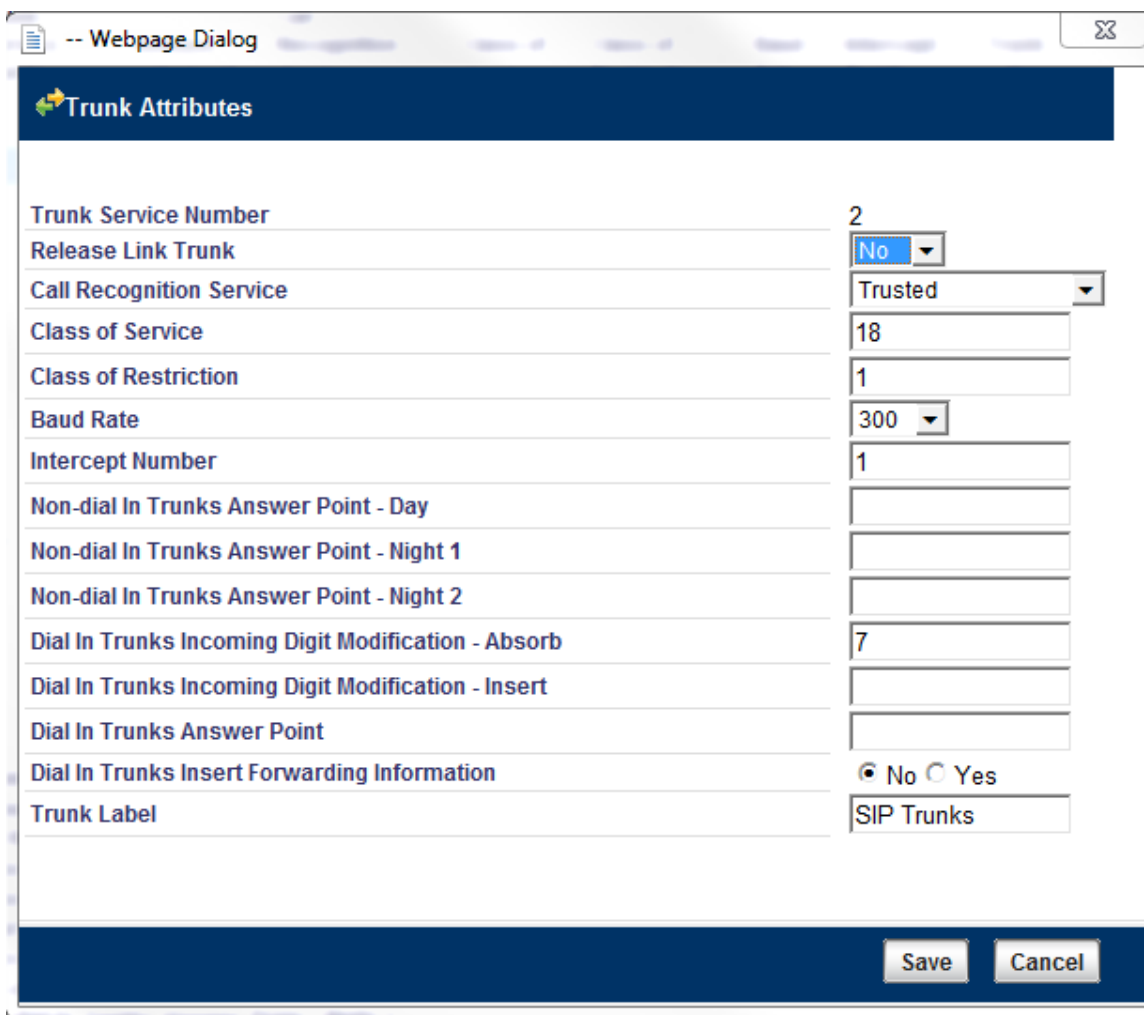
Figure 5 – Network Element Assignment (Proxy)

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" displaying the "Trunk Attributes" configuration form. The form has a dark blue header with the title "Trunk Attributes" and a small icon. Below the header, the form contains various fields and controls:

