

VoIP Recorder V2 Setup Guide

V2.10b

Software Requirement for VoIP Recorder V2 (VR2)

Please install WinPcap or Npcap first. VR2 uses WinPCap or Npcap to sniff network traffic.

For Windows XP/2003/Vista/2008/Win7/2008R2/Win8 (x86 and x64) users, you can use WinPcap, but For Windows 10+ users, please download Npcap driver instead.

The WinPcap project has ceased development and is no longer maintained. We recommend using Npcap instead for all Windows version 7+.

WinPcap download and installation guide:

Download link: It is free. https://www.winpcap.org/install/default.htm



Download WinPCap 4.1.3 and install it:



🗑 WinPcap 4.1.3 Setup			
Win Pcap	License Agreement Please review the license terms before installing WinPcap 4.1.3.		
Press Page Down to see the	e rest of the agreement.		
Copyright (c) 1999 - 2005 Copyright (c) 2005 - 2010 Copyright (c) 2010 - 2013 All rights reserved.	NetGroup, Politecnico di Torino (Italy). CACE Technologies, Davis (California). Riverbed Technology, San Francisco (California).		
Redistribution and use in so permitted provided that the	ource and binary forms, with or without modification, are e following conditions are met:		
 Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. Redistributions in binary form must reproduce the above copyright notice, this list of 			
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install WinPcap 4.1.3.			
Nullsoft Install System v2.46 –	< Back I Agree Cancel		



< Back

Finish

Cancel

Npcap download and installation guide: Download link: <u>https://nmap.org/npcap/</u>

	nmap.org/npcap/	☆ \varTheta :
More Site News Advertising About/Contact Site Search Sponsors: The shdesk The shdesk The shdesk	 Loopback Adapter for you. If you are a Wireshark user, choose this adapter to capture, yo same way as other non-loopback adapters. Try it by typing in commands like "ping 127.0 Loopback Packet Injection: Npcap is also able to send loopback packets using the Wins User-level software such as Nping can just send the packets out using Npcap Loopback ANpcap then does the magic of removing the packet's Ethernet header and injecting the pay stack. Libpcap API: Npcap uses the excellent Libpcap library, enabling Windows applications that is also supported on Linux and Mac OS X. While WinPcap was based on LibPcap includes the latest Libpcap release along with improvements that we also contribute back WinPcap compatibility: For applications that don't yet make use of Npcap's advanced fe "WinPcap can coexist alongside WinPcap; applications which only know about WinPcap will applications can choose to use the newer and faster Npcap driver instead. 	u will see all loopback traffic the 0.0.1" (IPv4) or "ping ::1" (IPv6). sock Kernel (WSK) technique. ddapter just like any other adapter. yload into the Windows TCP/IP to use a portable packet capturing ap 1.0.0 from 2009, Npcap upstream to Libpcap. atures, Npcap can be installed in npatibility mode is <u>not</u> selected, 1 continue using that, while other
To celebrate	Unsure whether to use WinPcap or Npcap? Check out our feature comparison and decide for yo	ourself.
10 years of	Downloading and Installing Npcap Free Edition	ı
enabling better customer experiences,	The free version of Npcap may be used (but not externally redistributed) on up to 5 systems (free used on unlimited systems where it is only used with Nmap and/or Wireshark. Simply run the ex source code for each release is available, and developers can build their apps against the SDK. The release are documented in the Npcap Changelog.	ee license details). It may also be xecutable installer. The full The improvements for each
	Npcap 1.00 installer for Windows 7/2008R2, 8/2012, 8,1/2012R2, 10/2016, 2019 (x86 an	id x64)
we have a		
we have a special offer for you!	 Npcap SDK 1.00 (ZIP). Npcap 1.00 debug symbols (ZIP). Npcap 1.00 source code (ZIP). The latest development source is in our Github source repository. Windows XP and earlier are n WinPcap for these versions. 	not supported; you can use

🕞 Npcap 1.00 Setup				
NMAP. ORG	License Agreement Please review the license terms before installing Npcap 1.00.			
Press Page Down to see th	ne rest of the agreement.			
NPCAP COPYRIGHT / END USER LICENSE AGREEMENT				
Npcap is a Windows packet sniffing driver and library and is copyright (c) 2013-2020 by Insecure.Com LLC ("The Nmap Project"). All rights reserved.				
Even though Npcap source code is publicly available for review, it is not open source software and may not be redistributed without special permission from the Nmap Project. The standard version is also limited to installation on five systems. We fund the Npcap project by				
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install Npcap 1.00.				
Nullsoft Install System v2.51	I Agree Cancel			

🕞 Npcap 1.00 Setup	
NMAP. ORG	Installation Options Please review the following options before installing Npcap 1.00
 Legacy loopback sup Restrict Npcap drive Support raw 802.11 Install Npcap in WinF 	oport for Nmap 7.80 and older. Not needed for Wireshark. r's access to Administrators only traffic (and monitor mode) for wireless adapters Pcap API-compatible Mode
Nullsoft Install System v2,51 -	< Back Install Cancel

🕞 Npcap 1.00 Setup		
NMAP. ORG	Installation Complete Setup was completed successfully.	
Completed		
Show details		
Nullsoft Install System v2.51 -	< Back	lext > Cancel



Network Requirement for VoIP Recorder V2 (VR2)

You don't need additional hardware if you only want to record calls for the local computer (using VoIP Recorder V2 to record VoIP software on the same computer).

