

## **PCBest Networks VOIP Recorder**

#### V1.196

#### **Software Requirement for PCBest VOIP Recorder**

Please install WinPCap first. VOIP Recorder uses WinPCap to sniff network traffic. Download link: It is free. http://www.winpcap.org/install/default.htm

#### Network requirement for PCBest VOIP Recorder

You don't need additional hardware if you only want to record calls for the local computer(using VoIPRecorder to record SIP 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. 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 VOIPRecorder can sniff the network and record other devices.

See articles:

http://kbserver.netgear.com/kb\_web\_files/n101527.asp

http://ask-leo.com/whats\_the\_difference\_between\_a\_hub\_a\_switch\_and\_a\_router.html http://www.duxcw.com/faq/network/hubsw.htm

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/contactus.htm</u>

## **Typical networks:**



#### How to use the software

- 1. Install the msi file which is downloaded from pcbest site.
- 2. Launch the VoipRecorder from Start\All Programers\PCBest VoIP Recorder

| 💼 PCBest VOIP Recorder   | •                    | 🥵 VOIPReco                   | rder   |  |
|--------------------------|----------------------|------------------------------|--------|--|
| 🛅 OkeySystems-SMS        | 📩 VoIPRecor          | 🖞 VoIPRecorder Setup Mannual |        |  |
| 3. Click "Start Recordin | ıg"                  |                              |        |  |
| DCBest Network VOIP      | Recorder(ver. 1.116) |                              |        |  |
| Start Recording          | Stop Recording       |                              |        |  |
| From                     | Caller               | То                           | Callee |  |
|                          |                      |                              |        |  |

4. In options dialog, set your configuration.

| Recording Options   |
|---|
| NIC: \Device\NPF_{044F652B-C059-4FD4-B855-83B486440ABC}(Realtek RTL8169/8110 Family Gigabit Ethernet N  |
| Monitor Channels: 20 License:   |
| Recording Root Folder: C:\PCBest Browse   |
| Clean up files older than: 60 days in recording folder. (0 means never remove files)  |
| Filter  Filter  Filter will make the recording efficient.  C By IP Address  C By Exten ID   |
| Specify the IP addresses or Exten ID of devices you want to record below.   |
| Add   |
| Remove  |
|   |
| Log Level: 0 = Disabled  Audio Disable Recording Max Length: 30 minutes  Save audio into mp3 files  |
| Enable Avaya CDR listener to correct SIP trunk id   |
| Listen Port:         Advanced Settings         Enable         Options   |
| Samsung PABX CDR  |
| Ignore possible same call. (In some network cases, one call may have two legs. Enabling this option will let recorder try to figure out if two legs are the same call by checking if two legs have same caller and callee id) Discontinue recording after 0 seconds no audio received.(Default value is 0, which means this feature is not enabled) |
| Real Time Audio Listening Server  |
| OK  |

**NIC:** The network card you want to monitor the traffic. The VOIP recorder **do NOT** support wireless network card now.

**Monitor Channels:** How many calls you want to monitor simultaneously. You can open as many as channel you want, but your license has to match your channel number.

**License:** Your license key. You can leave it blank if you don't have a license key, then the software will be running as free version model. *The free version allows your view the real-time traffic of calls, and record calls for only 30 seconds.* 

**License Link to**: The NIC MAC address you want to choose to link with your license key. If you don't know which one, you can just leave it to blank, and recorder will automatically choose one for you.

**Recording root folder:** Specify a root folder to save recording wav files. The call info xml file will be saved into this folder, and wav files will be placed at the subfolder of the root folder, with the name of current date.

**Clean up files older than:** Set how many days you want to keep the recording wav file and folders. If you set it to 0, then the recorder will not do any clean-up jobs.

**Filter:** Enable filter by specify the IP address of the device, or the extension(sip account username) of the device. This will make the VoIP recorder works more efficient because it can ignore some traffics that are not interested at early stage, or ignore some calls that we don't need.

**Log:** If enable log. Only if you have problem, you open the log, and make a test, then you send back with log for analyzing. The log file is saved in c:\, named as c:\voiprecorder.txt.