Trunk Service Number	2
Release Link Trunk	<input type="button" value="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 right 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					
Local Account Information							
Registration User Name							
Address Type		IP Address: 10.0.2.5					
Administration Options							
Interconnect Restriction		1					
Maximum Simultaneous Calls		4					
Outbound Proxy Server							
SMDR Tag		0					
Trunk Service		4					
Zone		1					
Authentication Options							
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						
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	<input type="radio"/> No <input checked="" type="radio"/> Yes
Allow Out Subscriptions for Remote Digit Monitoring	<input type="radio"/> No <input checked="" type="radio"/> Yes
Force Out Subscriptions for Remote Digit Monitoring	<input type="radio"/> No <input checked="" type="radio"/> Yes
Request Outbound Proxy to Handle Out Subscriptions	<input checked="" type="radio"/> No <input type="radio"/> 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					
						<input type="button" value="Add Member"/> <input type="button" value="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	
<input type="button" value="Load File"/> <input type="button" value="Save File"/>	
Creator	<input type="text"/>
Date Created	<input type="text"/>
Created on MCD Version	<input type="text"/>
Service Provider	<input type="text"/>
Vendor Notes	<input type="text"/>

Figure 15 – SIP Peer Profile Assignment- Profile Information

SIP Peer Profile Assignment by Incoming DID

This form is used to associate DID range numbers from Intelepeer SIP trunk to a particular SIP Peer profile. The configured here settings help matching the incoming DID numbers with the SIP Peer Profile when call is arriving from anonymous caller.

Enter one or more telephone numbers. The maximum number of digits per telephone number is 26. You can enter a mix of ranges and single numbers (for example, "33970008470-33970008472, 33970008475"). The entire field width is limited to 60 characters.

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. If the numbers do not fit within the 60 characters maximum, you can create a new entry for the same profile.

Use a '*' to reduce the number of entries that need to be programmed. This is a type of "prefix identifier", and cannot be used as a range with '-'. For example, the string "11*" would be used to associate a peer with any number in the range from 110 up to the maximum digits per telephone number (In this case, 1199999999999999999999.) Note that the string "11" by itself would not count as a match, as the '*' represents 1 or more digits.

SIP Peer Profile Assignment by Incoming DID		
Incoming DID Range	SIP Peer Profile Label	Comment

Incoming DID Range

SIP Peer Profile Label

Comment

Figure 16 – SIP Peer Profile Assignment by Incoming DID

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
9XXXXXX	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 Intelepeer web interface for configuring fax settings. The top navigation bar includes 'MITELE', 'Node 'Sipint4' Alarm', 'Status', 'Major 2009-Jun-16 13:32:48', and links for 'Logout', 'About', and 'Help'. A search bar is present with 'DN to search' and 'Show form on Not Accessible'. The left sidebar lists various configuration options, with 'Fax Configuration' selected. The main content area is titled 'Fax Configuration on Sipint4' and includes buttons for 'Change', 'Print...', 'Import...', 'Export...', and 'Data Refresh'. Below this, the 'Inter-Zone Fax Profile' section shows settings for 'Maximum Fax Rate' (14400 V.17, 14400bps), 'High Speed Redundancy' (1), 'Low Speed Redundancy' (3), 'Error Correction Mode (ECM)' (Disabled), and 'Override Non-Standard Facilities (NSF)' (Disabled). The 'Label' is set to 'Inter-zone'. Below this is a pagination bar showing 'Page 1 of 7' and a 'Go to:' field. The 'Intra-Zone Fax Profiles' section contains a table 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:

Go

Change Member

Change Page Members

Change All Members

Clear Member

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

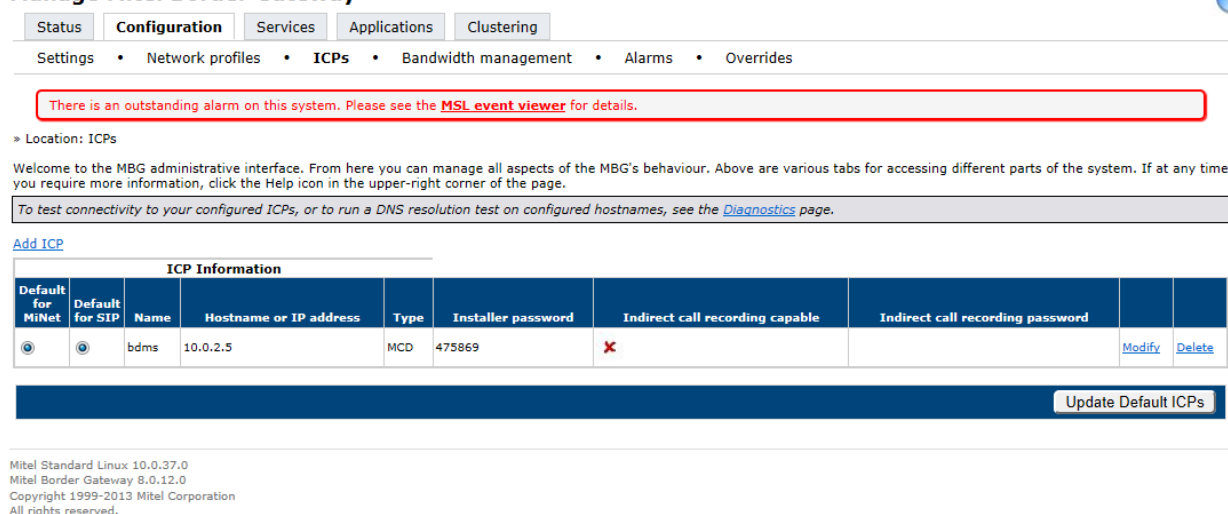
Mitel Border Gateway Configuration Notes (Optional)

