

April 30, 2019





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## Introduction

This document is intended to support you with the integration of XCAPI into an existing environment of the Avaya IP Office. In the following sections we describe the essential configuration steps for SIP trunking to allow optimal interworking of both, the XCAPI and the Avaya IP Office. Though being based on the Avaya IP Office release R11, this document is applicable with other versions given a few adjustments.

At this point we suppose that the Avaya IP Office environment and the physical or virtual application server is available and accessible through the network. Application server in this context mean, a server with a recent available Microsoft Windows operating system with latest updates and patches included. Further, that the XCAPI and the CAPI 2.0 voice or fax application is properly installed. It is also supposed that the public network access via ISDN and/or SIP is given and properly working, also in context with the custom and country dependent numberings and call routings. The same goes for the networking (LAN, WAN, DMZ, NAT, Firewall) itself as such topics are beyond the scope of this document and thus not shown here at all. Please refer to the respective manufacturer documentations, manuals and examples in such cases.

However, independent of the deployed application, the SIP connection can be tested with the XCAPI's included test application (xtest.exe) that is available within the XCAPI's installation folder (by default  $\Program Files (x86)\TE-SYSTEMS\XCAPI\)$ . This test tool allows to check with inbound and outbound calls, fax and testing several supplementary services.

We recommend to visit our YouTube channel frequently for XCAPI related tutorials about licensing, the test tool, line monitor, tracing, analyzing and others. Registered community users can check about latest documents, TechNotes and releases for XCAPI.



Please note that this example configurations are used in conjunction with a PRI\BRI line. If using a SIP carrier or other service provider related instances like a Session Border Controller, additional adjustments must be considered for all involved instances. The same goes for the interoperability in conjunction with other (SIP) lines. If available, we recommend to check with the corresponding Avaya IP Office Application Notes. If there are doubts, please check and test the required features and functions for the present VoIP environment.



## **XCAPI Configuration**

Please start up the XCAPI configuration to create a new controller assigned to the Avaya IP Office. If you've just installed the XCAPI and start the configuration tool for the first time or no controller is available at all, the XCAPI controller wizard will pop up automatically. To start up the XCAPI controller wizard manually, the hyperlink labeled **Click here to add a controller** on the main page has to be clicked. **Next** select **PBX or other VoIP System** in the initial **Type of controller** dialog and proceed with the **Next** button.



### 2.1 VolP Environment

The next dialog lists some common Voice-over-IP environments. Selecting one of those will set up the XCAPI controller with a selection of near-optimal presets, sparing you manual configuration.







VoiceoverIP

When the VoIP environment was selected, the next dialog allows setting a description for the controller. Also the number of channels that the new controller will be able to provide can be set here. This controls simultaneous connections the XCAPI controller can handle when communicating with the Avaya IP Office and the bound CAPI 2.0 application.

Controller Wizard	×
Add new controller Provide a description	and select the number of channels
<ul> <li>✓ Type of controller</li> <li>✓ VoIP environment</li> </ul>	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 Avaya IP Office	Description Avaya IP Office 8.0/9.0/10.0/11.0
Network Interface Port Allocation	Channels 20
Confirmation	
24412	< <u>Back</u> <u>Next &gt;</u> <u>Cancel</u>

### 2.3 Signaling Protocol

The next dialog shows a list of signaling protocols which are supported for the given Voiceover-IP environment. In this example the SIP protocol is selected.

Controller Wizard	×
Add new controller Select the Voice-ove	r-IP signalling protocol
<ul> <li>Type of controller</li> <li>VoIP environment</li> <li>Description and channels</li> </ul>	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.
Signaling protocol Avaya IP Office Network Interface Port Allocation Confirmation	H.323 SIP
21/1/1	< <u>B</u> ack <u>N</u> ext > <u>C</u> ancel



### 2.4 IP Address of the Avaya IP Office

Next the IP address or host name of the Avaya IP Office LAN interface must be provided. In this example 172.18.0.46is used. The Avaya IP Office LAN configurations can be reviewed in the chapter **System Settings** from page 9.