**Wav Length:** specify the max length of wav you want it to be. Once the wav file reach the max length, sound will be saved into next wav file. For example, the first wav file name is ABC.wav, then the second is ABC-1.wav. Then third will be ABC-2.wav, and so on.

**Save audio to mp3:** check it if you want to convert the wav file into mp3 file after the call is done.

**H323 or RTP Based Recording:** Enable this option will let you record other RTP based VOIP calls rather than SIP. You can specify the extensions and IP addresses in options sub-dialog. **Please be noted**: If you enable this option, the VoIP Recorder will **NOT** parse and record SIP calls.

Please give your settings just like the following picture.

| H323 Pbx and Extensions  |   |
|--|---|
| H323 PBX IP Address: 192.168.1.10<br>Extensions:<br>192.168.1.21 101 Emily<br>192.168.1.22 102 Yonge | Add Extension         Name       Bob         Number       103         IP Addr       192.168.1.23         Add         Delete |
| ОК   | Cancel  |

Also, in RTP recording model, only G711u, G711a, GSM and G729 calls can be recorded. **Enable Avaya CDR listener to correct SIP trunk ID:** this is a feature for avaya SIP trunk. If you record on avaya SIP trunk, and want to capture avaya H323 phones traffic. This feature will help you replace the SIP trunk id by real caller or callee id. How it does is, it open a TCP or UDP port, to accept avaya CDR data real-time, then compare it with SIP traffic. You can set the CDR format by this dialog:

| Avaya CDR Advan  | ced Options  |  |  |   | ×   |
|--|--|--|--|---|---|
| SIP Trunk IDs  |  |  |  |   |   |
| 170  |  |  | Ad   | d T   |   |
| CDR string format  |  |  |  |   |   |
| Time   | Start Pos:   | 1  | End Pos:   | 4   | Sample: 1-4   |
| Condition Code:  | Start Pos:   | 11   | End Pos:   | 11  | Sample: 11-11   |
| Dialed Nnumber:  | Start Pos:   | 21   | End Pos:   | 35  | Sample: 21-35   |
| Calling Number:  | Start Pos:   | 37   | End Pos:   | 41  | Sample: 37-41   |
| Avaya CDR correctio<br>feature is used for Av<br>You can use this voip<br>id by correct call id. | n is used to cor<br>aya H323 phon<br>recorder softwa<br>OK | rect caller or<br>es which use<br>are to monitor | called ids by rece<br>SIP trunk to rece<br>on SIP trunk to d<br>Canc | iving CDR d<br>eive or make<br>lo call record | ata from Avaya PBX. This<br>: calls.<br>ling, and replace sip trunk |

It should match the settings of Avaya PBX cdr format. The CDR format can be set in Avaya PBX. See the following picture:

| 🗢 TeamViewer - Free license (non-commercial us | se only)                                |  |                                  |   |                                |
|--|---|--|----------------------------------|---|--------------------------------|
| 🐕 Manager 6.2                                  | 🗙 🖳 File t                              | ransfer 🚺 Actions 🕶 🕻                                    | 🖥 View 🕶 🙀                       | Extras 🕶  | - 7 🛛                          |
|  | J                                       |  |                                  |   |                                |
| Hide Locate Back Forward Print Options Ava     | iya                                     |  |                                  |   |                                |
| Contents Index Search Fa. ← Manager 6.2: Apper | ndix: CDR Record                        | s > Record Formats                                       |                                  |   |                                |
| AIM and IP Office                              | ) Call Details                          | Record Format  | D and are real                   | and by a second or second. They                                     | a analticana ant listend and   |
| + Security Mode spaces.                        | in italics are not s                    | apported by IP Once CD                                   | k anu are repi                   | aceu by a space or spaces. Thos                                     | e posicions noc instea are     |
| 🗉 🔖 Menu Bar Commands                          | Date Rec                                | ord  | Call Detail                      | s Record  |                                |
| Configuration Settings                         | Position                                | Field Description  | Position                         | Field Description   |                                |
| + Short Codes                                  |   |  | 1.0                              |   | <b>-</b>                       |
| 표 🔖 Key and Lamp Operation                     | 1-2                                     | Month *  | 1-2                              | Time of day-nours   | -                              |
| 🖅 🧙 Telephone Features                         | 6                                       | Carriage return  | 6                                | Duration-hours  | -                              |
| 🗄 📡 Data Routing                               | 7                                       | Line feed  | 7-8                              | Duration-minutes  |                                |
| Voice over IP     Small Community Networ       | 8-10                                    | Null   | 9                                | Duration-tenths of minutes  |                                |
| + Appendix: Configuration I                    | *Leading                                | 0 added if needed.                                       | 11                               | Condition code  | -                              |
| 🗄 🔖 Appendix: Locale Setting                   |   |  | 13-15                            | Access code dialed  |                                |
| E D Appendix: CDR Records                      |   |  | 17-19                            | Access code used  | _                              |
| 2 CDR Record Format:                           |   |  | 21-35                            | Dialed number   |                                |
| 2 Call Soliting                                |   |  | 37-41                            | Calling number  |                                |
| E W Record Formats                             |   |  | 43-57                            | Account code  |                                |
| ? 59 Character (Nc                             |   |  | 59-65                            | Authorization code  |                                |
| ? Expanded (Norm                               |   |  | 70                               | FRL   | _                              |
| 2 Expanded (Enha                               |   |  | 72                               | IXC   | _                              |
| 2 INT-SDN (Norm                                |   |  | 74-76                            | Incoming circuit ID   | _                              |
| ? INT-Process (No.                             |   |  | 78-80                            | Outgoing circuit ID   | -                              |
| ? LSU (Normal)                                 |   |  | 02                               | Carriage return   |                                |
| 2 LSU (Enhanced)                               |   |  | 84                               | Line feed   |                                |
| 2 LSU (ISDN)                                   |   |  | 194                              | Line reed   | -                              |
| 2) Printer (Normal)                            |   |  |                                  |   |                                |
| ? Printer (Enhance                             |   |  |                                  |   |                                |
| Printer (ISDN)                                 |   |  |                                  |   |                                |
| ? Teleseer (Norma                              |   |  |                                  |   | © 2008 AVAYA                   |
| 2 Teleseer (Enhan                              |   |  |                                  |   | 23:47, 01 July 2008            |
| 2) Unformatted (No                             |   |  |                                  |   | (cdr_printer_normal.htm)       |
| ? Unformatted (Eni Performance                 | figures, data and                       | operation auoted in this i                               | locument are t                   | typical and must be specifically co                                 | onfirmed in writing by Avava   |
| 🖅 📚 Appendix: SMDR 🔄 before they become        | me applicable to                        | any particular order or co                               | ntract. The cor                  | npany reserves the right to make                                    | alterations or amendments      |
| Avava or other                                 | n, The publication<br>s. All trademarks | or information in this doc<br>identified by (R) or TM ar | ument does no<br>e registered tr | ot imply freedom from patent or a<br>ademarks or trademarks respect | iny other protective rights of |
| 🛃 start 📄 3 Windo 😋 TeamView                   | 😥 Diglog Dat                            | advance-s  | Windows T                        | Digliog VOI 🔗 Manager   | 6.2 TR 🔇 🔳 🗊 🌒 06:27           |

**Ignore possible same call:** In some networks, one call may have two legs. For example, extension A call extension B, but the audio paths are actually A to PBX and PBX to B. Recorder can try to ignore the second path by comparing if two calls have same caller and callee id.

**Disable Recording:** If this option is enabled, the recorder will not record the calls conversation into wav or mp3 files, but they will be still real-time showing on the screen, and the call info will be still saved into xml files.

Samsung CDR: Settings for receiving Samsung PABX CDR.

**Ignore possible same call:** Only enable this if you found there are two recording for one call. In some network environment, it is possible to get two recordings for one call.

**Discontinue recording after xxx seconds no audio:** This can be used to clean up the calls which are only established, but not seen BYE messages at the network. By monitoring if there are audio, the recorder can detect if the call is still OK.