You must have a network switch that supports bidirectional 'port mirroring'(also called 'port mapping' or the existence of a 'span port'). Most business grade switches do have this feature. Most of Layer 2 Smart or Managed Switch have mirror port(SPAN port) feature.

Home or Small office can choose: TP-LINK TL-SG105E http://www.tp-link.com/en/products/details/cat-41_TL-SG105E.html

Netgear GS105E https://www.youtube.com/watch?v=kCSRgbEMkWs

Or you must have network hub to connect your SIP VoIP devices if you want to record other devices. Why? Because all Ethernet traffic passes through all hub ports, so the PC runs VoIP Recorder V2 can sniff the network and record other devices. See articles: http://ask-leo.com/whats_the_difference_between a hub_a_switch_and_a_router.html http://www.cisco.com/en/US/products/hw/switches/ps708/products_tech_note09186a008_015c612.shtml#support

If you have any questions or problems about network hardware issues, please feel free to contact us by <u>http://www.pcbest.net/contact.php</u>

Typical Networks:



How to install and use the software

- 1. Download and install the VoIP Recorder V2 from PCBest Networks website: <u>http://www.pcbest.net/voip_recorder.php</u>
- 2. Unzip it and run setup.exe:

<u>H</u> elp		
5earch	Po 🏷	lders 🛄 🕶
	×	Name 🔺
		🔂 setup.exe 🕞 VR2Setup.msi

3. Follow the setup dialogs.

😸 VolP Recorder V2	
Welcome to the VoIP Recorder V2 Setup Wizard	
The installer will guide you through the steps required to install VoIP Recorder V2 on	your computer.
WARNING: This computer program is protected by copyright law and international tre Unauthorized duplication or distribution of this program, or any portion of it, may result or criminal penalties, and will be prosecuted to the maximum extent possible under the	eaties. in severe civil e law.
Cancel < Back	<u>N</u> ext >

🛃 VolP Recorder V2	
Select Installation Folder	
The installer will install VoIP Recorder V2 to the following folder.	
To install in this folder, click "Next". To install to a different folder, enter it be	elow or click "Browse".
<u>F</u> older:	
D:\Program Files\PCBest Networks Inc\VoIP Recorder V2\	Browse
	Disk Cost
Install VoIP Recorder V2 for yourself, or for anyone who uses this comput	er:
C Everyone	
• Just me	
Cancel < <u>B</u> ack	Next >





4.

5. From start, choose the application to run:



6. If you see this dialog, please go back to the first part of this doc " Software Requirement for VoIP Recorder V2 (VR2)" to install WinPCap driver.

Error Detected - Missing WinPcap Driver
WinPcap is not installed! Please download it from http://www.winpcap.org/ and install it first.
ОК

7. When first time running VR2, you will have a dialog to ask you which model you want to run VoIP Recorder Version 2.

Running Model
How to run recorder
Run as desktop application
In this model, the recorder is actually this Window application.
Run as Windows service
In this model, the recorder is actually another process which runs as Windows service. This application will work as a client application and try to connect to the service by TCP to get the realtime status.
Server IP: Leave blank for local
Server Port:
Run as manager client
In this model, the recorder is running on another PC/Server. This application works as a client application and try to connect to the server by TCP to get the realtime status.
Server IP: Leave blank for local
Server Port:
ОК

In general, you can run VR2 as a desktop application, just click OK to continue. If you want to run VR2 as a Windows service, please select 'Run as Windows service option'. It will actually run the vr2 service in Windows services. Please see 8.

If you run it as manager client, it will try to connect the VR2 instance on the another machine and show recording status. On remote, you might need to look at the "Access SQL Server from Remote" at the end of this document.

8. You can open Windows services and find the VoIP Recorder V2 service:

🍓 Services (Local)			24.9%		
PCBest Networks VoIP Recorder v2	Name 🛆	Description	Status	Startup Type	Log On As
	Net.Tcp Port Sharing Service	Provides ability to share T		Disabled	Local Service
Start the service	🏶 NetMeeting Remote Desktop Sharing	Enables an authorized use		Manual	Local System
	🏶 Network Access Protection Agent	Allows windows clients to		Manual	Local System
Description:	🏶 Network Connections	Manages objects in the Ne	Started	Manual	Local System
A passive recorder which can record VoIP	🏶 Network DDE	Provides network transpor		Disabled	Local System
calls on the network	🏶 Network DDE DSDM	Manages Dynamic Data Ex		Disabled	Local System
	🏶 Network Location Awareness (NLA)	Collects and stores networ	Started	Manual	Local System
	🏶 Network Provisioning Service	Manages XML configuratio		Manual	Local System
	🖏 NST ToolTipFixer	NST ToolTipFixer is a patc	Started	Automatic	Local System
	NT LM Security Support Provider	Provides security to remot		Manual	Local System
	PCBest Networks VoIP Recorder v2	A passive recorder which c		Manual	Local System

Set the start type to Auto then every time when Windows starts, it will run VR2 automatically.

9. Click Options in Menu first to set.

🔜 Recording Options	
Basic VolP Filters Database Advanced Extra Email License	
Recording Root Folder: C:\temp\VR2	Browse
● .wav ● .mp3 ● .gsm ● .wzp (encoded file)	
Encrypt Audio File	
ALL Log File: c:\temp\vr2\VR2.log	
Manage Port: 1376 Days to keep recording files: 0 0: no clean up. >0: days	
Start recording when application starts	
OK Cancel	

All the options in this dialog will be saved into VR2COnfig.xml config file. Below we will match the GUI item with the one in XML config, so just in case you need to manually change the setting in xml file directly.

