

Cbeyond 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 Cbeyond 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.

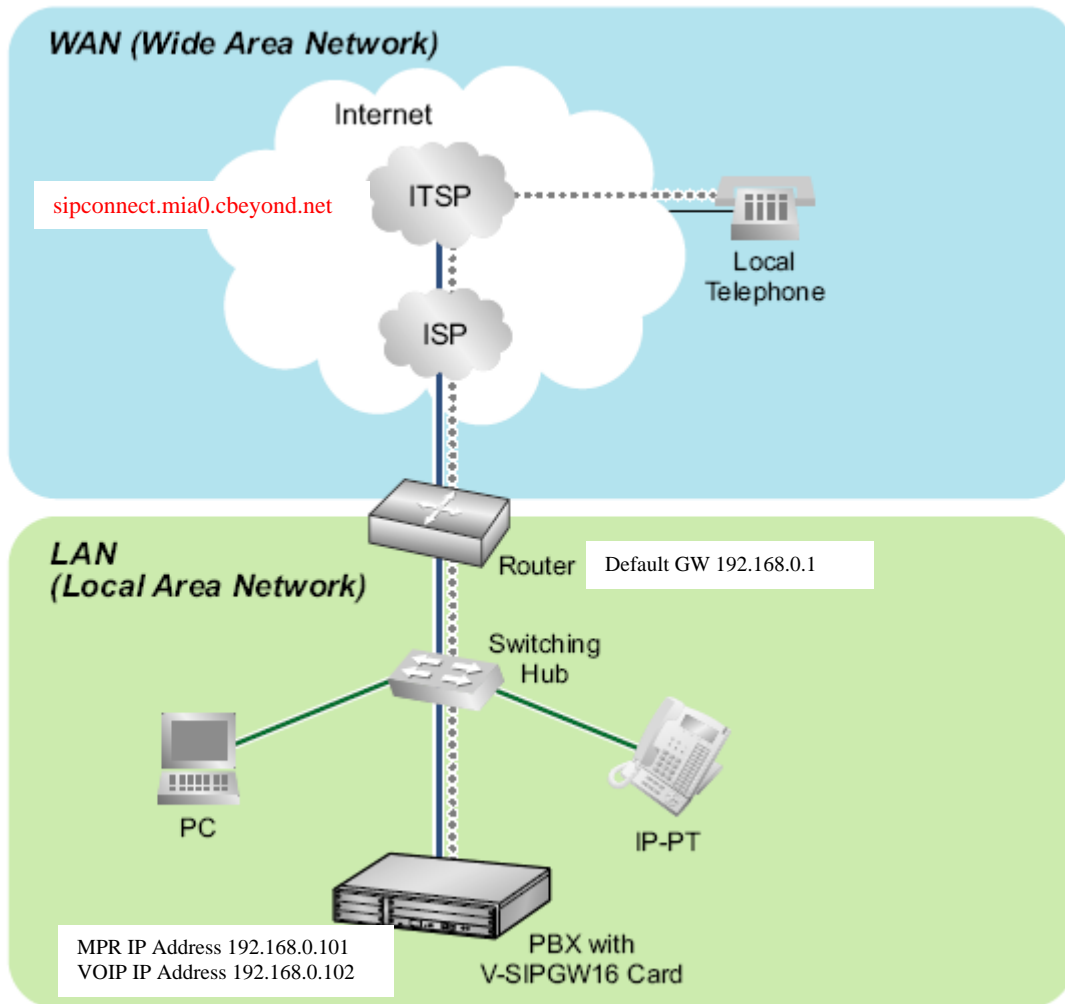
DSP card and Activation keys

- ✓ 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 Cbeyond Setup: Cbeyond will provide its services over a dedicated Circuit terminated at the CPE device



