

InEight Integrations

Using Postman with InEight APIM



Changelog

This changelog contains only significant or other notable changes to the document revision. Editorial or minor changes that do not affect the context of the document are not included in the changelog.

Rev	Date	Description
1.0	05-MAR-2019	Initial Release
	28-AUG-2019	Moved to new template
2.0	29-JUL-2022	Added NOTE in Create an Environment in Postman when using OAuth 2.0. Published revision.

Contents

Overview	4
Prerequisites.....	4
Environment Variables	4
Getting Started	6
About Authentication Methods	6
Create an Environment in Postman	6
Instructions – Using ProjectCodes_Get as Sample	9
Appendix A: Prerequisite Script	13
Appendix B: Environment Variable Mapping to APIM Headers	14

Overview

This document describes how to use the Postman developer tool to test and create proof-of-concept code for InEight cloud platform APIs.

Prerequisites

- **Postman** – Download the applicable version for your development environment from <https://www.getpostman.com/>.
- **InEight Environment** – You will need to have an existing environment for InEight that is suitable for testing and will not interfere with live production data. Creation of this environment will provide some of the information used for Environment Variables later in this document.
- **APIM Subscription** – Refer to the [Getting Started with InEight Integrations – Developer Guide](#) for instructions to create an account in APIM and generate an APIM Subscription Key.

Environment Variables

You can copy the following table and fill in the Value column for later reference.

Variable Name	Value	How to Obtain	Example
TenantId		The Id for your Azure Active Directory Tenant Subscription that will authenticate your ClientId	5ag46018-bd64-4747-8a43-4c0ecZ187b68
SSOClientId		Client Id within customer Azure AD used to verify identity. This is in the setting “In8.Platform.SSOClientId” in the InEight Tenant Catalog	c5e5eb3-7c68-4505-bca9-7bc46e9440a6
ClientId		Client Id provided for Azure AD when creating the InEight environment. This is in the ServiceClientId in the InEight Tenant Catalog ¹	67a8fa13-c7c5-4a7e-8b29-3cef970dae3a
ClientSecret		Client Secret provided for InEight environment. This is in the ServiceClientSecret in the InEight Tenant Catalog. NOTE: To request information from the Tenant Catalog, a request must be made via a ticket in InEight’s Service Now.	LBYgYv404e8=

Variable Name	Value	How to Obtain	Example
TenantPrefix		<p>The URL prefix for the environment domain For example, if your environment URL is https://sample-domain.hds.ineight.com, then the InEight InEight Tenant Prefix is "sample-domain".</p> <p>This is the "TenantKey" in the InEight Tenant Catalog¹</p>	sample-domain
SubscriptionKey		This is found in in your APIM Profile.	0bf82de6384043d0b0ebd9b1fb528ffd

Getting Started

About Authentication Methods

All API requests into InEight APIM are authenticated in two ways:

- The first layer of authentication for Integration APIs is validation that the caller has a valid Subscription Key to APIM. This is handled by passing a subscription key as a header in the API request, which is described in more detail throughout this document.
- The second layer of authentication is that the caller has a valid account, typically an email account in the InEight application environment.

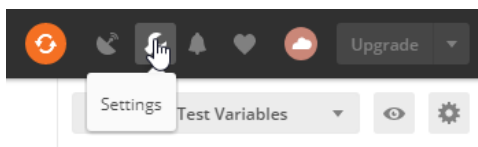
It is technically possible to use Postman in the InEight application through three general methods of authentication as mentioned below. However, only options 2 or 3 can currently be used with Postman due to incompatibility between OAuth2.0 and Postman.

1. Interactive/Manual User Id Entry – InEight uses Azure AD OAuth 2.0 to authenticate manually entered credentials. Because Postman is not currently aware of the Azure AD specifics for OAuth 2.0 at this time, this method is not supported.
2. Service Account with Client Id/Client Secret – This document provides examples for testing APIs using this method. The ClientID and Client-Secret are available through InEight’s professional Services.
3. Registered Application with Client Id/Client Secret – Although supported, this document does not provide examples.