10. Items in VR2Config.xml and corresponding GUI.

The red tags marked below are the ones you will have to change according to your system environment.

a. <**Type**>0</**Type**>

For IP Recorder, it is always 0. There is no GUI matching it since it is always 0.

b. <**AudioRootFolder**>c:\temp\vr2</**AudioRootFolder**>

Root folder for saving recording audio files.

Recording Root Folder:	C:\temp\VR2	Browse

c. <AudioFileFormat>0</AudioFileFormat>

0 = default(.wav), 1 = mp3, 2 = gsm

Note: Because VR2 is using third party application to convert wav into mp3 or gsm, changing this option from 0 to others may need extra effort to configure service to make it work.

File Format:				
💿 .wav	🔘 .mp3	🔘 .gsm	🔘 .wzp (encoded file)	

d. <Credential></Credential>

System credential for VR2 service launch third party application(lame.exe or sox.exe), to convert to wav into mp3 or gsm, when AudioFileFormat above is not set to default 0.

no GUI matching this item yet.

e. <Filters></Filters>

Set Filters based on IP, or Call ID. Format: FilterType;Filter1;Filter2;... FilterType 0:IP Address, 1:CallID Sample: 0;192.168.1.10;192.168.1.21 Sample: 1;16135552324;17042223333

Filters - Record only for specific IP, or ID, or MAC address-



f. Excludes

Same format as filters, but exclude explicitly.

Excludes - Exclude specific IP, or ID, or MAC address

```
Format same as Filters above.
```

- g. <LogLevel>4</LogLevel>
 - 0 = disable,
 - 1 = Error only,

2 = Error + Warning,
3 = Error + Warning + Debug,
4 = ALL(Error + Warning + Debug + Info)

Log		
ALL 🗸	Log File:	c:\temp\vr2\VR2.log

h. <**LogFileName**>c:\temp\vr2\VR2.log</**LogFileName**> Set log file name.

Log			
ALL	~	Log File:	c:\temp\vr2\VR2.log

i. <ChannelCount>8</ChannelCount>

Set the channel number to be opened by VR2.

Total Channels:	4
-----------------	---

j. <LicKey></LicKey>

License key for VR2. You can run trial version with no key, but the recording will be 30 seconds only for each call.

License Key:

k. <LicMAC></LicMAC>

The MAC address that you want the license key to be associated with. You don't have to set it. If it is null, VR2 will automatically choose one. You can use "ipconfig -all" in command Window to list all network interfaces. Set it to USB driver letter if you want to use a USB key as a dongle. Like e:

License MAC:	In format: 2F-D3-AC-82-56-7F
--------------	------------------------------

1. <ManagerPort>1376</ManagerPort>

This port is for VoIP Recorder V2 Management Client to connect.
Manage Port: 1376

m. <KeepRecordMaxDays>0</KeepRecordMaxDays>

How many days to keep the record in root folder. 0: no clean up. >0: days Days to keep recording files: 0 0: no clean up. >0: days

n. **<EnableRTSrv>**0**</EnableRTSrv>**

If enable realtime SIP server for listening conversation Set it to 1 to enable it Then during VR2 is running, you can use SIP phone to call <sip:1@local-ip> to listen to conversation on channel 0 Please edit file "VR2RTSrv.ini" in the VoIP Recorder folder to change the options for realtime listening SIP server.

📃 Enable Realtime Listening SIP Server. 🛛

o. **Database**(Please go the end of this doc for database set up)

<Database>

<Enabled>false</Enabled>

Enable saving data into MS SQL Server
<!--
DBType: 0 = MS SQL 2005 Express, 1 = MS SQL 2005, 2 = MS SQL 2000
-->

<DBType>0</DBType>

Database Type: MS SQL Express(2005, 2008, 2012,...)

<!--

DBServer: blank = local, otherwise give the server name or ip

-->

<DBServer></DBServer>

Database Server: blank = local, otherwise give the server name or ip

<!-- Please create a database as the following name. -->

<!-- NOTE: you do NOT need to create any table for your DB. -->

<!-- VR2 engine will automatically create tables once it can connect to DB. --

<DBName>VoIPRecorder</DBName>

| Database Name: | VolPRecorder | you do NOT need to create any table for your DB.
Recorder engine will automatically create tables once it can connect to DB first time. |
|----------------|--------------|--|
| | | |

<!--

-->

>

0 = SQL Authentication, 1 = Windows Authentication

<AuthType>1</AuthType>

Authentication Type:	Windows Authenticat	ion	*					
</td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
if AuthType is SQ	L Authentication	n, then plea	ase	gi	ve th	e Use	erNam	e and
Password								
for connecting SQ	L server.							
>								
<user1< td=""><td>Name><td>ame></td><td></td><td></td><td></td><td></td><td></td><td></td></td></user1<>	Name> <td>ame></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	ame>						

User Name:

<Password></Password>

Password:

