TekConSer

Installation & Configuration Guide
Version 1.6

Document Revision 2.5

http://www.kaplansoft.com/

TekConSer is built by Yasin KAPLAN

Read "Readme.txt" for last minute changes and updates which can be found under application directory.

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Introduction

TekConSer is a SIP Conference Server *(Based on RFC 3261)* runs under Windows *(Vista/7/8/10/11, 2008-2022 Server)*. Visit https://www.kaplansoft.com/TekConSer regularly for updates.

Major features:

- Simple, easy to use interface.
- You can select your own waiting message *(It must be a wav file in 16 bit per sample, 1 channel and 8000 Hz sampling frequency)*.
- Supports G.711 A - Mu law codecs.
- Supports NAT traversal. TekConSer also supports UPnP.
- You can monitor active SIP calls in real-time and hang up selected calls in a conference.
- HTTP interface.
- Supports registration of multiple conference IDs to SIP servers.
- TekConSer sends received SIP MESSAGE request from one conference participant to other participants *(Commercial edition only)*.

TekConSer uses UDP port 5082 and above for RTP traffic and UDP port 5080 for SIP signaling. Signaling port may be changed through GUI. You need to add necessary mappings to your router for incoming RTP traffic if TekConSer installed behind a NAT gateway which does not support UPnP.

The freeware version supports maximum 3 endpoints per conference.

System Requirements

TekConSer requires Microsoft .NET Framework 4.0 Client Profile installed with the latest patches. Pentium i3 class equivalent CPU with 4 GB of RAM is ideal for most configurations.

Installation

Unzip "TekConSer.zip" and click "Setup.exe" comes with the distribution. Follow the instructions of setup wizard. Setup will install TekConSer Manager and TekConSer Service, add a shortcut for TekConSer Manager to desktop and the start menu.

Configuration

Run TekConSer Manager from Start Menu / Program Files / TekConSer. TekConSer automatically configures itself at first run. TekConSer selects the first available IPv4 address and make a reverse lookup of that IPv4 address to obtain SIP domain information. If TekConSer cannot resolve selected IP address to an alphanumeric FQDN address, selected IPv4 address is used as SIP domain.

TekConSer also checks if it is installed behind an UPnP supported NAT gateway. If so, TekConSer automatically detects external IP and displays it on status bar. TekConSer also adds a reverse mapping for incoming UDP connections automatically *(Default UDP port 5080)*.

Settings / Parameters Tab
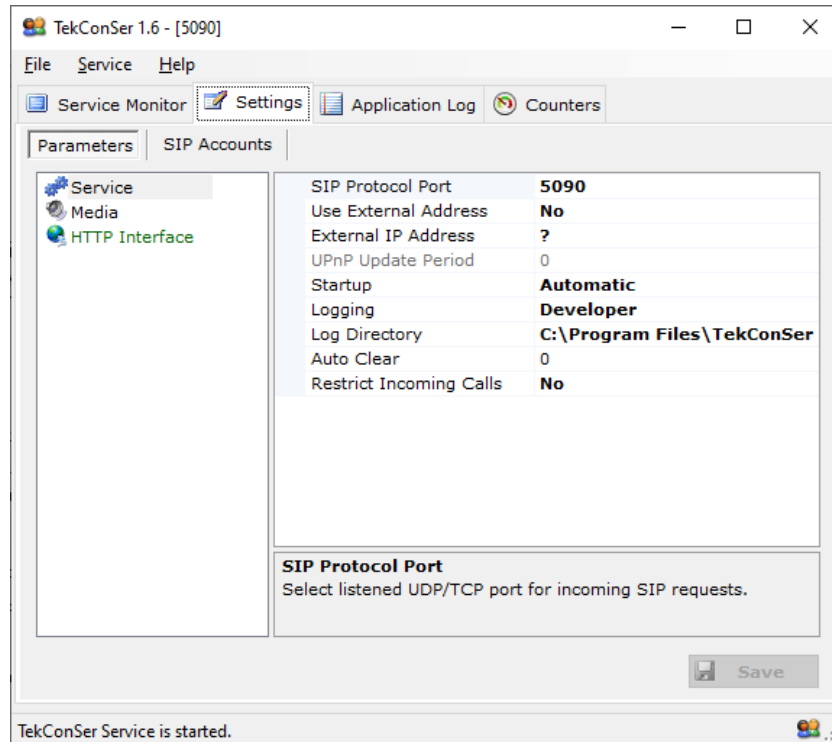
Click Settings Tab to start configuration.