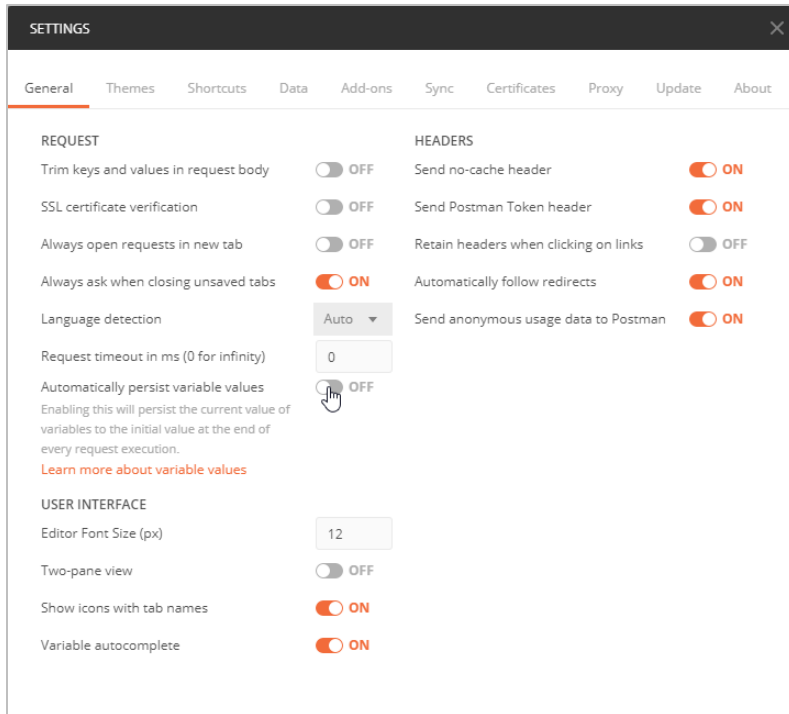
Create an Environment in Postman

The Environment is used to create variables used to set required values for headers in API Requests. Sample scripts are provided in the instructions for using the variables to set header values via script.

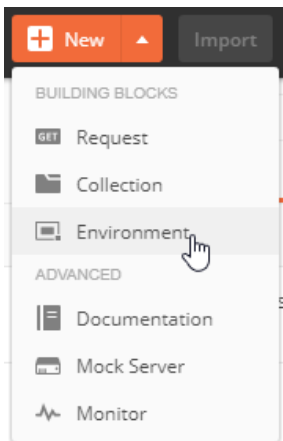
1. In Postman, click the Settings icon.



2. Change the setting Automatically persist variable values to *OFF*. Persisting the values will cause them to be stored on remote servers belonging to Postman. For testing InEight APIs, this means that sensitive data such as client ids and client secrets could be stored in locations not managed by InEight or a customer. Close this form after making the change.



3. Use the New menu to start a new environment.

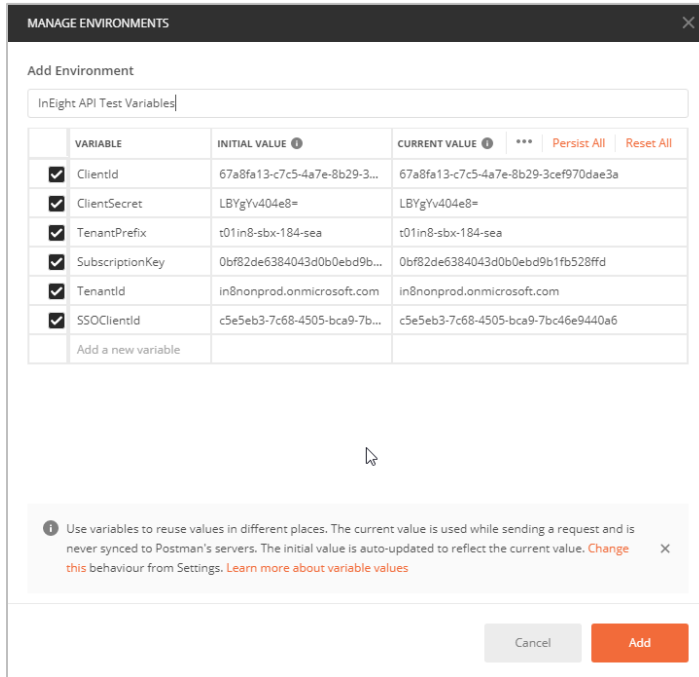


4. Name the new environment, and then enter variables in the Manage Environments form. The following variable names should be entered:

- TenantId
- SSOCientId
- ClientId
- ClientSecret
- TenantPrefix
- SubscriptionKey
- AccessToken
- ExpiresOn

5. Enter initial values for the variables. Refer to the Prerequisites table above for values to use. After all the information is entered, click the **Add** button.

NOTE: The variables AccessToken and ExpiresOn do not need initial or current values, but all other variables do.