¥

<CallLogTableName>calls</CallLogTableName>

<ChannelStatusTableName>channels</ChannelStatusTableName>

<UpdateChannelStatusToDB>true</UpdateChannelStatusToDB>

🔽 Update channel's status to database

</Database>

p. <Protocol>SIP</Protocol> Can be one of these: SIP, SCCP or SKINNY, RTP, H323, IAX2, UNISTIM, MGCP Protocol: SIP

q. <**Port**></**Port**>

Specify port of VoIP protocol to listen on. You don't have to set this value if your VoIP device is using default standard port.

i orc

r. <**NIC**>0</**NIC**>

Please run ListNetworks.exe to get the index of the NIC on which you want to monitor. Or in the GUI, you can choose from list:

If you set it to a filename of Wireshark trace .pcap file, VR2 will use this Wireshark trace file as input instead of a NIC in computer, and output all VoIP calls in it.

s. <PromiscuousMode></ PromiscuousMode >

Promiscuous Mode

Default PromiscuousMode is 1, means enabled. Few of network drivers don't support this feature. So you will need to uncheck this option(set it to 0 in XML) in order to make recording work.

t. **<RTP>**

Additional settings for RTP protocol recording. Usually when you are not sure what signal protocol your VoIP devices are using, you choose RTP as most

VoIP devices use RTP for audio stream. In this case, you need to specify the IP PBX's IP addresses, and IP Phone's identity.

```
<\!\!\!\! -- If it is RTP recording, please specify the PBX address, and Extension's address -->
```

```
<!-- Sample: 192.168.1.101;192.168.1.102 -->
<PBXAddr>192.168.1.214</PBXAddr>
```

C BT	P Record	ing Opt	ions
------	----------	---------	------

PBX IP Address:	192.168.1.214
	If Protocol is set to RTP recording, please specify the PBX address. Sample: 192.168.1.101;192.168.1.102

- <!-- PBX Extension list for RTP recording -->
- <!-- FORMAT: Name,number,ipaddress;name,number,ipaddress -->
- <!-- Sample: Mike,101,192.168.1.102;Jenny,102,192.168.1.103 -->

<ExtenAddr>Mike,101,192.168.1.41</ExtenAddr>

Extension l	ist: Mike,101,192.168.1.41					
	FORMAT: Name, number,	ipaddress;name,number,ipaddress				
	Sample: Mike,101,192.16	8.1.102;Jenny,102,192.168.1.103				
u.	IgnorePossibleSame	Call>talse				
	Set it to true if you see	duplicated calls are recorded.				
	📃 Ignore Possible Same Ca	II. Check it if you see duplicated calls are recorded.				
v.	< Recording >true <b Rec	cording>				
	Set it to false if you don	It want to create way files for calls.				
	Recording call. Uncheck i	t if you don't want to create wav files for calls.				
W.	<noaudioseconds>0<</noaudioseconds>	/NoAudioSeconds>				
	Default it is 0, means disabled. If you have seen channels not disconnected					
	and stayed forever, it w	ill be helpful to enable this option.				
	You can set it to 5 for 5	seconds, or 3 for 3 seconds.				
	No Audio Seconds: 0	Default it is 0, means disabled. If you have seen channels not disconnected forever, it will be beloful to enable this option. You can set it to 5 for 5 second				
		seconds.				
х.	RecordPauseDTMFKe	ý				
	You can define a key, s	o softphone user can press this key to stop recording				
	for unwanted audio.					
	Key can be '*', '#', '0', '1	','2','9'.				
	Pause Options					
	DTMF Keys:	set a key string for softphone to press, and pause recording. press the same key a resume. For example, *, or 1234.				
	Pause Settings: 0	0 = not insert, no auto-pause(automatically pause recording when call starts). 1 = insert blank/silence audio in way for paused period. 2 = auto-pause + pot insert blank (diagona audio in way for paused period.				

3 = auto-pause + insert blank/silence audio in way for paused period.

y. UsePacketTime

If use time on network package rather than the computer local time.

