



# **SIAM**

## **Assessment Support Toolkit**

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Installation Instructions

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## SIAM AST Installation Overview

### Server Software Requirements

The SIAM AST is a web-based application that requires a PHP-enabled Web server and a MySQL database server to run.

For private use and testing on a local machine, most publicly available WAMP (Windows Apache MySQL PHP) or LAMP (Linux Apache MySQL PHP) packages will satisfy the requirements for running the application. For any desktop PC or server running Windows as operating system, an example is *WAMP Server*, an open source product which is available for free use under the GPL license.

### Summary of the Installation Steps

In brief, the following steps need to be performed to install the SIAM AST:

1. Install and configure a web server
2. Install and configure a database server
3. Download the SIAM AST application files archive and unpack to a temporary directory.
4. Copy the SIAM AST application files to the web-root directory of the web server
5. Install the SIAM AST database
6. Configure E-mail support (optional)

Note that the installation parts of step 1 and step 2 are usually performed together when installing a WAMP or LAMP software package on a local computer.

### Application Access Levels

The SIAM AST has two levels of access, realised through dedicated user interfaces:

- 1) A user level, which allows the creating and editing of assessment cases, performing of assessments, and generating of reports.
- 2) An administration level, which offers features for changing the core data of the system, and for creating and managing user accounts.

Both user interfaces can be accessed via the main login page:

`http://<server name>/<SIAM AST web directory>/index.php`

## SIAM AST Installation and Configuration Details

### Web Server

We recommend to install the SIAM AST on an Apache Web Server, version 2.2.22 or higher. No special settings need to be modified but the toolkit does require PHP to be interpreted by the server (usually enabled by default).

The server can either be installed separately, or in the course of installing a WAMP or LAMP package.

### PHP

The SIAM AST requires PHP 5.3 or greater. The software has been developed and tested using versions 5.3.10 (Windows) and 5.3.18 (Linux).

We recommend the following PHP settings to be enabled:

- file uploads
- allow url fopen
- y2k compliance
- output buffering

The following PHP extensions should be active, too:

- php\_gd2
- php\_mbstring
- php\_mysql
- php\_mysqli
- php\_pdo\_mysql

### Application Files and Permissions

Copy the entire directory structure and files of the SIAM AST to your designated web directory. It is good practice to first create a separate folder within the www-root directory of the web server, e.g. "SIAM". Then copy the SIAM AST files into this web folder.

For example, if your web server's local www-root directory is

```
C:\wamp\www\
```

Create a folder "SIAM" there and copy all files into C:\wamp\www\SIAM\

**Technical note:**

There are two folders within the SIAM AST application structure for storing uploaded files. Once all application files have been copied, the web server needs write permissions on these directories. (These would now be located in the SIAM folder we just created):

- Files attached to questions: `/coredata/files/`
- Files attached to answers: `/coredata/documents/`

In a normal installation using Apache web server, there is usually no action required (no permissions need to be manually set or modified). The above is just for information should any “Permission denied” errors occur during file upload actions with the SIAM AST (e.g., when attaching documents to answers as a normal user).

**MySQL Server**

SIAM AST requires a MySQL 5 database server, which stores all information required to run the application and also the data generated by any assessment cases created with the toolkit.

The MySQL server can either be installed separately, or as part of a WAMP or LAMP package.

**Installing the SIAM AST Database**

The SIAM AST database structure and the initial core data can be created easily by opening an installation script in the web browser. To install the SIAM AST database do the following:

After both the Web server and the SQL server have been set up, and the application files copied into your SIAM AST web folder, open the following URL in your browser:  
`http://<server name>/<SIAM AST web folder>/`

For a local installation, the `<server name>` is usually `localhost`.

The `<SIAM AST web folder>` is where you copied the application files into, e.g. `SIAM`

For the above example, the URL to call would then be:

`http://localhost/SIAM/`

Upon first start-up, the SIAM AST application will detect automatically if a database installation needs to be performed and prompt the user to do (Figure 1).



## SIAM AST Installation

The SIAM AST installation is performed in two steps.

1. Installing the SIAM database.
2. Securing the application by removing the installation files.

Figure 1: Main Installation Page on First Start-up

On clicking the button “Install Database”, a page with installation setting is shown (Figure 2). This page allows adjusting installation and application parameters before the database is being deployed.



## SIAM AST Database Installation: Settings

### Installation Notes

This page allows setting basic parameters for the SIAM AST database installation. For a new installation on a local computer, the default settings can be used.

For security, make sure you use an encrypted connection before sending any of the requested account credentials through the form below, esp. when installing the SIAM AST on a public server.