Basic V-SIPGW16 Settings for Cbeyond

1-Install the PBX Maintenance console into your PC

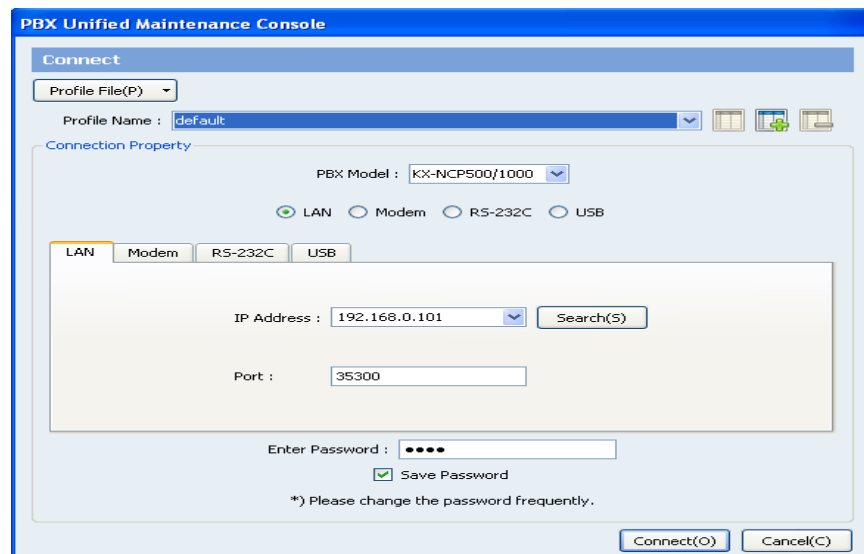
The maintenance console should be available to certified dealers; Dealers can get the latest version of the UPCM from www.btsdealer.com

2- Connect to the PBX

- Start the UPCM



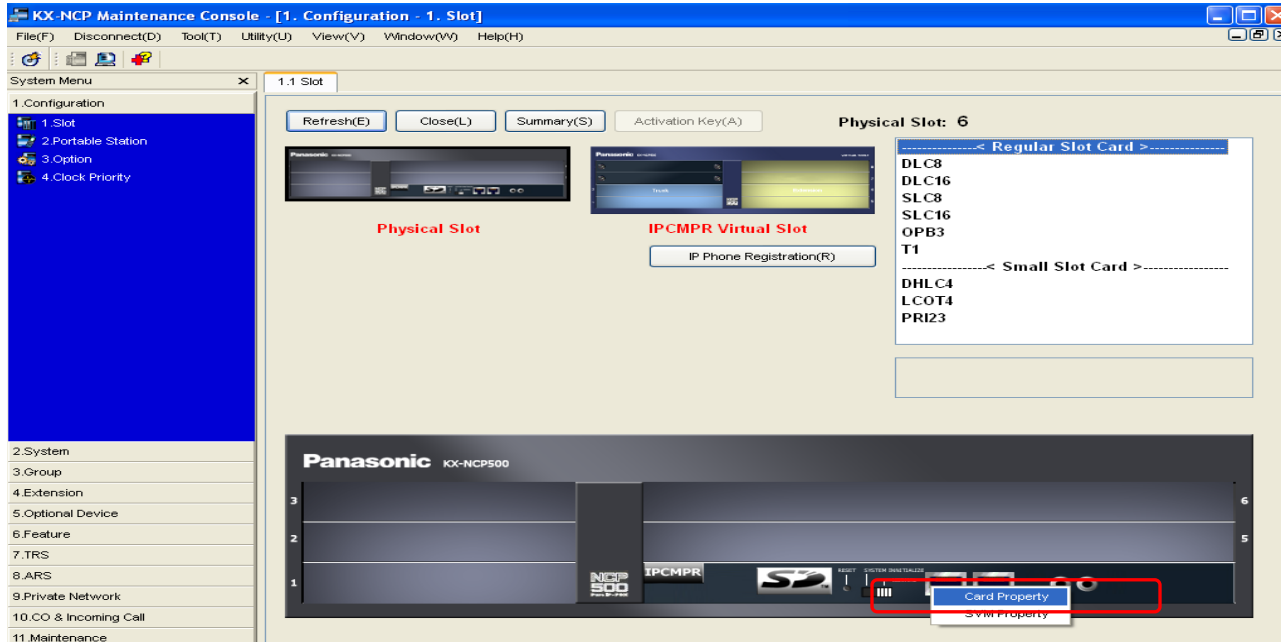
- Click Connect and choose the method of connection using either LAN , RS-232, Modem, or USB to Connect to your PBX for interactive configuration



