



2N[®]

PRI gateways



How to install PRI gateway Quick guide

Version 1.2.0

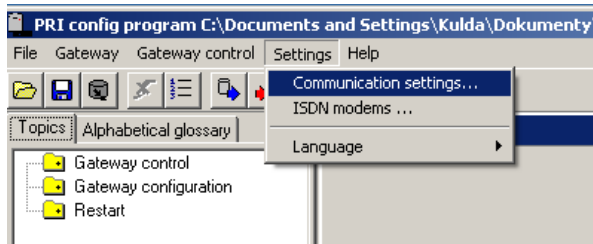
www.2n.cz

1. Preparation

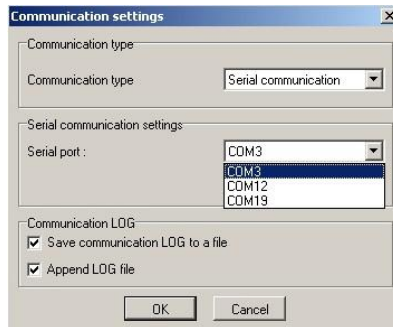
1.1 IP address settings

Open the newest version of config program (you can download it from www.2n.cz)

Choose Settings – Communication settings



Choose the type of communication



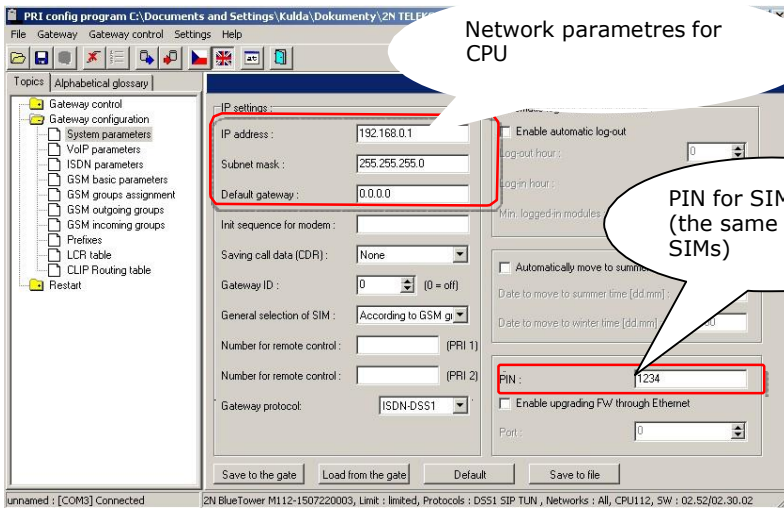
Connect to the gateway



Download parameters from the gateway



In Gateway configuration you can find System parameters and set IP address for CPU.



1.2 VoIP trunk configuration

Let say that we want to connect SG with our company VoIP PBX (SIP proxy) and we want to allow receiving calls from SIP proxy, so we can pass them to GSM and pass all incoming calls to it.

To allow call requests only from our SIP proxy we have to fill its IP address to field **SIP proxy (IP -> GSM)**.

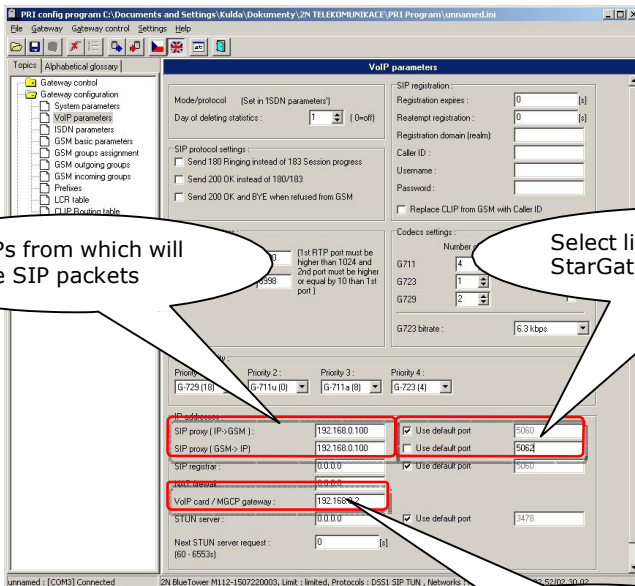
It is very important to set this IP address. In case that there is 0.0.0.0 in this field, call can come from any IP address on our network (in case that you have assigned public IP address, requests can be from any computer on Internet).

If you want to allow call from GSM to your SIP proxy, it is necessary fill its IP address to field **SIP proxy (GSM -> IP)**. If you want more about incoming call setting go to section 3 (Incoming calls) of this document.