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



The screenshot shows the 'Manage Mitel Border Gateway' interface. At the top, there are tabs for Status, Configuration, Services, Applications, and Clustering. Below these are links for Settings, Network profiles, ICPs, Bandwidth management, Alarms, and Overrides. A red alert box states: 'There is an outstanding alarm on this system. Please see the [MSL event viewer](#) for details.' Below the alert, it says 'Location: ICPs'. A welcome message follows: '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.' A link to the Diagnostics page is provided: 'To test connectivity to your configured ICPs, or to run a DNS resolution test on configured hostnames, see the [Diagnostics](#) page.' Below this is an 'Add ICP' link and a table titled 'ICP Information'.

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

At the bottom right of the table area is an 'Update Default ICPs' button. At the very bottom of the page, the following text is displayed: 'Mitel Standard Linux 10.0.37.0', 'Mitel Border Gateway 8.0.12.0', 'Copyright 1999-2013 Mitel Corporation', and 'All rights reserved.'

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 TrunkIntelepeer															
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	<table border="1" style="width: 100%; border-collapse: collapse;"> <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>from</td> <td>*</td> <td>bdmis</td> <td>None</td> </tr> </tbody> </table>					Rule number	Header match rule	Pattern	Primary destination	Secondary destination	1	from	*	bdmis	None
Rule number	Header match rule	Pattern	Primary destination	Secondary destination											
1	from	*	bdmis	None											
Filter rules list (Pattern or destination)	<input type="text"/> <input type="button" value="Apply"/> <input type="button" value="Clear"/>														
Metrics	Calls in progress 0 Max: 10	Calls per hour 0 Max: 540	Seconds idle 34	Active transactions 0	Transaction errors 5 Reset metrics										

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.

Name:

Intelepeer

Remote trunk endpoint address:

68.68.118.39

Remote trunk endpoint port:

5060

Options keepalives:

Use master setting

Options interval:

60

Rewrite host in PAI:

☒

Remote RTP framesize (ms):

30ms

Idle timeout (s):

3600

Re-invite filtering:

Off

RTP address override:

WAN Interface - 207.250.47.190

Local streaming:

☐

PRACK support:

Use master setting

Log verbosity:

Use master setting

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

10

First

Prev

Page 1 of 1

Jump to page 1

Next

Last

Match

Rule

Primary

Secondary

1

From header URI

*

bdms

Raise

Prepend

Delete

Lower

Append

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

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

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
User Profile								
Last Name	Cell			Role	Ext. Hot Desk ▾			
First Name	Seth			Language	English ▾			
Department				Email				
Location				IDS-Manageable	<input checked="" type="checkbox"/>			
Service Profile								
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.

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		
Service Details								
	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 shows a web-based configuration interface for a user named 'Seth Cell' with directory number '2000'. The interface includes a top navigation bar with buttons for 'Add', 'Change', 'Copy', 'Delete', 'Print...', 'Import...', 'Export...', and 'Data Refresh'. Below this is a summary bar showing 'Number: 2000', 'Name: Seth Cell', 'Hot Desking User: Yes', and 'Preferred Set: No Device', with 'Apply', 'Save', and 'Cancel' buttons. A tabbed interface at the bottom shows 'Profile', 'Device Details', 'Service Details', 'Voice Mail', 'Access and Authentication' (selected), 'Phone Applications', and 'Keys'. The 'Access and Authentication' tab contains several input fields: 'User PIN' and 'Confirm User PIN' (both masked with dots), 'Wireless PIN' and 'Confirm Wireless PIN' (both masked with grey bars), a 'Desktop Admin' checkbox, and 'Login ID', 'Password', and 'Confirm Password' (all masked with grey bars).

