

Clearfly SIP Trunks Configuration Guide

PBX Platform: KX-TDE/NCP





Overview

This document describes the configuration procedures required for the KX-TDE100/200/600 and NCP500/1000 to make full use of the capabilities of Clearfly Type SIP Trunks Services.

The SIP trunks services of the TDE/NCP PBX are provided through virtual CO line cards (V-SIPGW16) which are designed to be easily integrated into an Internet Telephony Service provided by an ITSP (Internet Telephony Service Provider).

This guide describes the specific configuration items for the virtual SIP Gateway card in addition to the PBX basic configuration related to SIP trunks functionality. It also describes basic Network configuration to familiarize dealers with the network setup. It does not describe the purpose and use of all configuration options on the virtual SIP Gateway card. For those details, see the KX-NCP500/1000 and KX-TDE100/200/600 Programming Manual for Virtual SIP CO Line Card and the KX-TDE100/200/600 and KX-NCP500/1000 Manuals available from Panasonic Communication SolutionS.

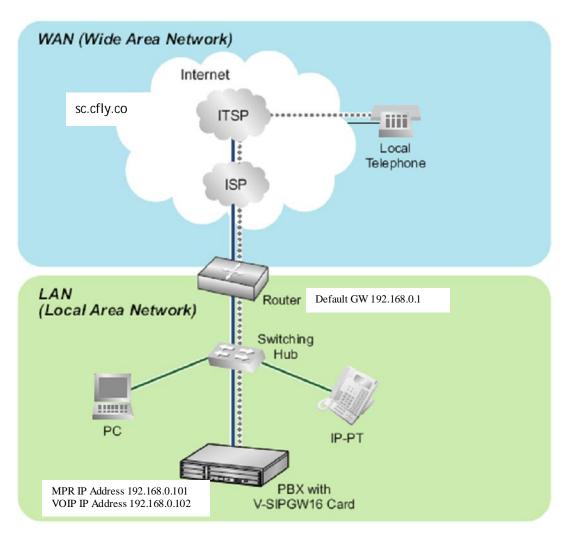
DSP card and Activation keys

- ✓ The PBX has to be equipped with a DSP card in order to provide communication between the TDM side of the PBX and the SIP trunks.
- ✓ Activation keys for SIP-Trunks has to be installed in the PBX to provide the SIP-trunks functionality

To check the number of activation keys installed into the PBX and add new licenses please refer to Page 12 in this guide

Architecture Overview

The following diagram illustrates simple VOIP networks connecting the TDE/NCP PBX: The Case of Clearfly Setup: Clearfly will provide its services over the Public Internet



Port Forwarding rules on the end router:

Forward Port 35060 to MPR IP address

Forward Port Range12000~12127 to VOIP-DSP IP address



Basic V-SIPGW16 Settings for Clearfly Trunks

1-Install the PBX Maintenance console into your PC

The maintenance console should be available to certified dealers; Dealers can get the latest version of the UPCMC from <u>www.btsdealer.com</u> (UPCMC version 7.2.1.0 or higher)

2- Connect to the PBX

• Start the UPCMC



 Click Connect and choose the method of connection using either LAN, RS-232, Modem, or USB to Connect to your PBX for interactive configuration

onnect		
Profile File(P) 🔹		
Profile Name : [əfault 🔛 🔛	tę te
onnection Proper		
	PBX Model : KX-NCP500/1000	
	● LAN ○ Modem ○ R5-232C ○ USB	
	CAN O HOUGHT O RS-232C O 055	
LAN Moden	R5-232C USB	
	IP Address : 192.168.0.101	
	B. (
	Port : 35300	
	Enter Password :	
	Save Password	
	*) Please change the password frequently.	

** We will be using the LAN method throughout this guide**

Provide the IP address of the MPR card and the password of the INSTALLER Level



• Go to 1-Configuration, 1-Slot, move your mouse over the MPR card and select the card property

J KX-NCP Maintenance Cons	le - [1, Configuration - 1, Slot]
File(F) Disconnect(D) Tool(T)	#lity(U) View(V) Window(W) Help(H)
of 🛙 🕮 😰 🖌	Itility(I) View(V) Window(V) Help(H) I11 Slot Intersent(E) Close(L) Summary(S) Activation Key(A) Physical Slot: 6 Image: Close(L) Image: Close(L) Summary(S) Activation Key(A) Physical Slot IPCMPR Virtual Slot DL(3 DL(3 DHLC4 DHLC4 Small Slot Card >
2.System 3.Group 4.Extension 5.Optional Device 6.Feature	Panasonic KX-NCP500 3 2 5
7.TRS 8.ARS 9.Private Network	
10.CO & Incoming Call	
11.Maintenance	

