Scottish Water:
Connecting LPNS

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1.2

Origin/Author   :   Nilesh Deshmukh

Contents

1 Introduction

Third party Licensed Providers (LP) can connect to LPNS and consume the available events data though either the LPNS API or SharePoint Online.

Through the LPNS API, the incidence data is returned as JSON payload while for the SharePoint option, the data is returned as a CSV file. This document provides the information required to successfully request the incidence data through LPNS API.
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2 LPNS APIM

The LPNS solution implements three http endpoints -**GetAllEvents**, **GetMyEvents**
GetClosedEvents through which Licensed Providers can retrieve incidence data. These endpoints,
which are all REST-based are managed via Azure API Management (APIM).

From an operational stance, when an LP invokes any of the exposed endpoints, APIM will redirect
the LP to Azure AD for authentication. Upon a successful authentication and presentation of a valid
token, APIM invokes the corresponding Logic App. The response of the logic app is subsequently
processed by the APIM and returned to the LP. Figure 1 presents a high-level illustration of the
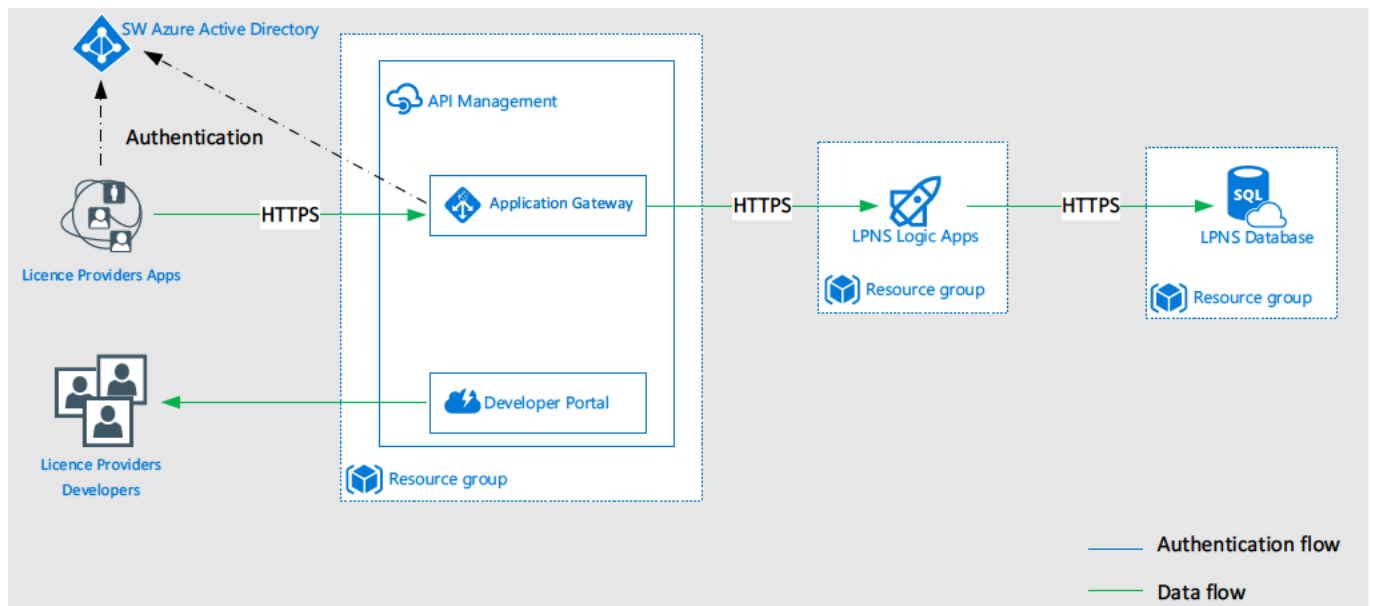interaction between LP, APIM, Azure AD and the LPNS backend.