**Enable Real-time audio listening server:** If you want to real-time listen the conversation of the calls showing on the screen, you can enable this feature. VoIP

Recorder will open a SIP IVR server when capturing the calls. Please copy VoIPRecorder.ini into c:\, so the SIP IVR server will use this ini to initiate. It is very easy to get the conversation by calling from a SIP softphone or hardware. For example, the VoIP recorder is working on the 192.168.1.120, and there is a call recorded on the channel 1. On the SIP phone, you just need to call into 1@192.168.1.120, and then you will hear the conversation.

Note: This feature need special license to work. Please contact PCBest for prices.

5. Click ok button to start capturing.

| OIP Recorder(ver. 1. | 102)   |                   |  |            |          |           |          |
|----------------------|--|-------------------|--|------------|----------|-----------|----------|
| Start Recording      | Stop Recording Lic   | ensed. Monitoring | g networking, and doing call   | recording  |          |           | Exit     |
| From                 | Caller   | To                | Callee   | Time Begin | Duration | Status    | Unique I |
| 1 2.168.1.75:5060    | "yasar bayýndýr" <sip:112@192.168.1.< td=""><td>2168.1.44:5060</td><td>"oguz ozcan" <sip:111@1:< td=""><td>18:54:56</td><td>00:12:31</td><td>Connected</td><td>6-51813</td></sip:111@1:<></td></sip:112@192.168.1.<>                 | 2168.1.44:5060    | "oguz ozcan" <sip:111@1:< td=""><td>18:54:56</td><td>00:12:31</td><td>Connected</td><td>6-51813</td></sip:111@1:<>               | 18:54:56   | 00:12:31 | Connected | 6-51813  |
| 2 2.168.1.44:5060    | "yasar bayindir" <sip:112@192.168.1.4< td=""><td>2.168.1.93:5060</td><td><sip:111@192.168.1.93:50< td=""><td>18:54:56</td><td>00:12:31</td><td>Connected</td><td>6-50242</td></sip:111@192.168.1.93:50<></td></sip:112@192.168.1.4<> | 2.168.1.93:5060   | <sip:111@192.168.1.93:50< td=""><td>18:54:56</td><td>00:12:31</td><td>Connected</td><td>6-50242</td></sip:111@192.168.1.93:50<>  | 18:54:56   | 00:12:31 | Connected | 6-50242  |
| 3 2.168.1.86:5060    | "Fatih CAGLAR" <sip:120@192.168.1.< td=""><td>2.168.1.44:5060</td><td><sip:600@192.168.1.44></sip:600@192.168.1.44></td><td>18:55:24</td><td>00:12:03</td><td>Connected</td><td>4-76481!</td></sip:120@192.168.1.<>                  | 2.168.1.44:5060   | <sip:600@192.168.1.44></sip:600@192.168.1.44>  | 18:55:24   | 00:12:03 | Connected | 4-76481! |
| 4 168.1.198:5060     | <sip:161@192.168.1.44></sip:161@192.168.1.44>  | 2.168.1.44:5060   | <sip:113@192.168.1.44></sip:113@192.168.1.44>  | 18:56:58   | 00:10:29 | Connected | 8-21724  |
| 5 2168.1.44:5060     | "161" <sip:161@192.168.1.44></sip:161@192.168.1.44>  | 2.168.1.91:5060   | <sip:113@192.168.1.91:50< td=""><td>18:56:57</td><td>00:10:30</td><td>Connected</td><td>7-90347:</td></sip:113@192.168.1.91:50<> | 18:56:57   | 00:10:30 | Connected | 7-90347: |
| 6 168.1.198:5060     | <sip:163@192.168.1.44></sip:163@192.168.1.44>  | 2.168.1.44:5060   | <sip:131@192.168.1.44></sip:131@192.168.1.44>  | 18:57:59   | 00:09:28 | Connected | 9-71149  |
| 7 2168.1.44:5060     | "163" <sip:163@192.168.1.44></sip:163@192.168.1.44>  | 2.168.1.77:5060   | <sip:131@192.168.1.77:50< td=""><td>18:57:59</td><td>00:09:28</td><td>Connected</td><td>9-39811</td></sip:131@192.168.1.77:50<>  | 18:57:59   | 00:09:28 | Connected | 9-39811  |
| 8 168.1.198:5060     | <sip:164@192.168.1.44></sip:164@192.168.1.44>  | 2.168.1.44:5060   | <sip:600@192.168.1.44></sip:600@192.168.1.44>  | 18:59:32   | 00:07:55 | Connected | 2-74886! |
|                      |  |                   |  |            |          |           |          |
|                      |  |                   |  |            |          |           |          |

The graphic grid will show you the calls which are happening on the network.