Also we have to define IP of our VoIP card – it will be 192.168.0.2 – This is the IP for RTP stream.

You have to setup the opposite PBX to send the SIP packets to IP address of CPU card.

The example of these settings is showed at this picture



The IPs from which will be the SIP packets

Select listen port for StarGate

The IP address of VoIP card

1.3 Example of Cisco Call Manager configuration


Following example of configuration correspond with configuration interface of Cisco Call Manager 6,7 and 8.

System ▾ Call Routing ▾ Media Resources ▾ Voice Mail ▾ Device ▾ Application ▾ User Management ▾ Bulk Administration ▾ Help ▾

Trunk Configuration

Save Delete Reset Add New

Status

 Status: Ready

Device Information

Product: Přenosový spoj SIP
 Device Protocol: SIP
 Device Name*: VB-GSM
 Description:
 Device Pool*: GSM
 Common Device Configuration: < None >
 Call Classification*: Použit výchozí systémová nastavení
 Media Resource Group List: < None >
 Location*: Hub_None
 AAR Group: < None >
 Packet Capture Mode*: Žádné
 Packet Capture Duration: 0

Media Termination Point Required
 Retry Video Call as Audio
 Transmit UTF-8 for Calling Party Name
 Unattended Port

Multilevel Precedence and Preemption (MLPP) Information

MLPP Domain: < None >

Call Routing Information

Inbound Calls

Significant Digits*: All
 Connected Line ID Presentation*: Výchozí
 Connected Name Presentation*: Výchozí
 Calling Search Space: Local
 AAR Calling Search Space: < None >
 Prefix DN:
 Redirecting Diversion Header Delivery - Inbound

Outbound Calls

Calling Party Selection*: Původce
 Calling Line ID Presentation*: Výchozí
 Calling Name Presentation*: Výchozí
 Caller ID DN:
 Caller Name:
 Redirecting Diversion Header Delivery - Outbound

IP address of SG

- SIP Information

Destination Address*

Destination Address is an SRV

Destination Port*

MTP Preferred Originating Codec*

Presence Group*

SIP Trunk Security Profile*

Rerouting Calling Search Space

Out-Of-Dialog Refer Calling Search Space

SUBSCRIBE Calling Search Space

SIP Profile*

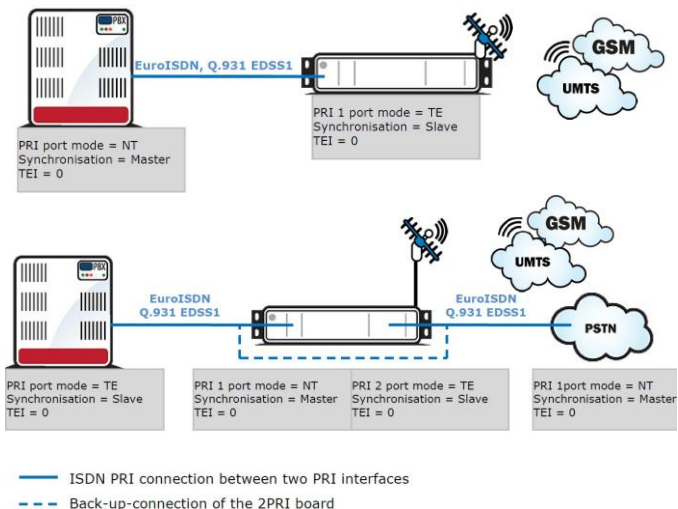
DTMF Signaling Method*

i *- indicates required item.

i **- Device reset is not required for changes to Packet Capture Mode and Packet Capture Duration.

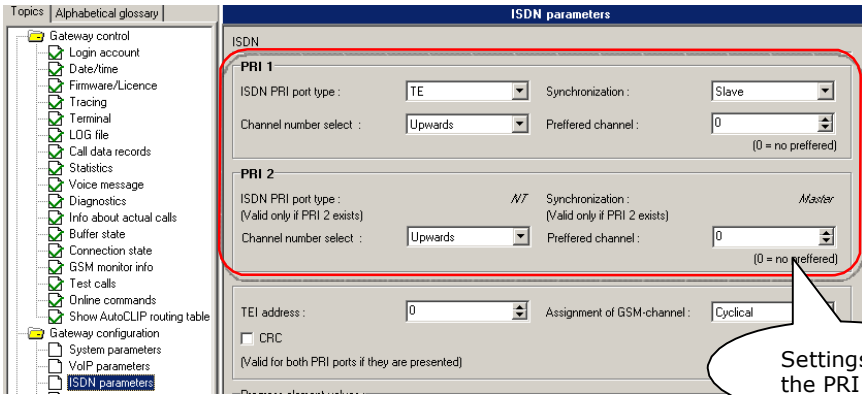
1.4 Configuration of PRI connection

If you have PRI card, you can connect the gateway to your PBX via NT or TE port. Here are examples of possible interconnection scenarios.



