# **Programmatic Access to Commercial Marketplace Analytics Data**

#### **Partner Onboarding Guide**

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#### 1. Commercial Marketplace Analytics

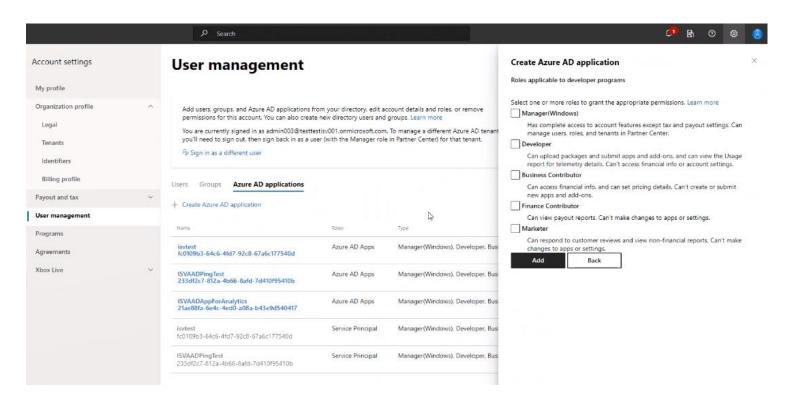
The objective of this guide is to help you get on-boarded to programmatic access to Commercial Marketplace Analytics data. The document enumerates how to programmatically get access to analytic reports to monitor sales, evaluate performance, and optimize offers in the marketplace. The improved analytics tools enable you to act on performance results and maintain better relationships with your customers and resellers.

You can use this guide to programmatically access Commercial Marketplace Analytics data. By using the methods/APIs as documented in this guide, you will be able easily schedule custom reports and ingest key data sets into your internal analytics systems, and effectively monitor sales, evaluate performance, and optimize your offers in the commercial marketplace.

The capability empowers you to schedule custom reports of your analytics data asynchronously. Customized reporting and integration with internal BI systems/platforms are they key value propositions of programmatic access of Marketplace analytics data. Partners would need dedicated engineering resources to do one time onboarding on the API interface. The capability enables you to define reporting queries/templates based on your needs, set a schedule, and get timely and trustworthy data (report) at scheduled intervals.

#### 2. Pre-requisites

- 1. Commercial Marketplace enrollment: You should be enrolled in Commercial Marketplace program and have a Partner Center account to access Commercial Marketplace Analytics data in a programmatic manner. See <a href="this article">this article</a> to learn more on how to enroll into the commercial marketplace program in Partner Center.
- 2. Creating Azure Active Directory (AAD) application: Regular user credentials cannot be used for programmatic access of Commercial Marketplace Analytics data. An Azure AD (AAD) application needs to be created along with a secret to access the programmatic access APIs. The steps for creating an AAD application and secret is listed in this <u>link</u>.
- 3. Associate AAD application to Partner Center tenant: The AAD application created from Azure portal needs to be linked to your Partner Center account. The steps are as mentioned below:
  - a. From <u>Partner Center</u>, select the gear icon (near the upper right corner of the dashboard) and then select **Account settings**. In the **Account settings** menu, select **User management**.
  - b. Select Azure AD applications and click on + Create Azure AD application.
  - c. Select the AAD application which you created on Azure portal and add "Manager(Windows)" role to the application.



4. AAD token generation: Using the Application (client) ID that helps to uniquely identify your client application in the Microsoft identity platform and the client secret from the previous step, an <u>AAD token needs to be generated</u>. The steps for AAD token generation are listed in this documentation.

Note: The token validity is one hour.

#### 3. Key Data Sets

#### 3.1. List of Reports & Dictionary of Data Terms

The following section enumerates the list of key Commercial Marketplace Analytics reports and definition of each fields in each of the reports.

#### 3.1.1. Orders Report

This report provides information on the transactions for your orders-based assets. Orders report is applicable to Software as a Service and Azure Managed applications offer types. To know more about "Orders Report" in Partner Center, please visit the MS DOCS documentation.

#### 3.1.2. Usage Report

This report provides information on the usages for your consumptions-based assets. Usage report is applicable to Solution Templates, Azure Virtual Machine and Azure Containers offer types. To know more about "Usage Report" in Partner Center, please visit the MS DOCS documentation.

#### 3.1.3. Customers Report

This report provides information on the customers of your offers. For some of the records, partners may find that Customer Company Name, Email, First Name, and last Name are missing. This is because customers can either purchase with their own personal Azure subscription that does not require any company affiliation, or they can purchase using an existing company's Azure subscription. To know more about "Customers Report" in Partner Center, please visit the MS DOCS <u>documentation</u>.

