ESET
SECURE
AUTHENTICATION

API User Guide
(intended for product version 2.7)

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1. Introduction

In most web-based applications, users are authenticated before being granted access to protected resources. By asking for an additional authentication factor during the logon process, such applications gain an additional layer of security.

The ESET Secure Authentication API is a REST-based web service that can be used to easily add two-factor authentication (2FA) to existing applications.

The full API documentation for developers is available on the same URL address as ESA Web Console, but followed by "/apidoc" without quotation marks. For example, if the ESA Web Console is available at https://120.0.1:8001/, the API documentation is available at https://127.0.0.1:8001/apidoc
2. Integration Overview

The API consists of two endpoints:

1. The Auth API, former Authentication API, for adding 2FA to existing applications.

2. The User Management API, for managing 2FA users.

The API operates using methods which are called by POSTing JSON-formatted text to the relevant API URLs. All responses are also encoded as JSON-formatted text containing the method result and any applicable error messages.

The API is available on all servers where the Authentication Core component is installed and runs over the secure HTTPS protocol on port 8001, unless you changed the port during installation of Authentication Server.

The API is a subcomponent of the standard ESA Authentication Service. As such, a functional ESA installation is prerequisite to using the API. The authentication API is available on URLs of the form https://127.0.0.1:8001/auth/v2/ and the Management API is available on URLs of the form https://127.0.0.1:8001/manage/v2/. Both endpoints are protected from unauthorized access via standard HTTP Basic Authentication, requiring a valid set of API Credentials before processing any request.
3. Configuration

The API is disabled by default and must be enabled before use. Each set of API credentials can be enabled for the Auth API, the User Management API or both endpoints. Once enabled, API credentials must be created to authorize requests:

Enabling API and configuring API credentials in ESA Web Console
1. Launch the ESET Secure Authentication Web Console and navigate to the Settings > API Credentials.
2. Select the Enabled check box. Save the changes.
3. Click the Add Credentials action to create a new set of credentials.
4. Enter the desired name, select the Auth API or Management API check box or both. Click Save.
5. The account ID and password displays.

Be sure to save the password securely, it cannot be displayed again.

Enabling API and configuring API credentials in MMC Console
1. Launch the ESET Secure Authentication Management Console and navigate to the Advanced Settings node for your domain.
2. Expand the API section and check the API is enabled check box. Save the changes.
3. Open the standard Windows Services Console and restart the ESET Secure Authentication Core service for the change to take effect.
4. Navigate to the newly visible API Credentials node for your domain.
5. Click the Add Credentials action to create a new set of credentials.
6. Double-click on the newly created credentials to get the username and password that are to be used for API authentication.
7. Check the Enabled for Auth API check box, the Enabled for User Management API check box or both.

Many sets of API credentials may be created. It is recommended to create different sets for each application being protected, as well as for testing.

If the API is enabled, all servers with the Authentication Server component installed will respond to authorized API requests after they are restarted. There is no need to restart the ESACore service when credentials are created or deleted.
4. Authentication API

All Auth API methods are available on URLs of the form https://127.0.0.1:8001/auth/v2/ and are protected from unauthorized access via standard HTTP Basic Authentication, requiring a valid set of API Credentials that are enabled for the Authentication API before processing any request. The Content-Type header must be set to application/json for each request.

The ESET Secure Authentication installer automatically uses an appropriate SSL security certificate installed on the machine, or generates a new self-signed certificate if another cannot be found.

Replacing the SSL certificate is covered in the ESA API SSL Certificate replacement document.

4.1 Step 1: Start 2-Factor Authentication

As soon as the existing application has verified a user’s username and password, the StartTwoFactorAuthentication method must be called in order to determine whether two-factor authentication has been enabled for the user. If required, a push notification or SMS OTP will automatically be sent to the user at this time.

4.1.1 Request

To begin the 2FA process, make an HTTP POST request to the following URI:

```
auth/v2/StartTwoFactorAuthentication
```

The following JSON string must be posted:

```
{
    "username": "USERNAME"
}
```

In case of a domain user, the username field is a string with the samAccountName of the user to be authenticated. It is very important that the correct username be sent to the API: the samAccountName is the user’s normal logon name in Active Directory.

4.1.2 Response

All typical responses will be returned with a 200 (OK) HTTP status code, even if the requested action failed. The response will be a JSON string. See below for an example of a standard response:

```
{
    "expected_otp": ["APP", "SMS"],
    "error": "ERROR_NONE",
    "error_message": ""
}
```

If no error has occurred, then the error field will display “ERROR_NONE”. Please see the Error Handling section for a description of possible error codes.

