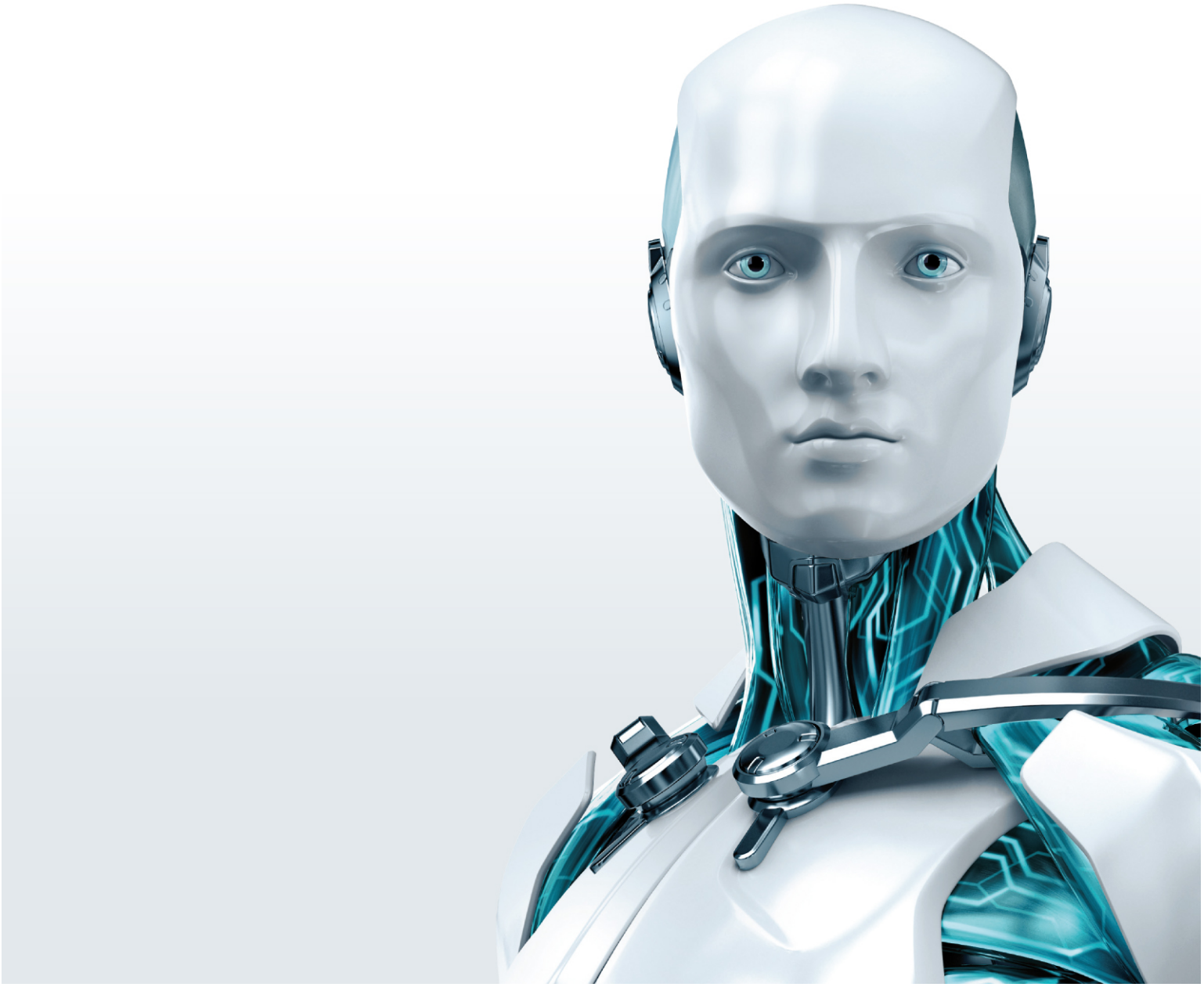
ESET Secure Authentication Java SDK

Getting Started Guide



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Introduction

This document details what is required to add a second authentication factor to an existing application by using the ESET Secure Authentication SDK.

SDK Overview

The ESET Secure Authentication SDK provides both user management and authentication functionality. The SDK integrates with custom applications by storing 2FA data in the system's existing user database. This means that there are minimal external dependencies making it possible for system architects to add 2FA to nearly any custom system.

