Spectrum Enterprise SIP Trunking Service
Panasonic KX-NS700/1000 V4.10060
IP PBX Configuration Guide

About Spectrum Enterprise:

Spectrum Enterprise is a division of Charter Communications following a merger with Time Warner Cable and acquisition of Bright House Networks. Spectrum Enterprise is a national provider of scalable, fiber technology solutions. The Spectrum Enterprise portfolio includes networking and managed services solutions, including Internet access, Ethernet and Managed Network Services, Voice, TV and Cloud solutions. Our industry-leading team of experts works closely with clients to achieve greater business success.

About this document:

Spectrum Enterprise assures IP PBX compatibility by conducting interoperability testing to ensure any potential compatibility issues have been resolved prior to installation. Please review the IP PBX configuration instructions in this guide prior to your installation date.

Be advised that this document may contain references to Charter or Charter Business. All references to Charter should be read as Spectrum Enterprise.

Thank you,

Spectrum Enterprise

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RESELLER
BULLETIN

Panasonic
AUTHORIZED
RESELLER PROGRAM

Subject: KX-NS700/1000 SIP Trunk Configuration Guide for Charter Communications

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Date: October 6, 2015

Product: Unified Communications

Platform tested**	Version
KX-NS1000	***V4.10060***

*** Configuration steps apply to both KX-NS700 and KX-NS1000 platforms*

Overview

This document outlines the configuration settings required for the KX-NS700 and KX-NS1000 to make full use of the capabilities of Charter Communications SIP Trunk Services.

The SIP trunk services of the KX-NS700/71000 PBX are provided through virtual CO line cards (VSIPGW16) which are designed to be easily integrated with an Internet Telephony Service provided by an ITSP (Internet Telephony Service Provider).

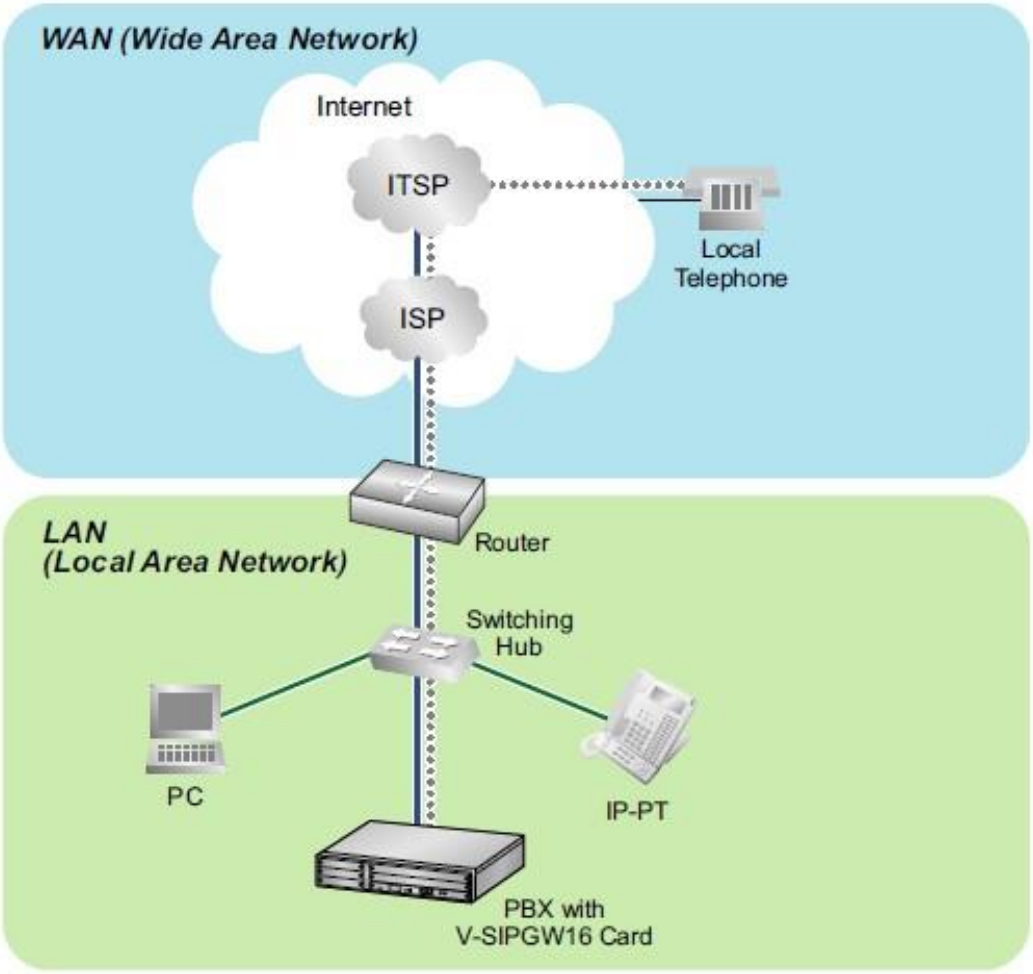
This guide describes the specific configuration items for the Virtual SIP Gateway Card in addition to the basic PBX configuration related to SIP trunk functionality. It also describes basic Network configuration to familiarize dealers with the network setup. It does not describe the purpose and use of all programming options on the Virtual SIP Gateway Card. For those details, see the KX-NS700/1000 Manuals for Virtual SIP CO Line Card available on the Panasonic Reseller website.

