Database schemas

Tables

users

Contains the informations for every user of the ChaTalK service, except the conversations to which they participate which are stored in the `keys` *table.*

`users ([user-id: SERIAL], username: VARCHAR(255), pw-hash: VARCHAR(255), pubkey: VARCHAR(1024), email: VARCHAR(255), disp-name: VARCHAR(255), status-msg: VARCHAR(512), pic-url: VARCHAR(64))`

- `user-id` - **PRIMARY KEY** (*SERIAL is an auto-incrementing non-null INTEGER*) : The User ID is a unique number set at the user creation, which allows to identify it amongst others and link it to other tables.
- `username` - **NOT NULL**, **UNIQUE** : The username is the login name and the unique name of the user.
- `pw-hash` - **NOT NULL**, **UNIQUE** : The hashed sum of the password of the user.
- `pubkey` - **NOT NULL**, **UNIQUE** : The public RSA key set up by the user.
- `email` - **UNIQUE** : The recovery e-mail address of the user.
- `disp-name` : The displayed name of the user.
- `status-msg` : The customized status message of the user.
- `pic-url` : The URL of the profile picture of the user.

conversations

Table containing every chat room in the ChaTalK server and relevant informations, except participating users and corresponding keys which are both stored in the `keys` *table.*

`conversations ([conv-id: SERIAL], convname: VARCHAR(255), topic: VARCHAR(512), pic-url: VARCHAR(64), archived: BOOLEAN)`

- `conv-id` - **PRIMARY KEY** (*SERIAL is an auto-incrementing non-null INTEGER*) : The Conversation ID is a unique number set at the conversation creation, which allows to identify it amongst others and link it to other tables.
- `convname` - **NOT NULL**, **UNIQUE** : The name of the conversation.
- `topic` : The customized topic of the conversation.
- `pic-url` : The URL of the conversation picture.
- `archived` - **NOT NULL** : The status of the conversation : `false` is active, `true` is archived.

keys

Stores the conversations to which a user participates and the corresponding shared keys used.

keys ({user-id: INTEGER}, {conv-id: INTEGER}, timefrom: TIMESTAMP, timeto: TIMESTAMP, [shared-key: VARCHAR(1024)])

- user-id - **FOREIGN KEY** references users(user-id) : The User ID to identify which user the key corresponds to and which conversations the user belongs to.
- conv-id - **FOREIGN KEY** references conversations(conv-id) : The Conversation ID to know which conversation the users and the key belongs to.
- timefrom - **NOT NULL** : The time stamp when the key started being in use.
- timeto - **NOT NULL** : The time stamp when the key stopped or will stop being in use.
- shared-key - **PRIMARY KEY** : The shared conversation key for that time period, encrypted with the public key of the user identified by user-id.

messages

Stores every message ever, with the associated conversation, user and timestamp.

messages ([mid: SERIAL], time: TIMESTAMPTZ, {user-id: INTEGER}, {conv-id: INTEGER}, content: VARCHAR(4096), archived: BOOLEAN)

- mid - **PRIMARY KEY** (*SERIAL is an auto-incrementing non-null INTEGER*) : Message ID is a field used to identify each message individually.
- time - **NOT NULL** (*TIMESTAMPTZ is an abbreviation for TIMESTAMP WITH TIMEZONE*) : Time is the field identifying the exact moment the message was sent by the user.
- user-id - **FOREIGN KEY** references users(user-id) : User ID tells us which user sent the message.
- conv-id - **FOREIGN KEY** references conversations(conv-id) : Conversation ID tells us in which conversation the message was sent.
- content - **NOT NULL** : The actual content of the message. Should accept Markdown formatting.
- archived - **NOT NULL** : The status of the message : false is active, true is archived.

seen

Stores the last messages seen by a user. There will be several messages per user, one for each conversation.

```
seen ([sid: SERIAL], {message-id: INTEGER}, {user-id:
INTEGER})
```

- `sid` - **PRIMARY KEY** : Seen ID used to identify rows in the seen table.
- `message-id` - **FOREIGN KEY** references `messages(mid)` : The Message ID of the last message seen by the user identified by `user-id`.
- `user-id` - **FOREIGN KEY** references `users(user-id)` : The User ID of the user that has seen the message.

Views

archived-messages

A view of the table `messages` which only shows the messages that have been archived by setting the `archived` flag to true.

```
CREATE VIEW archived-messages AS SELECT * FROM messages WHERE
archived == true;
```

active-messages

A view of the table `messages` which only shows the messages that have not been archived by setting the `archived` flag to false.

```
CREATE VIEW active-messages AS SELECT * FROM messages WHERE
archived == false;
```

active-keys

A view of the table `keys` which only shows the keys that have not expired.

```
CREATE VIEW active-keys AS SELECT * FROM keys WHERE timeto >
now;
```

recent-messages

A view of the table `messages` which only shows the messages sent today or yesterday in a conversation.

```
CREATE VIEW recent-messages AS SELECT * FROM messages WHERE
time > yesterday;
```