Make sure that the default gateway should be the end router LAN IP address Make sure that you have a valid DSP-VOIP LAN address

📕 KX-NCP Maintenance Console	- [1.Configuration - 1.Slot - Card Prop	erty - IPCMPR]	
File(F) Disconnect(D) Tool(T) Utili	ty(U) View(V) Window(W) Help(H)		
🥑 🗄 🚇 ₽			
System Menu X	1.1 Slot Card Property - IPCMPR		
1.Configuration			
T.Slot	OK(O) Cancel(C) Apply	/(A)	
2.Portable Station			
dig 3.Option	LAN Setting VolP-DSP Option Port 1	Number LAN Status DHCP	
🦉 4.Clock Priority	Description	Value	
	DHCP Client	Disable	
	MAC Address for IPCMPR-Card		
	IP Address for IPCMPR-Card	192.168.0.101	
	MAC Address for VolP-DSP		
	IP Address for VoIP-DSP	192.168.0.102	
	Subnet Mask	255.255.255.0	
	Default Gateway	192.168.0.1]]
	Speed/Duplex for Main Port	Auto Negotiation	
	Speed/Duplex for Maintenance Port	Auto Negotiation	
	LAN Disconnect Decision Time	5 \$	
	DHCP Port Number	67	
	DHCP Time Out	10 s	



3- Installing V-SIP W16 card

• Go to 1-Configuration, 1-Slot, move your mouse towards the IPCMPR virtual shelf and click on select shelf

🚝 KX-NCP Maintenance (Console - [1. Configuration - 1. Slot]
File(F) Disconnect(D) Tool	(T) Utility(U) View(V) Window(W) Help(H)
🎯 🔛 🖳 🧬	
System Menu	× 1.1 Slot
1.Configuration	
1.Slot 2.Portable Station	Refresh(E) Close(L) Summary(S) Activation Key(A) Physical Slot: 6
3.Option	Persente and Persente and Persente and Persente and Persente and Persente and Persente Pers
5. Option 5. Sphort	DLC8
	Select Shelf
	Physical Slot IPCMPR Virtuki Slot
	IP Phone Registration(R) T1
	DHLC4
	LCOT4
	PRI23
2.System	
3.Group	
4.Extension	
5.Optional Device	
6.Feature	2 5
7.TRS	
8.ARS	
9.Private Network	
10.CO & Incoming Call	

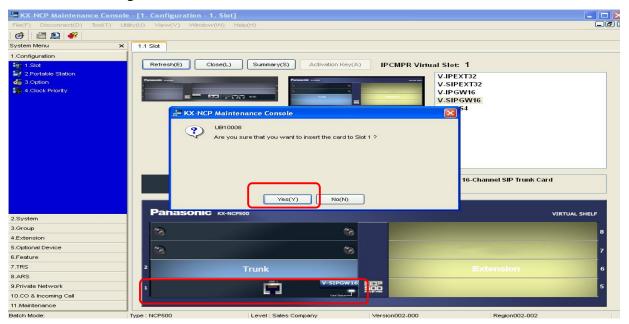
Highlight the V-SIPGW16 card from the cards list in the left side

KX-NCP Maintena	nce Console	e - [1. Configuration - 1.	Slot]				
File(F) Disconnect(D)	Tool(T) Ut	ility(U) View(V) Window(A/) Help(H)				
🥑 : 🖾 🔍 🥰							
System Menu	×	1.1 Slot					
1.Configuration Im 1.Slot 2.Portable Station 3. 3.Option 3. 4.Clock Priority		Present and	se(L) Summary(S)	Activation Key(A)	I Slot	rtual Slot: 8 V-IPEXT32 V-SIPEXT32 V-IPGW16 V-SIPGW16 V-SIPGW16	
			Ö	V-SIPGW16		Virtual 16-Channel S	
2.System		Panasonic	KX-NCP500				VIRTUAL SHELF
3.Group		3		63			
4.Extension				e e	-		°
5.Optional Device		3		63			7
6.Feature							
7.TRS		2	Trunk				ion 6
8.ARS	100 C						
9.Private Network		1		NC 50	30		5
10.CO & Incoming Call							
11.Maintenance							

- Drag the VSIPGW16 card into the trunk portion of the virtual shelf by using the PC mouse lift button
- Release the Mouse lift button and click Yes on the dialogue box