6. Checking the recording files

Please switch to the root folder you set in options dialog of start recording. You will see the xml file and folder for way.

| Name 🔺                       |  |
|------------------------------|--|
| 20081004                     |  |
| 20081004232122-950510-00.xml |  |

The xml files record the call information. The name of xml files are the unique id which mark the call. You can find the wav file with the same file name but the extension of file is wav.

7. XML format(sample)

Here is the content of 20081004232122-950510-00.xml.

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
- <CALL>
 <ID>20081004232122-950510-00</ID>
 <SUCCEED>true</SUCCEED>
- <CALLER>
 <IPADDR>192.168.1.101:5060</IPADDR>
 <NAME>"YongeHome" <sip:51680000@pcsip.com></NAME>
   </CALLER>
- <CALLEE>
 <IPADDR>209.222.52.49:5060</IPADDR>
 <NAME><sip:8888@pcsip.com></NAME>
   </CALLEE>
- <TIME>
 <INIT>2008-10-04 23:21:22</INIT>
 <BEGIN>2008-10-04 23:21:23</BEGIN>
 <END>2008-10-04 23:22:07</END>
 <DURATION>44</DURATION>
   </TIME>
- <RECORD>
 <ROOT>C:\900q</ROOT>
 <PATH>C:\900q\20081004\20081004232122-950510-00.wav</PATH>
   </RECORD>
   </CALL>
   ID: Unique id for this call.
   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.

# **VoIPRecorder Database Application**

This is a guide for PCBest Network VoIPRecord Database Application. This application needs .NET framework 2.0 to run, and uses **FREE** Microsoft SQL Server 2005 express to save data. Basically it will monitor the recording root folder, once there is a new xml file generated, it will read its info, and save the call info into database table, then move the xml file into subfolder with the way. It also provides basic search options for you to search calls and listen to the way files. You can also develop your web application to search the call table.

Please download its source code here: http://www.pcbest.net/recorder/DigilogApp.zip

The following steps is for setting up VoIPRecorder database application, which we call it Digilog database application.

- 1. Download and install SQL Server 2005 Express
- 2. When installing SQL Server 2005 Express, the following dialog need to be changed as pictures.

| B Microsoft SQL Server 2005 Express Edition Setup   | × |
|---|---|
| Registration Information<br>The following information will personalize your installation. |   |
| The Name field must be filled in prior to proceeding. The Company field is optional.      |   |
| Name:   |   |
| Company:  |   |
| PCBN-Mobile   |   |
|   |   |
| Uncheck this option   |   |
| Hide advanced configuration options   |   |
|   |   |
| Help < Back Next > Cancel   |   |



- 3. Install "SQL Server Management Studio Express"
- 4. Run "SQL Server Management Studio Express". When asking authorization, please give the password you set when installing SQL server.

| E Connect to Serv            | er                                      | ×     |
|------------------------------|---|-------|
| SQL Serv                     | Windows Server S<br>Ver 2005            | ystem |
| Server type:<br>Server name: | Database Engine<br>PCBN-2DUO\SQLEXPRESS | ~     |
| Authentication:              | SQL Server Authentication               | >     |
| Password:                    |   |       |
| Conne                        | ect Cancel Help Options                 | >>>   |