Figure 1 LPNS API Architecture

LP Registration and Authentication

All LPs will be added to the Scottish Water Azure AD and the LPs should get an email with the URL of
the LPNS APIM portal.

LP users will need to navigate the LPNS API page to register for a subscription. The URL is:
https://lpnsapi-uat.portal.azure-api.net/
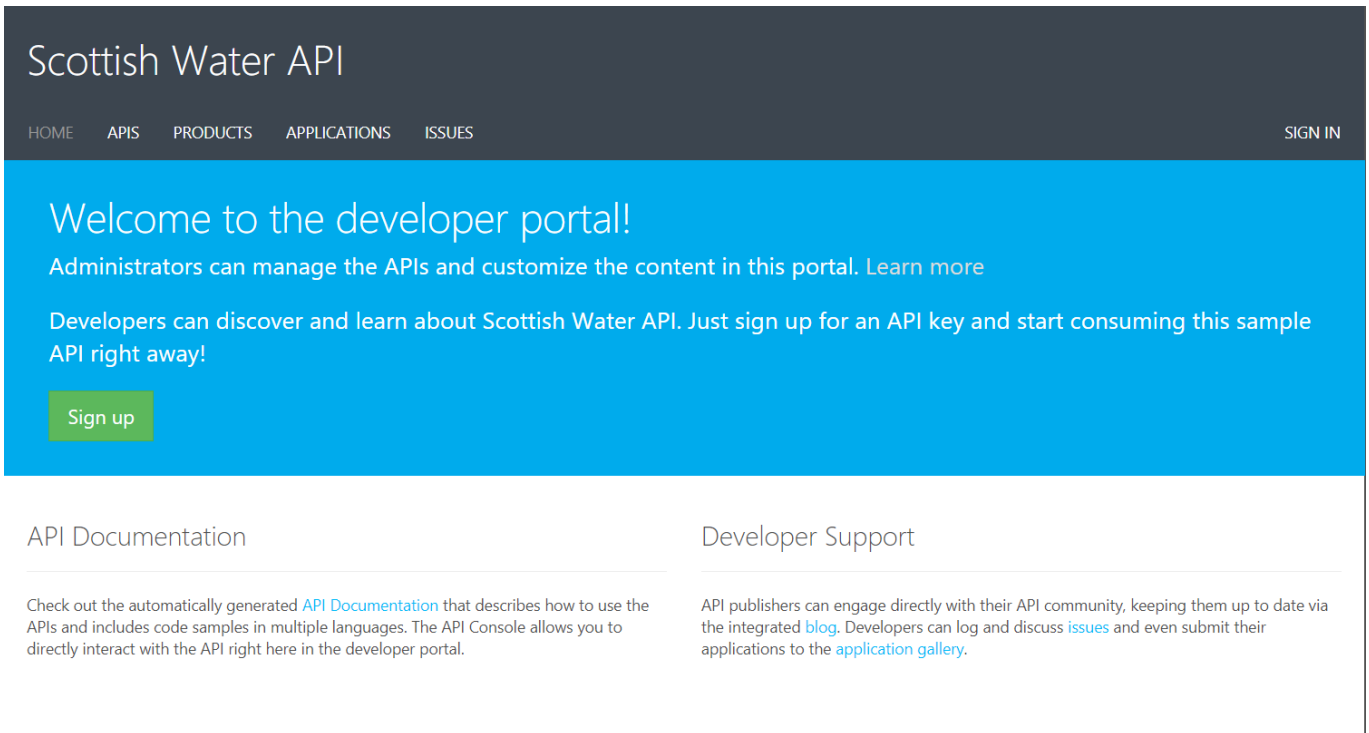
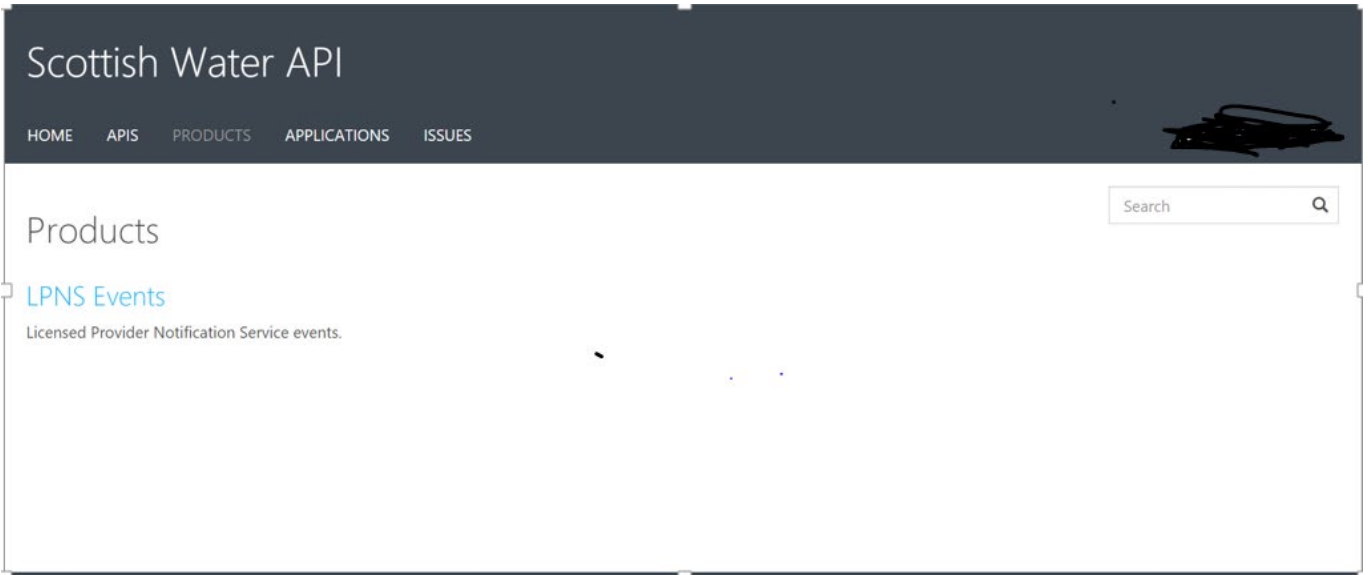On