#### 3.1.4. Marketplace Insights Report

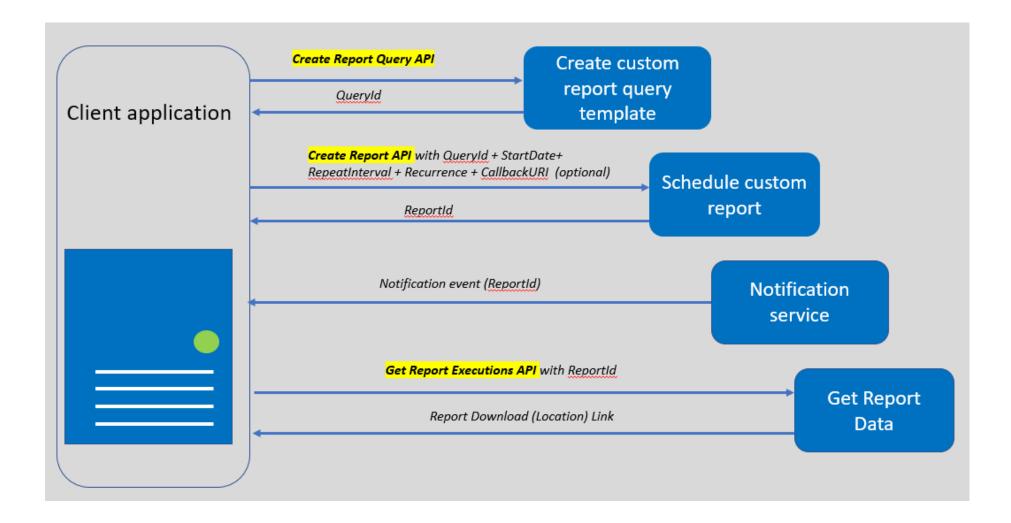
This report provides information on the commercial marketplace web analytics that enables publishers to measure customer engagement for their respective product detail pages listed in the commercial marketplace online stores: Microsoft AppSource and Azure Marketplace. To know more about "Marketplace Insights Report" in Partner Center, please visit the MS DOCS documentation.

Note: For more details on the column names, attributes, and description, please refer to the section <u>Dictionary of Data Terms & Column Descriptions</u> in Appendix

#### 4. Programmatic Access Paradigm

#### 4.1. High Level Flow

The following diagram explains the API call pattern to create a new report template, schedule the custom report and retrieve failure data.



- 1. The Client Application can define the custom report schema/template by calling the <u>Create Report Query API</u>. Alternately, you can pick a report template (Queryld) from the report template library samples listed <u>here</u>.
- 2. On success, the Create Report Template API returns the Queryld.
- 3. The client application then needs to call the <u>Create Report API</u> using the QueryID along with the report start date, Repeat Interval, Recurrence, and an optional Callback URI.
- 4. On Success, the Create Report API returns the ReportID.
- 5. The client application gets notified at the callback URI as soon as the report data is ready for download.

- 6. The client application then uses the Get Report Executions API to query the status of the report with the Report ID and date range.
- 7. On success, the report download link is returned and the application can initiate download of the data.

#### 4.2. Report Query Language Specification

While we do provide few <u>system queries</u> out of the box which can be used directly in creating reports, you can choose to create your own queries based on your business needs. To know more about the specification on how to formulate custom queries, you can visit the <u>Report Query Specification</u> section in the Appendix.

#### 4.3. Create Report Query API

The API helps to create custom queries which define the dataset from which columns and metrics need to be exported. The API provides the flexibility to create a new reporting template based on your business needs.

You can also use the <u>system queries</u> which are provided out of box. In such cases, where custom report templates are not needed, <u>you can call Create Report API directly using the Querylds of the system queries which are provided</u>.

As an example, we show how to **create a custom query** to get Normalized Usage and Estimated Financial Charges for PAID SKUs from <u>ISVUsage</u> dataset for last one month.

#### **Request syntax**

Method	Request URI
POST	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledQueries

#### Request header

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

#### **Path Parameter**

None

#### **Query Parameter**

None

#### **Sample Request Payload**

```
{
    "Name": "ISVUsageQuery",
    "Description": "Normalized Usage and Estimated Financial Charges for PAID SKUs",
    "Query": "SELECT UsageDate, NormalizedUsage, EstimatedExtendedChargePC FROM ISVUsage WHERE
    SKUBillingType = 'Paid' ORDER BY UsageDate DESC TIMESPAN LAST_MONTH"
  }
```

#### **Glossary**

Key definitions of elements in the request payload are articulated below:

Parameter	Required	Description	Allowed Values
Name	Yes	Friendly name of the query	string
Description	No	Description of what the query returns	string
Query	Yes	Report query string	Data type: string
			<u>Custom query</u> based
			on business need

Note: Examples of **sample** custom queries are listed <u>here</u>.

#### **Sample Response**

The response payload is structured as follows:

#### Glossary

Key definitions of elements in the response are articulated below:

Parameter	Description
Queryld	Unique UUID of the query created
Name	Friendly name given to the query in the request payload
Description	Description given during creation of the query
Query	Report query passed as input during query creation
Туре	Set to "userDefined"
User	User ID used for creation of the query
CreatedTime	UTC Time of creation of query in this format: yyyy-MM-ddTHH:mm:ssZ
TotalCount	Number of datasets in the Value array
StatusCode	Result Code [The possible values are 200, 400, 401, 403, 500]
message	Status message from the execution of the API

#### 4.4. Create Report API

On creating a custom report template successfully and receiving the QueryID as part of <u>Create Report Query</u> response, this API can be called to schedule a query to be executed at regular interval. You can set a frequency and schedule for the report to be delivered on regular basis. Create Report API can also be called with <u>QueryId</u> for system queries which are available to you out of box.

