TechNote

Mitel MiVoice MX-ONE V6 April 1, 2015







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Introduction

This document is intended to support you with the integration of the XCAPI into an existing environment of the Mitel MiVoice MX-ONE series (formerly Aastra MX-ONE).

Though being based on the Mitel MiVoice MX-ONE V6 series, it should be applicable to higher or lower versions, given a few adjustments.

In the following sections we describe the essential steps of configuration to allow for optimal cooperation of both the XCAPI and the Mitel MiVoice MX-ONE. At this point we suppose that the third party environment (including PSTN access and required licenses for appropriate SIP trunking) is in operation and the XCAPI and CAPI applications are properly installed. For XCAPI basics please refer to the document **XCAPI TechNote (en) - Quick Start Guide.pdf**, which is available for registered users within our community download area. We also recommend to visit our **YouTube channel** for additional information and hints around XCAPI.

XCAPI Configuration

Please start up the XCAPI configuration to create a new controller assigned to the Mitel MiVoice MX-ONE. If you've just installed the XCAPI and start the configuration tool for the first time, the XCAPI controller wizard will pop up automatically. This will also happen if there's no controller configured at all. To start up the XCAPI controller wizard on your own, just click the hyperlink labeled **Click here to add a controller** on the main page. On the first page of the controller wizard please select **PBX or other VoIP System** and continue with the **Next** button.





2.1 Voice-over-IP Environment

The next dialog of the configuration tool shows a list of some common Voice-over-IP environments. Selecting one of those will configure the XCAPI with a selection of near-optimal presets for the kind of environment you have, sparing you quite a lot of manual configuration.

Please note that **Mitel MiVoice MX-ONE** is selectable from XCAPI version 3.5.43.

	Controller Wizard	x
Add new controller Select the Voice-over-I	P environment	
Type of controller	Select the environment for the new controller to operate in. If the list be does not contain your PBX you should select a compatible or one of the	low
VolP environment	generic environments.	
Description and channels Signalling protocol Mitel MiVoice MX One	Microsoft Lync 2013 Mitel 3300 Integrated Communications Platform Mitel MiVoice Office 400 Mitel MiVoice 5000	^
Port Allocation	Mitel MiVoice MX One Mitel OpenCom 1000	
Confirmation	NEC Integrated Communications 3000 NEC UNIVERGE SV8100 R9.0 net Tenor Series Bx Nortel Communication Server 1000/2000 Patton SmartNode Series	=
	< <u>Back</u> <u>Next ></u> <u>Canc</u>	el

2.2 Description and Channels

The next-to-final dialog of the controller wizard allows you to configure a meaningful description for the newly created controller. Additionally this dialog allows to specify the number of available channels that the controller can provide towards the VoIP trunk and CAPI application.

Provide a description	and select the number of channels
 Type of controller VoIP environment 	Please enter a meaningful description for the new controller and decide how many channels should be available for applications. Please consider that the effective number of available channels depend on the installed license.
Description and channels	
Signalling protocol	Description
Mitel MiVoice MX One	Mitel MiVoice MX One
Network Interface	Channels
Port Allocation	50
Confirmation	
	Cancel Next > Cancel





2.3 VolP Protocol

Next, please select the appropriate signaling protocol used for this VoIP environment.

Controller Wizard				
Add new controller Select the Voice-over-If	² signalling protocol			
 Type of controller VolP environment Description and channels 	Each voice-over-ip network operates with a specific voice-over-ip protocol like H.323 or SIP. The list below contains any voice-over-ip protocol that may be used with the selected environment. Please select the protocol from the list that is used in your network.			
✓ Signalling protocol Mitel MiVoice MX One	H.323 SIP			
Port Allocation Confirmation				
24124				
	< Back Next > Cancel			

2.4 IP Address of the Mitel MiVoice MX-ONE

In the dialog Network Address please provide the IP address of the MX-ONE gateway.

	Controller Wizard				
Add new controller Provide the hostname	or the ip address of the voice-over-ip remote peer				
Type of controller VolP environment Description and channels Signalling protocol Mind MVoice MX One Network Interface Port Allocation Confirmation	Please provide the hostname or the ip address of the voice-over-ip remote peer (pbx) that should be used. Mitel MiVoice MX One 172.18.1.60				
	< <u>B</u> ack <u>N</u> ext > <u>C</u> ancel				







2.5 Network Interface

For this **XCAPI Controller Wizard** dialog the related network interface must be selected.

	Controll	er Wizard X
Add new controller Select the network inte	face	
 Type of controller VolP environment Description and channels 	Since each terminal a voice-over-ip networl (nic) with a link to thi below.	nd gateway requires a physical connection to the k, your system needs a network-interface-controller s network. Please select a certain nic from the list
🗸 Signalling protocol	Device	Comment
Mitel Milloice MX One	B 62.176.233.121	external [00-15-5D-00-5F-0C]
Network Interface	172.16.0.243	internal [00-15-5D-00-5F-0B]
Dest Allege Very		
Port Allocation		
Confirmation		
		< <u>B</u> ack <u>N</u> ext > <u>C</u> ancel

2.6 Port Allocation

On demand a port range can be set for UDP (RTP/T.38) packets towards the gateway.