DSP card and Activation keys

- ✓ The PBX must 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 must be installed in the PBX to provide SIP-trunk functionality

To check the number of activation keys installed in the PBX and add new licenses, please refer to **Page 13** in this configuration guide.

Architecture Overview



The above diagram illustrates simple VoIP networks connecting the NS700/1000 PBX. Charter Communications will provide its services over the Public Internet.

Port Forwarding rules on the end router:

- Forward Port (UDP) ***<SIP Client Port Number>*** to the PBX IP address
- Forward Port Range (UDP) ***<Enter RTP Port Range>*** to the VOIP-DSP#1-1 IP address
- Forward Port Range (UDP) ***<Enter RTP Port Range>*** to the VOIP-DSP#1-2 IP address
- Forward Port Range (UDP) ***<Enter RTP Port Range>*** to the VOIP-DSP#2-1 IP address
- Forward Port Range (UDP) ***<Enter RTP Port Range>*** to the VOIP-DSP#2-2 IP address

Basic V-SIPGW16 Settings for Charter Communications SIP Trunks

1. Install the NS Unified Web Maintenance console on your PC

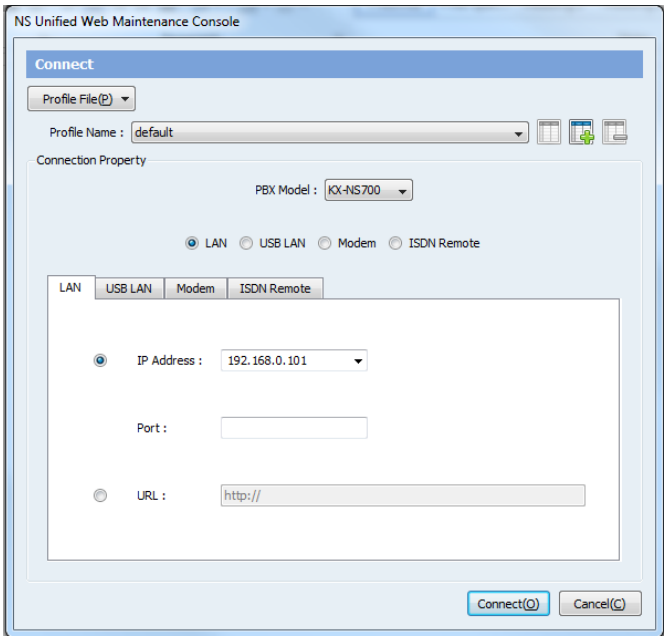
a. The maintenance console is available for certified dealers. Dealers can get the latest version of the UPCMC from www.panasonicpartnerportal.com (UPCMC version 5.10.1 or higher)

2. Connect to the PBX

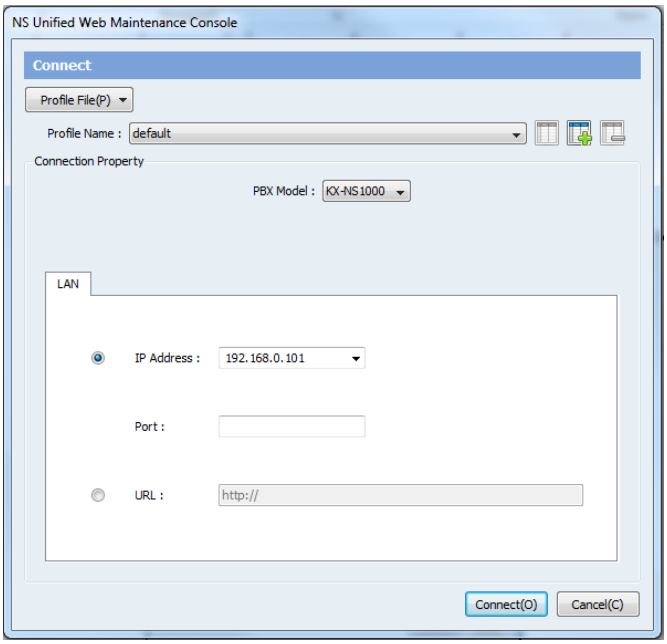
a. Start the UPCMC

b. Click Connect(O) and enter the IP Address to connect to your PBX for interactive configuration

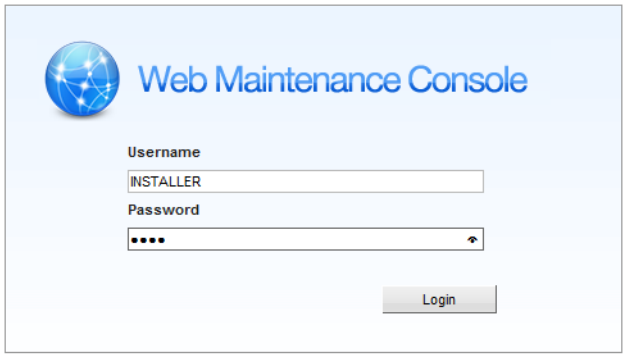
KX-NS700



KX-NS1000



c. Enter the username and password to log into the PBX
- Default Username: **INSTALLER**
- Default Password: **1234**