- 5. Right click on the database, and choose new database. See the picture

| 🍢 Microsoft SQL Server Management Studio   | Express   |
|--|---|
| File Edit View Tools Window Community  | Help  |
| 😫 New Query   🔥   😂 🛃 🥥   🚯 🗎 🐉  | 🖇 🖀 🖕   |
| Object Explorer 🚽 🗸 🚽  | Summary   |
|  | 🖄 🖻 🪅 🍸 🕅 🛗 List 🗸  |
| <ul> <li>PCBN-MOBILE\SQLEXPRESS (SQL Server 9.0)</li> <li>Databases</li> <li>Databases</li> <li>Parabases</li> <li>Pa</li></ul> | Databases<br>PCBN-MOBILE\SQLEXPRESS\Databases<br>Name<br>System Databases<br>gtsippbxv2 |

6. Input database name. Here we set it as "digilog":



8. Run DigilogApp.exe Choose Tools/options, and give your db password.

| 🔜 Digilog Database Application                                | ×        |
|---|----------|
| File Tools  |          |
| Options   |          |
| Search Search   |          |
|   |          |
|   |          |
|   |          |
|   |          |
|   |          |
|   |          |
|   |          |
|   |          |
|   |          |
|   |          |
|   |          |
| Disilar Database Application and 400                          | <b>_</b> |
|   |          |
|   | - 21     |
| 🖬 Options   |          |
| XML call files root folder: C:\temp\record Browse             |          |
|   |          |
| SQL Server Settings   |          |
| DB Type: SQL Server Express 2005/2008                         |          |
| DB Server Leave it blank it DB server is local                |          |
| DB Name digilog Defaultly it is digilog                       |          |
| Authentication Type: SQL Authentication                       |          |
| User Name sa  |          |
| Password ****** Test Connection                               |          |
| Converting Way to MP3   |          |
| Converting way to mp3 file when saving records into database. |          |
|   |          |
| OK Cancel   |          |

#### 9. Tools\search

| 🖶 Dig | ilog Database | Application                    |  |
|-------|---------------|--------------------------------|--|
| File  | Tools         |                                |  |
|       | 🔜 Search      |                                |  |
|       | Caller        | Leave it blank if it is any    |  |
|       | Callee        | leave it blank if it is any    |  |
|       | Start Time    | Tuesday , September 23, 2008   |  |
|       | EndTime       | Tuesday , September 23, 2008 💌 |  |
|       |               | Set Search start and end time  |  |
|       |               |                                |  |
|       |               | OK Cancel                      |  |
|       |               |                                |  |
| 5     |               |                                |  |

### 10. Double click one the row. The wav file will be played by Windows Media Player.

| 🔜 Digilog Database Application |            |            |                 |                                 |                  |          |
|--------------------------------|------------|------------|-----------------|---------------------------------|------------------|----------|
| File Tools                     |            |            |                 |                                 |                  |          |
|                                | CallerName | CalleeName | TimeInit        | TimeBegin                       | TimeEnd          | Duration |
| •                              | 51680000   | 8888       | 9/23/2008 12:00 | 9/23/2008 12:00                 | 9/23/2008 12:01  | 21       |
|                                | 51680000   | 8888       | 9/23/2008 12:01 | 9/23/2008 12:01                 | 9/23/2008 12:02  | 79       |
|                                | 51680001   | 8888       | 9/23/2008 12:02 | 9/23/2008 12:02                 | 9/23/2008 12:02  | 32       |
|                                | 51680001   | 8000       | 9/23/2008 12:02 | 9/23/2008 12:02                 | 9/23/2008 12:03  | 14       |
|                                | 51680001   | 8888       | 9/23/2008 12:03 | 9/23/2008 12:03                 | 9/23/2008 12:03  | 16       |
|                                | 51680001   | 8000       | 9/23/2008 12:03 | 9/23/20( <mark>9/23/2008</mark> | 12:03 AM B 12:03 | 7        |
| *                              |            |            |                 |                                 |                  |          |
|                                |            |            |                 |                                 |                  |          |
|                                |            |            |                 |                                 |                  |          |
|                                |            |            |                 |                                 |                  |          |
|                                |            |            |                 |                                 |                  |          |
|                                |            |            |                 |                                 |                  |          |
|                                |            |            |                 |                                 |                  |          |
|                                |            |            |                 |                                 |                  |          |
| <                              |            |            |                 |                                 |                  | >        |