navigating to this page, the user will need to sign in by clicking the Sign In link. The page below will then be displayed:
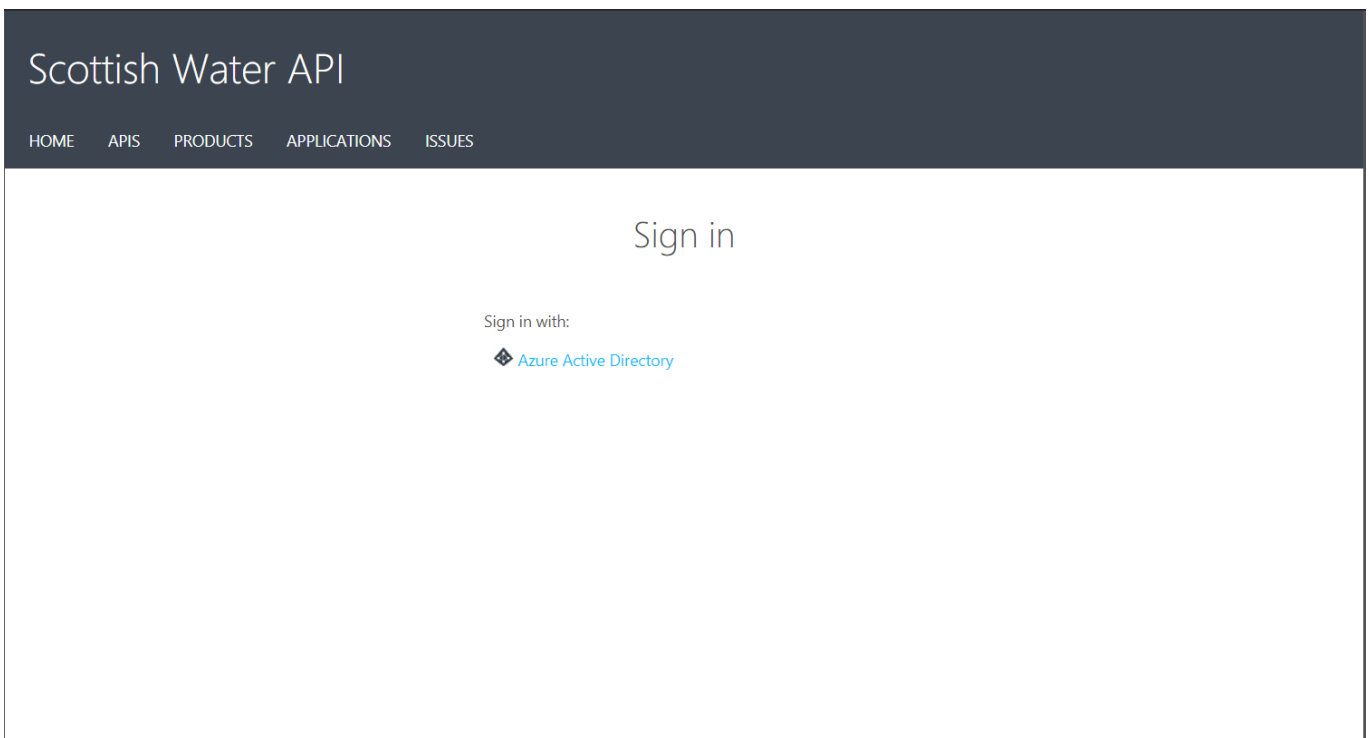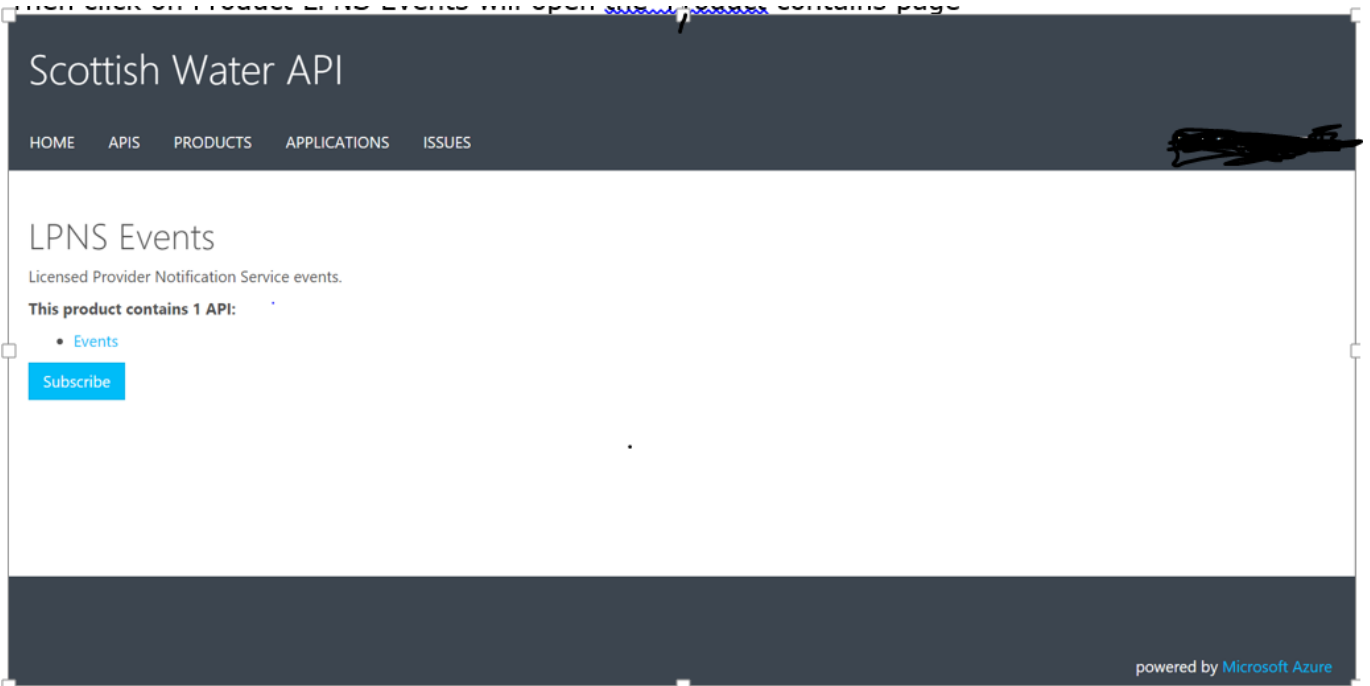