MANAGE ENVIRONMENTS

Add Environment

InEight API Test Variables

VARIABLE	INITIAL VALUE	CURRENT VALUE	***	Persist All	Reset All
<input checked="" type="checkbox"/> ClientId	67a8fa13-c7c5-4a7e-8b29-3...	67a8fa13-c7c5-4a7e-8b29-3cef970dae3a			
<input checked="" type="checkbox"/> ClientSecret	LBYGyv404e8=	LBYGyv404e8=			
<input checked="" type="checkbox"/> TenantPrefix	t01in8-sbx-184-sea	t01in8-sbx-184-sea			
<input checked="" type="checkbox"/> SubscriptionKey	0bf82de6384043d0b0ebd9b...	0bf82de6384043d0b0ebd9b1fb528ffd			
<input checked="" type="checkbox"/> TenantId	in8nonprod.onmicrosoft.com	in8nonprod.onmicrosoft.com			
<input checked="" type="checkbox"/> SSOClientId	c5e5eb3-7c68-4505-bca9-7b...	c5e5eb3-7c68-4505-bca9-7bc46e9440a6			
Add a new variable					

Use variables to reuse values in different places. The current value is used while sending a request and is never synced to Postman's servers. The initial value is auto-updated to reflect the current value. [Change](#) [Learn more about variable values](#)

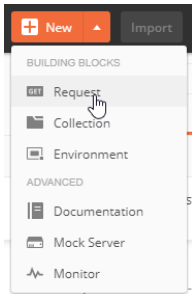
Cancel Add

NOTE: If using OAuth 2.0, enter [clientid value]/.default instead of only .default in the Scope field when requesting the token.

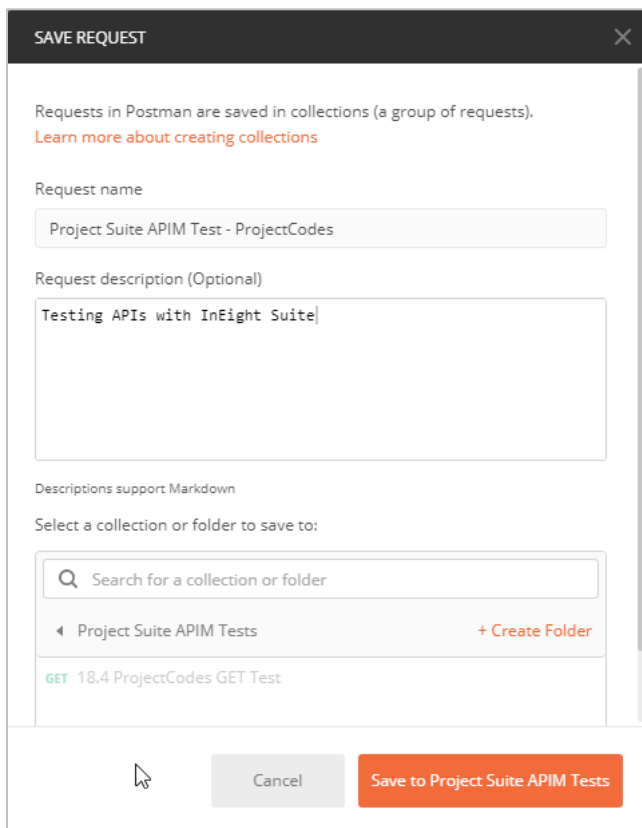
6. Close the Manage Environments dialog box. This completes the addition of an environment that contains repeatable variables, which can be used in any new Postman Request.

Instructions – Using ProjectCodes_Get as Sample

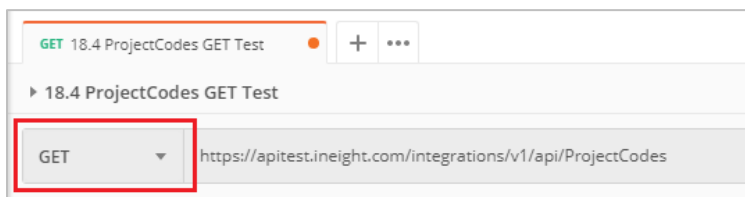
1. Create a new Request in Postman



2. Fill out all information for the new Request item. Be sure to select the Collection you created when installing Postman to save the Request to.