In accordance to your situation you have to setup the gateway ISDN parameters.

PRI 1 port has to be always used for connecting to your PBX!



Outgoing calls

2.2 How to configure the LCR table

Situation...

Let's say we have SIM cards of two GSM operators (4 pcs. for each one): The first one, we will call it N5, it has following prefixes (602, 606, 607, 723, 724) and it requires you to dial the number from your mobile phone with the international prefix (+420). All numbers have a nine digit length with the prefix but without the international prefix.

The second one, we may call it NobiCell, has the following prefixes (901, 902, 907, 909) and requires you to dial the number with the prefix (0). All numbers have a nine digit length with the prefix and without "0".

We have to assign modules to two GSM outgoing groups (for each operator one).

The first step we have to do is place the SIM cards into the SIM holders. We will start with modules 0-3 using the N5 operator SIMs. Modules 4-7 will follow the same procedure but using the NobiCell SIMs.

Topics | Alphabetical glossary

GSM groups assignment

Groups assignment :

Module :	Outgoing :	Incoming :
0. module	1. Group	1. Group
1. module	1. Group	1. Group
2. module	1. Group	1. Group
3. module	1. Group	1. Group
4. module	2. Group	1. Group
5. module	2. Group	1. Group
6. module	2. Group	1. Group
7. module	2. Group	1. Group

Save to the gate | Load from the gate | Default

Save to file

2.2.1 Configuration of outgoing groups

We have to select the option SIM1 for the Mode of switching SIM card (the SIM inserted in the SIM holder 1 will be used all the time). In the parameter CLIR select option Factory. The settings written above will configure both GSM outgoing groups. For switching between groups you can use the tabs.

The screenshot shows the configuration interface for GSM outgoing groups. On the left is a navigation tree with 'GSM outgoing groups' selected. The main panel is titled 'GSM outgoing groups' and contains several sections:

- Mode of switching SIM card:** A dropdown menu set to 'SIM 1'. A callout bubble points to this dropdown with the text 'Mode of switching SIMs'.
- Last searched SIM:** A dropdown menu set to 'SIM 8'.
- Disconnect call:** A group of checkboxes including 'SIM limit exceeded', 'Switch to another SIM', and 'No ALERTING before CONNECT'.
- Delay for CONNECT [s]:** A numeric input field set to '0'.
- Minimal ring duration to send "SMS" [s]:** A numeric input field set to '0'.
- Delay for ALERTING [s]:** A numeric input field set to '1'.
- Minute' parameter:** A dropdown menu set to 'Count of minutes'.
- Send CLIP from ISDN to GSM:** A section with a red warning: 'Attention! Must be supported by your GSM / UMTS operator. In other case outgoing calls to GSM / UMTS can be rejected!'. It includes a checkbox for 'Transfer CLIP to GSM' and a 'Separating char:' field.
- Call length counting:** A dropdown menu set to 'Seconds'.
- Roaming enable:** A section with a 'Roaming code:' field.
- CLIR:** A dropdown menu set to 'Default'. A callout bubble points to this dropdown with the text 'Parameter CLIR'.
- Max. number of called minutes:** A numeric input field set to '1'.
- SMS messages number:** A numeric input field set to '0'.
- Day of restore call limit and delete statistics:** A dropdown menu set to '1'.
- First count:** A numeric input field set to '1'.
- Next count:** A numeric input field set to '1'.
- Day limit of called minutes:** A numeric input field set to '0'.
- Time to switch to another SIM:** Two sections, each with 'From:' and 'To:' time pickers (both set to 00:00 to 24:00) and radio buttons for 'Enable on weekends', 'Use whole weekend', and 'Use the above set time'.

At the top of the main panel, there are tabs for '1 GSM group' through '8 GSM group'. A callout bubble points to these tabs with the text 'Tabs for GSM outgoing groups'.