And the user should click the Azure Active Directory link.

Once the log in process is completed, navigate to the products page shown below:

Then click on Product LPNS Events will open the Product contains page

Click on Subscribe to subscribe to the Event's API. Will open Confirmation page

After Clicking on Confirm button will show the Profile page with your subscription sections

Profile

Email
First name
Last name

Your subscriptions

Subscription details			Product	State	Action
Subscription name	LPNS Events	Rename	LPNS Events	Active	✖ Cancel
Started on	02/04/2021				
Primary key	xxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Show | Regenerate			
Secondary key	xxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Show | Regenerate			

Your applications

+ Register application

Name	Category	State
	No results found.	

Looking to close your account?

Close account

All subsequent request to the API will require you to submit the subscription code as part of the request.

NB: Please note that your subscription will only become active after it has been approved by Scottish Water API Administrator.

To consume an LPNS API, the LP application must make a request to the required endpoint. Upon this request, APIM will redirect the application to the SW AD to obtain the necessary application grant and application token.

Once the application obtains a token, it then needs to add that token to subsequent request to the LPNS endpoint. See authentication section in Figure 1:

Authorization Steps

In order to invoke the LPNS APIM endpoints, please perform the following actions to obtain an access token (see also https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-protect-backend-with-aad)

1. Browse to the required endpoint from your application
2. Obtain an **Authorization code** from the SW Azure AD tenant
3. After obtaining the authorization code, then obtain the access token from SW Azure AD
4. Add this access token to your request authorization header as shown below:

    Authorization: Bearer {OAuth Token}

5. Then submit your request to the LPNS APIM endpoint

APIs

These sets of logic apps retrieve incidence data from the LPNS database based of predefined parameters. They are all triggered via a HTTP request and return a JSON response back to the caller.

Each of these logic app will only accept requests that originate from the designated LPNS APIM.

NB: The **EventAddress** which is part of the JSON responses for each of the API methods below is a comma separated combination of the address, region and postcode of the primary premise associated with the Event

Response Status Code:
On invoking the API methods, any of the following responses will be obtained as part of the response. Note that these are standard HTP response status codes.
- HTTP/1.1 400 Bad Request - This usually indicates that the parameters submitted to the API were not in the correct format.
- HTTP/1.1 401 Unauthorised – This usually indicates that your request is not authorised.
- HTTP/1.1 403 Forbidden – This usually indicates that your request has not been successfully authenticated.
- HTTP/1.1 404 Resource not found – This usually indicates that your request is looking for a resource that does not exist. If you get this, make sure that your URL is correct.