#### **Request syntax**

Method	Request URI
POST	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledReport

#### **Request header**

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

#### **Path Parameter**

None

#### **Query Parameter**

None

#### **Sample Request Payload**

```
{
    "ReportName": "ISVUsageReport",
    "Description": "Normalized Usage and Estimated Financial Charges for PAID SKUs",
    "Queryld": "78be43f2-e35f-491a-8cd5-78fe14194f9c",
    "StartTime": "2021-01-06T19:00:00Z",
    "RecurrenceInterval": 48,
    "RecurrenceCount": 20,
    "Format": "csv",
    "CallbackUrl": "https://<SampleCallbackUrl>"
}
```

#### Glossary

Key definitions of elements in the request payload are articulated below:

Parameter	Required	Description	Allowed Values
ReportName	Yes	Name to be assigned to the report	string

Description	No	Description of the created report	string
Queryld	Yes	Report query Id	string
StartTime	Yes	UTC Timestamp at which the report generation will begin. The format should be: yyyy-MM-ddTHH:mm:ssZ	string
RecurrenceInterval	Yes	Frequency at which the report should be generated in hours.  Minimum value is 4 and Maximum value is 90.	integer
RecurrenceCount	No	Number of reports to be generated. The max value is 90.	integer
Format	No	File format of the exported file. Default is CSV.	"CSV"/"TSV"
CallbackUrl	No	Publicly reachable URL which can be <b>optionally</b> configured as callback destination	String (http URL)

#### **Sample Response**

The response payload is structured as follows:

Response Code	200, 400, 401, 403, 404, 500
Response payload	{
	"Value": [
	{
	"reportId": "72fa95ab-35f5-4d44-a1ee-503abbc88003",
	"reportName": "ISVUsageReport",
	"description": "Normalized Usage and Estimated Financial Charges for
	PAID SKUs",
	"queryld": "78be43f2-e35f-491a-8cd5-78fe14194f9c",
	"query": "SELECT UsageDate, NormalizedUsage, EstimatedExtendedChargePC
	FROM ISVUsage WHERE SKUBillingType = 'Paid' ORDER BY UsageDate DESC TIMESPAN
	LAST_MONTH",
	"user": "142344300",
	"createdTime": "2021-01-06T05:46:00Z",
	"modifiedTime": null,
	"startTime": "2021-01-06T19:00:00Z",
	"reportStatus": "Active",
	"recurrenceInterval": 48,
	"recurrenceCount": 20,

#### Glossary

Key definitions of elements in the response are articulated below:

Parameter	Description
ReportId	Unique UUID of the report created
ReportName	Name given to the report in the request payload
Description	Description given during creation of the report
Queryld	Query Id passed at the time of creation of the report
Query	Query text that will be executed for this report
User	User ID used for creation of the report
CreatedTime	UTC Time at which report was created in the format: yyyy-MM-ddTHH:mm:ssZ
ModifiedTime	UTC Time at which the report was last modified in the format: yyyy-MM-ddTHH:mm:ssZ
StartTime	UTC Time at which report execution will begin in the format: yyyy-MM-ddTHH:mm:ssZ
ReportStatus	Status of the report execution. The possible values are <b>Paused, Active and Inactive</b>
RecurrenceInterval	Recurrence interval provided during report creation
RecurrenceCount	Recurrence count provided during report creation.
CallbackUrl	Callback URL provided in the request
Format	Format of the report files. The possible values are <b>CSV or TSV</b> .
TotalCount	Number of datasets in the Value array
StatusCode	Result Code [The possible values are 200, 400, 401, 403, 500]
message	Status message from the execution of the API

#### 4.5. Get Report Executions API

You can use this method to query the status of a report execution using the Reportld received from <u>Create Report API</u>. The method returns the report download link if ready and status otherwise. You can also use this API to get all the executions that have happened for a given report.

**IMPORTANT NOTE:** This API has default query parameters set for (a.) executionStatus=Completed and (b.) getLatestExecution=true. Hence, calling the API before the first successful execution of the report will return 404. Executions pending for future execution can be obtained by setting executionStatus=Pending.

#### **Request syntax**

Metho	Request URI
d	
GET	https://partneranalytics-api.azure-
	api.net/analytics/cmp/ScheduledReport/execution/{reportId}?executionId={executionId}&executionStatus={executionStatus}&getLatestExecu
	tion={getLatestExecution}

#### Request header

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

#### **Path Parameter**

None

#### **Query Parameter**

Parameter Name	Required	Туре	Description
reportId	Yes	string	Filter to get execution details of only reports with the reportld given in this argument
executionId	No	string	Filter to get details of only reports with the executionId given in this argument

executionStatus	No	String/enum	Filter to get details of only reports with the executionStatus given in this argument.  Valid values are: Pending, Running, Paused, Completed  The default value will be  "Completed"
getLatestExecution	No	boolean	By default, this parameter is set to true, and the API will return details of the latest report execution.  If you choose to pass the value of this parameter as false, then the API will return last 90 days execution instances.

#### **Request Payload**

None

#### **Sample Response**

The response payload is structured as follows:

```
"totalCount": 1,
    "message": null,
    "statusCode": 200
}
```

Once report execution is complete, the execution status will show as "Completed". You can download the report by clicking on the URL in the reportAccessSecureLink

#### Glossary

Key definitions of elements in the response.