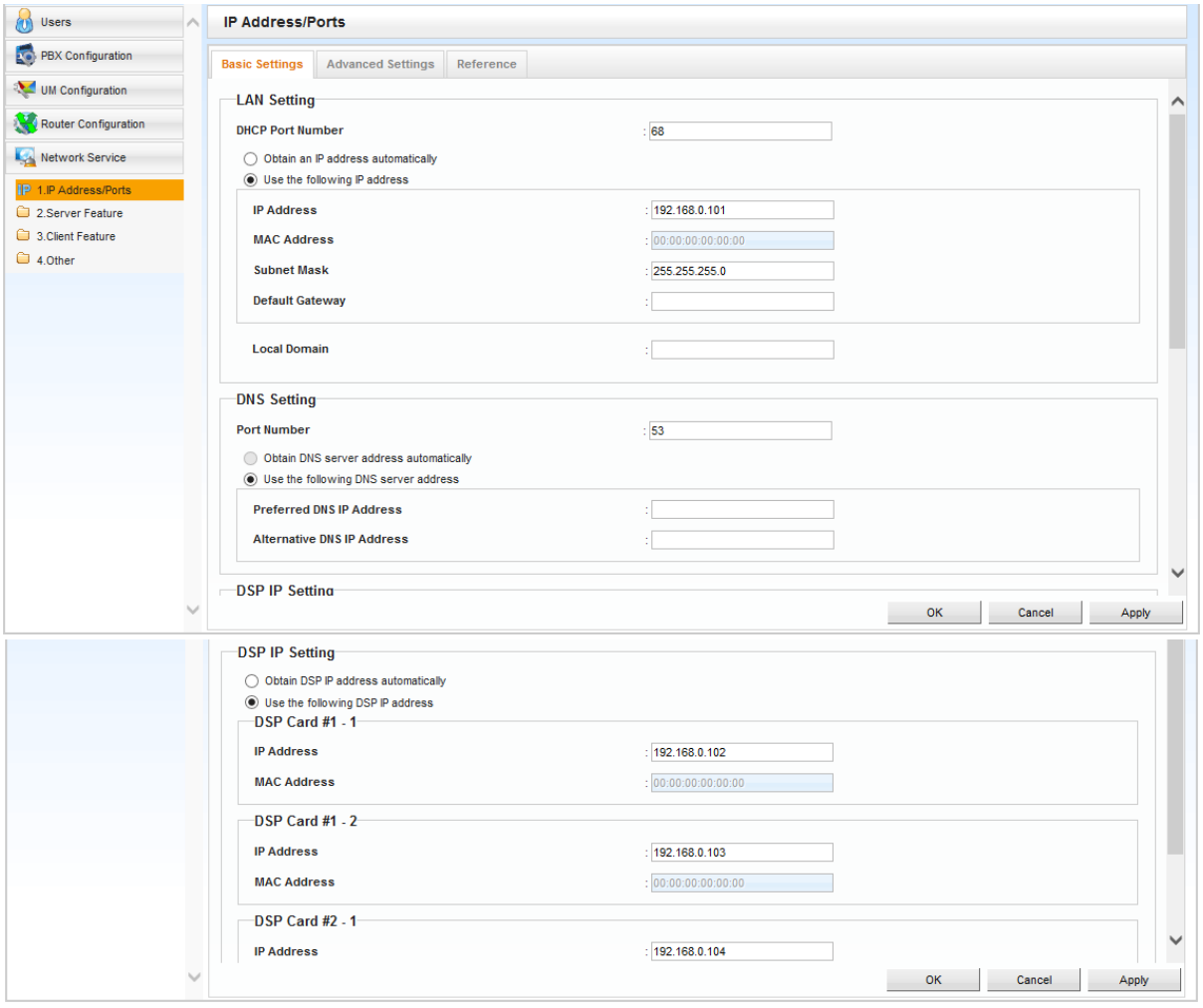


d. Complete the Easy Setup Wizard configuration (if starting at factory default)

3. Configure the LAN Settings of the PBX

a. Click on Setup

b. Go to Network Service > 1.IP Address/Ports > Basic Settings tab



c. Based on your Local LAN, assign static IP addresses to the PBX. The default gateway should be the end router's network IP address.

- IP Address: ***<provided by LAN administrator>***
- Subnet Mask: ***<provided by LAN administrator>***
- Default Gateway: ***<provided by LAN administrator>***
- Preferred DNS IP Address: ***<provided by LAN administrator>***
- Alternative DNS IP Address: ***<provided by LAN administrator>***
- DSP Card #1 – 1: ***<provided by LAN administrator>***
- DSP Card #1 – 2: ***<provided by LAN administrator>***

(NS1000 Only)
- DSP Card #2 – 1: ***<provided by LAN administrator>***
- DSP Card #2 – 2: ***<provided by LAN administrator>***