Figure - 1. TekConSer Settings

Enter following information for Parameters section:

- **Listen Port:** You can define a port number to be listened *(Default 5070)*.

- **Use External Address:** If TekConSer is installed behind a NAT gateway which does not UPnP you can set external IP address manually for NAT traversal. If your NAT gateway supports UPnP set UPnP Update Period to value greater than "0".

- **Logging:** Select logging level of TekConSer. Select "None" if you do not want logging, select "Errors" to log errors and select "Sessions" to log session information and errors. Log files are located under <Application Directory>\Logs directory.

- **UPnP Update Period:** You can specify period of querying UPnP Internet Access Gateway. Set "0" to disable UPnP support.

- **Restrict Incoming Calls:** TekConSer will accept calls only from its upstream routes specified in SIP accounts section if this option is set. TekConSer will accept calls from unspecified SIP endpoints if no SIP account is specified even if this option is set.
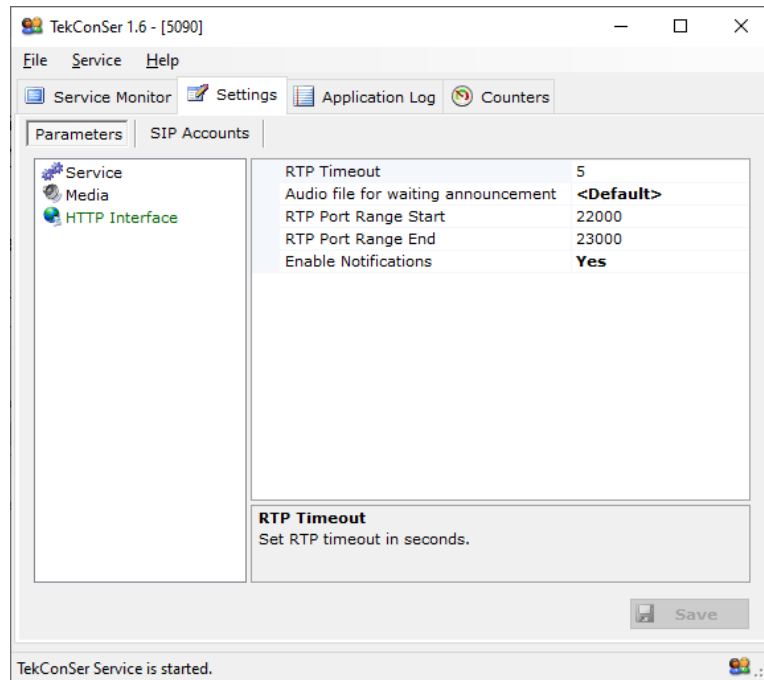
Figure - 2. TekConSer Settings

Enter following information for Media section:

- **RTP Timeout:** Set RTP timeout for incoming media in seconds.

- **Audi file for waiting announcement:** You can optionally select your own recorded welcome message which will be played when incoming calls arrives.

- **RTP Port Range:** Set upper and lower UDP ports for RTP port range.

- **Enable Notifications:** Enable audio notifications when participant joins and leaves conferences.

Figure - 3. TekConSer Settings / Accounts Tab

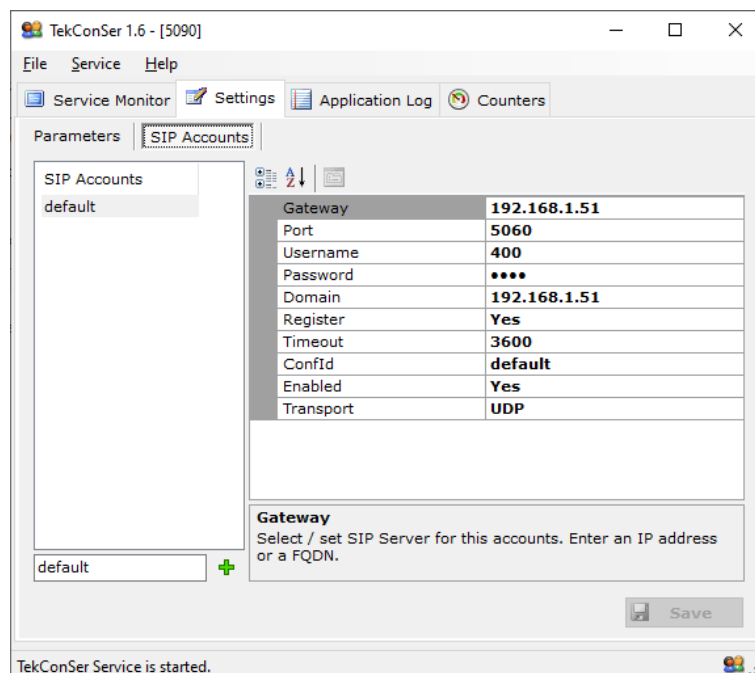You can configure SIP Accounts for Conference IDs. Type a SIP Account name to left bottom text box and click the add button right to it. Enter the following information for a SIP account.