Parameter	Description		
ExecutionId	Unique UUID of the execution instance		
ReportId	Report Id associated with the execution instance		
RecurrenceInterval	Recurrence interval provided during report creation		
RecurrenceCount	Recurrence count provided during report creation		
CallbackUrl	Callback URL associated with the execution instance		
Format	Format of the generated file at the end of execution		
ExecutionStatus	Status of the report execution instance.		
	Valid values are: Pending, Running, Paused, Completed		
ReportAccessSecureLink	Link through which the report can be accessed securely		
ReportExpiryTime	UTC Time after which the report link will expire in this format: yyyy-MM-		
	ddTHH:mm:ssZ		
ReportGeneratedTime	UTC Time at which the report was generated in this format: yyyy-MM-		
	ddTHH:mm:ssZ		
TotalCount Number of datasets in the Value array			
StatusCode Result Code [The possible values are 200, 400, 401, 403, 404 and 500]			
message Status message from the execution of the API			

#### 5. Getting Started

#### 5.1. Available APIs

Following are the list of APIs and their associated functionalities:

API	Functionality				
Dataset Pull APIs					
Get all datasets	Gets all the available datasets. Datasets list the tables, columns, metrics,				
	and time ranges.				
	Query Management APIs				
Create Report Query	Creates custom queries which define the dataset from which columns				
	and metrics need to be exported.				
GET Report Queries	Gets all the queries available for use in reports. Gets all the system and				
	user defined queries by default.				
DELETE Report Queries	Deletes user defined queries.				
	Report Management APIs				
<u>Create Report</u>	Schedules a query to be executed at regular interval.				
TRY Report Queries	Executes a Report query statement. Returns only 10 records which				
	partner can use to verify if the data is as expected.				
Get Report	Get all the reports which have been scheduled.				
<u>Update Report</u>	Modify a report parameter.				
Remove Report	Deletes all the report and report execution records.				
Pause Report Executions	Temporarily pause the scheduled execution of reports.				
Resume Report Executions	Resumes the scheduled execution of a paused report.				
Report Execution Pull APIs					
Get Report Executions Get all the executions that have happened for a given report.					

Note: For details on individual APIs, please refer to the <u>API specification</u> section in the Appendix.

#### 5.2. Making your first programmatic API call

Please ensure that you adhered to the <u>pre-requisites</u> to programmatic access to Commercial Marketplace analytics data.

#### 5.2.1. Token Generation

Before calling any of the methods, you must first obtain an Azure AD (AAD) access token. The AAD access token needs to be passed to the Authorization header of each method in the API. After obtaining an access token, you have 60 minutes to use it before it expires. After the token expires, you can refresh the token and can continue to use it for further calls to the API.

Please refer to the MS DOCS <u>documentation</u> on how to obtain an Azure AD access token for your application. The three values that are required to generate the token are clientld, clientSecret, and tenantld.

#### 5.2.2. Programmatic API call

After obtaining the AAD Token as described in the <u>previous section</u>, follow these steps to create your first programmatic access report.

Following are the list of datasets (datasetName) from which data can be downloaded:

- ISVCustomer
- ISVMarketplaceInsights
- ISVUsage
- ISVOrder

As an example, we will see how to programmatically access Orderld from ISVOrder dataset.

1. Make a REST call using the Get Datasets API:

The API response provides the dataset name from where you can download the report. For the specific dataset, the API response also provides the list of selectable columns which can be used for your custom report template. Alternatively, you can refer to the to the section <u>Dictionary of Data Terms & Column Descriptions</u> in Appendix to get the names of the columns.

# curl --location --request GET 'https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledDataset '\ --header 'Authorization: Bearer <AADToken>' Response {

```
"value": [
    {
        "datasetName": "ISVOrder",
        "selectableColumns": [
            "MarketplaceSubscriptionId",
            "MonthStartDate",
            "OfferType",
            "AzureLicenseType",
            "Sku",
            "CustomerCountry",
            "IsPreviewSKU",
            "OrderId",
            "OrderQuantity",
            "CloudInstanceName",
            "IsNewCustomer",
            "OrderStatus",
            "OrderCancelDate",
            "CustomerCompanyName",
            "CustomerName",
            "OrderPurchaseDate",
            "OfferName",
            "TrialEndDate",
            "CustomerId",
            "BillingAccountId"
        ],
        "availableMetrics": [],
        "availableDateRanges": [
            "LAST_MONTH",
            "LAST_3_MONTHS",
            "LAST_6_MONTHS",
            "LIFETIME"
    },
"totalCount": 1,
"message": "Dataset fetched successfully",
"statusCode": 200
```

2. Create the custom query (Order Id from Orders Report) for which you want to create a report for. The default timespan if not specified in the query is 6 months.

```
Request
curl
--location
--request POST 'https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledQueries' \
--header ' Authorization: Bearer < AADToken > ' \
--header 'Content-Type: application/json' \
--data-raw
         "Query": "SELECT Orderld from ISVOrder",
         "Name": "ISVOrderQuery1",
         "Description": "Get a list of all Order IDs"
Response
    "value": [
            "queryId": "78be43f2-e35f-491a-8cd5-78fe14194f9c",
            "name": "ISVOrderQuery1",
            "description": "Get a list of all Order IDs",
            "query": "SELECT OrderId from ISVOrder",
             "type": "userDefined",
            "user": "142344300",
            "createdTime": "2021-01-06T05:38:34",
            "modifiedTime": null
        }
    "totalCount": 1,
    "message": "Query created successfully",
    "statusCode": 200
```

On successful execution, there will be a queryld generated which needs to be used to generate a report.