If there are concerns about transmission security, it may be safer to directly edit the header part of the file `/Install/createdb.php` before copying the application files to the server.

When ready, click the Install button at the bottom to proceed.

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### SQL Account for the Installation

Here, you may provide the credentials of an existing MySQL account that has sufficient permissions for performing the installation (user name / password).

/

Figure 2: Database Installation Settings page (1/4)

The installation script needs the credentials of an SQL user account for establishing a connection to the database server. Depending on the actions selected further down the form, this account needs sufficient permissions to create a database, create another SQL user account, grant user permissions to this account, create database tables, and perform data insert operations on these tables.

When installing the SIAM AST on a local computer, the default settings should be used. This will create a database container named “siam”, a user account named “siam\_db\_user” with all privileges granted for this database, and all required SIAM database tables. Further, the initial SIAM dataset will be imported. The SIAM AST application will work instantly as it has been preconfigured to use these settings.

---

#### SIAM AST Database

Create a new database using the preconfigured name 'siam' (Default)

Create a new database but use a different name:

Connect to an existing database:

Test Connection

Figure 3: Database Installation Settings page (2/4)

By selecting any of the alternative options, the database name can be changed before creation, or no database created but an existing database used (Figure 3). Similarly, a different user account can be created or an existing account used (Figure 4). The information stored in the *original* SIAM AST configuration files will be updated automatically during installation - no manual editing is required.

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#### SIAM AST Database User

Create a new user account using the preconfigured name 'siam\_db\_user' and password (Default)

Create a new database user but with a different name / password:

 / 

Use an existing user account for connecting to the SIAM database:

 / 

Test Connection

Figure 4: Database Installation Settings page (3/4)

The last setting on the page concerns the data import options (Figure 5). When selecting the default option, the standard dataset will be imported from the file SIAM\_DATA.sql, which resides in the /install directory.<sup>1</sup>

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#### SIAM AST Data Import

Create the SIAM database tables and import the standard dataset (Default)

Create the SIAM database tables but import data from a different file:

(State filename incl. extension, without path)

Note: When selecting this option, the data file needs to be placed in the /Install/ folder before proceeding with the installation

Do not create any database tables or import anything

---

Install

Figure 5: Database Installation Settings page (4/4)

A modified dataset can be imported by either overwriting the above file and selecting the default option; or copying another data file into the /install directory, selecting the second option, and stating the new file name before proceeding with the installation. Selecting the third option will skip the entire installation part that is about creating database tables and importing data.

Sometimes, it may be necessary to use other than the default settings, especially when the system is to be installed on Web- and/or database servers that already exist as part of the network infrastructure of an organisation (like a University, for instance). In such case, the installing user does normally not have the required permissions to create new databases or database users, or grant any permissions to users. Instead, only pre-defined database- and user names may be available to install the system with. Figure 6 shows an example of how the SIAM AST installation parameters can be adjusted to allow an installation in environments with such technical restrictions. By configuring the system to use both an existing database container, as well as an existing user account, the related permissions to create these are not required anymore to install the SIAM AST.

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<sup>1</sup> When setting up the database manually, the database can be created by importing this file into a common database management tool, like phpMyAdmin.

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**SQL Account for the Installation**

Here, you may provide the credentials of an existing MySQL account that has sufficient permissions for performing the installation (user name / password).

d0121ace / ●●●●●●●●●●

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**SIAM AST Database**

Create a new database using the preconfigured name 'siam' (Default)

Create a new database but use a different name:

Connect to an existing database:

d0121ace

---

**SIAM AST Database User**

Create a new user account using the preconfigured name 'siam\_db\_user' and password (Default)

Create a new database user but with a different name / password:

/

Use an existing user account for connecting to the SIAM database:

d0121ace / ●●●●●●●●●●

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**SIAM AST Data Import**

Create the SIAM database tables and import the standard dataset (Default)

Create the SIAM database tables but import data from a different file:

(State filename incl. extension, without path)

Note: When selecting this option, the data file needs to be placed in the /Install/ folder before proceeding with the installation

Do not create any database tables or import anything

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**Figure 6: Custom Settings Example**

When configuring the installer to use an existing database, and/or an existing user name, clicking the related buttons “Test Connection” will open an additional window and a connectivity check will be performed using the names or credentials provided. After entering a database name and clicking the nearest “Test Connection” button, the test script will attempt to establish a connection to a database of the given name (Figure 7), using the SQL account credentials stated at the top of the form.

## SIAM AST Database Installation

This script will test if a connection to a database on the MySQL server can be established, using the SQL account credentials and database name provided.