	Controller Wizard
Add new controller Provide information a	about port allocation
Type of controller ValP environment Jescription and channels Signalling protocol Mitel MVoice MX One Network Interface Port Allocation Confirmation	If you want to operate this system behind a router/gateway it might be necessary to constrain local udp ports to a certain range. Constrain local udp ports to the following range 12000 -
	< <u>B</u> ack <u>N</u> ext > <u>C</u> ancel





2.7 Confirmation

The final controller wizard dialog performs some checks on the configuration parameters you've made. If any errors are detected here, you can go back to the respective dialogs and correct the necessary input. Use the **Finish** button in order to finally create the new controller.

	Controller Wizard X
Add new controller Confirm that the provi	ded information is correct
Type of controller VolP environment Description and channels Signaling protocol Met MVoice MX One Network Interface Port Allocation Confirmation	Click Finish to add the new controller with the configuration you have had made.
	< <u>B</u> ack <u>Finish</u> <u>C</u> ancel

The created controller is now listed on the main page of the XCAPI configuration. Finally, please save the new controller and exit the configuration tool.



You always need to restart the bound CAPI application services to take effect on any changes. Restarting any XCAPI services won't help at all.







Mitel MiVoice MX-ONE Configuration

This chapter gives an overview about the PBX related configurations.

3.1 Telephony System Version

The shown Mitel MiVoice MX-ONE configurations are based on the following build version and RPM packages.

3.2 License Status

Review the license status and the availability of the SIP trunk services and channels.

Trial time	Allowed	Used	
0	120	0	
0	2	0	
	Trial time 	Trial time Allowed 	Trial time Allowed Used







3.3 Number Initialization

This example use the external destination prefix 9 for accessing the XCAPI related SIP trunk. It is initiated and reviewed as follows.

```
MDSH> number_initiate -numbertype ed -number 9;
EXECUTED
MDSH> number_print -numbertype ed;
TYPE OF SERIES NUMBER SERIES
EXTERNAL DESTINATION CODE
0
8 - 9
```

3.4 Route Category (ROCAI)

The SIP trunks route category is set as shown next.

```
MDSH> ROCAI:ROU=19,SEL=71100000000010,SIG=0111111000A0,TRAF=03151515,
TRM=4,SERV=310000007,BCAP=111111;
MDSH> rocap:rou=19;
ROUTE CATEGORY DATA
ROU CUST SEL TRM SERV NODG DIST DISL TRAF SIG BCAP
19 711000000000010 4 311000000 0 30 128 03151515 0111111000A0 111111
END
```

3.5 Route Data (RODAI)

The according SIP trunk route data is used as follows.

```
MDSH> RODAI:ROU=19,TYPE=TL66,VARI=00000000,VARO=00000110,VARC=00000010;

MDSH> rodap:rou=19;

ROUTE DATA

ROU TYPE VARC VARI VARO FILTER

19 TL66 H'00000010 H'00000000 H'00000110 NO

END
```





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3.6 SIP Route

The SIP trunks interface data is here used with the SIP **Default** profile. IP address **172.16.0.243** is the one used by the XCAPI Ethernet interface whilst IP address **172.18.1.60** is the one used by the Mitel MiVoice MX-ONE Ethernet interface. Additional **sip_route** parameters might be set for local requirements.

```
MDSH> sip_route -set -route 19 -uristring0 "sip:?@172.16.0.243" -fromuri0 "sip:?@172.18.1.60"
-accept REMOTE_IP -match 172.16.0.243 -trusted NO_TRUSTED
                          -protocol udp -service PRIVATE_SERVICES
MDSH> sip_route -print -route 19 -short
Route data for SIP destination
route : 19
  protocol
                     = udp
                     = Default
  profile
                     = PRIVATE_SERVICES
= sip:?@172.16.0.243
= sip:?@172.18.1.60
  service
  uristring0
  fromuri0
                     = REMOTE_IP
  accept
  match
                     = 172.16.0.243
                     = NO REG
  register
```

3.7 Route Equipment (ROEQI)

Next, the SIP trunk route equipment will be created.