z. Email settings

	Basic VolP Filters Database Advanced Extra Email License								
	⊂ SMTP Settings								
	SMTP Server: SMTP Port 25								
	Email Address: Email Password:								
	✓ Enable SSL .								
	Notify Email Addresses: Set email addresses to be notified for system fatal errors. Format: email1:email2: Sample: abc@gmail.com;def@hotmail.com								
	OK Cancel								
	IDHeadersInXMI >								
Foz Av	a example: From;To;P-Asserted-Identity;P-Charging-Vector								
Ch Lai	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage:Refer-To								
Ch Laı Sif	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To								
Ch Lai Sii So Fo Av Fro	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To P Headers In XML: Metimes you need to record extra SIP headers into XML, so you can set the extra headers here. K example: From;To;P-Asserted-Identity;P-Charging-Vector ailable Headers Name: m;To;Call-Id;Contact;P-Asserted-Identity;P-Charging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept-Language;Refer- o								
Ch Lai Sil So Fo Av Fro r-T	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To P Headers In XML: metimes you need to record extra SIP headers into XML, so you can set the extra headers here. example: From;To;P-Asserted-Identity;P-Charging-Vector ailable Headers Name: m;To;Call-Id;Contact;P-Asserted-Identity;P-Charging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept-Language;Refo D								
Ch Lai Sil So Fo Av Fro r-T b. Ext	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To P Headers In XML: metimes you need to record extra SIP headers into XML, so you can set the extra headers here. example: From;To;P-Asserted-Identity;P-Charging-Vector ailable Headers Name: m;To;Call-Id;Contact;P-Asserted-Identity;P-Charging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept-Language;Refer P enPattern I recorder how extension number looks like. * means any string. ? means								
Ch Lai Sii So Fo Av Fro r-T b. Ext Tel any	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To P Headers In XML: metimes you need to record extra SIP headers into XML, so you can set the extra headers here. example: From;To;P-Asserted-Identity;P-Charging-Vector ailable Headers Name: m;To;Call-Id;Contact;P-Asserted-Identity;P-Charging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept-Language;Refer enPattern I recorder how extension number looks like. * means any string. ? means one character. Sample: 1??? means extension number starts as 1, and four								
Ch Laı Sıl So Fo Av Fro r-T Tel any dig	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To P Headers In XML: metimes you need to record extra SIP headers into XML, so you can set the extra headers here. example: From;To;P-Asserted-Identity;P-Charging-Vector ailable Headers Name: m;To;Call-Id;Contact;P-Asserted-Identity;P-Charging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept-Language;Ref p enPattern I recorder how extension number looks like. * means any string. ? means to one character. Sample: 1??? means extension number starts as 1, and four its/characters.								
Ch Lai Sii So Fo Av Fr Tel any dig	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To P Headers In XML: metimes you need to record extra SIP headers into XML, so you can set the extra headers here. example: From;To;P-Asserted-Identity;P-Charging-Vector ailable Headers Name: m;To;Call-Id;Contact;P-Asserted-Identity;P-Charging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept-Language;Ref enPattern I recorder how extension number looks like. * means any string. ? means to one character. Sample: 1??? means extension number starts as 1, and four its/characters. ten Pattern: Tell recorder how extension number looks like. * means any string. ? means any one character, Sample: 1??? means extension number starts as 1, and four digits/characters.								
Ch Laı Sı So Av Fro Tel any dig c. IDI Set DB	ailable Headers Name: From;To;Call-Id;Contact;P-Asserted-Identity;P- arging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept- aguage;Refer-To P Headers In XML: metimes you need to record extra SIP headers into XML, so you can set the extra headers here. example: From;To;P-Asserted-Identity;P-Charging-Vector ailable Headers Name: m;To;Call-Id;Contact;P-Asserted-Identity;P-Charging-Vector;Remote-Party-ID;Reason;Date;User-Agent;Accept-Language;Ref enPattern I recorder how extension number looks like. * means any string. ? means one character. Sample: 1??? means extension number starts as 1, and four its/characters. ten Pattern: Tell recorder how extension number looks like. * means any string. ? means any one character. Sample: 1??? means extension number starts as 1, and four digits/characters. Maps ID mapping rule if you want to replace specific ID before it is writen into table								

ID Maps:	

Set ID mapping rule if you want to replace specific ID before it is writen into DB table. Format: org-str1,replace-str1;org-str2,replace-str2; Sample: exten_1234,Mike;1100,Bob

dd. RecordCallLegs

Set it to true if you want to create a wav file for each audio leg of the call.

Create a way file for each audio leg of the call.

ee. XMLCallInfo

Set it to false if you don't want to create XML call info file.

- ff. RecordOnlyAfterAnswer
 Record only after call is answered.
- gg. EncryptAudioFile 0 = disabled, 1 = enabled Encrypt Audio File

11. Now you can start recording.



12. Stop recording when need.



13. VR2 Main GUI:

🛐 PCBe:	st Networks VoIP	Recorder V2.10)								- X
File	Options Searce	ch									
● ● 9 1 k 2 k 3 k * 4 k	Status de de de de	Init Time	Connect Time	Seconds	CallerIP	CallerID	CalleelP	calleeID		Channel Info: Total Channels: Available Channels: Offline Channels: Channel In Use: Calls Info: Total Calls: Connected Calls: Failed Calls:	
•									•		
Status: R	ecording]	,	,

You have each channel's status. Call reports at right. And 'Search' in menu to perform the database call record search.

14. Make a VoIP call, you will see the call on screen in real time:

S PCB	est Networks Vol	IP Recorder V2.10			Concession of the local division of the loca	-	-				X
File	Options Sea	rch									
•											
	Status	Init Time	Connect Time	Seconds	CallerIP	CallerID	CalleeIP	calleeID	U	Channel Info:	
▶ 1	Connected	2015-06-14 23:5	2015-06-14 23:5	13	192.168.1.112:2	"Snom320" <sip:< th=""><th>64.26.133.178:5</th><th><sip:8888@64.2< th=""><th>20</th><th>Total Channels:</th><th>4</th></sip:8888@64.2<></th></sip:<>	64.26.133.178:5	<sip:8888@64.2< th=""><th>20</th><th>Total Channels:</th><th>4</th></sip:8888@64.2<>	20	Total Channels:	4
2	Connected	2015-06-14 23:5	2015-06-14 23:5	11	192.168.1.113:5	"LinksysSPA921	64.26.133.178:5	<sip:8888@64.2< th=""><th>20</th><th></th><th></th></sip:8888@64.2<>	20		
3	Idle									Available Channels:	4
* 4	Idle									Offline Channels:	0
										Channel In Use:	2
										Calla lafa:	
										Calls Into.	-
										Total Calls:	2
										Connected Calls:	2
										Failed Calls:	0
4 III >											
tatus:	Recording (NOT	Licensed Software. C	NLY record first 30	seconds of each	n call!)						