Please note, by default XCAPI is using port 5060 for SIP UDP. If the Avaya IP Office LAN and SIP Line configurations are not using this default port, the XCAPI controller must be adjusted after running the XCAPI controller wizard.

Controller Wizard	×
Add new controller Provide the address o	f the Avaya IP Office
<ul> <li>✓ Type of controller</li> <li>✓ VoIP environment</li> <li>✓ Description and channels</li> </ul>	Provide the IP address of the Avaya IP Office in the network. If there is more than one Avaya IP Office present in the network be sure to provide the IP address of the Avaya IP Office that you want to use.
<ul> <li>Signalling protocol</li> </ul>	Network Address
V Avaya IP Office Network Interface Port Allocation Confirmation	172.18.0.46
	< <u>Back</u> <u>Next &gt;</u> <u>Cancel</u>

#### 2.5 Network Interface

Afterwards, select the network interface that will control the inbound and outbound communications. Note that this is the XCAPI controller used Ethernet interface which will be leveraged for the SIP communication with the Avaya IP Office.

Type of controller	Since each terminal network, your syster	and gateway requires a physical connection to the voice-over-ip n needs a network-interface-controller (nic) with a link to this
VoIP environment	network. Please sele	ct a certain nic from the list below.
<ul> <li>Description and channels</li> </ul>		
Signalling protocol	Device	Comment
Avaya IP Office	172.16.0.153	Ethernet [B8-AE-ED-22-33-33]
Network Interface	<b>P</b> :1	Loopback Pseudo-Interface 1
Port Allocation	127.0.0.1	Loopback Pseudo-Interface 1
Confirmation		
Commindon		



### 2.6 Port Allocation

If needed, a port range can be specified for any router or firewall restrictions for UDP (RTP/T.38). In this example no range will be set which allows the XCAPI controller to use a random port range between 1024 and 65535.

Controller Wizard	×
Add new controller Provide information a	about port allocation
Yope of controller     VolP environment     Oescription and channels     Signaling protocol     Avaya IP Office     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 10000 - 10120 -
	< <u>Back</u> <u>Next</u> <u>Cancel</u>

#### 2.7 Confirmation

The final wizard dialog performs checks on the configuration parameters you've made. If errors are detected, use the **Back** button to correct the respective dialogs. Use the **Finish** button to create the new controller.

Controller Wizard	×	
Add new controller Confirm that the prov	ided information is correct	
<ul> <li>Type of controller</li> <li>VoIP environment</li> <li>Description and channels</li> <li>Signalling protocol</li> <li>Avaya IP Office</li> </ul>	Click Finish to add the new controller with the configuration you have had made.	
<ul> <li>Vetwork Interface</li> <li>Port Allocation</li> <li>Confirmation</li> </ul>		
	< <u>B</u> ack <u>Finish</u> <u>C</u> ancel	



Now, the created controller is listed on the main page of XCAPI's configuration tool. Use the **save** button and exit the tool.

XCAPI Configuration				- 0	$\times$	
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voiceovern	-					
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-	Channels: 500 (H.323: 500, SIP: 500), T.38: 500, and Softfax: 500 (Expires:	: 1/10/2020)				
Click here to	a manage licenses					
Controlle	or					
Controlle	Avaus IP Office 9 0/9 0/10 0/11 0 (172 16 0 152)					
	20 channels with ITU G.711 A-Law [64 kbit] (8000 Hz), ITU G.711 µ-La	aw [64 kbit] (8000 Hz), ETSI GSM 6.10, IT	U G.729, T.38 - UDP, and Telephone-Even	t (RFC 2833) using So	oftfax	
A.	at Avaya IP Office 8.0/9.0 at domain "172.18.0.46" = Disable					
Click here to	a add a controller					
Tupos						
ITace	Disabled					
E Star	Currently not collecting diagnostic information.					
Click here to	) start the trace	Informatio	n		×	
		<u> </u>	The configuration is now stored. Please are still active for the changes to take ef	restart all CAPI applic fect.	cations that	
			9 x	CAPI Reinit Notifica	tion	9:2
			T	he diagnostics applic	ation has disconn	nected
			T	initialization. The dia	agnostics applicat	to per
			re	register as soon as pr	ossible.	