• Take the V-SIPGW16 card OUS in order to be able to enter the following settings



4-Configuring the VSIP-GW16 card

a- Shelf Property settings: Move the computer mouse over the VSIPGW16 card and choose Shelf property

🚝 KX-NCP Maintenance Conso	le - [1. Configuration	1. Slot]				
File(F) Disconnect(D) Tool(T) L	Jtility(U) View(V) Wind	ow(VV) Help(H)				_6
🥳 i 🛅 😰 🧬						
System Menu ×	1.1 Slot					
1.Configuration	1					
1.Slot	Refresh(E)	Close(L) Summary(S) Activ	ation Key(A)	PCMPR Virtu	al Slot: 1	
2.Portable Station					V-IPEXT32	
🧓 3.Option 🚡 4.Clock Priority			* *		V-SIPEXT32 V-IPGW16 V-SIPGW16 V-IPCS4	
	Physi	ical Slot IP	CMPR Virtual SI		V-II C34	
			PGW16		Virtual 16-Channel SIP Trunk Card	
	Panasoni	С кх-NCP500			VIRTUA	L SHELF
2.System						
3.Group 4.Extension	68		63			8
5.Optional Device			-			
6.Feature	-		(3)			7
7.TRS	2	Trunk			Extension	e
8.ARS					Extension	
9.Private Network	1		Shelf Property			5
10.CO & Incoming Call			Card Property			100 Mar 100
11.Maintenance			Port Property			
Batch Mode:	Type : NCP500	Level : Sales Company	Delete	002-000	Region002-002	

The following settings are required for Clearfly SIP trunk services on the shelf property:

6/19/2012 Version1

ain Timer	
Description	Value
SIP Client Port Number	35060
NAT Traversal	Off
NAT - Voice (RTP) UDP Port No.	16000
NAT - Keep Alive Packet Sending Ability	Disable
NAT - Keep Alive Packet Type	Blank UDP
NAT - Keep Alive Packet Sending Interval (s)	20
NAT - Fixed Global IP Address	
STUN Ability	Disable
STUN Client Port Number	33478
STUN External Address Detection Retry Counter	1
STUN Resending Interval	500 ms
SIP Called Party Number Check Ability	Disable(High->Low)
Symmetric Response Routing Ability	Enable
100rel Ability	Enable(Passive)
Ringback Tone to Outside Caller	Disable

Click Apply and then OK to exit the shelf property settings screen.

b- Card Property settings:

- Move the computer mouse over the VSIPGW16 card and choose Card property
- Click on Common settings
- o DNS Server IP address method is Manual
- Provide your ISP DNS serevers IP addresses. (Contact your ISP to obtain DNS IP addresses if needed)

OK(O) Cancel(C) Apply(A)	J	
Description	Value	
DNS Server IP Address Method	Manual	×
DHCP Preferred DNS Server IP Address		
DHCP Alternate DNS Server IP Address		
Manual Preferred DNS Server IP Address	66.180.96.12	These addresses are just
Manual Alternate DNS Server IP Address	64.238.96.12	sample. Please use your IS
Manual DNS Server Port Number	53	provided information
DNS Port Number	30053	
DNS Retry Interval Timer (s)	3	
DNS Retry Counter	2	
DNS SRV Record Resolve Ability	Enable	

• Click Apply and then OK

• Click Cancel on the card property- Virtual SIP gateway screen to exit this screen

c- Port Property settings:

Move the computer mouse over the VSIPGW16 card and choose port property

Basic Channel setup:

Please locate the Clearfly SIP Trunks account details from your Clearfly account Welcome letter/email.. Sample is shown below..

Main	1	Acc	ount	Register	r NAT	Option Calling Party	Called Party Voice/	FAX RTP/RTCP T.38	T.38 Option DSP	Supplement	ary Service
]	SIP Server Location									
-	No).	Slot	Port	inection	Channel Attribute	Provider Name (20 characters)	Name (100 characters)	IP Address		SIP Service D (100 characte
	1		4	1		Basic channel	Clearfly	sc.cfly.co		5060	
	2		4	2		Additional channel f				5060	
	3		4	3		Additional channel f				5060	