- HTTP/1.1 405 Method not allowed – This usually indicates that your request is using an unsupported HTTP method. All LPNS API calls must use the POST method.
- HTTP/1.1 500 Internal server error – This usually indicates that there is an issue with the LPNS backend. If you get this response, try again and if it persists contact the LPNS support team.
- HTTP/1.1 200 OK – This response indicates that your request was successful, and you should have data in the request response body.

GetAllEvents

For each authenticated call to the GetAllEvents API the licensed provider will receive a JSON formatted response with details of all the open events that are active or planned in a supplied postcode or post code region. If no postcode or post code region supplied all open events are returned.

Note: If a full postcode is supplied on the interface then any event that has an impacted postcode of the region would need to be returned. For example, LP selects EH2 7HH then all events that have an impacted postcode entry of EH2 should also be returned.

Request:

Request URL: https://lpnsapi-uat.azure-api.net/events/getallevents
Method: Post
Request headers:
> **Ocp-Apim-Subscription-Key**: Subscription key which was obtained from the developer portal.
> **Authorization**: OAuth 2.0 access token obtained from SWApimOAuth. Supported grant types: Authorization code. For more info on how to authorise your request see Authorization Steps

Request body:

```
{
        "postcode":"AB11 5AL"
}
```

NB: Postcode is optional and for such scenarios, the entity request body JSON is not necessary.

Response body:

```
[
    {
        "Id": 2,
        "EventIdentifier": "07388577",
        "NotificationType": "Planned",
        "OriginalDescription": "Update Mains",
        "EnrichedDescription": null,
        "LevelOfDisruption": "Medium",
        "AlternativeArrangements": "",
        "EstimatedCompletionDate": "30 Nov 2020",
        "PlannedStartDate": "28 Nov 2020",
        "PlannedCompletionDate": "30 Nov 2020",
        "LastModifiedDate": "25 Nov 2020",
        "ImpactedPostcodes": [{
            "Postcode": "AB10"
        }, {
```

```
                    "Postcode": "AB10 1AG"
                }, {
                    "Postcode": "AB11 5AL"
                }, {
                    "Postcode": "AB11 5AN"
                }]
            },
            {
                "Id": 8,
                "EventIdentifier": "07411553",
                "NotificationType": "Planned",
                "OriginalDescription": "Update Mains",
                "EnrichedDescription": null,
                "LevelOfDisruption": "Medium",
                "AlternativeArrangements": "",
                "EstimatedCompletionDate": "30 Dec 2020",
                "PlannedStartDate": "28 Dec 2020",
                "PlannedCompletionDate": "30 Dec 2020",
                "LastModifiedDate": "25 Nov 2020",
                "ImpactedPostcodes": [{
                    "Postcode": "AB11 5AL"
                }]
            }
        ]
```

GetMyEvents

For each authenticated call to the GetMyEvents API the licensed provider will receive a JSON formatted response with details of all the open events that impact or are planned to impact one of their customers. An event will only be returned as part of the response if based on the impacted postcodes one or more of the Licence Provider SPID's are impacted. No input parameters are required.

Request:

>   **Request URL**: https://lpnsapi-uat.azure-api.net/events/getmyevents
>   **Method**: Post
>   **Request headers**:
> > **Ocp-Apim-Subscription-Key**: Subscription key which was obtained from the developer portal.
> > **Authorization**: OAuth 2.0 access token obtained from SWApimOAuth. Supported grant types: Authorization code. For more info on how to authorise your request see Authorization Steps

Request body:

NB: While the request body is empty, please note that APIM will pass the Email address of the current context to the backend logic app. This email is the registered email address of the associated LP on whose behalf this request is submitted. It must therefore be the same email address stored within the **ApiUsername** field of the **LicenseProvider** table with LPNS database.