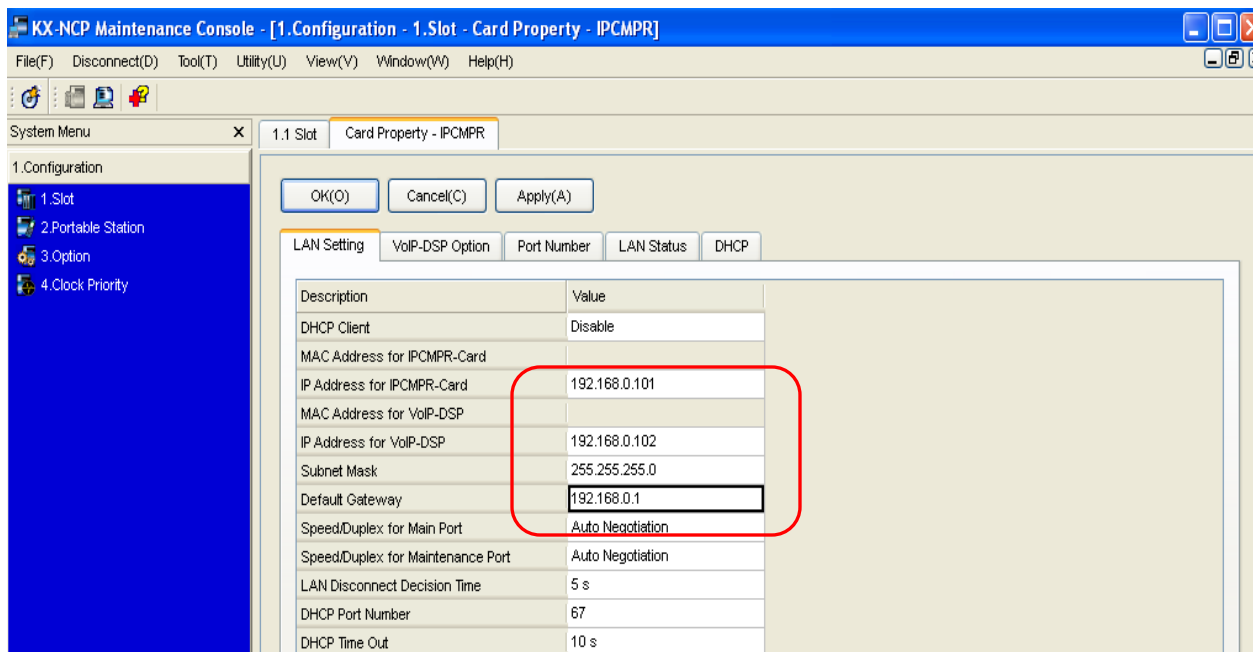
** We will be using the LAN method throughout this guide**

