

Brekeke SIP Server

Version 3

Using a Third-Party Database Tutorial

Brekeke Software, Inc.

Version

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1. Introduction

This document describes steps needed to use a third party database instead of using the embedded database in Brekeke SIP Server. You can add or modify the database from your own database management tool.

Brekeke SIP Server uses the following database tables.

Table Name	Purpose
t_registered	Registered Table This table stores the data of registered user agents. The data will be updated by REGISTER requests and used for the session routing.
t_userdir	Users Table This table stores authentication data of users.
t_alias	Alias Table This table stores alias data. Note: Alias Database is available in Advanced Edition only.

Note: The following sections are using MySQL as an example but other databases can be used in a similar way.

2. Using MySQL for Brekeke SIP Server

The following section describes the steps to use MySQL with Brekeke SIP Server.

- MySQL: <http://www.mysql.com/>

2.1. Create the Database

Open a MySQL command line and create a database.

For example, if "serverdb" is the database name:

```
mysql> CREATE DATABASE serverdb;  
mysql> USE serverdb;
```

2.2. Create the Registered Table

This table stores the data of registered user agents.

1. Create a table "t_registered" using the command below:

```
mysql> CREATE TABLE t_registered (  
    skey          BIGINT,  
    namealias     VARCHAR(255),  
    nameoriginal  VARCHAR(255),  
    urlalias      VARCHAR(255),  
    urloriginal   VARCHAR(255),  
    acceptpattern VARCHAR(1000),  
    requester     VARCHAR(100),  
    expires       BIGINT,  
    priority      INT,  
    timeupdate    BIGINT,  
    expirestime   BIGINT,  
    mappedport    VARCHAR(100),  
    awake         INT,  
    useragent     VARCHAR(255),  
    param         VARCHAR(1000)  
);
```

Note: If you are upgrading from OnDO SIP Server (version 1.x) to Brekeke SIP Server (version 2.x), you will need to add the last two lines for useragent and param as shown in the table above.

2. Create indexes using the commands below:

```
mysql> CREATE INDEX idx_registered_skey ON t_registered(skey);  
mysql> CREATE INDEX idx_registered_urlalias ON t_registered(urlalias);  
mysql> CREATE INDEX idx_registered_urloriginal ON t_registered(urloriginal);  
mysql> CREATE INDEX idx_registered_expirestime ON t_registered(expirestime);
```

2.3. Create the Users Table

This table stores user authentication data.

1. Create a table "t_userdir" using the command below:

```
mysql> CREATE TABLE t_userdir (  
    uid          BIGINT,  
    username     VARCHAR(100),  
    longname     VARCHAR(200),  
    password     VARCHAR(100),  
    email        VARCHAR(100),  
    description  VARCHAR(200),  
    gid          BIGINT,  
    timeexpire   BIGINT,  
    timemake     BIGINT  
);
```

2. Create indexes using the commands below:

```
mysql> CREATE UNIQUE INDEX idx_userdir_uid ON t_userdir(uid);  
mysql> CREATE INDEX idx_userdir_username ON t_userdir(username);  
mysql> CREATE INDEX idx_userdir_timeexpire ON t_userdir(timeexpire);
```

2.4. Create the Alias Table

This table stores alias data.

Note: Alias Database is available in Advanced Edition only.

- 1) Create a table "t_alias" using the command below:

```
mysql> CREATE TABLE t_alias (  
    alias_name      VARCHAR(100) NOT NULL,  
    group_id        VARCHAR(100),  
    entity_name     VARCHAR(100) NOT NULL  
);
```

- 2) Create indexes using the commands below:

```
mysql> CREATE UNIQUE INDEX idx_aliasdb_alias ON t_alias(alias_name,  
group_id);  
mysql> CREATE INDEX idx_aliasdb_entity ON t_alias(entity_name);
```

2.5. Brekeke SIP Server Configuration

1. Install the JDBC driver

Please download the latest JDBC driver for MySQL "MySQL Connector/J" from the link below.