To: New Customer
cc: support < support@clearfly.net>
Subject: Clearfly SIP Trunk Information:
Hello,
Your Clearfly SIP trunk is now active and has been provisioned as follows:
PBX IP: 1.2.3.4 ← NAT Fixed-Global IP address
Clearfly SIP Server: sc.cfly.co ← SIP Server Location
Transport: UDP/5060
Codec: G.711u & G.729a
RTP Payload Type: 101
DTMF Relay: RFC2833
Digits Transferred: Default is 10. Please respond if you'd like something different.
123.456.7890 has been routed to this trunk < DID/BTN /account username
If you have any questions about or problems with this trunk, our techs are available for test/turn-up from 8AM-5PM MST,
Monday-Friday at +1.866.652.7520.
Regards,

• Main tab:

According to the account info above, we need to configure the Basic Channel Port as follows: "Please Note: the information above is just a sample, please locate your account details in your Clearfly welcome letter/email"

- 1- Port 1 channel attribute = Basic channel
- 2- Provider name= Clearfly
- 3- SIP Server Name= "sc.cfly.co "
- 4- SIP server port number =5060
- 5- SIP service Domain = "Blank"
- 6- Subscriber number = 1234567890 (Optional)

• Account tab:

- 1- user name == 1234567890
- 2- Authentication ID== same as BTN & Username 1234567890
- **3-** Password == Provided by Clearfly

• **Register Tab:**

Changes from Default settings:

- 1- Register abilty== Enable
- 2- Unregister ability when port INS= Disable

• NAT Tab:

Same as default

• Calling Party tab:

Changes from Default settings:

1- P-asserted Identity Header = Enable

• Called party Tab:

Same as default

• Voice/Fax Tab:

Changes from Default settings:

1- IP Codec priority (1st = G.729A, 2nd = G.711u, $3^{rd} = None$)

• **RTP/RTCP Tab:** Same as default

• T.38, T.38 Option

Same as default

• DSP

Same as default

• Supplementry services:

Changes from Default settings:

1- CNIP (Receive) = Yes

Additional DID's

Please set the channel attribute for number of ports depending on the number of active SIP lines as "additonal channel for channel 1"

For example, if there are 3 Simultaneous calls can be received on this trunk, the number of V-SIPGW ports to be set as an "additonal channel for channel 1" will be

						2
N	/lain	Acc	ount	Register	NAT Option Calling F	ports
	-	No.	Slot	Port	Channel Attribute	11
lì	3	1	1	1	Basic channel	
		2	1	2	Additional channel for Ch1	
		з	1	3	Additional channel for Ch1	

Essential PBX Configuration:

Please locate your DID information in the Clearfly Welcome letter

To Assign the DID numbers destinations, Go to 10-3.CO & Incoming Call→ DID table

	- No.	DID		DID Destination				-	CLI Ring for DID				
-		Number (32 digits)	DID Name (20 characters)	Day	Lunch	Break	Night		VM Trunk Group No.	Day	Lunch	Break	Nij
	31	1234567890	Clearfly	101	101	102	103	1	1	Disable	Disable	Disable	Di

Important note:

Make sure that you provide the 10 digits DID number in the DID number field to be able to make use of the additional DID's assigned by the Provider.

SIP trunks Activation keys:

- 1- The DSP card installed onto the PBX MPR Card has preinstalled number of SIP trunks activation keys (DSP4 and DSP16 have 4 IP trunks and DSP64 has 16 IP trunks)
- 2- To obtain additional activation keys, you need to purchase the appropriate activation key codes (For IP Trunks) and access the Key Management System. You can download the activation keys as an activation key file from the Key Management System. To download the activation keys, enter the MPR ID number shown on the IPCMPR Card in the PBX, and activation key number and registration ID provided on each activation key code.
- 3- To check the Number of Activation Keys Installed into your system Go to 1- Configuration, 1-Slot, click on Activation Keys (Top of the PBX image)



Minimum System Software requirements:

UPCMC	V7.2.1.0 or higher
NCP	V5.0002 or higher
TDE 100/200	V5.0002 or higher
TDE600	V5.0002 or higher

Useful Hints:

- 1- Update your system software once the update is available through the Dealer website to make use of added features and improved functionality
- 2- Update your PCMC (Maintenance Tool) with the latest version available on the BTS website and through Panasonic Tech support department
- 3- Back up your configuration file with the Good known settings
- 4- Consult with your network administrator prior to installation to guarantee a smooth setup for your system over the existing network

Important Notes:

1- Fax and Modem communication:

Clearfly doesn't support Fax or Modem communication over their SIP trunks. *Clearfly* always suggests using POTS line for these types of communication.

2- <u>E911</u>:

Please Work Closely with *Clearfly* team to ensure that E911 service is configured and tested properly