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

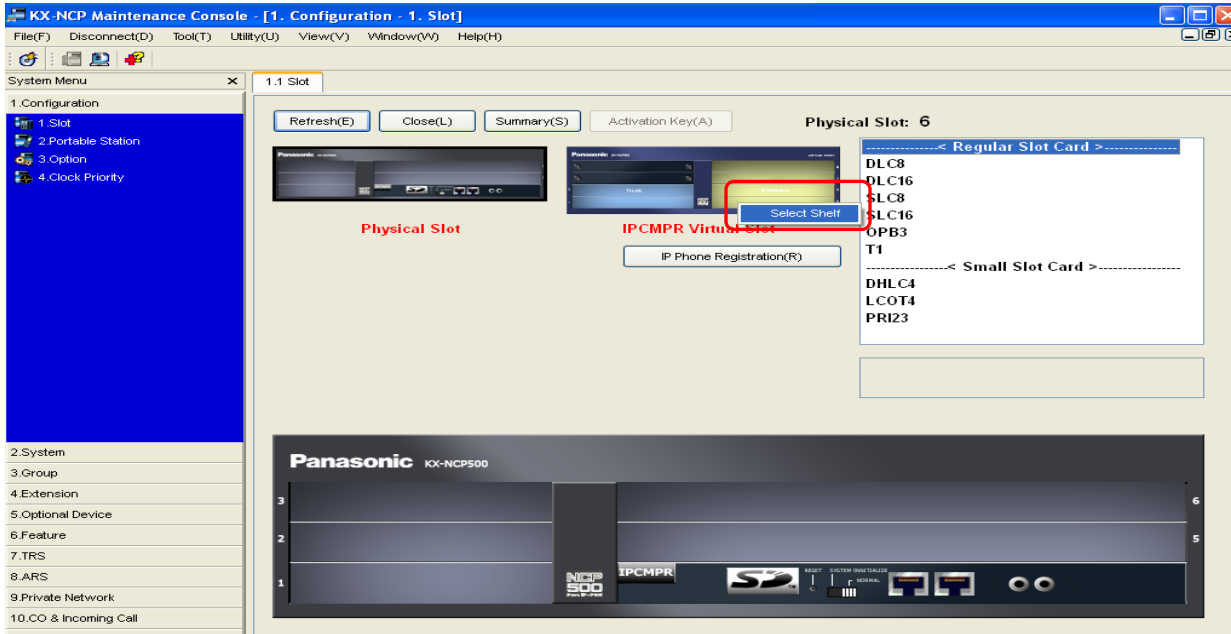


Make sure that the default gateway should be the end router LAN IP address
Make sure that you have a valid DSP-VOIP LAN address