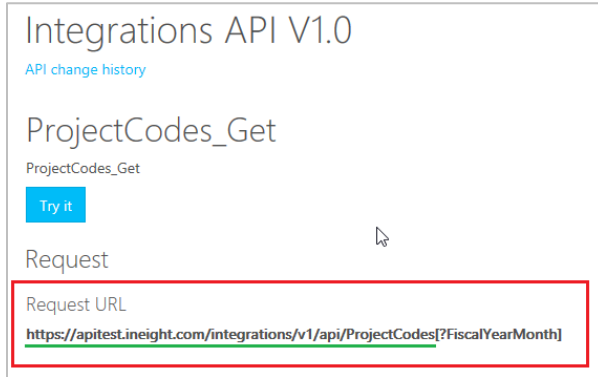


3. Verify the correct method is selected for the new request. For our sample, the GET method is used.



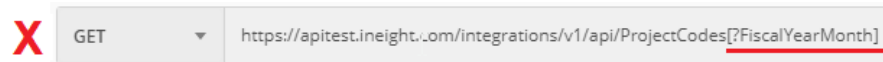
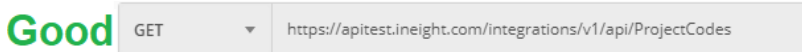
- Copy the URL to use for the request from APIM.

NOTE: Do not copy any parameter options that might be shown at the end of the URL string contained within square brackets [].



- Paste the URL to the request in Postman. If any parameter information within square brackets was pasted, delete it from the URL string before continuing.

Examples:

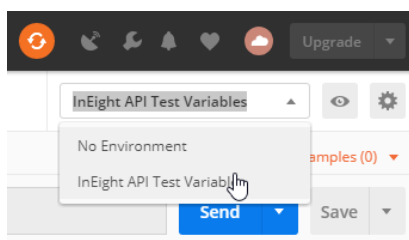


- Add required Header Keys and set the values for headers using variables. Each variable name should be contained within two curly braces, for example, {{variable}}.

- **Authorization** = Bearer {{AccessToken}}
- **X-IN8-TENANT-PREFIX** = {{TenantPrefix}}
- **Content-Type** = application/json – This should be selectable from a list in the Value field. This Header is not required for Get Requests, so is not shown in the example below.
- **Ocp-Apim-Subscription-Key** = {{SubscriptionKey}}

KEY	VALUE
<input checked="" type="checkbox"/> Authorization	Bearer {{AccessToken}}
<input checked="" type="checkbox"/> X-IN8-TENANT-PREFIX	{{TenantPrefix}}
<input checked="" type="checkbox"/> Ocp-Apim-Subscription...	{{SubscriptionKey}}
Key	Value

- Select the environment that you want to use. After selected, variables change from red text to orange.



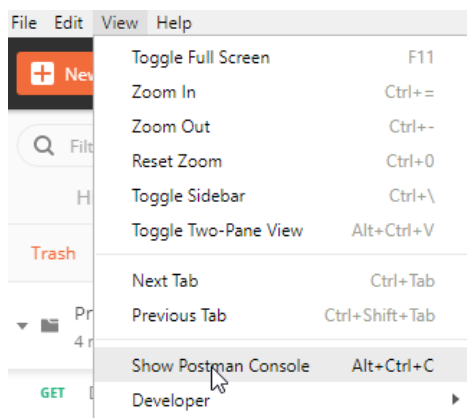
8. Select the **Pre-req** option on the request, and then paste the sample script from [Appendix A](#).

```

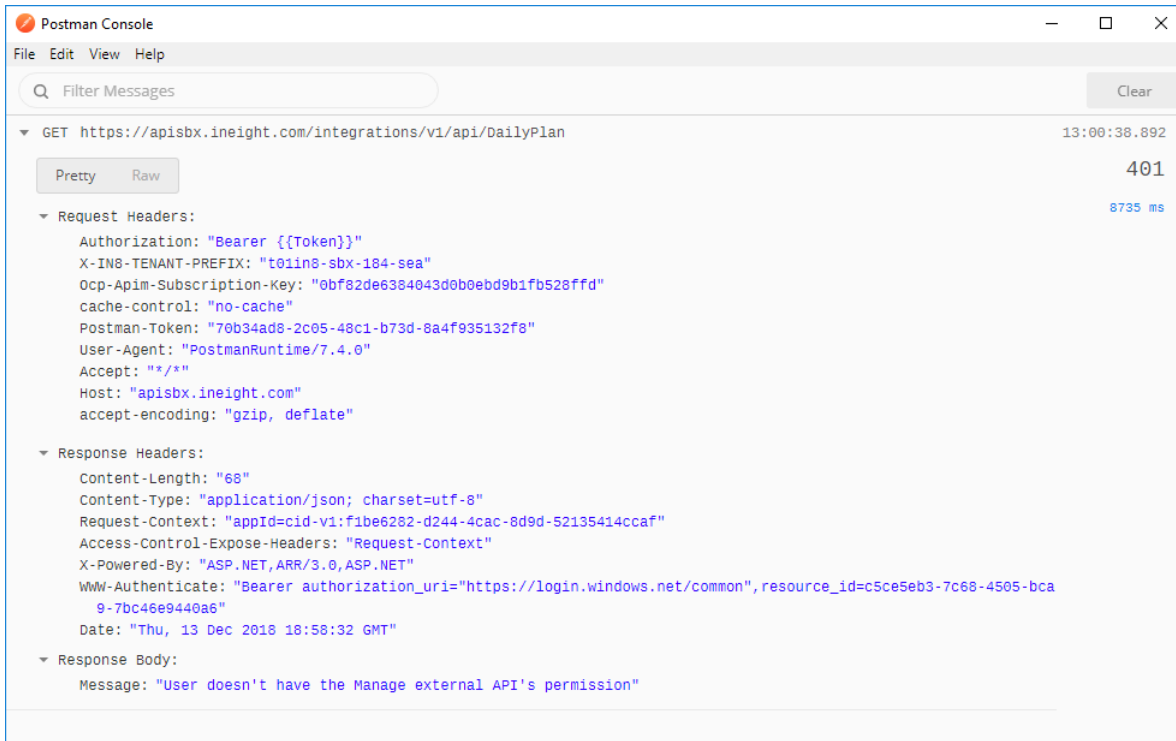
1  var expiration = new Date(+pm.environment.get('ExpiresOn')
  || '');
2  var now = new Date();
3  var isExpired = now >= expiration;
4  if (isExpired)
5  {
6    pm.sendRequest({
7      url: 'https://login.microsoftonline.com/'+pm
      .environment.get('TenantId')+'/oauth2/token',
8      method: 'POST',
9      header: 'Content-Type:application/x-www-form
      -urlencoded',
10     body: {
11       mode: 'raw',
12       raw: 'grant_type=client_credentials&client_id='
      +pm.environment.get('ClientId')
      + '&client_secret='+pm.environment.get
      ('ClientSecret')+'&resource=' +pm
      .environment.get('SSOClientId')
13     }
14   }, function (err, response) {
15     var result = response.json();
16     console.log(result);
17     var expires_on = new Date(+ (result.expires_on+'000'
      ));
18     console.log(expires_on);
19     pm.environment.set('AccessToken',result.access_token
      );
20     pm.environment.set('ExpiresOn',result.expires_on
      +'000');
21   });
22 }
23
  