Please note that the bound CAPI 2.0 application with its services must be completely stopped and restarted for the XCAPI controller changes to take effect. Restarting any of the XCAPI services won't help at all. Alternatively the Server where XCAPI is running on can be restarted. If enabled, the XCAPI diagnostic monitor pops-up with a re-initialization notification on success. Alternatively check with the **Events** tab of the **XCAPI Line Monitor** about a configuration update notification (Event ID 20).





## **Configuring the Avaya IP Office**

In order to establish a connection between the XCAPI and the Avaya IP Office you need to setup the XCAPI as SIP trunk with all its appropriate configurations. This example shows a basic configuration which can't be assigned one-to-one to the environment. The configuration dialogs have to be adapted to the PBX environment, hardware and CAPI application. Especially the dialing and numbering related topics such as **Short Codes**, **ARS**, **Incoming Call Route** handling and all the **Line** related settings with its configurations must reflect local conditions.

### 3.1 License

First, please ensure that the Avaya IP Office SIP Trunk Channels license key is available to allow SIP trunking.

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IP Offices						📥 🗕 🔤	X   ✓   <   >
BOOTP         BOOTP         Constant         Constant <td< td=""><td>License Remote Server License Mode License Normal Licensed Version 11.0 PLDS Host ID 111326111326 PLDS File Status Valid Feature Avaya IP endpoints Essential Edition IP500 Voice Networking Channels SIP Trunk Channels IP500 Universal PRI (Additional channels)</td><td>Key N/A N/A N/A N/A N/A</td><td>Instances 10 1 4 10 22</td><td>Status Valid Valid Valid Valid Valid Valid</td><td>Expiration Date Never Never Never Never Never Never</td><td>Source PLDS Nodal PLDS Nodal PLDS Nodal PLDS Nodal PLDS Nodal</td><td>Add Remove</td></td<>	License Remote Server License Mode License Normal Licensed Version 11.0 PLDS Host ID 111326111326 PLDS File Status Valid Feature Avaya IP endpoints Essential Edition IP500 Voice Networking Channels SIP Trunk Channels IP500 Universal PRI (Additional channels)	Key N/A N/A N/A N/A N/A	Instances 10 1 4 10 22	Status Valid Valid Valid Valid Valid Valid	Expiration Date Never Never Never Never Never Never	Source PLDS Nodal PLDS Nodal PLDS Nodal PLDS Nodal PLDS Nodal	Add Remove
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The Avaya IP Office LAN settings in this example are shown below. The IP address is the one that was set for the XCAPI SIP controller as shown in the chapter IP Address of the Avaya IP Office on page 5. Ensure that the SIP Trunks Enable option is set to allow SIP trunking. Ensure that the Firewall/Nat Type configurations are set to your local requirements, also for the LAN2 interface.