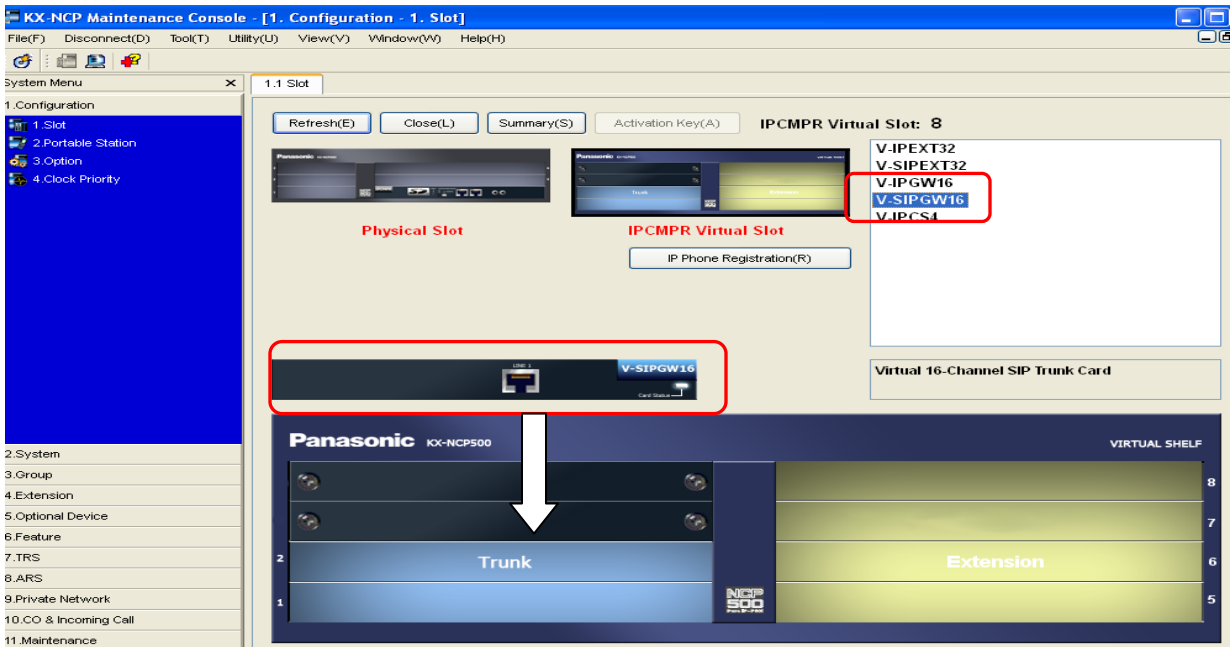


3- Installing V-SIP W16 card

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

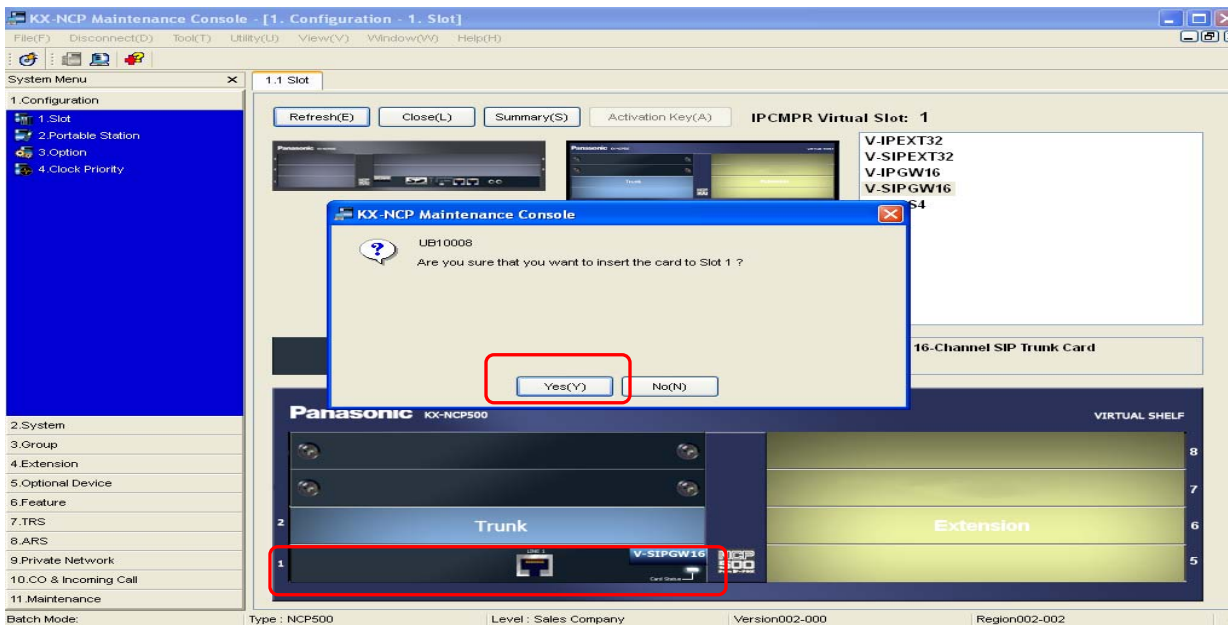


Highlight the V-SIPGW16 card from the cards list in the left side



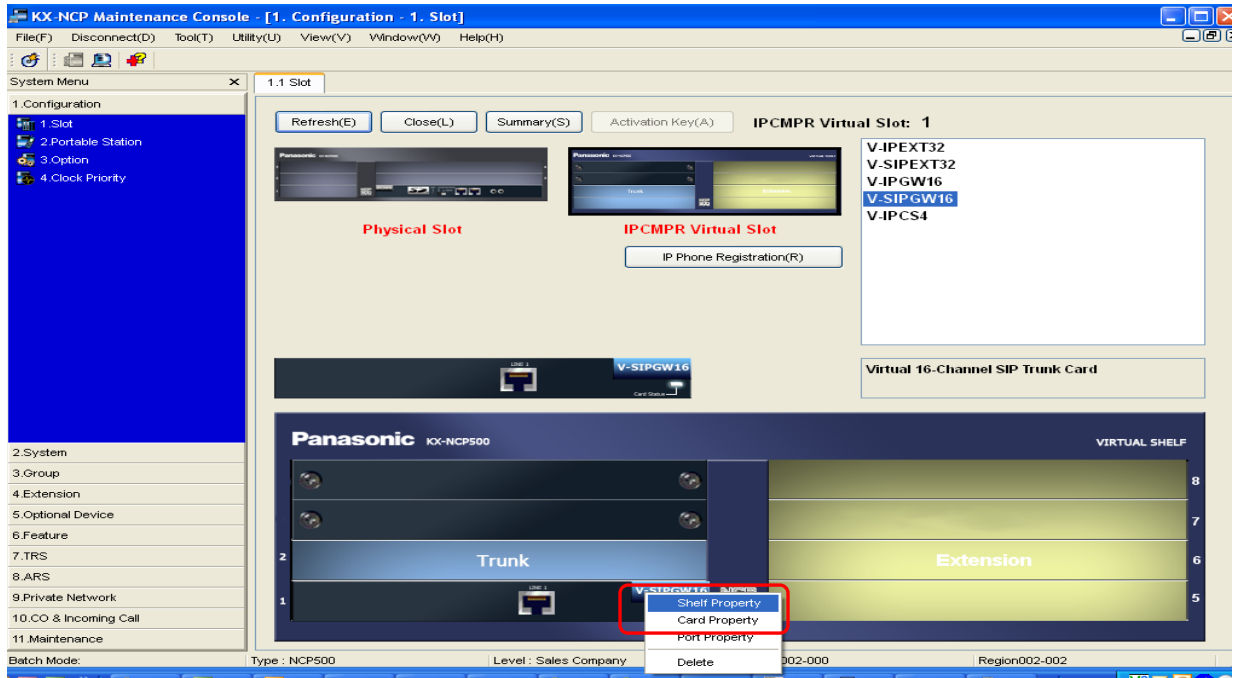
- Drag the VSIPGW16 card into the trunk portion of the virtual shelf by using the PC mouse lift button