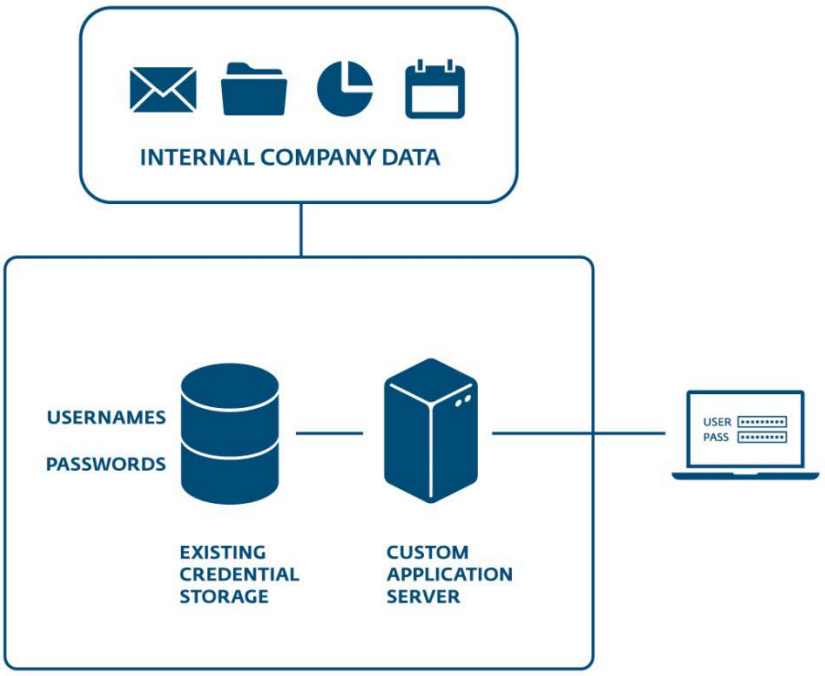


Figure 1: Before ESET Secure Authentication SDK integration

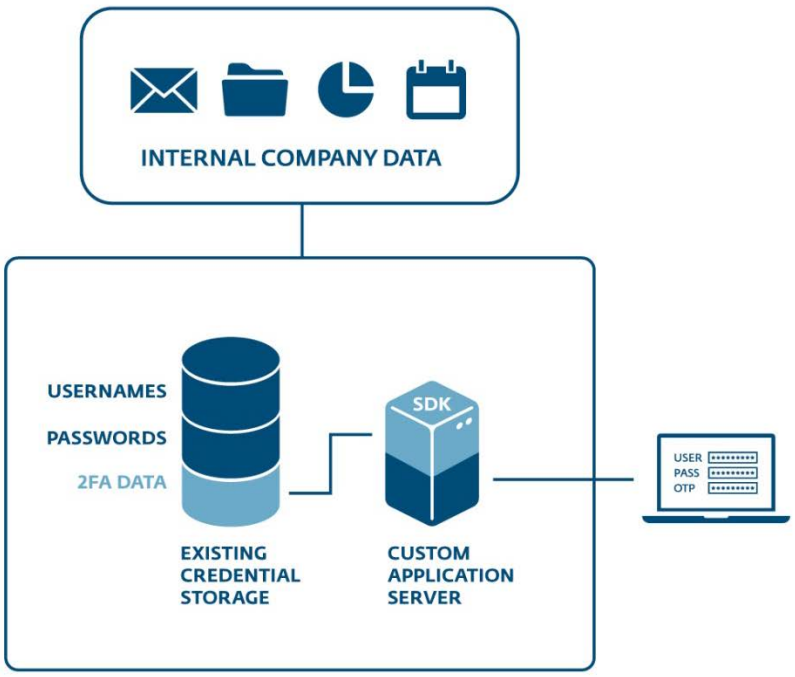


Figure 2: After ESET Secure Authentication SDK integration

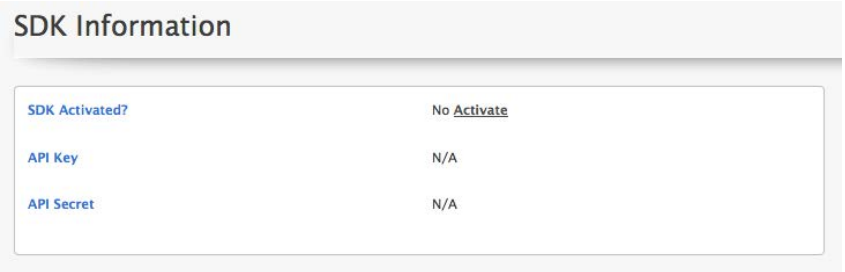
The remainder of this document provides instructions for obtaining the SDK, using the example code and finally integrating the SDK into your existing platform.

Step 1: Activate Your License

To use the ESET Secure Authentication SDK, you require an API Key and a Shared Secret. These credentials are derived from your ESET Secure Authentication license.