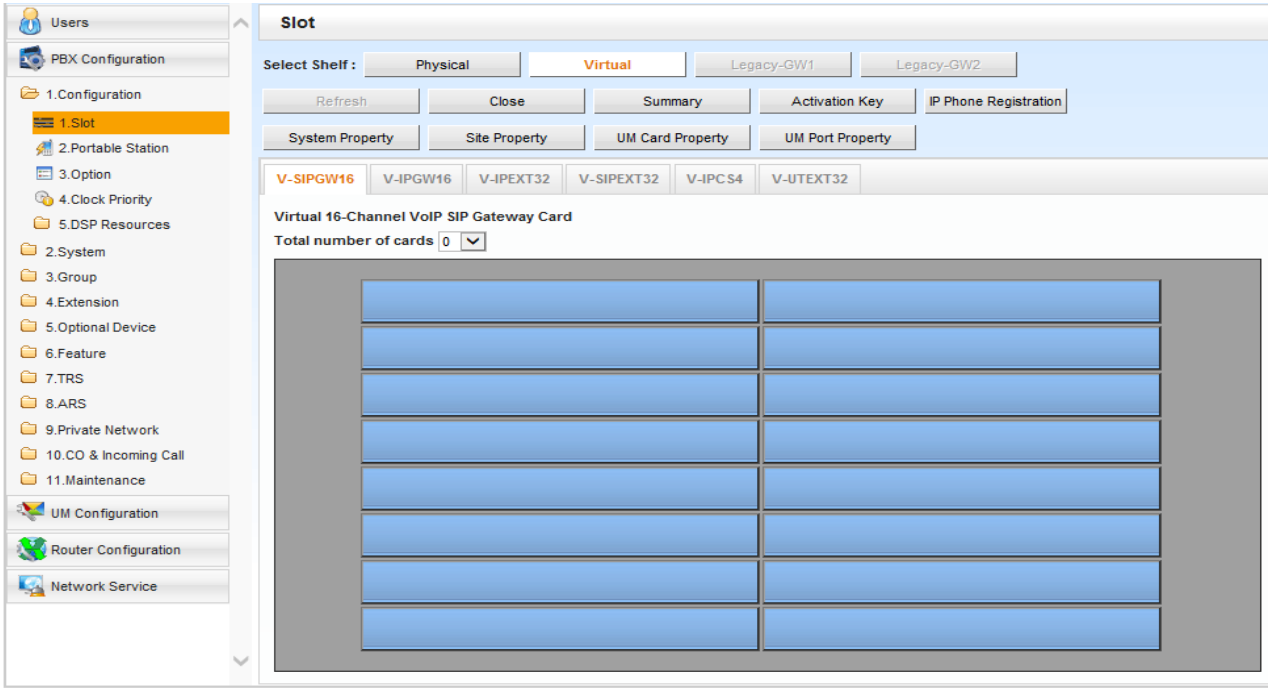
d. Click Apply

e. Click OK

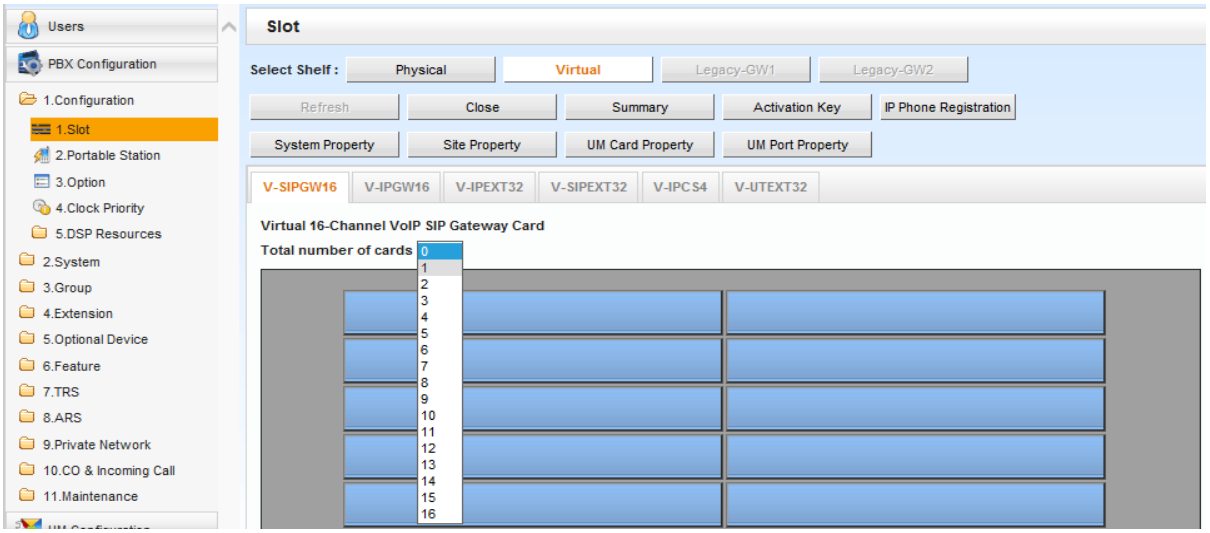
4. Installing V-SIPGW16 cards

KX-NS1000

a. Go to PBX Configuration > 1.Configuration > 1.Slot > Virtual Shelf > V-SIPGW16 tab



b. Click the drop down menu and select the number of V-SIPGW16 Cards to add for your installation