Response:
```
    [
        {
          "Id": 18,
          "EventIdentifier": "5015190000",
          "NotificationType": "Planned",
          "Description": "Major Sewer Replacement",
```

```
        "LevelOfDisruption": "High",
        "AlternativeArrangements": "",
        "EstimatedCompletionDate": "27 Nov 2022",
        "PlannedStartDate": "20 Jul 2022",
        "PlannedCompletionDate": "27 Nov 2022",
        "ActualCompletionDate": null,
        "LastModifiedDate": "30 Nov 2020",
        "Version": 1,
        "EventAddress": "Union Street , Arbroath , DD11 1DA",
        "ImpactedPostcodes": [
          {
            "Postcode": "DD11 1DA"
          }
        ],
        "AffectedSpids": [
          {
            "SpidId": "265786425"
          }
        ]
      },
      {
        "Id": 20,
        "EventIdentifier": "EVNT-90000",
        "NotificationType": "Planned",
        "Description": "Major Sewer Replacement",
        "LevelOfDisruption": "High",
        "AlternativeArrangements": "",
        "EstimatedCompletionDate": "27 Feb 2021",
        "PlannedStartDate": "20 Jan 2021",
        "PlannedCompletionDate": "27 Feb 2021",
        "ActualCompletionDate": "27 Feb 2021",
        "LastModifiedDate": "30 Nov 2020",
        "Version": 1,
        "EventAddress": "Union Street , Arbroath , DD11 1DA",
        "ImpactedPostcodes": [
          {
            "Postcode": "DD11 1DA"
          }
        ],
        "AffectedSpids": [
          {
            "SpidId": "265786425"
          }
        ]
      },
      {
        "Id": 21,
        "EventIdentifier": "EVNT-12",
        "NotificationType": "Planned",
        "Description": "Major Sewer Replacement",
        "LevelOfDisruption": "High",
        "AlternativeArrangements": "",
        "EstimatedCompletionDate": "27 Nov 2020",
        "PlannedStartDate": "20 Jan 2020",
        "PlannedCompletionDate": "27 Nov 2020",
        "ActualCompletionDate": "27 Nov 2020",
        "LastModifiedDate": "27 Nov 2020",
        "Version": 1,
        "EventAddress": "Union Street , Arbroath , G52 1DA",
        "ImpactedPostcodes": [
          {
            "Postcode": "G52 1DA"
          },
```

```
          {
            "Postcode": "G53 1DA"
          }
        ],
        "AffectedSpids": [
          {
            "SpidId": "265123425"
          }
        ]
      }
    ]
```

On invoking this API method, any of the following responses will be obtained from the API.

GetClosedEvents

For each authenticated call to the GetClosedEvents API the licensed provider will receive a JSON formatted response with details of all the events that have been closed/completed in the last 7 calendar days (Up to Midnight the previous working day) and any that have been closed on the day of the run. No input parameters are required.

Request:

Request URL: https://lpnsapi-uat.azure-api.net/events/getclosedevents
Method: Post
Request headers:
Ocp-Apim-Subscription-Key: Subscription key which was obtained from the developer portal.
Authorization: OAuth 2.0 access token obtained from SWApimOAuth. Supported grant types: Authorization code. For more info on how to authorise your request see Authorization Steps

Request body:

The request body for

Response:

```
[
    {
        "Id": 21,
        "EventIdentifier": "EVNT-12",
        "NotificationType": "Planned",
        "Description": "Major Sewer Replacement",
        "PlannedStartDate": "20 Jan 2020",
        "PlannedCompletionDate": "27 Nov 2020",
        "ActualCompletionDate": "27 Nov 2020",
        "EventAddress": "Union Street , Arbroath , G52 1DA",
        "ImpactedPostcodes": [{
            "ImpactedPostcodes": "G52 1DA"
        }, {
            "ImpactedPostcodes": "G53 1DA"
        }]
    }
]
```

APPENDICES

Appendix A: Document Control

Version History

Version	Date	Comments
0.1	October 2020	
1.0	December 2020	Updated following internal review and testing
1.1	February	Updated API info with latest details
1.2	March 2021	

Document Distribution

Name	Location	Responsibility	Action / Information

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