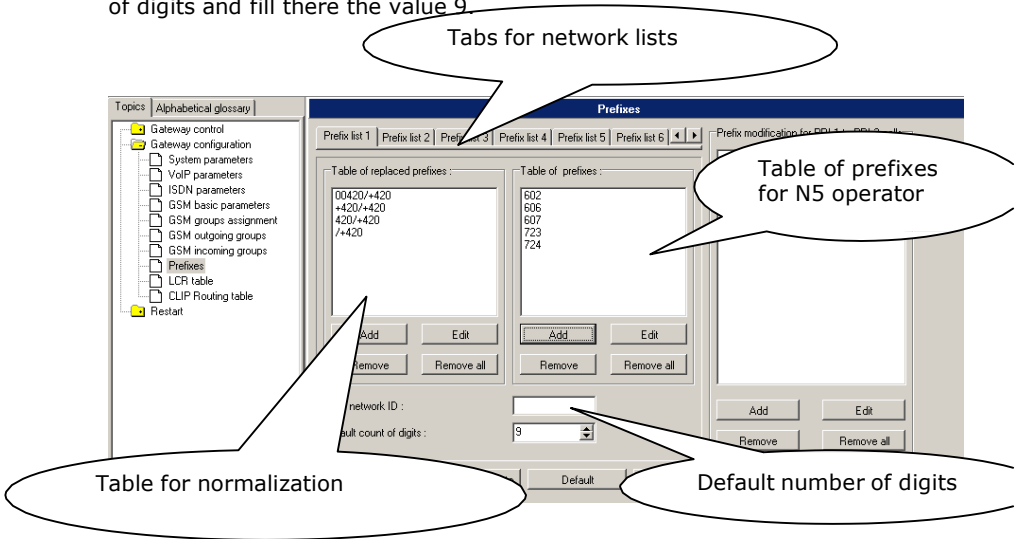
2.2.2 Prefix list configuration

We have to create two network lists, the first one for N5 and the second one for NobiCell.

N5 network list:

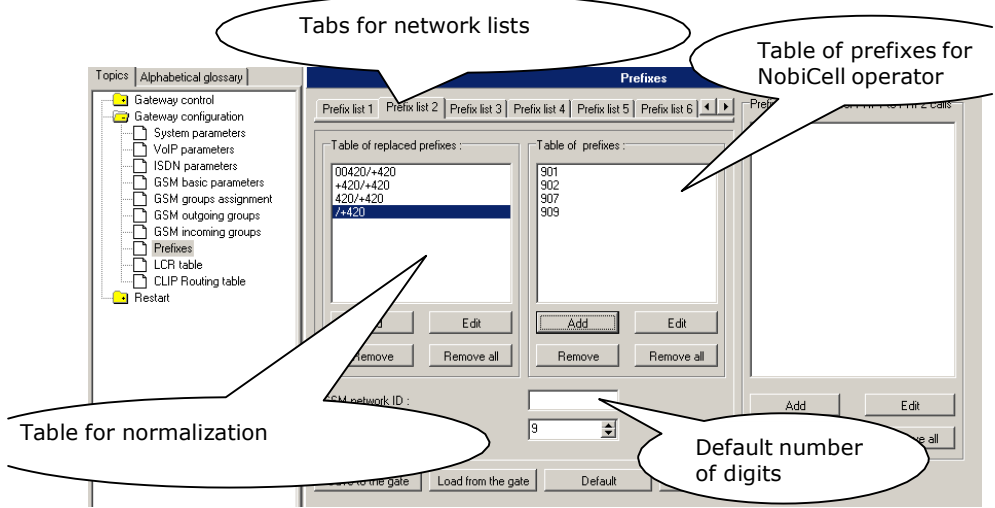
We configure the normalization of Called party number in the Table of replaced prefixes (the number in front of the slash mark is replaced by number behind the slash mark, if there is not any number in front of the slash mark it is equaled to "everything").

We also have to fill in the Table of prefixes with all prefixes of the N5 operator. Because all numbers are 9 digits length, it is not necessary to specify for each prefix, we can use the parameter Default number of digits and fill there the value 9.



NobiCell network list:

We configure the normalization of Called party number in the Table of replaced prefixes (the number in front of the slash mark is replaced by number behind the slash mark, if there is not any number in front of the slash mark it is equaled to "everything"). We also have to fill in the Table of prefixes with all prefixes of the N5 operator. Because all numbers are 9 digits length, it is not necessary to specify for each prefix, we can use the parameter Default number of digits and fill there the value 9.