- **Domain:** Enter FQDN or an IP address of your SIP domain. You have to configure a valid SIP domain for proper operation.

- **Gateway:** Enter an IP address or FQDN of your SIP gateway or proxy. Please make sure that this address is resolvable by your SIP client and has a valid entry *(an A record)* in your DNS server if you enter a FQDN. You must configure a valid SIP proxy for proper operation.

- **Port:** Enter signaling port for the SIP server. The default value is 5060.

- **Transport:** Select transport for this SIP server *(TCP or UDP).*

- **Enabled:** Select "Yes" to enable this SIP account.

- **Register:** SIP endpoint registration is disabled by default. If this option is enabled TekConSer tries to register itself to configure SIP Domain.

- **Timeout:** Set registration timeout for this SIP account. TekConSer will re-register after timeout.

- **ConfId:** Select conference ID for this SIP account. Incoming calls for this SIP account will be directed to the selected conference.

- **Username:** You must specify a SIP endpoint ID for TekConSer. If incoming calls are not destined to the number specified in Account ID parameter, TekConSer will reject the calls. This ID is also used by TekConSer while registering to SIP registrar.

- **Password:** If SIP registrar requires password authentication specify password.

If you click [Save] button setting will be saved and activated immediately. Registered SIP account will be displayed in **green** color. You can delete a SIP account by pressing the delete key on keyboard after selecting.
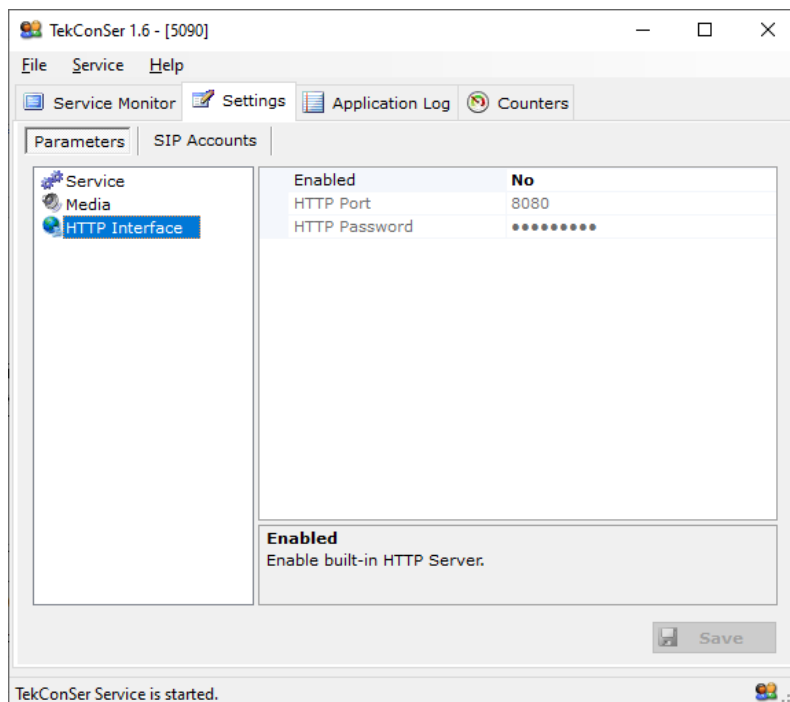

Figure - 4. TekConSer Settings / HTTP Server Tab

You can enable the built-in web server for remote management. You can set the HTTP port and interface password. The built-in web server is disabled by default.