Operation	Status
Connecting to database server 'localhost'	OK
Opening database 'd0121ace'	OK
<b>Test completed successfully.</b>	

You can now close this window.

Figure 7: Checking Connectivity to an Existing Database

Similarly, after entering an existing user name and password, and clicking the “Test Connection” button next to the related form fields, the opening test script will attempt to establish a connection to the database server using the given user name and password as credentials (Figure 8).

## SIAM AST Database Installation

This script will test the connection to an existing database on the MySQL server, using the credentials provided for an existing user account.

Operation	Status
Testing database server connection with user d0121ace...	OK
<b>Test completed successfully.</b>	

You can now close this window.

Figure 8: Checking Connectivity with an Existing User Account

Note that when using an existing user account, the installation script does not attempt to grant particular permissions to this account in relation to any to-be-created or pre-existing databases. You need to make sure the user account has sufficient permissions on the chosen database container to create database tables and insert, update, and delete contents (Which is usually the case).

Once all settings have been made and the “Install” button clicked, the database installation script will be started. Remain patient, as it may take about half a minute before any protocol feedback is reported on screen, especially when installing on servers that reside on a network.



## SIAM AST Database Installation

This script will attempt to automatically create the SIAM database on the MySQL server.

Operation	Status
Opening server connection...	OK
Opening database...	OK
Updating database information in configuration file 1...	OK
Updating database information in configuration file 2...	OK
Updating user information in configuration file 1...	OK
Updating user information in configuration file 2...	OK
Reading data import file SIAM_DATA.sql...	OK
Processing data import step 1...	OK
Processing data import step 2...	OK
Processing data import step 3...	OK

Figure 9: Installation Protocol (top section)

The installation script will perform a series of steps such as:

- Opening a database server connection
- Creating and/or opening a database container
- Creating a new user account and granting permissions to it, or
- Adjusting the system configuration files to use existing credentials
- Creating the database tables
- Importing the standard data set

The partial screen shot in Figure 9 shows the installation progress based on the previous custom settings made (Figure 6).

Once all steps have been processed without problems, the script will report “Process completed successfully” at the end (Figure 10).

Processing data import step 109...	OK
Processing data import step 110...	OK
Processing data import step 111...	OK
Processing data import step 112...	OK
Processing data import step 113...	OK
Processing data import step 114...	OK
Processing data import step 115...	OK
Processing data import step 116...	OK
Processing data import step 117...	OK
Processing data import step 118...	OK
Processing data import step 119...	OK
<b>Process completed successfully.</b>	
<input type="button" value="Continue"/>	

Figure 10: Installation Protocol (bottom section)

If there were any problems during installation, the bottom line will say “Process completed with errors”, and a short statement about what went wrong given below. In such case, the problem will also be clearly indicated somewhere further up in the protocol. It then needs to be resolved and all changes rolled back before another installation attempt can be made. In particular, and depending on which actions have been performed, this means deleting any newly created database container and/or database user account, as well as replacing any modified configuration files with their original versions (If the installing user doesn’t know which files to replace, once again copying over all application files to the server will do the trick). Once this step has been completed with success, click the “Continue” button (Figure 10).

The main installation page will open, indicating that the first of the two SIAM AST installation steps has been completed (Figure 11).

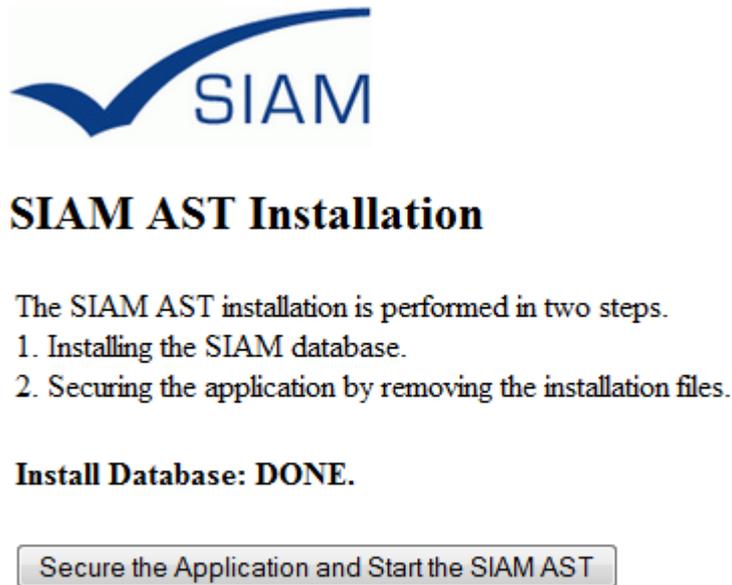


Figure 11: Main Installation Page after Database Setup

After the database has been installed, the SIAM AST application needs to be secured. This step is very simple: Just click the button “Secure the Application and Start the SIAM AST”.