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

The EDHU can be added as part of PRG.

Add Change Copy Delete
Print... Import... Export... Data Refresh

Page 1 of 2
Go to:
value:
Go

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

Add Member Change Member Delete Member

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.

Field	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

Save Cancel

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)

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

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.

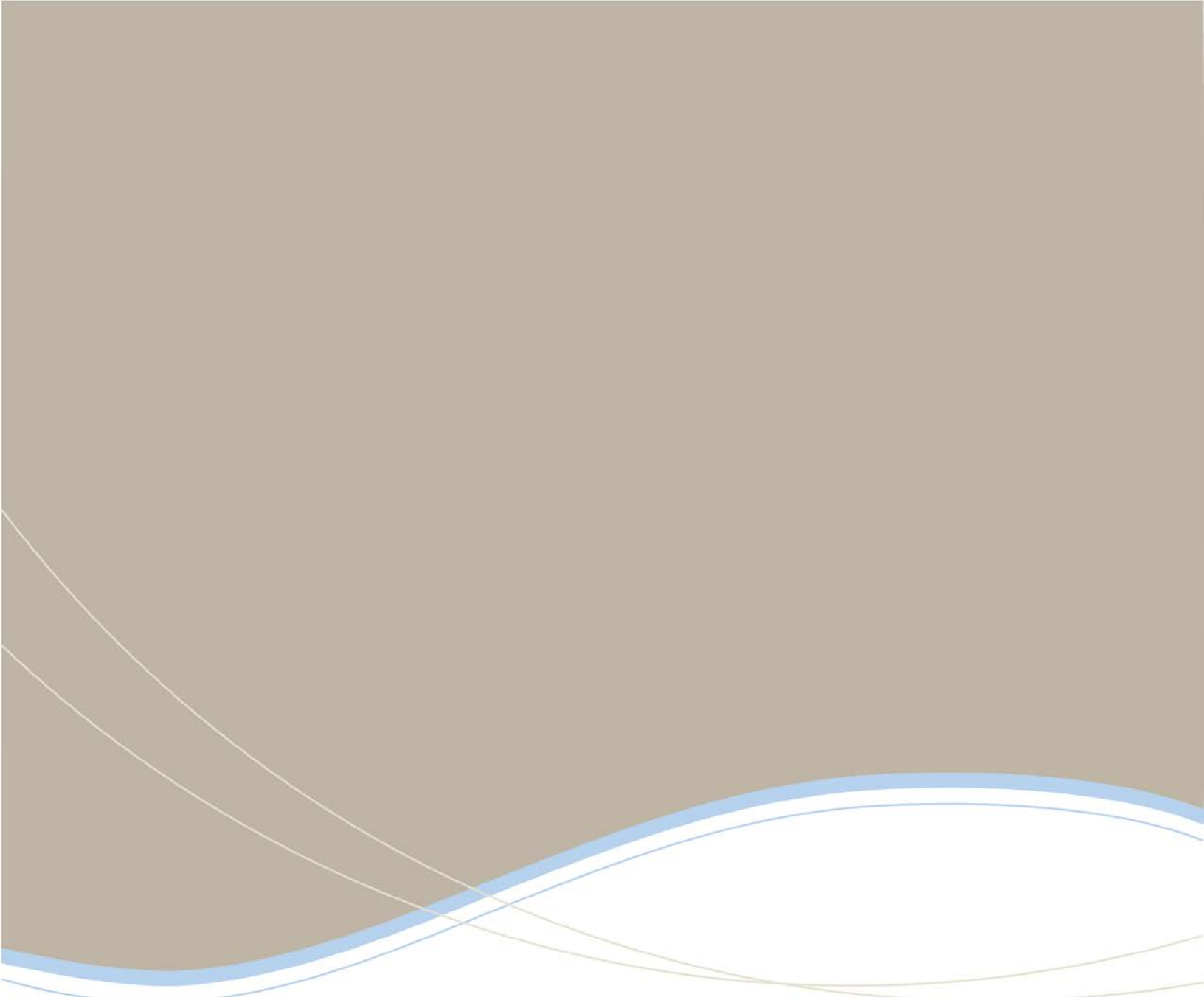
Allow Inc Subscriptions for Local Digit Monitoring	No
Allow Out Subscriptions for Remote Digit Monitoring	Yes
Force Out Subscriptions for Remote Digit Monitoring	No
Request Outbound Proxy to Handle Out Subscriptions	No
KPML Transport	UDP
KPML Port	5060

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

Figure 34 – MBG Configuration for KPML



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