Service Monitor

You can monitor active calls through the service monitor tab. You can clear log entries by right clicking on Call Log.

You can add conferences through the service monitor. Enter an ID and maximum number of recipients for the conference and click the Add/Update button. TekConSer supports a maximum of 8 nodes per conference. TekConSer automatically adds a default conference allowing 8 participants at first run. Click conference entry to see active participants. You can hang up selected peers in the participants list.
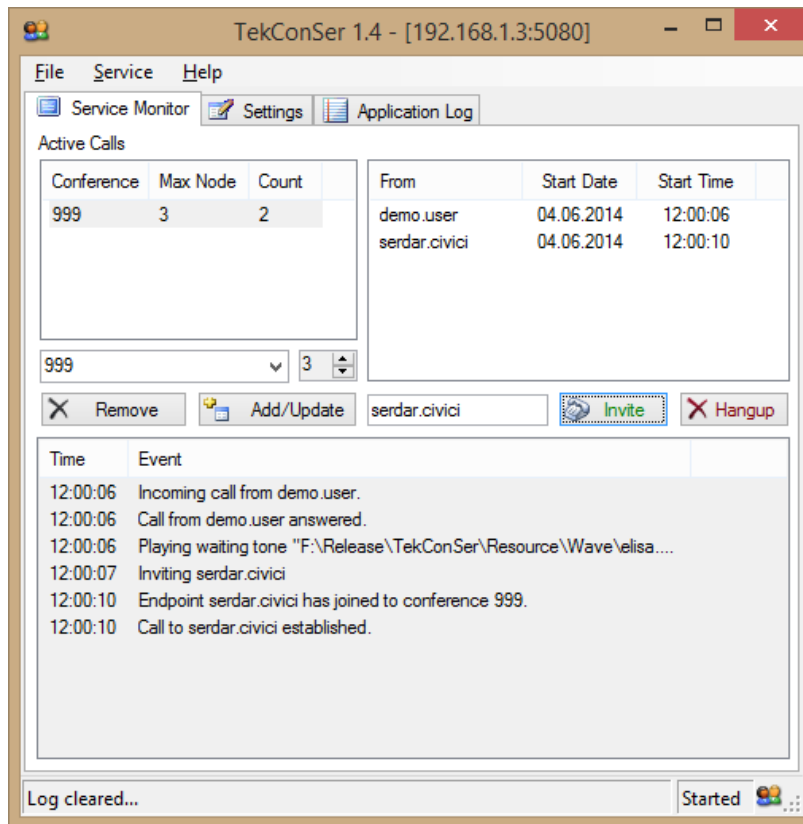

Figure - 5. Service Monitor Tab

You can invite a remote SIP endpoint by entering its phone number and clicking the Invite button. You must have a SIP account entry named "Default" to invite remote endpoints.