3. Execute test query API to get top 10 rows for the query that was created:

```
Request
curl
--location
--request GET 'https://partneranalytics-api.azure-
--header ' Authorization: Bearer <AADToken>'
Response
   "value": [
       {
          "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2ba8"
       },
          "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bb8"
       },
       {
          "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bc8"
       },
       {
          "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bd8"
       },
       {
          "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2be8"
       },
          "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bf0"
      },
          "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bf1"
```

```
{
        "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bf2"
    },
        "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bf3"
    },
        "OrderId": "086365c6-9c38-4fba-904a-6228f6cb2bf4"
٦,
"totalCount": 10,
"message": null,
"statusCode": 200
```

4. Create Report using the previously generated Queryld

```
Request
curl
--location
--request POST 'https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledReport' \
--header ' Authorization: Bearer < AADToken>' \
--header 'Content-Type: application/json' \
--data-raw
           "ReportName": "ISVReport1",
           "Description": "Report for getting list of Order Ids",
            "Queryld": "78be43f2-e35f-491a-8cd5-78fe14194f9c",
            "StartTime": "2021-01-06T19:00:00Z",
            "RecurrenceInterval": 48,
            "RecurrenceCount": 20,
            "Format": "csv"
```

#### **Description of the Parameters and Examples**

Description: Provide a brief description of the report being generated.

Queryld: This is the queryld that was generated when the query was created in Step number 2.

StartTime: Time of start of first execution of the report. RecurrenceInterval: Recurrence interval provided during report creation.

RecurrenceCount: Recurrence count provided during report creation.

Format: CSV and TSV file formats are supported.

```
Response
    "value": [
            "reportId": "72fa95ab-35f5-4d44-a1ee-503abbc88003",
            "reportName": "ISVReport1",
            "description": "Report for getting list of Order Ids",
            "queryId": "78be43f2-e35f-491a-8cd5-78fe14194f9c",
            "query": "SELECT OrderId from ISVOrder",
            "user": "142344300",
            "createdTime": "2021-01-06T05:46:00Z",
            "modifiedTime": null,
            "startTime": "2021-01-06T19:00:00Z",
            "reportStatus": "Active",
            "recurrenceInterval": 48,
            "recurrenceCount": 20,
            "callbackUrl": null,
            "format": "csv"
       }
    "totalCount": 1,
    "message": "Report created successfully",
    "statusCode": 200
```

On successful execution, there will be a reportld generated which needs to be used to schedule download of the report.

5. Execute Report Executions API to get the secure location (URL) of the report.

```
Request

Curl
--location
--request GET 'https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledReport/execution/72fa95ab-35f5-4d44-a1ee-503abbc88003'\
--header ' Authorization: Bearer < AADToken>'\
```

```
Response
    "value": [
       {
            "executionId": "1f18b53b-df30-4d98-85ee-e6c7e687aeed",
            "reportId": "72fa95ab-35f5-4d44-a1ee-503abbc88003",
            "recurrenceInterval": 48,
            "recurrenceCount": 20,
            "callbackUrl": null,
            "format": "csv",
            "executionStatus": "Pending",
            "reportAccessSecureLink": null,
            "reportExpiryTime": null,
            "reportGeneratedTime": null
        }
    ],
    "totalCount": 1,
    "message": null,
    "statusCode": 200
```

Note: Post completion of the pilot program, the API endpoint will change. The new endpoint will be conveyed closer to GA of the feature.

#### 5.3. List of System Queries

The following **system queries** can be used in the <u>Create Report API</u> directly with a Queryld. The system queries are like the export reports for 6M computation period in the Partner Center UI.

Note: For more details on the column names, attributes, and description, please refer to the section Dictionary of Data Terms & Column Descriptions in Appendix