The error_message field will give a friendly description of the error, if applicable.
The `expected_otp` field is an array and specifies the OTP (One-time password) types that can be expected from the user. This value can assist with UI creation, for example, it will indicate if the user should expect an SMS or not. If the array is empty then no OTP is required (i.e. 2FA is not enabled) and the user should be logged in immediately. The following OTP types can be included in the array:

- **APP** – the user has already installed the ESA application on their mobile phone and should generate an OTP using the application.
- **SMS** – the user has not installed the application and has been sent an SMS with an OTP.
- **HARD_TOKEN** – the user has been assigned a hard token and should generate an OTP using the device.

### 4.2 Step 2: Authenticate

#### 4.2.1 Request

To authenticate a user, make an HTTP POST request to the following URI:

```
/auth/v1/authenticate
```

The following JSON string must be posted:

```
{
    "username": "USERNAME",
    "otp": "123456"
}
```

The `username` field is a string with the `samAccountName` of the user to be authenticated and the `otp` field a string with the OTP entered by the user.

#### 4.2.2 Response

All typical responses will be returned with a 200 (OK) HTTP status code, even if the requested action failed. The response will be a JSON string. See below for an example of a standard response:

```
{
    "authenticated": true,
    "error": "ERROR_NONE",
    "error_message": ""
}
```

If no error has occurred, then the `error` field will display `ERROR_NONE`. Please see the Error Handling section of this guide for a description of possible error codes.

The `error_message` field will give a description of the error if an error has occurred.

The `authenticated` field is a Boolean that specifies whether the supplied OTP is valid. If the `authenticated` value is `true`, the user’s OTP has been successfully validated and the user should be logged in.
5. User Management API

All User Management API methods are available on URLs of the form `https://127.0.0.1:8001/manage/users/v1/` and are protected from unauthorized access via standard HTTP Basic Authentication, requiring a valid set of API Credentials that are enabled for the User Management API before processing any request. The `Content-Type` header must be set to `application/json` for each request.

The ESET Secure Authentication installer automatically uses an appropriate SSL security certificate installed on the machine, or generates a new self-signed certificate if another cannot be found.

Replacing the SSL certificate is covered in the ESA API SSL Certificate replacement document.

5.1 Get User Profile

This method returns 2FA information about a user account.

5.1.1 Request

To get the 2FA profile of a user, make an HTTP GET request to the following URI:

```
/manage/users/v1/profile/USERNAME
```

Where `USERNAME` is a string with the `samAccountName` of the user to fetch the profile of. It is very important that the correct username be sent to the API: the `samAccountName` is the user’s normal logon name in Active Directory. The username must be URL-encoded.

5.1.2 Response

All typical responses will be returned with a 200 (OK) HTTP status code, even if the requested action failed. The response will be a JSON string. See below for an example of a standard response:

```json
{
    "username": "USERNAME",
    "mobile_number": "2700000",
    "is_locked": false,
    "last_success": "2014-01-01T00:00:00",
    "last_failure": null,
    "consecutive_failures": 0,
    "credential_type": ["APP", "SMS"],
    "error": "ERROR_NONE",
    "error_message": ""
}
```

If no error has occurred, then the `error` field will display `ERROR_NONE`. Please see the Error Handling section of this guide for a description of possible error codes.

The `error_message` field will give a description of the error if an error has occurred.

The `username` field is a String containing the `samAccountName` of the user.

The `mobile_number` field is a String containing the mobile number of the user.

The `is_locked` field is a Boolean that specifies if the user has been locked for 2FA due to too many failed authentication attempts.
The `last_success` field is a Date that specifies the last time that the user performed a successful authentication. This field can be null.

The `last_failure` field is a Date that specifies the last time that the user performed a failed authentication. This field can be null.

The `consecutive_failures` field is an Integer that specifies the number of consecutive failed authentication attempts performed by the user.

The `credential_type` field is an array and specifies the OTP (One-time password) types that have been enabled for the user. The following OTP types can be included in the array:

- **APP** – the user has been enabled for the ESA Mobile App.
- **SMS** – the user has been enabled for SMS OTPs.
- **HARD_TOKEN** – the user has been enabled for hard token OTPs.

### 5.2 Unlock

This method will unlock the 2FA access of a user. It will not unlock an account locked by Active Directory.

#### 5.2.1 Request

To unlock a user, make an HTTP POST request to the following URI:

```
/manage/users/v1/unlock
```

The following JSON string must be posted:

```json
{
    "username": "USERNAME"
}
```

The `username` field is a string with the `samAccountName` of the user to unlock. It is very important that the correct username be sent to the API: the `samAccountName` is the user’s normal logon name in Active Directory.