KX-NS700

a. Go to PBX Configuration > 1.Configuration > 1.Slot > Select the Virtual Shelf

b. Drag and Drop V-SIPGW16 Cards to the virtual Trunk slots (1 - 4) as needed

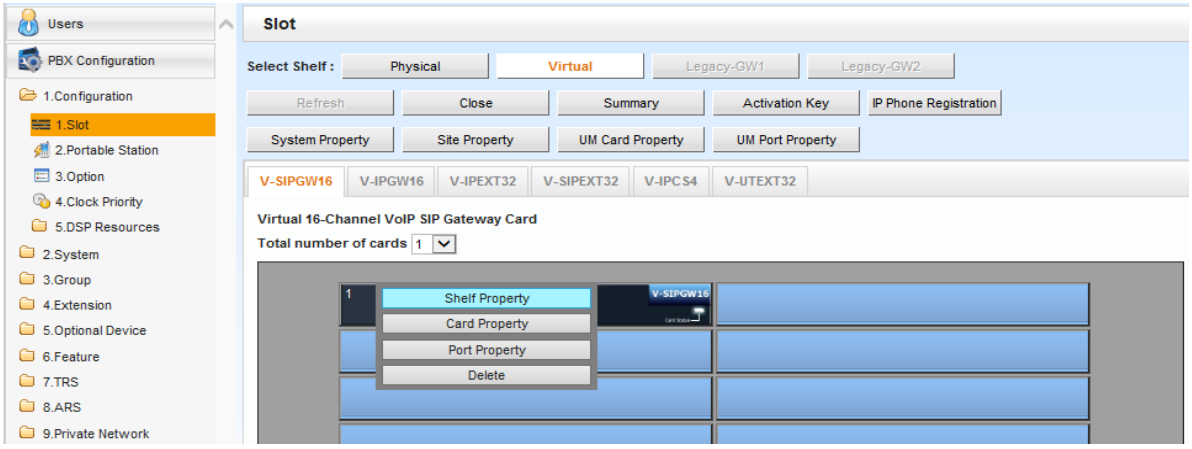
c. Click OK

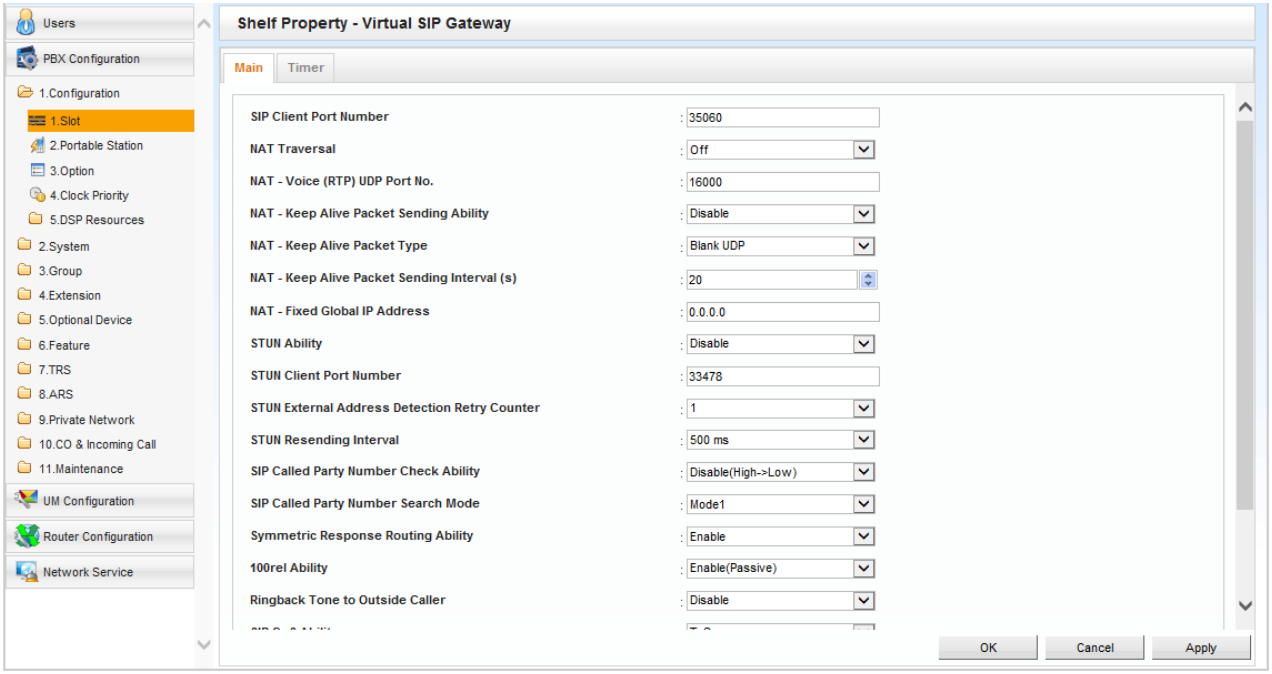
5. Configuring the V-SIPGW16 Card

a. Move the mouse over the V-SIPGW16 Card and click OUS to take the card out of service