2.2.3 LCR table configuration

We have to configure lines in the LCR table where we bind together Outgoing GSM groups with Network lists. Click on ADD button (or edit the first line of LCR table) to add the first line and configure it the following way for the N5:



Click on ADD button to add the second line and configure it the following way for the NobiCell:

Add LCR entry

Prefix list : Prefix list 2/

Time limitation of use :

From : 00:00 To : 24:00

Use whole weekend
 Use whole weekend
 Use the time set above

Maximal duration of call : (0 = off) 0

Outgoing destination : GSM_group 2

<None>
<None>
<None>
<None>
<None>

OK Cancel

Now you can see two LCR lines in the LCR table:

LCR table

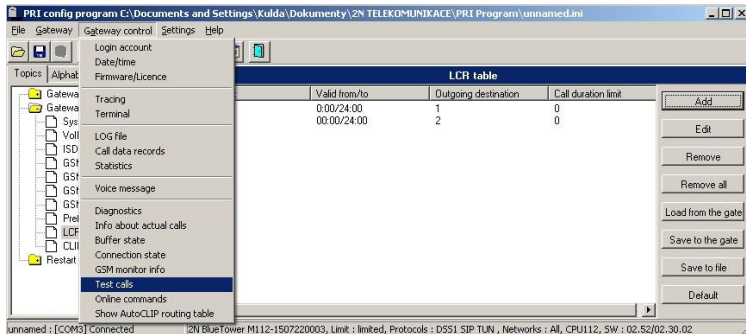
Prefix List	Valid from/to	Outgoing destination	Call duration limit
1/	0:00/24:00	1	0
2/	00:00/24:00	2	0

Buttons: Add, Edit, Remove, Remove all, Load from the gate, Save to the gate, Save to file, Default

unnamed : [COM3] Connected | 2N BlueTower M112-1S07220003, Limit : limited, Protocols : DSS1 SIP TUN , Networks : All, CPU112, SW : 02.52/02.30.02

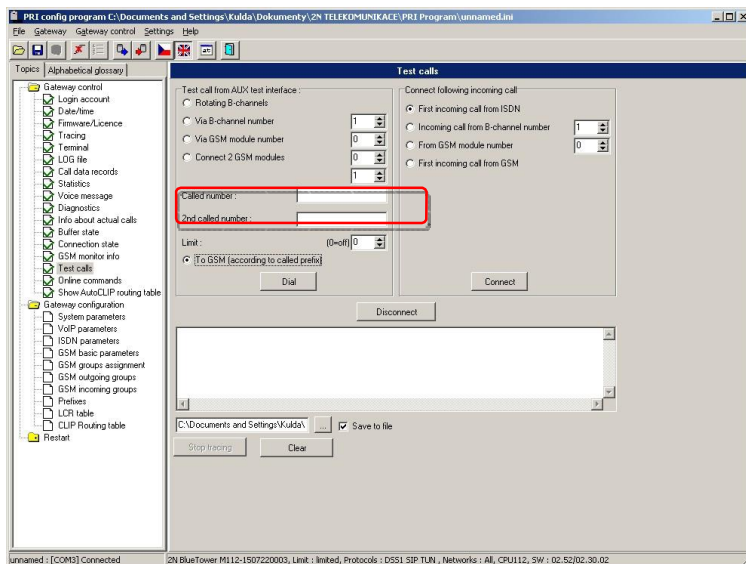
2.2.4 Test call

We can connect the phone handset to the AUX card and make a test call. The menu for test calls we can find under Gateway control:



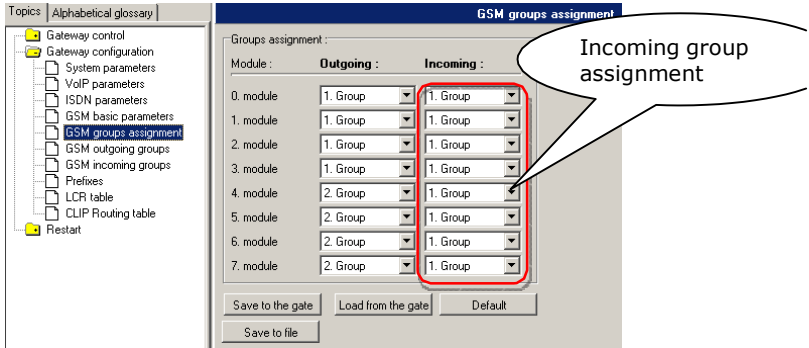
In the window select the option **To GSM (according to the called prefix)**.

To the space called number the write number you want to dial (use the form of the called party number in which StarGate receives it from the PBX). Click on the Dial button. The call will be established to mobile phone number written in the line called number.



3. Incoming calls

For incoming calls you can define 4 groups with the different behavior and assign GSM modules for them. The settings are similar with GSM group assignment for outgoing calls.



In GSM incoming groups you can define the behavior for each GSM incoming group. Choose the mode to Reject, Ignore, or accept incoming calls.

Also, you can specify if call should be connected directly to some extension of connected PBX or if you will allow user to dial over DTMF.