In practice, what happens next is that all installation scripts will be physically deleted from the server. Once these files are gone, the SIAM AST login page will be automatically unlocked so that entering the base URL of the SIAM AST which we previously used to start the installation (for instance, on a local computer: `http://localhost/SIAM/`), will then show the login page (Figure 12).



Figure 12: SIAM AST Login page (After Securing the Application)

***Technical Note:***

The SIAM AST installation scripts are only to be run once, when the system is being set up on a computer for the first time. If these routines were executed again after the system was installed and actively used for assessment, this would likely cause loss of assessment data. Deleting the installation scripts after system setup is a safeguard to prevent accidental damage to any assessment data which has been stored in the database. Note that only if the database installation script completed “successfully” (without errors) will the option to secure the application be available, when a user clicks “Continue” (Figure 10).

## Configuring Email Support (optional)

If enabled, the AST uses email exclusively in the administration console, in order to inform registered users when a new account has been created for them, or when their password has been reset by the SIAM AST Administrator. Email is not used at all in the actual AST user application because this employs a dedicated messaging system, built into the toolkit software.

However, note that the administration console can be used without email support so that having email enabled is therefore not a strict requirement. In fact, the use of email is switched off by default. This can be changed by editing the console's configuration file:

To enable, set `$usemail = "1";` in `/coredata/includes/config.php`

To disable, set `$usemail = "0";` in the same file.

If you choose to enable the use of email for the administration console, you also need to tell the application which mail server settings to use:

```
$mailhost = "<the IP or domain name of the SMTP server>";  
// e.g., "mail.yourdomain.net"  
  
$mailport = "<SMTP port>";  
// server port for sending mail, usually "25", "587", or "465"  
  
$mailaddr = "<the email address of the sender>";  
//e.g., siamadmin@yourdomain.net";  
  
$smtpuser = "<user name for authentication at the SMTP server>";  
  
$smtppass = "<password for the above account>";
```

### ***Technical Note:***

Most public web servers will have sendmail support enabled by default, i.e. switching on email support for the AST application as instructed above will then instantly work. If it does not, contact your web server administrator for help.

To enable email for a local WAMP or LAMP installation, install and configure PEAR:

- Download <http://pear.php.net/go-pear.phar> and save this file in the directory that contains the file `php.exe` (e.g., `C:\wamp\bin\php\php5.3.10\`).
- Open an admin terminal (Linux) or the command console as Administrator (Windows), navigate to the above directory, and perform the following commands:
  - o `php -q go-pear.php`
  - o `pear install -o Net_Smtp`
  - o `pear install Mail Mail_mime`
- Uncomment the following in the `php.ini` file: `extension=php_openssl.dll`
- Add the file system path of PEAR in `php.ini`, e.g., add the following line:
 

```
include_path = ".;C:\wamp\bin\php\php5.3.10\PEAR"
```
- Restart the web server for the changes to take effect

### Application Settings (Optional)

The SIAM AST application has two configuration files which can be edited to change global system settings and behaviour.

After a standard installation, there is usually NO NEED to make any modifications. The system should run instantly, without any changes to these files.

#### ***Technical Note:***

Edit

```
/model/db.class.php
```

in order to change the database connector settings for the SIAM AST user level interface. This may be necessary if your database name is different from the default setting or if you've modified the user account that accesses the SIAM AST database.

Edit

```
/coredata/includes/config.php
```

in order to enable welcome emails or change the database connector settings for the SIAM AST administration console.

## First Use

- Open a Chrome browser
- Enter the SIAM AST URL:  
`http://<server name>/<SIAM AST web directory>/`  
For instance, on a local installation:  
`http://localhost/SIAM/`
- Log in to the SIAM AST using the default Administrator account (admin/admin).
- You should now see the main menu and an empty dashboard.
- Click on the PROFILE option and change the password of the default administrator account. Consider that a strong password uses a combination of letters, numbers, and special characters.  
Make sure you remember the password chosen!
- Log out.
- On the SIAM AST login page, click the “Administration Console” link.
- Log in using “admin” as user name and your newly set password.
- Click on “Manage User Accounts” and create additional users, as necessary. The default user type for the SIAM AST user level interface is “Contributor”. Assign the other types (Administrator, or Developer) only to those users that need access to the administration console.
- Log out of the Administration Console when finished.