b. **Shelf Property settings:**

Move the mouse over the V-SIPGW16 Card and choose Shelf Property





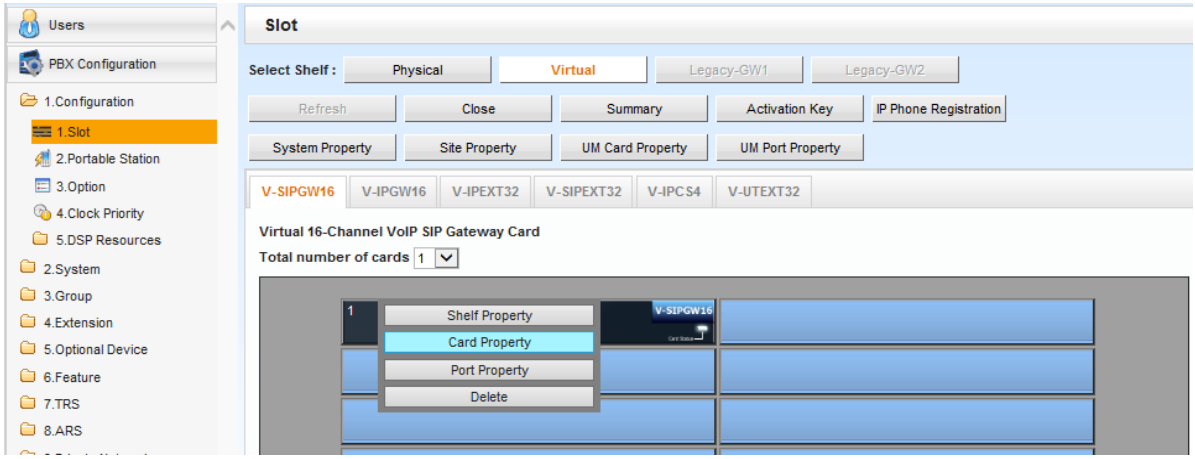
c. Change the following parameters from their default value

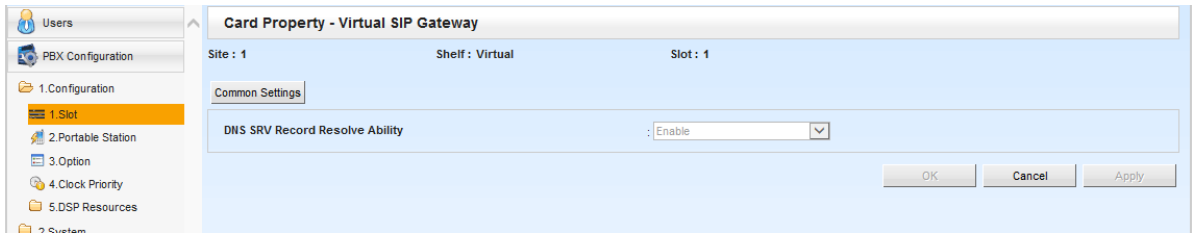
Main Tab
- SIP Client Port Number: **5060**

Timer Tab
- *<leave at factory default setting>*

d. Click Apply and then OK to exit the Shelf Property settings screen

e. **Card Property settings:**
Move the mouse over the V-SIPGW16 card and choose Card Property