- Release the Mouse left 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

- Move the mouse over the VSIPGW16 card and choose **shelf property**



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

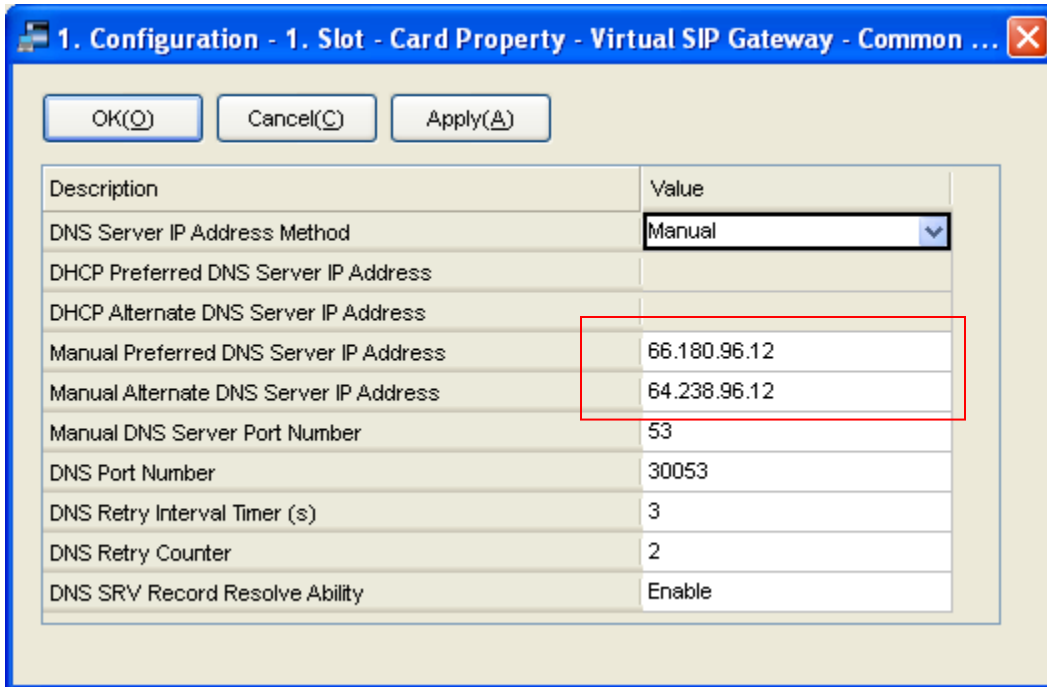
Description	Value
SIP Client Port Number	5060
NAT Traversal	Off
NAT - Voice (RTP) UDP Port No.	16000
NAT - Keep Alive Packet Sending Ability	Enable
NAT - Keep Alive Packet Type	Blank UDP
NAT - Keep Alive Packet Sending Interval (s)	20
NAT - Fixed Global IP Address	
STUN Ability	Disable
STUN Client Port 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
*) Perform System Reset for changes to take effect.	