#### 5.2.2 Response

All typical responses will be returned with a 200 (OK) HTTP status code, even if the requested action failed. The response will be a JSON string. The response will only contain a possible error code and message, without any other data. See below for an example of a standard response:

```json
{
    "error": "ERROR_NONE",
    "error_message": ""
}
```

If no error has occurred, then the `error` field will display `ERROR_NONE`. Please see the Error Handling section of this guide for a description of possible error codes.

The `error_message` field will give a description of the error if an error has occurred.
5.3 Deprovision

This method will disable 2FA for a user.

5.3.1 Request

To disable 2FA for a user, make an HTTP POST request to the following URI:

`/manage/users/v1/deprovision`

The following JSON string must be posted:

```json
{
    "username": "USERNAME"
}
```

The `username` field is a string with the `samAccountName` of the user to disable 2FA for. It is very important that the correct username be sent to the API: the `samAccountName` is the user’s normal logon name in Active Directory.

5.3.2 Response

All typical responses will be returned with a 200 (OK) HTTP status code, even if the requested action failed. The response will be a JSON string. The response will only contain a possible error code and message, without any other data. See below for an example of a standard response:

```json
{
    "error": "ERROR_NONE",
    "error_message": ""
}
```

If no error has occurred, then the `error` field will display `ERROR_NONE`. Please see the Error Handling section of this guide for a description of possible error codes.

The `error_message` field will give a description of the error if an error has occurred.

5.4 Provision Mobile Application

This method will enable a user for Mobile Application OTPs. A text message with the installation URL for the mobile application will be sent to the user.

5.4.1 Request

To provision a user for the Mobile Application, make an HTTP POST request to the following URI:

`/manage/users/v1/provisionmobileapp`

The following JSON string must be posted:

```json
{
    "username": "USERNAME"
}
```

The `username` field is a string with the `samAccountName` of the user to provision. It is very important that the correct username be sent to the API: the `samAccountName` is the user’s normal logon name in Active Directory.
5.4.2 Response

All typical responses will be returned with a 200 (OK) HTTP status code, even if the requested action failed. The response will be a JSON string. See below for an example of a standard response:

```
{
    "installation_url": "http://...",
    "error": "ERROR_NONE",
    "error_message": ""
}
```

If no error has occurred, then the `error` field will display `ERROR_NONE`. Please see the Error Handling section of this guide for a description of possible error codes.

The `error_message` field will give a description of the error if an error has occurred.

The `installation_url` field is a String that contains the installation URL for the Mobile Application.

5.5 Provision Text Message

This method will enable a user for text message OTPs.

5.5.1 Request

To provision a user for the text message OTPs, make an HTTP POST request to the following URI:

```
/manage/users/v1/provisiontextmessage
```

The following JSON string must be posted:

```
{
    "username": "USERNAME"
}
```

The `username` field is a string with the `samAccountName` of the user to provision. It is very important that the correct username be sent to the API: the `samAccountName` is the user’s normal logon name in Active Directory.

5.5.2 Response

All typical responses will be returned with a 200 (OK) HTTP status code, even if the requested action failed. The response will be a JSON string. The response will only contain a possible error code and message, without any other data. See below for an example of a standard response:

```
{
    "error": "ERROR_NONE",
    "error_message": ""
}
```

If no error has occurred, then the `error` field will display `ERROR_NONE`. Please see the Error Handling section of this guide for a description of possible error codes.

The `error_message` field will give a description of the error if an error has occurred.
6. Error Handling

6.1 API Errors

All API errors will be returned as a response with an HTTP 200 (OK) status code.

The error field in the JSON response will indicate the error code, which is a literal string value. The following error codes are defined:

- **ERROR_NONE**: No error has occurred
- **ERROR_USER_NOT_FOUND**: The supplied username does not exist in the system
- **ERROR_FAULT**: An unspecified error has occurred

In addition to the error field, an error_message is also provided with a friendly description of the error. Only the error field should be used to determine error conditions as the error_message field is only informational and is subject to change without notice.

6.2 HTTP Errors

All HTTP errors will be returned as responses with an empty body and an HTTP status code other than the normal 200 (OK).

The following erroneous HTTP status code can be returned:

- **HTTP 500 (Internal Server Error)**: The API service experienced an unknown, fatal error
- **HTTP 400 (Bad Request)**: The format of the “Authorization” header in the HTTP request is invalid
- **HTTP 401 (Unauthorized)**: No API credentials were supplied with the HTTP request
- **HTTP 403 (Forbidden)**: Credentials supplied with the HTTP request are invalid.