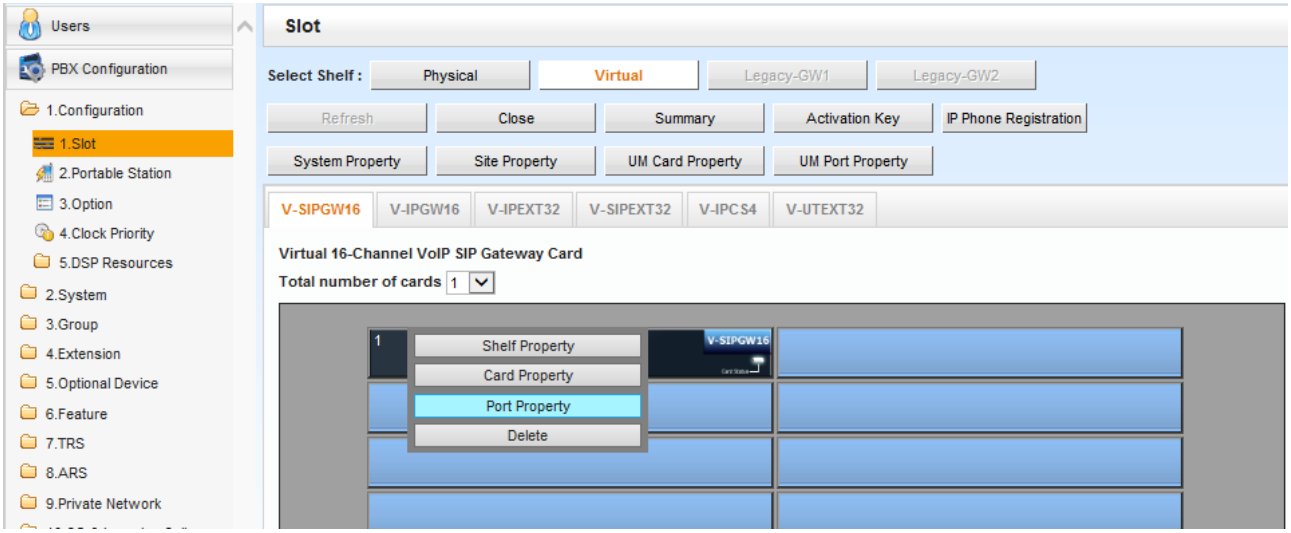




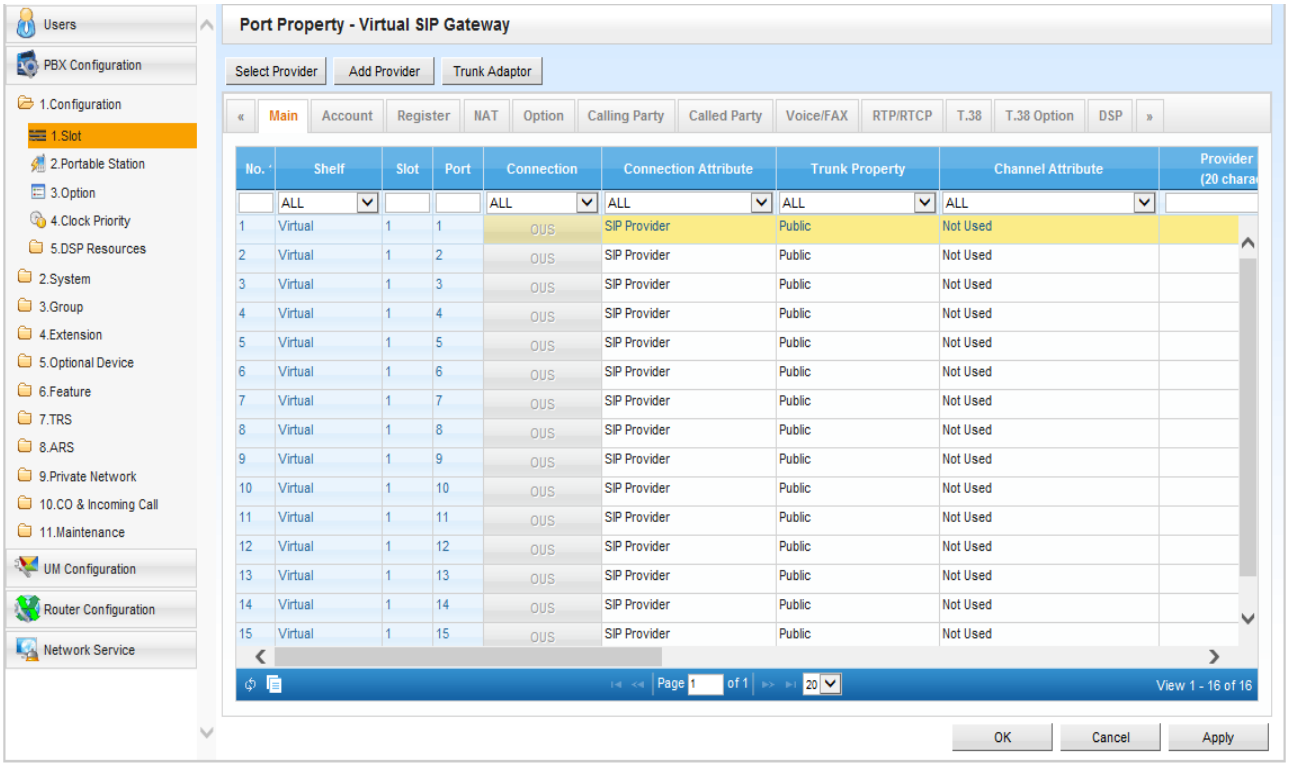
- *<leave at factory default setting>*

f. Click Apply and then OK to exit the Card Property settings screen

g. **Port Property settings:**
Move the mouse over the V-SIPGW16 card and choose Port Property



h. Change the following parameters from their default value



Main Tab

- Connection Attribute: **Basic Channel + Additional Channels**
- Provider Name: Charter

- SIP Server IP address: Provided IP address.

Account Tab
- User Name: Provided by Charter
- Authorization ID: Provided by Charter
- Authorization Password: Provided by Charter

Register Tab
- *<leave at factory default setting>*

NAT Tab
- *<leave at factory default setting>*

Option Tab
- *<leave at factory default setting>*

Calling Party Tab
- From Header – User Port: PBX-CLIP

Called Party Tab
- *<leave at factory default setting>*

Voice/FAX Tab
- *<leave at factory default setting>*

RTP/RTCP Tab
- *<leave at factory default setting>*

T.38 Tab
- *<leave at factory default setting>*

T.38 Option Tab
- *<leave at factory default setting>*

DSP Tab
- *<leave at factory default setting>*

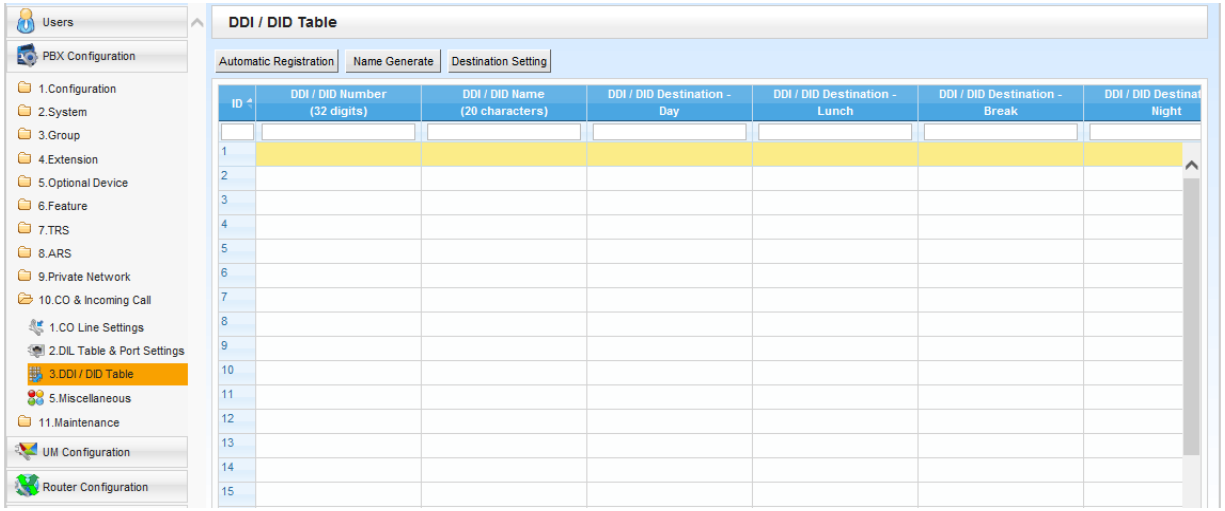
Supplementary Service Tab
- *<leave at factory default setting>*