**** (SIP Client Port Number = 5060 and NAT-Keep Alive Packet sending ability=Enable)**

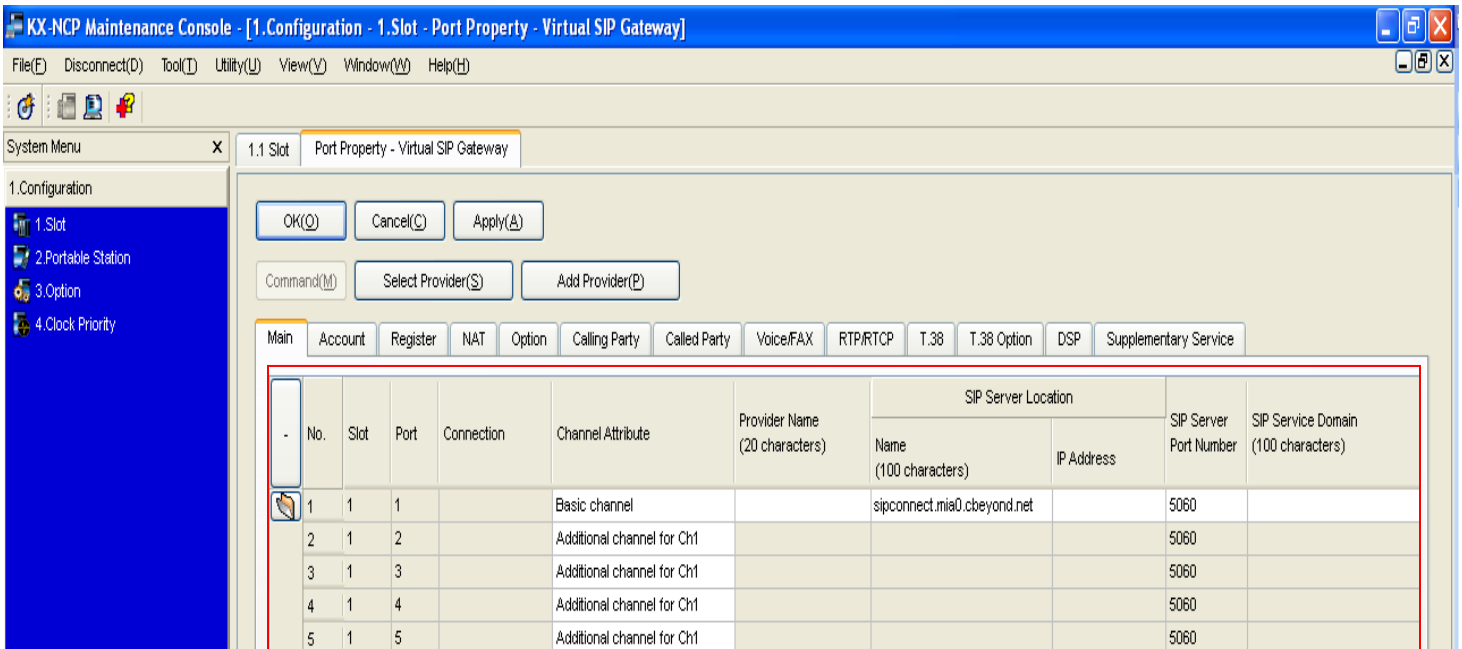
- Click Apply and then OK
- Move you mouse over the VSIPGW16 card and choose **Card property**
- Click on Common settings
- DNS Server IP address method is Manual
- Provide your Cbeyond DNS servers IP addresses. **You can find the DNS information in your Cbeyond Install profile by logging onto CbeyondOnline.net or from Cbeyond Service Coordinator**

Private IP Addressing

Private IP Address Range:	10.0.1.2 to 10.0.1.255
Subnet Mask:	255.255.255.0
Port Forwarding / DHCP IP Excluded Range(s):	10.0.1.128 to 10.0.1.191
Primary DNS:	66.180.96.12
Secondary DNS:	64.238.96.12
Default Gateway IP Address:	10.0.1.1



- Click Apply and then OK
- Click Cancel on the card property- Virtual SIP gateway screen to exit this screen
- Move you mouse over the VSIPGW16 card and choose port property



Basic Channel setup:

Please locate the SIP Connect Settings details in your Install Profile from Cbeyond

SIP Connect Settings	
Outbound Proxy sip-proxy.mia0.cbeyond.net	SIPConnect Domain sipconnect.mia0.cbeyond.net
PBX Username 1234567890	PBX Password RNJORNJO

- **Main tab:** According to the account info above, we need to configure the Basic Channel Port as follows:

- 1- Port 1 channel attribute = Basic channel
- 2- Provider name= Cbeyond
- 3- SIP Server Name= SIPConnect Domain= “sip-proxy.mia0.cbeyond.net”
- 4- SIP server port number =5060
- 5- SIP service Domain = “sipconnect.mia0.cbeyond.net”
- 6- Subscriber number = 1234567890 (Optional)

- **Account tab:**

- 1- user name == PBX Username==1234567890
- 2- Authentication ID== same as PBX Username 1234567890
- 3- Password == PBX Password=RNJORNJO → Case Sensitive Entry

- **Register Tab:**

- 1- Register ability== Enable
- 2- Register sending interval==3600sec
- 3- Unregister ability when port INS==Enable
- 4- Register server name/IP address== Blank (No settings)
- 5- Register server port==5060

- **NAT Tab:**

Same as default

- **Option Tab:**

Same as default

- **Calling Party tab:**

Same as default

- **Called party Tab:**

Same as default

- **Voice/Gax Tab:**

- 1- IP Codec priority (1st = G.729A, 2nd= G.711u, 3rd=None)
- 2- Fax Sending method= G.711 Inband
- 3- Fax Detection Ability= Enable

- **RTP/RTCP Tab:**
Same as default
- **T.38, T.38 Option**
Same as default
- **DSP, Supplementary services:**
 - 1- CLIR = Yes
 - 2- CNIP (Send) = Yes
 - 3- CNIP (Receive) = **Yes**

Additional DID's

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

Trunk Group Information					
1					
Billing Telephone Number:	1234567890				
New: <input checked="" type="checkbox"/>	Port: <input type="checkbox"/>				
<table border="1"> <tr> <td>Active SIP Lines</td> <td>Caller ID w/Name</td> </tr> <tr> <td>SIP Lines: 16 SIP</td> <td>Yes</td> </tr> </table>		Active SIP Lines	Caller ID w/Name	SIP Lines: 16 SIP	Yes
Active SIP Lines	Caller ID w/Name				
SIP Lines: 16 SIP	Yes				

Since there are 16 active SIP lines, the number of V-SIPGW ports to be set as **an "additional channel for channel 1"** will be 15 ports

Main Account Register NAT Option Calling Party Called Party Voice/FAX RTP/RTCP T.38 T.38 Option DSP Supplementary Service									
No.	Slot	Port	Channel Attribute	Provider Name (20 characters)	SIP Server Location		SIP Server Port Number	SIP Service Domain (100 characters)	Subscriber Number
					Name (100 characters)	IP Address			
1	1	1	Basic channel				5060		
2	1	2	Additional channel for Ch1				5060		
3	1	3	Additional channel for Ch1				5060		
4	1	4	Additional channel for Ch1				5060		

Essential PBX Configuration:

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

Please locate your DID information in the Cbeyond Install Profile under the Trunk Group Information section

-	No.	DID Number (32 digits)	DID Name (20 characters)	DID Destination				Tenant Number	VM Trunk Group No.	CLI Ring for DID			
				Day	Lunch	Break	Night			Day	Lunch	Break	Ni
	31	1234567890	Cbeyond1	101	101	102	103	1	1	Disable	Disable	Disable	Dis
	32	1234567891	Cbeyond2	101	101	102	103	1	1	Disable	Disable	Disable	Dis
	33	1234567892	Cbeyond3	101	101	102	103	1	1	Disable	Disable	Disable	Dis
	34	1234567893	Cbeyond4	101	101	102	103	1	1	Disable	Disable	Disable	Dis
	35	1234567894	Cbeyond5	101	101	102	103	1	1	Disable	Disable	Disable	Dis

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	V5.1.2.3(Latest as of 1/14/10)
NCP	V1.0101 and higher
TDE 100/200/600	V 2.0104 and 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