2	Avaya IP Office Manager 00E007071830 [11.0.4.0.0 build 74] [Administrator(Administrator Manager Operator)]
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IP Offices	표 00E007071B30 관····································
BOOTP	System LAN1 LAN2 DNS Voicemail Telephony Directory Services System Events SMTP SMDR VCM VoIP Contact Center Avaya Cloud Services
<ul> <li>W 00E007071B30</li> <li>Surtern (1)</li> </ul>	LAN Settings VolP Network Topology
a system(t)	IP Address 172 . 18 . 0 . 46
	IP Mask 255 - 255 - 254 - 0
	Primary Trans. IP Address 0 . 0 . 0
	RIP Mode v
	Enable NAT
	Number Of DHCP IP Addresses 30
	O Server   Client  Diabled  Advanced
	System LANI LAN2 DNS Voicemail Telephony Directory Services System Events SMTP SMDR VCM VolP Contact Center Avaya Cloud Services
	LAN Settings VolP Network Topology
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	SIP Trunks Enable
	SIP Registrar Enable
	Auto-create Extension/User ISIP Remote Extension Enable
	SIP Domain Name
	SIP Registrar FQDN
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	Layer 4 Protocol TCP TCP Port 5060 🙀
	TLS TLS Port 5061 🗇 Remote TLS Port 5061 🗇
	Challenge Expiration Time (sec) 10
	RTP
	Port Number Range
	Minimum 49152 🗘 Maximum 53246 🗘
	Port Number Range (NAT)
	Minimum 49132 v Meximum 23240 v
	Enable KTCP Monitoring on Port 3005
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	Scope Disabled V Periodic timeout 0
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	46 A DSCP 46 V Video DSCP 63 A DSCP Mask 34 V SiG DSCP
	- DHCP Settings
	Primary Site Specific Option Number (4600/5600) 176
	Secondary Site Specific Option Number (1600/9600) 242
	VLAN Not Present V
	1100 Voice VLAN Site Specific Option Number (SSON) 232
	100 Voirs VLAN ID:
	System LAN1 LAN2 DNS Voicemail Telephony Directory Services System Events SMTP SMDR VCM VoIP Contact Center Avaya Cloud Services
	LAN Settings VolP Network Topology
	Network Topology Discovery
	STUN Server Address 0.0.0.0 STUN Port 3478
	Firewall/NAT Type Unknown v
	Binding Refresh Time (sec) 0 🙀
	Public IP Address 0 · 0 · 0 · 0 Run STUN Cancel
	Public Port
	UDP 5060 🙀
	TCP 5060
	TLS 5061 🗮
	Run STUN on startup
	QK Gancel Help
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The **Telephony** settings are mostly use defaults. The **Inhibit Off-Switch Forward / Transfer** must be disabled to allow call forwarding or call transfer towards the pstn interface of the Avaya IP Office.

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The **VoIP** defaults usually work well in conjunction with the ones of the XCAPI Avaya IP Office controller. Nevertheless, please ensure that at minimum the G.711 codecs are set and the RFC2833 Default payload value conforms to the one set in the XCAPI controller and other SIP lines. If the RFC2833 value will be changed, please change it in the XCAPI controller also, as described in the chapter DTMF on page 22. In practice, it is recommended using the same codecs and codec profiles for all participating Avaya IP Office SIP line entities.

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### 3.3 SIP Line

The XCAPI related SIP Line here is used as follows.

- The ITSP Domain Name is left blank as this allows using the provided ITSP Proxy Address field value that will be set in the Transport tab.
- In Service must be selected for enabling the SIP Line.
- Check OOS is also set for enabling SIP Options as a keep alive (heartbeat).
- Redirect and Transfer has to be set for allowing call transfer via SIP refer. For this Incoming Supervised REFER must be set to Always and Outgoing Supervised REFER must be set to Never.

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IP Offices         IP & BOOTP         IP ⊕ Operator         IP ⊕ OCEONTRIBO         IP ⊕ OCEONTRIBO     <	SP Line       Transport       Call Details       VoiP         Line Number       ITSP Domain Name         Local Domain Name       URI Type         Location       Prefix         National Prefix       International Prefix         Country Code       Name Priority         Description       International Prefix	T3B Fax SP Credentials SI T3B Fax SP Credentials SI SIP URI Cloud Cloud 0 0 Cloud System Default XCAPI SIP Trunk	P Advanced Engine  V V V V	e 3 ering In Service Check OOS Session Timers Refresh Method Timer (sec) Redirect and Transfer Incoming Supervised REFER Outgoing Supervised REFER Send 302 Moved Temporarily Outgoing Blind REFER	Auto On Demand Always Never		Help
Ready							



The **ITSP Proxy Address** is set to the XCAPI-Controller as shown in the chapter **Network Interface** on page 5. The **Network Configuration** values are used with their defaults (Layer 4 Protocol with UDP, send and listen Port 5060).