Troubleshooting

TekConSer provides many messages when problems occur. You can see error messages on TekConSer Status bar or in the log file of TekConSer service. You can enable logging in to the Settings Tab. There are three levels of logging; None, Errors, Sessions. If you select Errors TekConSer logs just error messages. If you select Sessions both Session and Error messages will be logged. You must save or apply settings changes if you change the logging level setting. Log files are located under <Application Directory>\Logs directory by default.
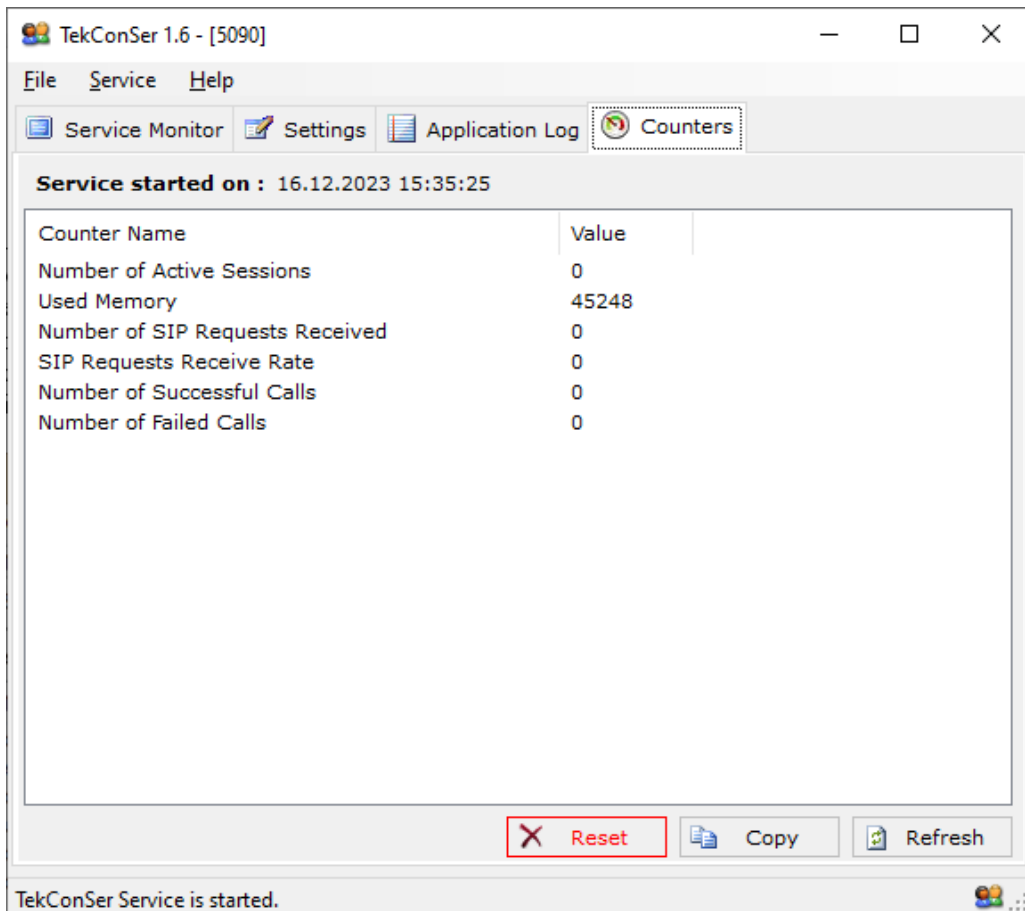

Figure - 6. Counters Tab

TekConSer also utilizes Windows Performance Monitor, providing numerous counters:

- Number of Active Sessions (INVITE)
- Number of SIP Requests Received
- SIP Requests Receive Rate
- Number of Successful Calls
- Number of Failed Calls

You can add and monitor these counters using Windows Performance Monitor *(Perfmon.exe)*. You can also monitor these counters through TekConSer Manager and the web monitoring interface.

TekConSer Messages

DNS Client could not be initialized.

TekConSer cannot bind internal DNS client to a suitable UDP port. Restart your system and try again.

Settings could not be loaded. Initializing with default values.
TekConSer Service is being started with default values.

You get this message at first run of TekConSer. If TekConSer cannot find or read TekConSer.ini initializes itself with default settings.

Unable to initialize UDP/TCP thread [5060]
Could not start any of TekConSer threads; exiting...

If another application is configured to use the same UDP/TCP port with TekConSer, TekConSer cannot initialize respective thread. If both threads, TCP / UDP, cannot be started, TekConSer service will terminates itself.

New setting(s) applied and activated. Check default route.

There is a problem with the IP address or FQDN of the default route.

Hanging up conference peer [Conference : ConferenceID].

Active conference endpoint is being disconnected upon receiving command from the GUI.

Conference has been terminated (ConferenceID)

Conference terminated since there is no endpoint in the conference.

Bad Request URI

Request URI is invalid in received SIP request. Check RFC compliance for the SIP UA.

NAT Error

The remote endpoint is behind a NAT gateway, but its real IP address could not be detected.

Multiple To/From Header Found in SIP Packet

Check To/From headers of the received SIP packet.

Malformed To/From Header Found in INVITE Request

Check To/From headers of the received SIP INVITE request.

Multiple CallID Header Found in SIP Packet

Check the Call-ID header of the received SIP packet.

Malformed CSeq Header Found in SIP Packet

Check the CSeq header of the received SIP packet.

Malformed Contact Header Found in SIP Packet.
Multiple Contact Header Found in SIP Packet

Check the Contact header of the received SIP packet.

Malformed Content-Length Header Found in SIP Packet.

Check the Contact header of the received SIP packet.

General Syntax Error Found in SIP Packet

There is a syntax problem in the received SIP packet. Check RFC compliance.