Report Report Queryld

Description

Customers	Customers report for the last 6M	SELECT MarketplaceSubscriptionId,DateAcquired,DateLost,ProviderName,ProviderEmail,FirstName,LastName, Email,CustomerCompanyName,CustomerCity,CustomerPostalCode,CustomerCommunicationCulture,Custome rCountryRegion,AzureLicenseType,PromotionalCustomers,CustomerState,CommerceRootCustomer,Custom erId,BillingAccountId,ID FROM ISVCustomer TIMESPAN LAST_6_MONTHS	b9df4929-073f- 4795-b0cb- a2c81b11e28d
Orders	Orders report for the last 6M	SELECT MarketplaceSubscriptionId,MonthStartDate,OfferType,AzureLicenseType,MarketplaceLicenseType,Sku ,CustomerCountry,IsPreviewSKU,OrderId,OrderQuantity,CloudInstanceName,IsNewCustomer,OrderStatu s,OrderCancelDate,CustomerCompanyName,CustomerName,OrderPurchaseDate,OfferName,TrialEndDate,Cu stomerId,BillingAccountId FROM ISVOrder TIMESPAN LAST_6_MONTHS	fd0f299c-5a1c- 4929-9f48- bfc6cc44355d
Usage	VM Normalized usage report for the last 6M	SELECT MarketplaceSubscriptionId,MonthStartDate,OfferType,AzureLicenseType,MarketplaceLicenseType,SKU ,CustomerCountry,IsPreviewSKU,SKUBillingType,IsInternal,VMSize,CloudInstanceName,ServicePlanNa me,OfferName,DeploymentMethod,CustomerName,CustomerCompanyName,UsageDate,IsNewCustomer,CoreSiz e,TrialEndDate,CustomerCurrencyCC,PriceCC,PayoutCurrencyPC,EstimatedPricePC,UsageReference,Usa geUnit,CustomerId,BillingAccountId,NormalizedUsage,EstimatedExtendedChargeCC,EstimatedExtended ChargePC FROM ISVUsage WHERE OfferType IN ('vm core image', 'Virtual Machine Licenses', 'multisolution') TIMESPAN LAST_6_MONTHS	2c6f384b-ad52- 4aed-965f- 32bfa09b3778
Usage	VM Raw usage report for the last 6M	SELECT  MarketplaceSubscriptionId,MonthStartDate,OfferType,AzureLicenseType,MarketplaceLicenseType,SKU ,CustomerCountry,IsPreviewSKU,SKUBillingType,IsInternal,VMSize,CloudInstanceName,ServicePlanNa me,OfferName,DeploymentMethod,CustomerName,CustomerCompanyName,UsageDate,IsNewCustomer,CoreSiz e,TrialEndDate,CustomerCurrencyCC,PriceCC,PayoutCurrencyPC,EstimatedPricePC,UsageReference,Usa geUnit,CustomerId,BillingAccountId,RawUsage,EstimatedExtendedChargeCC,EstimatedExtendedChargeP C FROM ISVUsage WHERE OfferType IN ('vm core image', 'Virtual Machine Licenses', 'multisolution') TIMESPAN LAST_6_MONTHS	3f19fb95-5bc4- 4ee0-872e- cedd22578512
Usage	Metered usage report for the last 6M	SELECT MarketplaceSubscriptionId,MonthStartDate,OfferType,AzureLicenseType,MarketplaceLicenseType,SKU ,CustomerCountry,IsPreviewSKU,SKUBillingType,IsInternal,VMSize,CloudInstanceName,ServicePlanNa me,OfferName,DeploymentMethod,CustomerName,CustomerCompanyName,UsageDate,IsNewCustomer,CoreSiz e,TrialEndDate,CustomerCurrencyCC,PriceCC,PayoutCurrencyPC,EstimatedPricePC,UsageReference,Usa geUnit,CustomerId,BillingAccountId,MeteredUsage,EstimatedExtendedChargeCC,EstimatedExtendedCha rgePC FROM ISVUsage WHERE OfferType IN ('SaaS', 'Azure Applications') TIMESPAN LAST_6_MONTHS	f0c4927f-1f23- 4c99-be4a- 1371a5a9a086

Marketpla ce Insights	Marketplace Insights	SELECT Date,OfferName,ReferralDomain,CountryName,PageVisits,GetItNow,ContactMe,TestDrive,FreeTrial FROM ISVMarketplaceInsights TIMESPAN LAST 6 MONTHS	6fd7624b-aa9f- 42df-a61d- 67d42fd00e92
	report for the last 6M	TROT ISWIE RECEITING TELESTAN EAST_O_NONTHS	074421400032

#### 5.4. Example of sample queries

The following serve as examples for <u>few sample queries</u>. The queries can be created by calling the <u>Create Report Query</u> API endpoint. If required, the <u>Create Report Query</u> can be modified to <u>add more columns</u>, <u>adjust the computation period</u> (6M/12M/Custom Time Period), and <u>add filter conditions</u>.

Note: For more details on the column names, attributes, and description, please refer to the section Dictionary of Data Terms & Column Descriptions in Appendix

Report	Query Description	Sample Query
Customers	Active customers of the partner till date	SELECT DateAcquired,CustomerCompanyName,CustomerId FROM ISVCustomer WHERE IsActive = 1
Customers	Churned customers of the partner till date	SELECT DateAcquired,CustomerCompanyName,CustomerId FROM ISVCustomer WHERE IsActive = 0
Customers	List of new customers from a specific geography in the last 6M	SELECT DateAcquired,CustomerCompanyName,CustomerId FROM ISVCustomer WHERE DateAcquired >= '2020-06-30' AND CustomerCountryRegion = 'United States'
Usage	VM Normalized usage for "Billed through Azure" Marketplace License type for the last 6M	SELECT MonthStartDate, NormalizedUsage FROM ISVUsage WHERE MarketplaceLicenseType = 'Billed Through Azure' AND OfferType NOT IN ('Azure Applications', 'SaaS') TIMESPAN LAST_6_MONTHS
Usage	VM Raw usage for "Billed through Azure" Marketplace License type for the last 12M	SELECT MonthStartDate, RawUsage FROM ISVUsage WHERE MarketplaceLicenseType = 'Billed Through Azure' AND OfferType NOT IN ('Azure Applications', 'SaaS') TIMESPAN LAST_1_YEAR
Usage	VM Normalized usage for "Bring Your Own License" Marketplace License type for the last 6M	SELECT MonthStartDate, NormalizedUsage FROM ISVUsage WHERE MarketplaceLicenseType = 'Bring Your Own License' AND OfferType NOT IN ('Azure Applications', 'SaaS') TIMESPAN LAST_6_MONTHS
Usage	VM Raw usage for "Bring Your Own License" Marketplace License type for the last 6M	SELECT MonthStartDate, RawUsage FROM ISVUsage WHERE MarketplaceLicenseType = 'Bring Your Own License' AND OfferType NOT IN ('Azure Applications', 'SaaS') TIMESPAN LAST_6_MONTHS