15. Real-time monitoring and listening to the recording conversation

From V2.01, ManageClient has integrated PCBest SIP softphone in order to listen the recording conversation in real-time.

In order to use this feature, you need to enable this tag in VR2Config.xml:

<EnableRTSrv><mark>1</mark></EnableRTSrv>

Then please re-start the VR2 service.

Restart ManagerClient to connect to the VR2 service.

You will see the real-time listening panel at right:

Real Time Listener							
Channel:	1	•	Listen				
Idle			Options				

Click options to give the recorder machine's IP and SIP port it is set in VR2RTSrv.ini.

Manager Clie	nt GUI	VR2RTSrv.ini
Realtime Listener Options		#gtsrv.sip.ip.address =
VoIP Recorder IP Address:	192.168.1.107	#SIP Port, default 5060
VoIP Recorder RT SIP Port:	5060	gtsrv.sip.ip.port = 5060
ОК	Cencel	

16. Get into your recording folder, then find the recording files for the call:

20111222125246-0000-WNFHM4.wav	
P 20111222125246-0000-WNFHM4.xml	

There are two files for one call. They both have same name, but with different file extensions. One file is audio wav file. Another one is XML file to record the call's additional information.

17. XML information file format for a recorded call(sample)

<?xml version="1.0" encoding="ISO-8859-1" ?>

```
<CALL>
```

```
<ID>20111222125246-0000-WNFHM4</ID>
<SIP-ID/>
<SUCCEED>true</SUCCEED>
<CALLER>
<IPADDR>192.168.1.233:2758</IPADDR>
<NAME>PBX</NAME>
<AUDIO>G711(ulaw)</AUDIO>
</CALLER>
```

```
<IPADDR>192.168.1.41:2048</IPADDR>
<NAME>Mike&lt;sip:101@192.168.1.41&gt;</NAME>
```

```
<AUDIO>G711(ulaw)</AUDIO>
</CALLEE>
```

```
<TIME>
<INIT>2011-12-25 11:18:31</INIT>
<BEGIN>2011-12-25 11:18:31</BEGIN>
<END>2011-12-25 11:19:09</END>
<DURATION>38</DURATION>
</TIME>
```

```
<RECORD>
<ROOT>c:\temp\vr2</ROOT>
<PATH>c:\temp\vr2\2011\12\22\20111222125246-0000-WNFHM4.wav</PATH>
<FILENUM>1</FILENUM>
</RECORD>
```

</CALL>

ID: Unique id for this call.
SIP-ID: Unique SIP CALLID for this call. This id is in SIP message CALL-ID header for mark SIP calls.
SUCCEED: true – the call was established. false – the call couldn't get through.
Caller: caller IP address and name
Callee: callee IP address and name
Time:

Init: Call start time
Begin: Call connected(begin) time (if call was not successful, this field is null)
End: Call end time.

Duration: the call duration in seconds.
Record: recording root path and file.

VoIP Recorder V2 Database Setup

The following steps are for setting up database for VR2. VR2 supports MS SQL Server 2005/2008/2008R2/2012. Assuming we are using SQL Server 2012 Express.

1. Download and install SQL Server:

Microsoft SQL Server 2005 Express Edition Service Pack 4: http://www.microsoft.com/en-ca/download/details.aspx?id=184

Please download SQLEXPR_TOOLKIT.EXE(224.6MB) or MBSQLEXPR_ADV.EXE(254.6 MB).

Microsoft® SQL Server® 2008 Express with Tools: http://www.microsoft.com/en-ca/download/details.aspx?id=22973

Microsoft SQL Server 2008 R2 RTM - Express with Management Tools:

http://www.microsoft.com/en-ca/download/details.aspx?id=23650

Microsoft® SQL Server® 2012 Express:

http://www.microsoft.com/en-ca/download/details.aspx?id=29062

32bit OS download one of the following:

ENU\x86\SQLEXPRADV_x86_ENU.exe 1.3 GB Download ENU\x86\SQLEXPRWT_x86_ENU.exe 706.1 MB Download

64bit OS download one of the following:

ENU\x64\SQLEXPRADV_x64_ENU.exe 1.3 GB Download ENU\x64\SQLEXPRWT_x64_ENU.exe 669.9 MB

Assume we use SQL Server 2012 Express here. It is free to download from website. We download SQL Server 2012 with tool, which has management studio. Right click on SQLEXPRWT_x86_ENU.exe for 32bit Windows or SQLEXPRWT_x64_ENU.exe for 64bit Windows, and "Run as administrator":

🎍 · · · · · · · · · · · ·		Open
	۲	Run as administrator
a	_	Troubleshoot compatibility
gtsimplephone		
ዿ jre-7u11-windows-i58	К.	Scan for viruses
Microsoft Visual Studi		Add to archive
SQLEXPR_x86_ENU		Add to "SQLEXPRWT_x86_ENU-2012.rar"
SQLEXPR_x86_ENU-sp	۲	Compress and email
SQLEXPRWT_x86_ENU	۱	Compress to "SQLEXPRWT_x86_ENU-2012.rar" and email
SQLEXPRWT_x86_ENU		Extract files
SOI ManagementStud		Extract Here
		Extract to SOLEXPRWT x86 ENU-2012\

Choose new SQL server stand-alone installation:



Of course, if you already have 2005, 2008, or 2008R2, you can upgrade it to 2012. Click next:

1 SQL Server 2012 Setup	and a local difference	- D - X							
Setup Support Rules Setup Support Rules identify problems that might occur when you install SQL Server Setup support files. Failures must be corrected before Setup can continue.									
Setup Support Rules License Terms Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress Complete	Operation completed. Passed: 7. Failed 0. Warning 0. Skipped 0. Show details >> View detailed report	Re-run							
	< Back Next > Cancel	Help							

Accept license terms, and clieck Next:

📸 SQL Server 2012 Setup	
License Terms To install SQL Server 2012, you	u must accept the Microsoft Software License Terms.
Setup Support Rules License Terms	MICROSOFT SOFTWARE LICENSE TERMS
Feature Selection	MICROSOFT SQL SERVER 2012 EXPRESS
Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress	These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft updates, supplements, Internet-based services, and
Complete	Copy Print
	 I accept the license terms. Send feature usage data to Microsoft. Feature usage data includes information about your hardware configuration and how you use SQL Server and its components. See the Microsoft SQL Server 2012 Privacy Statement for more information.
	< Back Next > Cancel Help

📸 SQL Server 2012 Setup	1000 T	
Feature Selection Select the Express features to in	istall.	
Setup Support Rules License Terms Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress Complete	Features: Instance Features	Feature description: The configuration and operation of each instance feature of a SQL Server instance is isolated from other SQL Server instances. SQL Server instances can operate side-by-side on the same computer. Prerequisites for selected features: Already installed: Microsoft .NET Framework 4.0 Windows PowerShell 2.0 Microsoft .NET Framework 3.5 To be installed from media: Microsoft Visual Studio 2010 Shell
	Select All Unselect All Shared feature directory: C:\Program Files\Microsoft < Back	SQL Server\ Next > Cancel Help

📸 SQL Server 2012 Setup					
Instance Configuration Specify the name and instance	1 e ID for the instance of SQL	Server. Instance	ID becomes part of t	he installation path.	
Setup Support Rules License Terms Feature Selection	 Default instance Named instance: 	SQLEXPRESS			
Installation Rules Instance Configuration Disk Space Requirements Server Configuration	Instance ID: Instance root directory:	SQLEXPRESS C:\Program File	es\Microsoft SQL Sen	ver\	
Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress	SQL Server directory: Installed instances:	C:\Program File	s\Microsoft SQL Serv	er\MSSQL11.SQLEXPR	ESS
Complete	Instance Name	Instance ID	Features	Edition	Version
			< Back	Next > Can	cel Help

SQL Server 2012 Setup	0000				
Server Configuration					
Specify the service accounts and	d collation configuration.				X
Setup Support Rules	Service Accounts Collation				
License Terms Feature Selection	Microsoft recommends that you	use a separate account for each	SQL Server serv	ice.	
Installation Rules	Service	Account Name	Password	Startup Type	e
Instance Configuration	SQL Server Database Engine	NT Service\MSSQL\$SQL		Automatic	-
Disk Space Requirements	SQL Server Browser	NT AUTHORITY\LOCAL		Disabled	•
Server Configuration					
Database Engine Configuration					
Error Reporting					
Installation Configuration Rules					
Installation Progress					
Complete					
		< Back Next	> Car	cel He	elp

Choose Mixed Mode, and set password for account sa. NOTE: please write down your password in paper for later use.

📸 SQL Server 2012 Setup				
Database Engine Configuration Specify Database Engine authentication security mode, administrators and data directories.				
Setup Support Rules License Terms Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress Complete	Server Configuration Data Directories User Instances FILESTREAM Specify the authentication mode and administrators for the Database Engine. Authentication Mode Windows authentication mode Windows authentication mode Windows authentication and Windows authentication) Specify the password for the SQL Server system administrator (sa) account. Enter password: Confirm password: Specify SQL Server administrators Specify SQL Server administrators			
	Add Current User Add Remove < Back Next > Cancel			

📸 SQL Server 2012 Setup	
Error Reporting Help Microsoft improve SQL Se	erver features and services.
Setup Support Rules License Terms Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress Complete	Specify the information that you would like to automatically send to Microsoft to improve future releases of SQL Server. These settings are optional. Microsoft treats this information as confidential. Microsoft may provide updates through Microsoft Update to modify feature usage data. These updates might be downloaded and installed on your machine automatically, depending on your Automatic Update settings. See the Microsoft SQL Server 2012 Privacy Statement for more information. Read more about Microsoft Update and Automatic Update. Send Windows and SQL Server Error Reports to Microsoft or your corporate report server. This setting only applies to services that run without user interaction.
	< Back Next > Cancel Help

📸 SQL Server 2012 Setup				
Installation Progress				
Setup Support Rules License Terms Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Error Reporting Installation Configuration Rules Installation Progress Complete	Install_VSShell_Cpu32_Action :	ProcessComponents. Upo	dating component registration	
			Next > Cancel	Help

Installation Complete:

