



VISIT SINGAPORE ACCOUNT TECHNICAL INTEGRATION GUIDE - INDUSTRY PARTNERS

Version 1.0

REVISION HISTORY

Version	Date	Summary
1.0	07/10/2019	Base Version

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1 Introduction

The Visit Singapore Account (VS Account) is a unique digital identity for each visitor to Singapore, to enable Singapore Tourism Board (STB) and our partners to deliver a truly personalized experience to each traveler. Partners can use the VS Account service as a fast, convenient and secure way for VS Account users to log into your digital application or website.

1.1 Purpose

This document aims to provide partners with the necessary information to leverage the VS Account APIs, including integration process flow, usage of the Visit Singapore sign in button to assist them in integrating their existing websites or applications with the VS Account service.

1.2 Pre-requisite for Partners

This document assumes that the user of VS Account service has the pre-requisite knowledge and experience required to do the necessary integration using the technologies listed below:

1. OAuth 2.0 Protocol and process
2. REST APIs

1.3 VS Account Partner On-Boarding

Partners who wish to leverage the VS Account should register for a TIH Business account and request for the service through the following procedure:

1. The partner shall submit the application form, attached in <https://tih-dev.stb.gov.sg/sites/default/files/ApplicationForm.pdf>, to the TIH Helpdesk (stb_tih@stb.gov.sg) to request for access to the VS Account service with the following key information:

- a. TIH Portal ID (Email address)
- b. Nature of Business
- c. Intended use of VS Account API
- d. Application(s) Name, Description and URL
- e. Redirect URL
- f. Applicant's Privacy Policy and Terms of Service URLs
- g. Application administrator's email address

2. The partner shall submit all necessary information as may be required by STB in connection with their application for the VS Account service. By doing so, the partner warrants that any information, which they have provided in order to obtain the API, is accurate and complete for the duration of their access and/or use of the API. If there is any update to the information provided, they are expected to inform TIH Helpdesk at (stb_tih@stb.gov.sg) immediately.

3. By requesting for the VS Account service, the partner unconditionally agree to be bound by TIH Terms of Use, which may be updated and amended from time to time at STB's sole and absolute discretion.

4. Once the request has approved, an email with the ClientId and ClientSecret will be sent to the partner's email address and application administrator's email address.

5. Partners are then able to integrate the VS Account APIs into specified application(s) by following the specifications captured in this document.

1.4 Management of VS Account Users Consent

A VS Account User may withdraw his/her consent for the sharing, use or storage of his/her personal data with a partner's application. STB will notify the partner of such withdrawal of consent via an email sent to the partner's administrator email address, stated in Section 1.3, para 1(g) above.

The partner shall delete all of the VS Account User's data upon notification by STB if that person requests for such deletion, unless the partner is required to keep it by law.

2 API Interface Overview

The VS Account service APIs are RESTful web services based on representational state transfer (REST) technology, that uses HTTP requests to access data from the VS Account service. The APIs leverages the OAuth 2.0 industry-standard protocol for authorisation and authentication of the VS Account users.

This section provides the overview of the available methods and formats to access the data via the APIs.

2.1 Interfacing with VS Account service

Before accessing any of the VS Account service APIs, do note the reference to the following:

[OAuth_domain] refers one of the following accessible URLs,

- i. *account.visitsingapore.com* (Production Environment)

[API_domain] refers one of the following accessible URLs,

- i. *api.visitsingapore.com* (Production Environment)

A valid access token is required to access any of the VS Account Service APIs. (See section on [OAuth Authentication Process Flow](#))

2.2 API Response Format

The VS Account service APIs only support the JSON format. The selection of the response format is via the “Accept” request header and the APIs will respond with a JSON response.

GET /service/v1/user/profile

Accept: application/json

ContentType: application/x-www-form-urlencoded

Host: **[API_domain]**

Authorization: BearerToken <access_token>

Date: Thu, 26 September 2019 21:04:25 +0800

Format	Accept header
JSON	application/json

JSON Response

```
{
  "status": {
    "statusCode": 200,
    "statusText": "OK"
  },
  "data": {
    "uuid": "string value",
```

```
"attribute": "value",
...
}
}
```

2.3 Request Methods

The following are the supported request methods for the APIs available for partners:

Method	Message Body Encoding	Remarks
GET	none	Retrieve resource data from server. No change shall be made on data.
POST/PUT	application/x-www-form-urlencoded	Send resource data to server.