Usage	Based on Usage Date, daily total normalized usage and "Estimated Extended Charges (PC/CC)" for Paid SKUs for the last 1M	SELECT UsageDate, NormalizedUsage, EstimatedExtendedChargePC FROM ISVUsage WHERE SKUBillingType = 'Paid' ORDER BY UsageDate DESC TIMESPAN LAST_MONTH
Usage	Based on Usage Date, daily total raw usage and "Estimated Extended Charges (PC/CC)" for Paid SKUs for the last 1M	SELECT UsageDate, RawUsage, EstimatedExtendedChargePC FROM ISVUsage WHERE SKUBillingType = 'Paid' ORDER BY UsageDate DESC TIMESPAN LAST_MONTH
Usage	For a specific Offer Name, VM Normalized usage for "Billed through Azure" Marketplace License type for the last 6M	SELECT OfferName, NormalizedUsage FROM ISVUsage WHERE MarketplaceLicenseType = 'Billed Through Azure' AND OfferName = 'Example Offer Name' TIMESPAN LAST_6_MONTHS
Usage	For a specific Offer Name, metered usage for the last 6M	SELECT OfferName, MeteredUsage FROM ISVUsage WHERE OfferName = 'Example Offer Name' AND OfferType IN ('SaaS', 'Azure Applications') TIMESPAN LAST_6_MONTHS
Orders	Orders report for Azure License Type as "Enterprise" for the last 6M	SELECT OrderId, OrderPurchaseDate FROM ISVOrder WHERE AzureLicenseType = 'Enterprise' TIMESPAN LAST_6_MONTHS
Orders	Orders report for Azure License Type as "Pay as You Go" for the last 6M	SELECT OrderId, OrderPurchaseDate FROM ISVOrder WHERE AzureLicenseType = 'Pay as You Go' TIMESPAN LAST_6_MONTHS
Orders	Orders report for specific offer name for the last 6M	SELECT OrderId, OrderPurchaseDate FROM ISVOrder WHERE OfferName = 'Example Offer Name' TIMESPAN LAST_6_MONTHS
Orders	Orders report for active orders for the last 6M	SELECT OrderId, OrderPurchaseDate FROM ISVOrder WHERE OrderStatus = 'Active' TIMESPAN LAST_6_MONTHS
Orders	Orders report for cancelled orders for the last 6M	SELECT OrderId, OrderPurchaseDate FROM ISVOrder WHERE OrderStatus = 'Cancelled' TIMESPAN LAST_6_MONTHS

#### 5.5. Sample Application

A sample application in C# language is available <u>here</u>. You can choose to take inspiration from the sample application and build your own application in any language.

The sample application achieves the following objectives:

- a) Generation of an AAD Token.
- b) Getting available datasets.

- c) Creating user defined queries.
- d) Getting user defined and system queries.
- e) Scheduling of a report.

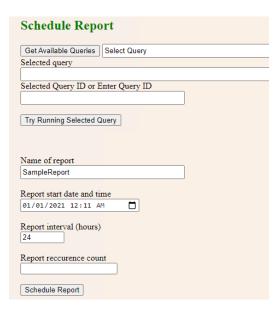
The sample application doesn't cover the method of calling APIs for other functionalities. The process of calling other APIs however remains the same as outlined above.

#### 5.5.1. How to run the application

- Clone the repository to a local system using this command:
  - git clone <a href="https://github.com/partneranalytics/ProgrammaticExportSampleAppISV.git">https://github.com/partneranalytics/ProgrammaticExportSampleAppISV.git</a>
  - Please refer to the ProgrammaticExportSampleAppISV/README.md file in the <u>repository</u> for the instructions.
- To quickly run the app, update the client id and client secret in the appsettings.Development.json

```
"AdTokenConfig": {
    "TokenGenerateUrl": "https://login.microsoftonline.com/{0}/oauth2/token",
    "TenantId": "https://graph.windows.net",
    "WebAppClientId"::""
    "WebAppClientSecret": ,
    "WebAppClientSecret": ,
```

 Running the app will start a local web server and a page will open (https://localhost:44365/ProgrammaticExportSampleApp/sample).



• This page will make API calls to the webserver running on the local machine, which in turn will make the actual programmatic access API calls.