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Eile Edit ⊻iew Iools He	lp			
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●         ▲ 00.07P           ●         ●	SP Line     Transport     Call Details [Vol9     T38 Fax Sti       TTSP Proxy Address     [I7240015]       Network Configuration     Layer 4 Protocol       UDP     Ude Network Topology Info     None       Explicit DNS Server(s)     0     0     0       Calls Route via Registrar	• C resentials (SIP Advanced [Ingineering]           • Send Port           • Ustern Port           • Ustern Port		QK Çencel Hep
Reach				

The Call Details of the XCAPI related SIP line are used as shown next.

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	SIP URIS SIP URIS URI Group T 8000	ort Call Details Vc ss Credential 8000 0: <none> 8000 8000</none>	IP T38 Fax SIP Cn Local URI Contac Auto Auto Max Ses	edentials SIP Advanced Er t   P Asserted ID   P Prefer Auto SIP sions 10	red ID Div Au	version Header Remote Part ato Call Details   SIP URI	y ID		Add Remove Edit	
	Credentials	0: <none></none>	~							
	Credentials	0: <none> Display</none>	~	Content	ſ	Field meaning Outgoing Calls	Forwardina/Twinn	ina	Incoming	Calls
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The **Codec Selection** is used with a **Custom** codec selection (G.711 only). Except the **Re-Invite Supported** flag, all others parameters must be unchecked.

In reference to the XCAPI controller configurations with its defaults, the **Fax Transport Support** is using **G.711**. The **DTMF Support** is used with the **RFC2833** method. As a reminder the RFC2833 payload value is by default set to 101 for both, the XCAPI controller and the Avaya IP Office. RFC2833 related information can be found in the chapter **System Settings** on page 9 and **DTMF** on page 22. Additional information about facsimile can be reviewed in the referring fax chapters starting on page 16. Please take notice of using conform codec and payload configurations (voice, fax, dtmf) for all involved SIP line entities of the Avaya IP Office environment.

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The SIP Advanced tab is also mainly used with its defaults, only Suppress DNS SRV Lookups is set.

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<ul> <li>● ● 00E007071B30</li> <li>● ● System</li> <li>● ● 00E007071B30</li> <li>● 一行了 Line (8)</li> </ul>	Addressing Association Method	By Source IP address	Media     Allow Empty INVITE     Send Empty re-INVITE	
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7	Use P-Called-Party	_	Send SilenceSupp=Off	
	Suppress DNS SRV Lookups	<b>v</b>	Media Connection Disabled	~
· 🎻 99	Identity Use "phone-context"		Indicate HOLD	
	Add user=phone Use + for International		Call Control	
	Use PAI for Privacy		Call Initiation Timeout (s) 4 A	
	Caller ID from From header		Service Busy Response 486 - Busy Here	~
	Cache Auth Credentials		on No User Responding Send 408-Request Timeout	~
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### 3.4 Short Codes

The XCAPI related Short Code is using Code 8N, Dial Feature, Telephone Number N and Line Group ID 8000.

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File Edit View Iools Help	a < 👔 🕴 00E007071B30	Short Code     SN     T	
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IP:         ★ BOOTP           IP:         ✓ Operator           IP:         ♥ N	Short Code Code Feature Telephone Number Line Group ID Locale Force Account Code Force Authorization Code	8N       Dial       N       8000       v	
~			OK Cancel Help
Ready			

### 3.5 Incoming Call Route

The **Incoming Call Route** entry for the XCAPI **SIP Line** is shown next. The dot symbol for the **Destination** value matches the **Incoming Number** field. In this example this field is blank, so any destination value will match.

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IP Offices			Incoming C	all Route			
- K BOOTP	Line Group ID	Incoming Number	Destination	Bearer Capability	CLI	Fallback Extension	
🖗 Operator	<b>()</b> 0	-454XXX	#	Any Voice			
⊟-≪ 00E007071B30	<b>()</b> 0	-450XXX	#	Any Voice			
「「「」 System 作了 Line	<b>()</b> 7000			Any Voice			
Control Unit	8000		100 A. 100 A. 100 A.	Any Voice			
- A Extension	9000	03221102	220 Extn220	Any Voice			
User	9000	03221108		Any Voice		#	
Short Code							
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Incoming Call Route							
Ready							.::