MDSH>	MDSH> ROEQI:ROU=19,TRU=1-30,INDDAT=0000000000;						
MDSH>	roedp:ro	u=19,tru=all;					
ROUTE	EQUIPMEN	T DATA					
ROU	TRU	EQU	IP	ADDRESS	SQU	INDDAT	CNTRL
19	001-1					H'000000000000	
19	001-2					H'000000000000	
19	001-3					H'000000000000	
19	001-4					H'000000000000	
19	001-5					H'00000000000	
19	001-6					H'000000000000	
19	001-7					H'00000000000	
19	001-8					H'00000000000	
19	001-9					H'00000000000	
19	001-10					H'00000000000	
19	001-11					H'00000000000	
19	001-12					H'00000000000	
19	001-13					H'00000000000	
19	001-14					H'00000000000	
19	001-15					H'00000000000	
19	001-16					H'00000000000	
19	001-17					H'000000000000	
19	001-18					H'00000000000	
19	001-19					H'00000000000	
19	001-20					H'00000000000	
19	001-21					H'000000000000	
19	001-22					H'00000000000	
19	001-23					H'000000000000	
19	001-24					H'000000000000	
19	001-25					H'000000000000	
19	001-26					H'0000000000000	
19	001-27					Н'0000000000000	
19	001-28					Н'00000000000000	
19	001-29					Н'0000000000000	
19	001-30					Н'0000000000000	



3.8 Route External Destination Data (RODDI)

Finally this examples SIP trunk will be accessed by using the route access code 9 which is related to route 19.

```
MDSH> roddi:dest=9,rou=19,srt=1,adc=011720000000250001001110001;
9
-
MDSH> roddp:dest=9;
EXTERNAL DESTINATION ROUTE DATA
DEST DRN ROU CHO CUST ADC TRC SRT NUMACK PRE
9 19 011700000000250001001110001 0 1
END
```

Configuration Notes

In these chapters you'll find some configuration hints and settings for supplementary services and configurations such as T.38 or call transfer via SIP refer. Such services should be enabled by default at least if using the XCAPI controller wizard. Nevertheless those configurations should be reviewed just as the according gateway parameters for appropriate interworking.

4.1 T.38

Please ensure that the FAX Method is set to T.38.

ø	XCAPI Configuration		_ □ X
File View Help			
Configuration	Options Fax Method Select whether the XCAPI shoul T.30 signalling encoded in the a also remove any configured fax Fax Method J V.34 Fax Support Enabled Fax Calling Tone/Fax Called Ton	d transfer fax messages via T.38 si udio channel (Softfax). Selecting I codecs. T.38 ie	gnalling or via Disabled will
CAPI 2.0 CAPI 2.0 CAP	Depending on direction fax tran Select whether these shall be tra Transmit CED signal tone Transmit CNG signal tone Transmit CNG signal tone time	smissions start with a CED or CNG insmitted before or after T.38 nego after T.38 negotiation before T.38 negotiation (in audio before T.38 negotiation (in audio befault	i signal tone- otiation.



Beside of **Telephone-Event (RFC2833)** please ensure that at least one supported voice codec is available for initial call establishment. The **T.38** - **UDP** codec, which is enabled by default when using the XCAPI controller wizard for creating XCAPI's controller, must be set.

ø	XCAPI Configuration	Ŀ	- - X
File View Help			
Configuration	Codecs		
Information Licenses G CAPI 2.0 Options Trace Trace	Each codec activated below may be selected and used in the codecs determines their priority.	call establishment	. The order of
	Codec	Samplerate	Packettime
Mitel MiVoice MX One SP Grav CAPI 2.0 CAPI 2.0 CAPI 2.0 Capitalian Part Codecs Codecs Codecs Codecs Codecs Codecs Codecs Codecs SP Tueaks SP Tueaks SIP Tweaks SIP Tweaks	Audio Codecs	8000 Hz 8000 Hz 8000 Hz 8000 Hz 8000 Hz	20 ms 20 ms 20 ms 20 ms 20 ms
	Add Codec Remove Codec		 ₽ ₽

4.2 Software Fax

With the Softfax mode, the XCAPI simulates an analogue Fax device by transmitting modulated Fax-signals modem-like through the established G.711 audio channels. For enabling **Softfax** (G.711 fax pass through) must be set as Fax Method within the labeled Fax tab.

F	XCAPI Configuration	
File View Help		
8 - 8 0		
Configuration Configuration CAPI 2.0 Options CAPI 2.0 Options CAPI 2.0 Options CAPI 2.0 Options Controller Par Controller CAPI 2.0 CAPI	Options Fax Method Select whether the XCAPI shou T.30 signalling encoded in the also remove any configured far Fax Method V.34 Fax Support Enabled Fax Calling Tone/Fax Called Ton Depending on direction fax tran Select whether these shall be tr Transmit CED signal tone Transmit CNG signal tone Transmit CNG signal tone time	Id transfer fax messages via T.38 signalling or via audio channel (Softfax). Selecting Disabled will x codecs. Softfax (G.711 fax pass through) Ine Insmissions start with a CED or CNG signal tone. ansmitted before or after T.38 negotiation. Seg Default Default



4.2.1 Call Transfer

Please ensure that the **Simulated ECT by call-tromboning (line-interconnect)** parameter of the XCAPI controller **Features** dialog is disabled for supporting call transfer via SIP REFER.

4.3 MWI (Message Waiting Indication)

For appropriate MWI support, please ensure that the **SIP NOTIFY** method is enabled within the XCAPI controller configuration.







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