```

9. Click the **Send** button to test the API. The desired result is a response with 200 OK, or if using a POST message and you have not provided JSON content for the body, the message Payload was missing or invalid and was not parsed indicates initial success.

To see more details about what happened when a request was sent, such as when troubleshooting an error, the Postman Console tool can provide helpful information. The console is accessed from the View menu at the top left.



After it opens, send the request again and details will be captured in a separate console window. The image below shows an example for a permission error caused by the Authorization Header containing a value of Bearer {{Token}} instead of Bearer {{AccessToken}}.



Appendix A: Prerequisite Script

For obtaining Bearer Token using Service Account Client Id/Secret.

The following script determines if the current token has expired, and if it has, it will get another one based on the variables set in the Postman Environment.

```
var expiration = new Date(+ (pm.environment.get('ExpiresOn') || ''));
var now = new Date();
var isExpired = now >= expiration;
if (isExpired)
{
    pm.sendRequest({
        url:
        'https://login.microsoftonline.com/'+pm.environment.get('TenantId')+'/oauth2/token'
        ,
        method: 'POST',
        header: 'Content-Type:application/x-www-form-urlencoded',
        body: {
            mode: 'raw',
            raw:
            'grant_type=client_credentials&client_id='+pm.environment.get('ClientId')+'&client_secret='+encodeURIComponent(pm.environment.get('ClientSecret'))+'&resource='+pm.environment.get('SSOClientId')
            }
        }, function (err, response) {
            var result = response.json();
            console.log(result);
            if (result.expires_on)
            {
                var expires_on = new Date(+ (result.expires_on+'000'));
                console.log(expires_on);
                pm.environment.set('AccessToken', result.access_token);
                pm.environment.set('ExpiresOn', result.expires_on+'000');
            }
        });
    }
}
```

Appendix B: Environment Variable Mapping to APIM Headers

When creating API requests used with APIM in your own environment, use the following table to understand how the Environment Variables used in this document map to the required message headers for APIM messages.

APIM Message Header	Postman Environment Variable
X-IN8-TENANT-PREFIX	TenantPrefix
Ocp-Apim-Subscription-Key	SubscriptionKey
Content-Type	<i>Not set as an Environment Variable.</i> Always set to "application/json"
Authorization	<i>Not set as an Environment Variable.</i> Same as {{AccessToken}} created by Postman script provided in this document. This needs to be obtained based on ClientID, SSOClientId, and ClientSecret for each API request sent to APIM.