Advanced
- *<leave at factory default setting>*

i. Click Apply, then OK to exit the Port Property settings screen

4. Configuring Incoming DID Call Routing

a. Go to PBX Configuration > 10.CO & Incoming Call > 3.DDI/DID Table



b. Enter the 10-digit DDI / DID Numbers

c. Enter the Day/Lunch/Break/Night destination extension for each DDI / DID

d. Click Apply and then OK to exit the DDI / DID Table settings screen

5. Backup and Reset

a. Click on Maintenance > System Control > 4.System Reset

b. Click Backup

c. Click OK

d. Click OK

e. NS system will restart

SIP Trunk Activation keys:

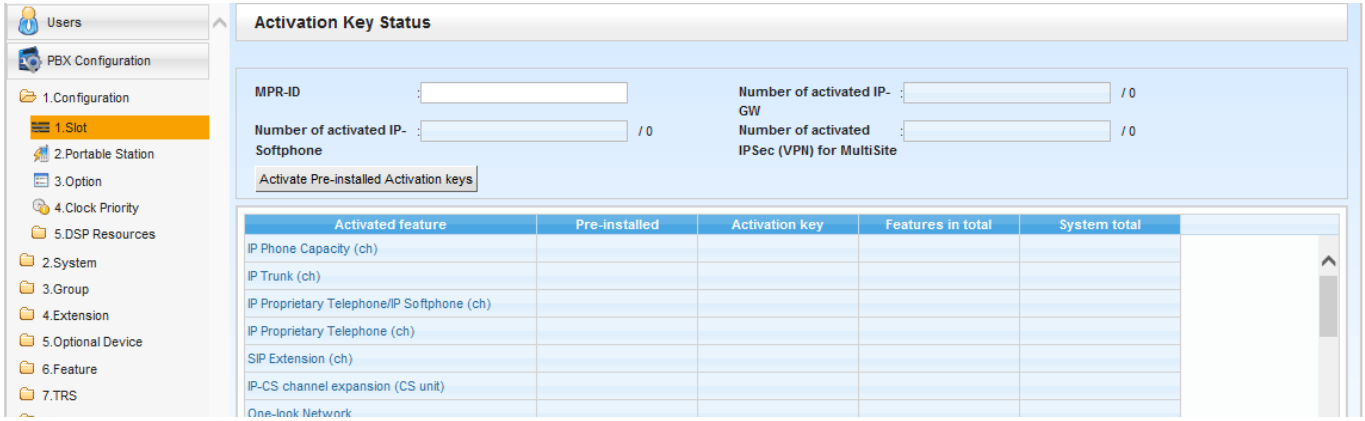
1. To obtain Activation Keys, you need to purchase the appropriate IP Trunk activation key models and access the Key Management System to register them to your PBX at

http://tde.panacare.com.

- **KX-NSM102:** 2-Channel IP Trunk Activation Key (2 IP Trunk)
- **KX-NSM104:** 4-Channel IP Trunk Activation Key (4 IP Trunk)
- **KX-NSM108:** 8-Channel IP Trunk Activation Key (8 IP Trunk)
- **KX-NSM116:** 16-Channel IP Trunk Activation Key (16 IP Trunk)

2. You will need the MPR ID from the PBX to register the Activation Key(s) on the Key Management System

3. To check the Number of Activation Keys Installed in your system and the MPR ID:
   PBX Configuration > 1.Configuration > 1.Slot > Activation Key



Minimum System Software requirements:

NS Unified Web Maintenance Console	**v5.10.1**

KX-NS1000	**v4.10060**
KX-NS700	**v4.10064**

Useful Hints:

1. Update your system software once an update is available through the Dealer website to make use of added features and improved functionality
2. Update your UPCMC (Maintenance Tool) with the latest version available on the BTS website
3. Back up your PBX 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:

   Fax or Modem communication may require additional POTS or PSTN lines to be connected to the Panasonic PBX in order to provide service reliability. Most of Charter Communications VOIP services are provided over Best Effort internet which can adversely affect Fax /Modem Transactions that are time sensitive and depend on accurate Tone detection for successful operation. Charter Communications cannot guarantee FAX service.

2. E911:

   Please work closely with Charter Communications Provisioning team to ensure that E911 service is configured and tested properly.