To derive your SDK credentials, navigate to https://esa.eset.com/sdk. Log in using the ESET Secure Authentication license information you used to access the SDK download.

The resulting page will display your SDK license information. To activate your license for the SDK, click "Activate" in the "SDK Information" section, as depicted in Figure 3.



Step 2: Running the Sample Code

The quickest way to get up and running with the SDK is to run the sample code.

Download the sample application .zip file from https://esa.eset.com/sdk/docs/samples/

The zip file contains a README.txt – follow the instructions therein.

Step 3: Using the SDK

Users of the SDK can consult the ESET Secure Authentication SDK Developer Guide for instructions on integration with their platform.

The SDK Developer Guide is available here: https://esa.eset.com/sdk/docs/

This guide contains:

- How to reference the SDK library in an application
- An overview of how to use the SDK
- Detailed reference documentation for namespaces and classes

Step 4: SDK System Integration

Once the SDK has been evaluated, it must be integrated with your existing authentication system.

The following steps are required to integrate the ESET Secure Authentication SDK into a system:

- Extend the user storage database with extra 2FA fields
- Implement classes for reading and writing 2FA data for users
- Update existing login UI to accept OTPs
- Update existing user management UI to manage a user's 2FA settings
- Implement optional components

The subsequent sections of this document describe these steps.

Database Requirements

The ESET Secure Authentication SDK stores a user's 2FA data in your existing database as a string. You will therefore need to add a column capable of storing unicode strings of varying length.

MySQL users: We recommend that you use the TEXT datatype
Postgres users: We recommend that you use the `character_data` datatype
Oracle users: We recommend that you use the NCLOB datatype
Microsoft SQL Server users: We recommend that you use the `nvarchar(max)` datatype

If you do not have a mobile telephone number field for each user, it is highly recommended that you create a field capable of storing mobile numbers (varying length numerical string). This will help ensure compatibility with future ESET Secure Authentication releases.

Reading and Writing 2FA Data

The ESET Secure Authentication SDK exposes the `IUserStorage` interface that transports data between the SDK and your database; this interface must be implemented to read and write 2FA data (see the SDK Developer Guide for details).

The interface uses two methods that must be implemented, `LoadUser` and `SaveUser`:

loadUser

This method uses the following input parameter:

- string username - the user whose 2FA data will be retrieved

This method has the following return type:

- string data - the 2FA data for the user

In other words, the supplied username must be used to return the 2FA data for that user.

saveUser

This method has the following input parameters:

- string username - the user whose 2FA data you want to store
- string data - the 2FA data to store

This method has no return value. In other words, the SDK will provide the username and 2FA data – make sure that this data is written to the 2FA field in your user database.

Update Login UI With 2FA Methods

This section describes the authentication logic that must be implemented for 2FA users.

Once a user has authenticated their static password against the existing system, the pre-authenticate method must be called for that user. This method checks the 2FA type for the user (SMS, Mobile App, etc.) and sends an SMS OTP if required. It returns a result that contains the expected credential type, which must be used to guide the user during the logon process. Details of this type may be found in the Developer Guide.

An example of a single-factor authentication system is provided in 4

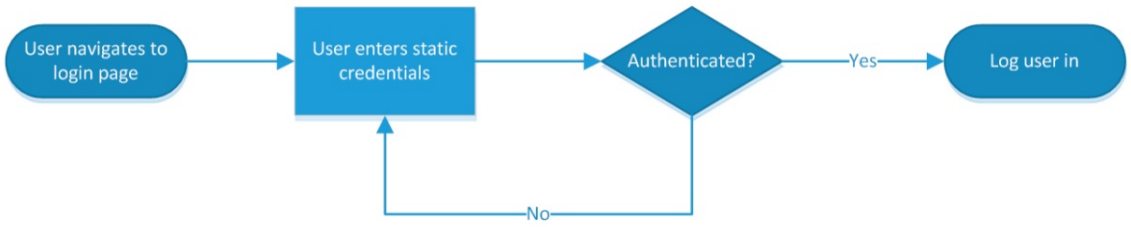


Figure 4: Single factor authentication logic (before integration)

An example of authentication logic after the ESET Secure Authentication SDK has been integrated is depicted in Figure 5. Note that the logic for this will vary from system to system, depending on the requirements.