## Fax

In this chapter, we are going to describe configuring the fax services for leveraging T.38 and Softfax (G.711 fax pass through). The latter is being used as default if creating the Avaya IP Office controller through XCAPI's controller wizard. For faxing to function correctly you must ensure that the Codec, Framing, Bandwidth and DTMF settings are set conform to the ones in the XCAPI controller configuration and other participating SIP instances. Take note of the following considerations and hints for choosing the fax method:

- Both, SoftFax (G.711 fax pass through) and T.38 is working well in conjunction with an Avaya IP Office BRI or PRI interface.
- If using multiple SIP instances connecting the Avaya IP Office the pstn, the supported and preferred fax method of the SIP carrier **must** be used and set to conform for all of them. If there are any doubts and if available, please check with the corresponding Avaya IP Office Application Notes.
- It is recommended to not use different Fax methods for multiple SIP line instances. The same goes for the codec selection (G.711 codecs, RFC2833 value). Ensure the settings used for all SIP line instances, conform to the ones that are supported.
- Don't use fax fallback (T.38 to G.711 fax pass through) unless it is fully supported by the SIP carrier and tested extensively in conjunction with XCAPI.
- For virtual environments, please check our documents XCAPI TechNote (en) VMware Virtual Machines and XCAPI TechNote (en) Microsoft Hyper-V which are available within or community download section for registered users.
- We strongly recommend using latest XCAPI versions for best results and it might be even be necessary with latest manufacturer releases and firmware versions, especially when using the T.38 fax method.





In the **SoftFax (G.711 fax pass through)** mode, XCAPI simulates an analog fax device by transmitting modulated fax signals like a modem through the established G.711 audio channels. For this **Softfax (G.711 fax pass through)** must be selected as **Fax Method**, which is set by default through the XCAPI controller wizard. Ensure that the **Fax Transport Support** within **VoIP** tab of the SIP line is enabled for **G.711** as shown in the chapter **SIP Line** starting on page 11.

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When using SoftFax (G.711 fax pass through) you may have to set the BRI or PRI line short code to **Dial 3K1** for proper functionality. This dial feature sets the ISDN bearer capabilities to 3.1KHz and improves the compatibility with specific remote devices which only allows facsimile up to such bearer capability.







#### 4.2 T.38

Before enabling T.38, it is mandatory to ensure that this method is supported by all participating SIP lines (such as SBC's and SIP carriers) for pstn connectivity. As mentioned in the beginning of this chapter, don't use fax fallback if any of the involved instances supports T.38 or G.711 fax pass through only. However, for enabling this fax method you have to select T.38 as **Fax Transport Support** method as shown next.

K	Avaya IP Office	Manager 00E007071B3	0 [11.0.4.0.0 build 74] [Administrate	or(Administrator	Manager Operator)]	_ 🗆 X
<u>File Edit View Tools Hel</u>	p 🗸 🍰 孝 😭 🕴 00E007	071B30 - Line	▼ 8	•		
IP Offices	12		SIP Line - Line 8*		🖆 -	• 😬   🗙   🗸   <   >
	SIP Line Transport Call	Details VolP 738 Fax SIP Custom G.722 64K G.729(a) 8K CS-ACELP G.723.1 6K3 MP-MLQ	Credentials SIP Advanced Engineering		VoIP Silence Suppression Local Hold Music Re-invite Supported Codec Lockdown Allow Direct Media Path Force direct media with phones PRACK/100el Supported Gr.711 Fax ECAN	
	Fax Transport Support	T38		~		
	DTMF Support	RFC2833		~		
	Media Security	Disabled	v			
					<u></u> K	<u>C</u> ancel <u>H</u> elp
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Ensure that the **T.38** - **UDP** is available and enabled within the **Codecs** tab of the XCAPI controller configuration. One speech codec (in common G.711law or G.711 $\mu$ -law) must be enabled for the initial call establishment. The **Fax Calling Tone/Fax Called Tone** behavior as well as the T.38 codec settings should only be adjusted after consultation.