2.4 Status Codes

Each API will return a status for each request based on HTTP Response Codes. The list of possible status codes is as defined in the table below:

Code	Message	Remarks
200	OK	No error. The request to retrieve or update the resource was successful.
201	CREATED	Creation of a resource was successful.
400	BAD REQUEST	Invalid request URI or header, or unsupported non-standard parameters.
401	UNAUTHORIZED	Authorisation required. Authorisation header was invalid format. Authorisation token was invalid.
403	FORBIDDEN	User is not authorised to access the specified resource.
404	NOT FOUND	Resource not found.
422	UNPROCESSABLE ENTITY	Bad value provided for request parameter.
500	INTERNAL SERVER ERROR	Internal error. Default code of unrecognized error.
503	SERVICE TEMPORARILY UNAVAILABLE	Service temporarily unavailable.

2.5 Available API End Points

The available API End Points for partners include, but not limited to, the following:

OAuth Authentication APIs		
API	Request Method	Request URL
Get Access Token	POST	https://[OAuth_domain]/sso/oauth/accessToken
Refresh Access Token	POST	https://[OAuth_domain]/sso/oauth/accessToken

User Account Related APIs		
API	Request Method	Request URL
Get User Profile	GET	https://[API_domain]/service/v1/user/profile
User Logout	POST	https://[API_domain]/service/v1/user/logout

Other APIs		
API	Request Method	Request URL
Get Countries	GET	http://[API_domain]/service/v1/countries

3 Detailed API Specifications

This section describes the detailed specifications of each individual API and gives the broad overview of the respective request method, input parameters as well as a sample output for reference.

3.1 OAuth Authentication

The OAuth protocol allows the 3rd party application to access to resource APIs on behalf of a resource owner (user) through the use of access tokens.

3.1.1 OAuth Roles

OAuth2 defines 4 roles as defined in the table below.

Role	Description
Resource Owner	VS Account User.
Resource Server	Server hosting the VS Account profile data. (E.g. VS Account service hosting the VS Account User's profile information)
Client	Application requesting access to a resource server. (it can be a website or a mobile application)
Authorisation Server	Server issuing access token to the client. This token will be used by the client when requesting for access to the resources in the resource server.