<http://www.mysql.com/products/connector/j/>

Copy the file named "mysql-connector-java-3.0.XX-ga-bin.jar" into the following directory.

YOUR_INSTALL_DIRECTORY\webapps\sip\WEB-INF\lib

Note: If you are using the bundled SIP Server for Brekeke PBX, please use the following directory instead.

YOUR_INSTALL_DIRECTORY\webapps\pbx\WEB-INF\lib

2. Settings at Brekeke SIP Server

Login to the Admintool and go to **[Configuration] > [Database]** page.

At the **[Database]** page, you can set third party databases. (fig.1)

After you change settings, press [Save] button and restart the server machine.

The screenshot shows a web-based configuration interface for the Brekeke SIP Server. It is divided into three sections, each for a different type of third-party database. Each section has a title in green, followed by an 'On/Off' toggle and several input fields for database connection details. The 'On/Off' toggle consists of two radio buttons: 'on' and 'off'. The 'Registered Database URL', 'Registered Database Driver', 'User Name', and 'Password' fields are present in the first section. The 'Thirdparty Users Database' section includes an 'Encrypt Users Passwords' toggle (with 'true' and 'false' radio buttons) in addition to the standard fields. The 'Thirdparty Alias Database' section follows the same structure as the first section. All input fields are currently empty, and the 'off' radio button is selected for all 'On/Off' toggles.

Database Type	On/Off	Registered Database URL	Registered Database Driver	User Name	Password	Encrypt Users Passwords
Thirdparty Registered Database	<input type="radio"/> on <input checked="" type="radio"/> off				*****	
Thirdparty Users Database	<input type="radio"/> on <input checked="" type="radio"/> off				*****	<input checked="" type="radio"/> true <input type="radio"/> false
Thirdparty Alias Database	<input type="radio"/> on <input checked="" type="radio"/> off				*****	

fig.1 [Database] page

Thirdparty Registered Database

Field Name	Explanation
On/Off	Select "on" to enable Registered Database
Registered Database URL	URL for the Registered Database (e.g. <code>jdbc:mysql://localhost/serverdb</code>)
Registered Database Driver	JDBC Driver for the Registered Database (e.g. <code>com.mysql.jdbc.Driver</code>)
User Name	User name for the Registered Database
Password	Password for the Registered Database

Thirdparty Users Database

Field Name	Explanation
On/Off	Select "on" to enable Users Database
Encrypt Users Passwords	Select "false" to record users' passwords in plain text
Users Database URL	URL for the Users Database (e.g. <code>jdbc:mysql://localhost/serverdb</code>)
Users Database Driver	JDBC Driver for the Users Database (e.g. <code>com.mysql.jdbc.Driver</code>)
User Name	User name for the Users Database
Password	Password for the Users Database

Thirdparty Alias Database

Field Name	Explanation
On/Off	Select "on" to enable Alias Database
Alias Database URL	URL for the Alias Database (e.g. <code>jdbc:mysql://localhost/serverdb</code>)
Alias Database Driver	JDBC Driver for the Alias Database (e.g. <code>com.mysql.jdbc.Driver</code>)
User Name	User name for the Alias Database
Password	Password for the Alias Database

3. Troubleshooting

If you receive the error message "Can not open a database" at the Brekeke SIP Server's Admintool, the following issues may be causing the error:

- Database's port number may conflict with another program
To resolve this issue, you need to either change the database's port number, or close the program that is using the same port number.
- Database is not allowing Brekeke SIP Server's requests
Change the database setting to accept Brekeke SIP Server's requests.
- The configuration in the Brekeke SIP Server may be incorrect.
Please follow this document and check your settings.

If the problem still persists, you can usually see some detailed error message which is related to the database connection in the following log file.

`YOUR_INSTALL_DIRECTORY\webapps\sip\WEB-INF\work\logs\log.log`