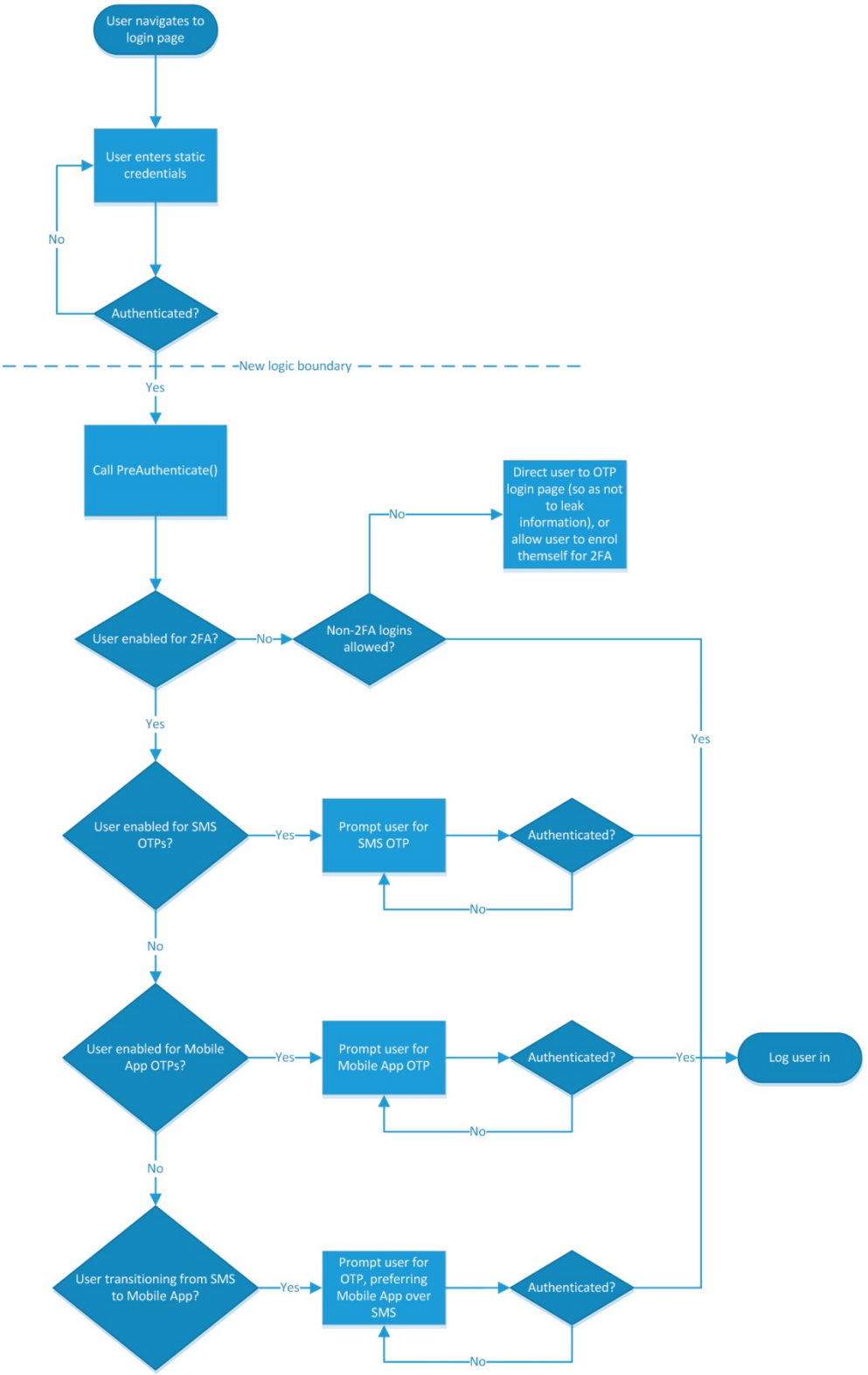


Figure 5: Two-factor authentication logic with the ESET Secure Authentication SDK

Update the Management UI to Enable/Disable 2FA For Users

User management is performed via the `TwoFactorUser` class. Users can be enabled for 2FA using mobile app OTPs or SMS OTPs. The transitioning state allows a user to upgrade from SMS to Mobile App OTPs. An administrator may perform user management, or users may enroll themselves.

The `TwoFactorUser` class exposes methods (actions) that may be performed on users.

Additional Components

The following components are optional.

Logging Integration (Recommended)

The ESET Secure Authentication SDK logs non-critical events via a logging wrapper, so as not to limit you to any logging framework. This means it is easy to use your existing logging framework. See the Developer Guide for further details.

Auditing Integration (Recommended)

The SDK audits various critical events via the `IAuditor` interface. If this interface is not implemented, auditing events are sent to the configured logger. The implementation is set on the `Auditor` property of the `TwoFactorConfiguration` class.

Using an Alternative SMS Gateway (Optional)

The ESET Secure Authentication SDK sends SMS messages via theglobal ESET SMS gateway. You can configure your own SMS Gateway by implementing the `ITextMessageSender` interface.