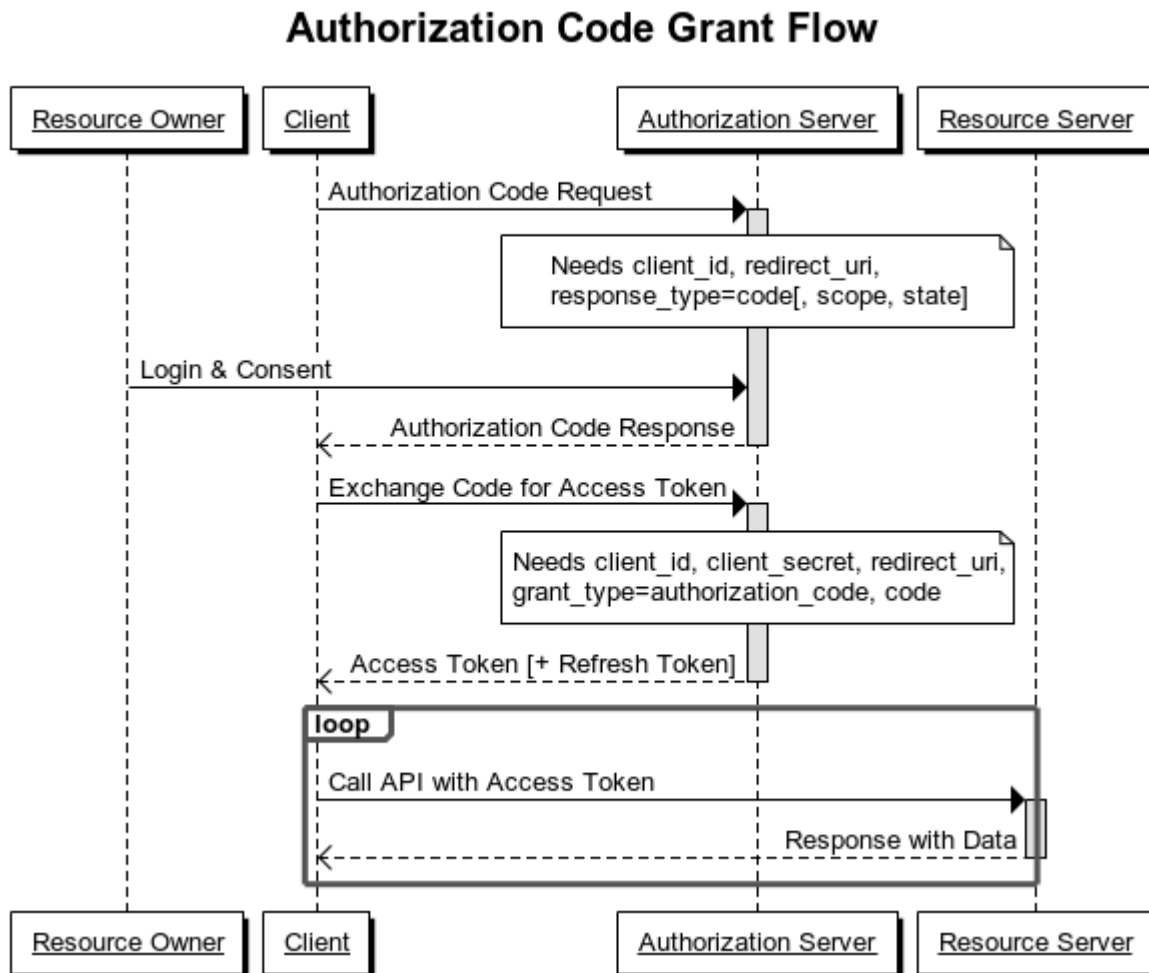
3.1.2 Tokens

Tokens are random strings generated by the authorisation server and are issued when the client requests them. There are 2 types of token:

Token Type	Description
Access Token	It allows the user data to be accessed by a third-party application. This token is sent by the client as a header in the request to the resource server. It has a limited lifetime, which is defined by the authorisation server.
Refresh Token	This token is issued with the access token but unlike the latter, it is not sent in each request from the client to the resource server. It merely serves to be sent to the authorisation server for renewing the access token when it expires.

3.1.3 OAuth Authentication Process Flow

OAuth implementation has the following steps / sequence to access the services as depicted in the diagram below.



3.1.4 Get Authorisation Code

The following steps describes the process for the client to obtain an authorisation code.

1. The client will implement a login button, detailed in Section 4, to connect to VS Account Portal with the below URL.
[https://account.visitsingapore.com/sso/oauth/authorize?client_id=\[CLIENT_ID\]&redirect_uri=\[REDIRECT_URI\]&response_type=code](https://account.visitsingapore.com/sso/oauth/authorize?client_id=[CLIENT_ID]&redirect_uri=[REDIRECT_URI]&response_type=code)
2. Upon clicking on the login button, it redirects to VS Account Portal Login page for the resource owner's login credentials. Apart from email login, VS Account also enables login via social handle (e.g. Facebook), in which the resource owner is expected to have an existing account with the associated platforms. In the event that the resource owner has to register for a social handle, the resource owner will not be auto redirected to the VS Account Portal.

3. On successful login, the resource owner will be prompted for consent to share his/her profile information with the client.
4. With the resource owner's consent, it redirects to the *REDIRECT_URI* specified in the above link with the authorization code appended to it.
E.g.: [https://\[REDIRECT_URI\]?code=<authorization_code>](https://[REDIRECT_URI]?code=<authorization_code>)

Do note that the authorization code will have the following format:

- Alphanumeric characters
- hyphen "-" as the only allowed special character

In cases where the resource owner logs in via a social handle, the returned URL may be appended with an additional hash.

e.g. [https://\[REDIRECT_URI\]?code=<authorization_code>#_="](https://[REDIRECT_URI]?code=<authorization_code>#_=)

The client will have to remove the hash, highlighted in the example above, from the authorisation code before use.

3.1.5 Get Access Token

The following steps describe the process for the client to obtain an access token using the authorisation code from the [Get Authorisation Code](#) step.

1. Call the below API with a HTTP POST request with Authorisation code from above step.

URL	https://account.visitsingapore.com/sso/oauth/accessToken
Header	Content-Type=application/x-www-form-urlencoded
Form Params	client_id=[CLIENT_ID] client_secret=[CLIENT_SECRET] redirect_uri={REDIRECT_URI} grant_type=authorization_code code=[AUTH_CODE]

2. The response will have token type, access token, refresh token and the expiry duration of the access token.

3.1.6 Refresh Access Token

1. Call the below API with a HTTP POST request with Authorisation code from above step.

URL	https://account.visitsingapore.com/sso/oauth/accessToken
Header	Content-Type=application/x-www-form-urlencoded
Form Params	client_id=[CLIENT_ID] client_secret=[CLIENT_SECRET] redirect_uri={REDIRECT_URI} grant_type= refresh_token refresh_token=[REFRESH_TOKEN]

2. The response will have token type, access token and the expiry duration of the access token.

3.1.7 Access the services

After obtaining the access token, it can be used to access the VS Account service APIs as described in the following sections.

3.2 User Account APIs

3.2.1 User Profile

The User Profile API allows the requestor to retrieve the profile of the VS Account User that is associated to the provided access token.