## **Call Transfer**

For enabling call transfer via SIP refer, the **simulated ect by call-tromboning (line-interconnect)** parameter has to be disabled within the XCAPI controller **features** tab. As previously mentioned in the **SIP Line** chapter starting on page 11, **Incoming Supervised REFER** must be set to **Always**. If required you may have to disable the **Inhibit Off-Switch Forward / Transfer** parameter as mentioned in the **System Settings** chapter starting on page 9.

Depending on other call transfer or forward scenarios, parameters like **Restrict Network Interconnect** or **Analog Trunk to Trunk Connection** of the Avaya IP Office might be adjusted as well. Both parameters are located in the **Telephony** tab of the Avaya IP Office **Systems** settings which are not shown in detail here.





## **SIP Diversion Header**

For enabling SIP diversion headers from the Avaya IP Office towards the XCAPI SIP line, the **Diversion Header** must be enabled through the **Call Details**. An example is shown in the **SIP** Line chapter starting on page 11. XCAPI detects the SIP Diversion header automatically by default. The first header will be used.

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File View Help										
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## Codecs

The XCAPI controller wizard sets the codecs as shown on the screenshot below. For interoperability reasons, this might having to be adjusted. Unsupported codecs, especially in conjunction with other Avaya IP Office SIP lines, can be disabled. If your environment and region prefers the G.711ulaw, this should be moved to the top of the codec list. To do this, just mark the codec entry and use the arrow key symbols. Codec related hints are given in the chapters **System Settings** on page 9, **SIP Line** on page 11 and **Fax** on page 15.

**DTMF** related hints will be given in the next chapter.

🛠 XCAPI Configuration		-	
File View Help			
Configuration Information Configuration CAPI 2.0 Options CaPI 2.0 CAPI 2.	Codecs Each codec activated below may be selected and used in call establishment. The order or priority. Codec Audio Codecs Selection Codecs S	f the codecs deta Samplerate 8000 Hz 8000 Hz 8000 Hz 8000 Hz 8000 Hz	ermines their Packettime 20 ms 20 ms 20 ms 20 ms 20 ms



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## DTMF

The XCAPI controller is set and enabled for RFC2833 with payload value of 101 by default. Ensure that the corresponding Avaya IP Office SIP line for XCAPI is enabled for **RFC2833 DTMF Support** as well and that the global Avaya IP Office **RFC2833 Default Payload** value is set the same. For details please check with the **VoIP** tab of the Avaya IP Office **System Settings** as shown in the same named chapter described on page 9 and the **SIP Line** chapter on page 11.

Please note that the payload value must be set to conform for all participating SIP instances for proper functionality. The required value of the SIP carrier (or SBC) connected to the Avaya IP Office should have priority.

If the value is not 101, the required one should be set for the XCAPI controller

	XCAPI Configuration
File View Help	File View Help
Configuration Options	Configuration
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## Troubleshooting

Initially we recommend checking the **Avaya IP Office** System Status for any alarms if the XCAPI related SIP trunk and the Avaya IP Office SIP line is **In Service**. Initial debugging can be check with some **Tracing** on the participating trunk lines. For in-depth analyzing, check the **Avaya IP Office SysMonitor**.

For XCAPI troubleshooting please check with an XCAPI trace. Some basic information about using the XCAPI traces will be given in the video XCAPI 08 - Create a trace in our YouTube channel. Contact our sales team for any license related questions or general questions about our products. For support requests, contact our support team with a short and precise description of the issue. Attach a trace showing the described scenario. Please provide any additional information if the infrastructure and VoIP environment is complex. An example of this would be if a connected SIP provider or other SIP instances (like an SBC) are able to provide additional logs. This gives us a more complete overview of the problem. For in-depth analyzing additional Wireshark logs might also being useful, from both, the XCAPI system and the participating Avaya IP Office lines of SIP carriers or SBC's. New e-mail requests to our support system will open a ticket and our ticket system automatically generates a reply with a ticket number. This should always be used for reference purposes. Always refer to that ticket number when doing any e-mail or phone requests.





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