📸 SQL Server 2012 Setup	anting \$2. Second \$5. ontarios			
Complete Your SQL Server 2012 installation	on completed successfully with product up	dates.		
Setup Support Rules License Terms	Information about the Setup operation o	or possible next steps:		
Feature Selection	Feature	Status		
Installation Rules	🖉 Management Tools - Basic	Succeeded		
Instance Configuration	Database Engine Services	Succeeded		
Instance Configuration	SQL Server Replication	Succeeded		
Disk Space Requirements	SQL Browser	Succeeded		
Server Configuration	SQL Writer	Succeeded		
Database Engine Configuration				
Error Reporting				
Installation Configuration Rules	Details:			
Installation Progress	Viewing Product Documentation	for SQL Server	A	
Complete	The wing Product Documentation		E	
	Only the components that you use to view and manage the documentation for SQL Server have been installed. By default, the Help Viewer component uses the online library. After installing SQL Server, you can use the Help Library Manager component to download documentation to your local computer. For more information, see <u>Use Microsoft Books Online for SQL Server</u> < <u>http://go.microsoft.com/fwlink/?LinklD=224683></u> . Summary log file has been saved to the following location:			
	C:\Program Files\Microsoft SQL Server\1 PCW7_20130422_172129.txt	10\Setup Bootstrap\Log\20130422 172	2129\Summary Yonge-	
			Close Help	

Recycle Bin Adobe		Open	
Keader XI	0	Run as administrator	
		Troubleshoot compatibility	
	К	Scan for viruses	
Google		Open file location	
Chrome	۱	Add to archive	
	۱	Add to "Ssms.rar"	
	۱	Compress and email	
	۱	Compress to "Ssms.rar" and email	
		Pin to Taskbar	
Kasnershy		Pin to Start Menu	
Kaspersky Internet Security 2013			
Maintenance		Restore previous versions	
Microsoft Silverlight		Send to	
Microsoft Silverlight 3 SDK			
Microsoft Silverlight 4 SDK		Cut	
Microsoft Silverlight 5 SDK		Сору	
Microsoft SQL Server 2008		Delete	
Microsoft SQL Server 2012	~		
Download Microsoft SQL Server Co	1	Rename	
🔄 Import and Export Data (32-bit)		Properties	
🧏 SQL Server Management Studio			
🍌 Configuration Tools		Computer	
Integration Services		comparei	

Run "SQL Server Management Studio":

You can use "Windows Authentication" here, and click Next,

🚽 Connect to Server	
SQL Serve	er 2012
Server type:	Database Engine 👻
Server name:	YONGE-PCW7\SQLEXPRESS
Authentication:	Windows Authentication
User name:	Yonge-PCW7\Yonge
Password:	
	Remember password
Connect	Cancel Help Options >>

Or use SQL Authentication, then give username sa, password whatever you set when installing SQL server.

🛃 Connect to Server		\mathbf{X}
SQL Serve	Windows Se 1.2005	erver System
Server type: Server name:	Database Engine PCBN-2DUO\SQLEXPRESS	 ✓
Authentication: 🤇	SQL Server Authentication	~
Login:	sa	~
Password: 🤇	Remember password	
Connect	Cancel Help O	ptions >>

This is the item **AuthType** in VR2Config.xml.

AuthType = 0 (SQL Server Authentication) AuthType = 1(Windows Authentication)

```
<AuthType>0</AuthType>
<UserName>sa</UserName>
<Password>xxxxxx</Password>
Or
```

<**AuthType**>1</**AuthType**> <UserName></UserName> <Password></Password>

Right click on "Database", then choose "New Database":



 Input database name. Here we set it as "VoIPRecorder". This name should be the same you set in VR2Config.xml: <DBName>VoIPRecorder</DBName>



- Click "ok", you will get:

 PCW7\SQLEXPRESS (SQL Server 9.0.5000 PCW7\Yor

 Databases

 System Databases

 System Databases

 PCW7\SQLEXPRESS\Databases

 VoIPRecorder
- Then you can enable the Database section in VR2Config.xml to allow VR2 service directly save call records into SQL Server.

<Database>

<**Enabled**>true</**Enabled**> <DBType>0</DBType> <DBServer></DBServer> <DBName><mark>VoIPRecorder</mark></DBName> <AuthType>1</AuthType> <UserName></UserName> <Password></Password>

- 5. NOTE: you don't need to create tables for VR2. It will automatically create two tables(calls and channels):
 - VoIPRecorder
 Database Diagrams
 Tables
 Tables
 System Tables
 dbo.calls
 dbo.channels

You can develop your own application on these two tables.

6. Restart VR2 Service then it will save recorded call info into database.

Access SQL Server from Remote

In order to access the DB from remote tool, you will need to enable 'Name Pipes', 'TCP/IP', and 'VIA' in SQL Server Network Configuration --> Protocols for SQLEXPRESS:



Hopefully this document has covered everything about PCBest Networks VoIP Recorder V2. We are trying to keep this guide brief and helpful. Please send your questions to <u>support@pcbest.net</u> if you do have any. Thank you for trying our software.

Setup Packet Filter

Sometimes you might need to set a filter in the driver to only look at the specific packets because forwarding the whole network's traffic into one port leads to a lot for VoIP Recorder to process.

Create a file named 'pcap_filter.txt' and put it under same folder of VoIP recorder's exe and dll files.

You can refer to two samples over there already: pcap_filter_rtp_only.txt and pcap_filter_sip_rtp.txt.

Also refer to the following links about how to set filters: <u>http://www.tcpdump.org/manpages/pcap-filter.7.html</u> <u>http://wiki.wireshark.org/CaptureFilters</u> <u>http://docs.nimsoft.com/prodhelp/en_US/Probes/Catalog/net_traffic/1.3/index.htm?toc.ht</u> <u>m?1925170.html</u>