TekConSer is behind a NAT gateway, detected external IP Address

TekConSer has been detected existence of an NAT gateway and detected the external IP address for the network

TekConSer is behind a NAT gateway, detected external IP Address is not valid

TekConSer has been detected existence of an NAT gateway and but detected external IP address for the network is not valid.

Cannot apply changes; enter minimum configuration

There is missing configuration data.

How to Record a Custom Waiting Message

You can use Windows Sound Recorder to record a custom audio prompt. You can use TekRecorder to record audio files compatible with TekConSer.
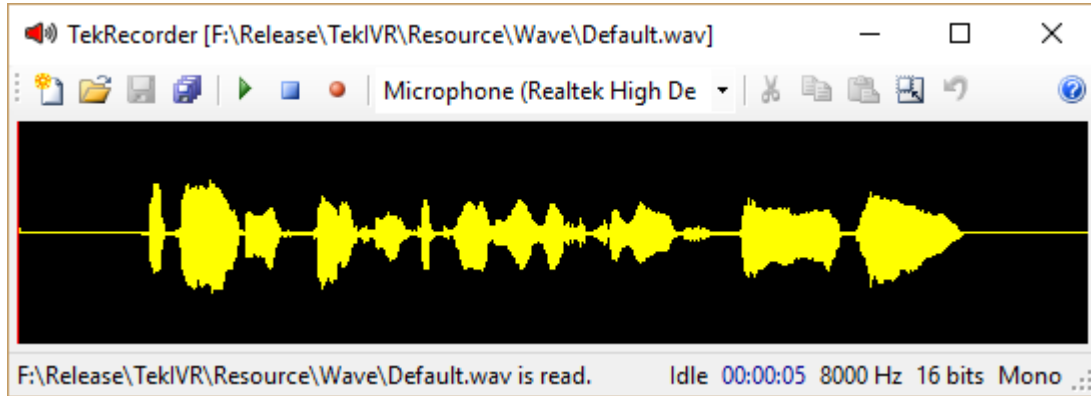
Click record button to start recording. Click record button again after finishing. Select "File/Save As" option from File menu.
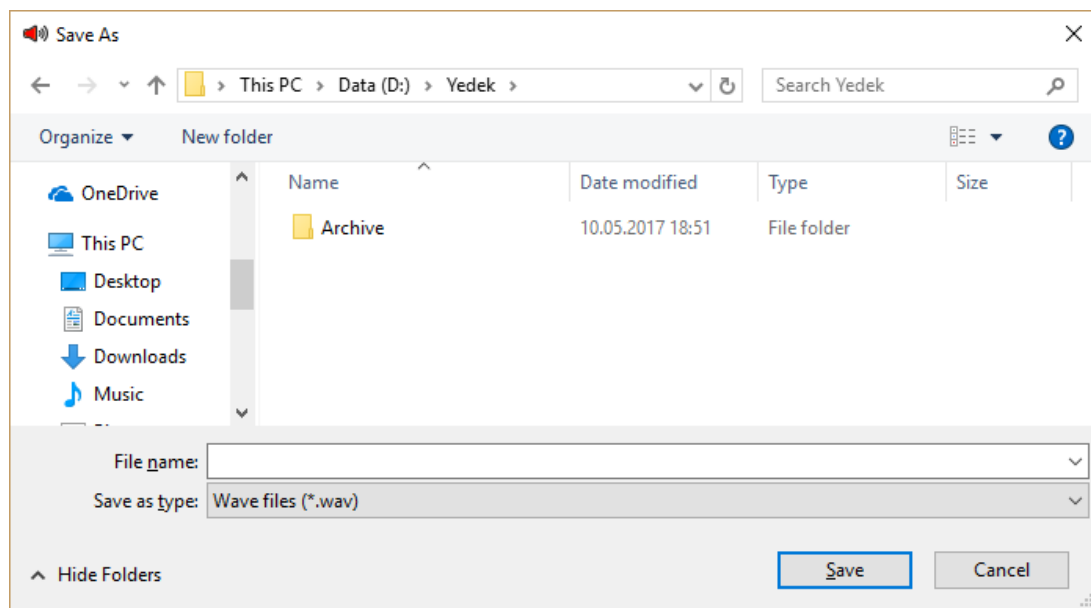
Audio file will be saved in "8000 Hz; 16 Bit; Mono" format. You can download TekRecorder from KaplanSoft website download section.