Do note that the Country of Residence in the User Profile API references to the Get Countries API, detailed in Section 3.3:

Field in the User Profile	Reference API
Country of Residence (countryInfo)	Get Countries

GET profile	
https://[API_domain]/service/v1/user/profile	
This endpoint allows the retrieval of the user's profile on VS Account.	
Request Header	
Authorization	BearerToken <access_token>
Sample Output Response	
<pre>{ "status": { "statusCode": 200, "statusText": "OK" }, "data": { "uuid": "740e3a4227c54a56bcde582b8ea47987", "name": "John Smith", "firstName": "John", "lastName": "Smith", "email": "john_smith@gmail.com", "countryInfo": { "countryCode": "JP", "countryName": "Japan" } } }</pre>	

3.2.2 User Logout

The User Logout API allows the requestor to log out the associated user, based on the access token, from the VS Account service. The access token is subsequently removed from the VS Account service.

POST		logout	
https://[API_domain]/service/v1/user/logout			
This endpoint logs a VS Account user out from the VS Account service.			
Request Header			
Authorization	BearerToken <access_token>		
ContentType	application/x-www-form-urlencoded		
Output Response Sample			
<pre>{ "status": { "statusCode": 200, "statusText": "OK", "message": "User logout successfully" } }</pre>			

3.3 Get Countries API

The Get Countries API returns a list of countries that the VS Account service uses. This list is used together with the [User Profile](#) API, to identify the user's country of residence by matching the value indicated in user's profile with that of the *countryCode* in the Get Countries API.

Extract from User Profile API	Extract from Get Countries API
<pre>"countryInfo": { "countryCode": "JP", "countryName": "Japan" }, ...</pre>	<pre>{ "countryName": "Japan", "countryCode": "JP " }, ...</pre>

GET countries https://[API_domain]/service/v1/countries	
This endpoint allows the retrieval of a list of available options for the user's country of residence.	
Request Header	
Authorization	BearerToken <access_token>
Sample Output Response	
<pre>{ "status": { "statusCode": 200, "statusText": "OK" }, "totalCount": 235, "data": [{ "countryName": "Afghanistan", "countryCode": "AF", "countryPrefix": "+93" }, { "countryName": "Albania", "countryCode": "AL", "countryPrefix": "+355" }, { "countryName": "Algeria", "countryCode": "DZ", "countryPrefix": "+213" }, ...] }</pre>	

4 Guidelines on the Usage of Visit Singapore Account Sign-In Button

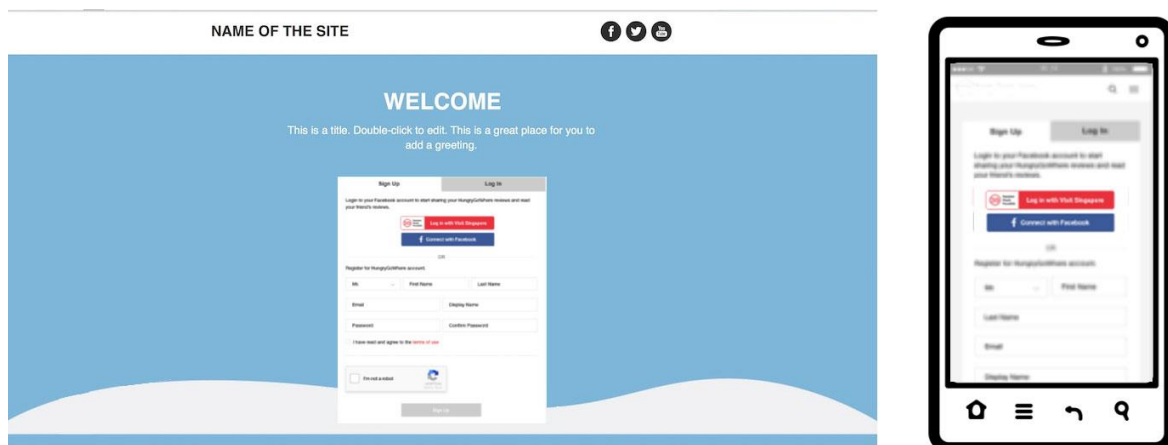
Visit Singapore Account sign-in button should be applied across your application or website consistently.



The composition of the button contains two key elements:

- (1) Passion Made Possible logo
- (2) Red rectangle button with white text “Log in with Visit Singapore”

The Visit Singapore Account sign-in button must be used as-is. It should be legible and displayed as prominently as other third-party sign-in options, if applicable.



To seek deviations from the guidelines, please write to the TIH Helpdesk (stb_tih@stb.gov.sg) for approval. STB reserves the right not to approve deviations and/ or revoke the use of the Visit Singapore Account sign-in button.