#### 5.5.2. Code Snippets

■ The basic structure of the C# code for doing the programmatic access API calls is as follows:

```
var accessToken = await tokenGenerator.GenerateADTokenWithRetries();
                                                                                                                       Token Generation
if (string.IsNullOrEmpty(accessToken))
    return StatusCode((int)HttpStatusCode.InternalServerError, "Unable to generate AD token");
var baseUrl = _configuration["ProgrammaticExport:ApiEndpointUrl"];
                                                                                                                  Get the API path
var datasetPath = configuration["ProgrammaticExport:DatasetsPath"];
using var client = new HttpClient();
client.BaseAddress = new Uri(baseUrl);
                                                                                                                         Set headers
client.DefaultRequestHeaders.Add("Authorization", $"Bearer {accessToken}");
client.DefaultRequestHeaders.Accept.Add(new MediaTypeWithQualityHeaderValue("application/json"));
                                                                                                                Make API call
HttpResponseMessage response = await client.GetAsync(datasetPath); 
if ((int)response.StatusCode != 200)
    return StatusCode((int)response.StatusCode, response);
var responseString = await response.Content.ReadAsStringAsync(); Parse the output

APIOutput<ScheduledDatasetObject> datasetResultObject = JsonConvert.DeserializeObject<APIOutput<ScheduledDatasetObject>>(responseString);
return Ok(datasetResultObject);
```

#### 6. Resources

- 1. Commercial Marketplace Analytics documentation is available <a href="here">here</a>.
- 2. GitHub location to sample application.
- 3. Swagger API link to try out the APIs.
- 4. POSTMAN Collections of the API calls.

#### 7. Frequently Asked Questions

- 1. Whom should I reach out if I need help with the onboarding?

  Please drop an email to the following address: <a href="mailto:pcanalyticsapipilot@microsoft.com">pcanalyticsapipilot@microsoft.com</a>
- 2. What are the different scenarios under which I can receive API response other than 200 (Success)?

Error Description	Error Code	Possible Troubleshooting
Unauthorized	401	This is an "Authentication Exception". Please check the correctness of the AAD token. The AAD token is valid for 60 minutes, post which you would need to regenerate the AAD token.
Invalid table name	400	The name of the dataset is wrong. Please recheck the dataset name by calling "Get All Datasets" API call.
Incorrect column name	400	The name of the column in the query is incorrect. Please recheck the column name by calling "Get All Datasets" API call or refer to the <u>dictionary of data terms &amp; column descriptions</u> .
Null or missing value	400	You may be missing mandatory parameters as part of the request payload of the API.
Invalid report parameters	400	Please ensure that the report parameters are correct. As an example, you may be giving a value of less than 4 for RecurrenceInterval parameter.
Recurrence Interval has to be between 4 and 90	400	Please ensure that value of RecurrenceInterval request parameter is between 4 and 90
Invalid Queryld	400	Please recheck the generated Queryld
Invalid report parameters for creation - Start time of report should at least be 4 hours from current UTC time -	400	Start Time parameter as part of request payload shouldn't be in the past. The start time of report should be at least 4 hours from current UTC time.
Requested value 'string' not found	400	Please check whether you have updated the request parameters callbackurl or format
No item found with given filters.	404	Please check the reportID parameter used in Get Report Executions API.
There are no executions that have occurred for the given filter conditions. Please recheck the reportld or executionld and retry the API after the report's scheduled execution time	404	Please ensure that the reportId is correct. Retry the API after the report's scheduled execution time as specified in the request payload.
Service unavailable	500	If you are receiving service unavailable (5xx error) continuously, please drop an email to: <a href="mailto:pcanalyticsapipilot@microsoft.com">pcanalyticsapipilot@microsoft.com</a>

3. I receive API response 200, but when I download the report from the secure location, I am getting no records.

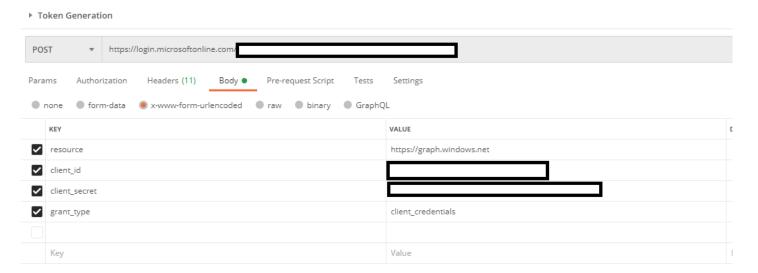
Please check whether the string in the query has one of the allowable values for the column header. As an example, the below query will return 0 results:

"SELECT UsageDate, NormalizedUsage, EstimatedExtendedChargePC FROM ISVUsage WHERE SKUBillingType = 'Paided' ORDER BY UsageDate DESC TIMESP AN LAST\_MONTH"

In the example above, the allowable values for SKUBillingType as Paid or Free. Please refer to the <u>dictionary of data terms & column descriptions</u> to know about the possible values for various columns.

4. What are the pre-requisites to use the POSTMAN collections of the API?

You would need to add the client\_id and client\_secret in the Token Generation POST call. The AAD token generated as part of the response needs to be used for other API calls.



#### 8. Appendix

# 8.1. Dictionary of Data Terms & Column Descriptions8.1.1. Orders Report

Column Name in PC UI	Attribute Name	Definition	Column in Programmatic Access Reports
Marketplace Subscription Id	Marketplace Subscription ID	The unique identifier associated with the Azure subscription the customer used to purchase your commercial marketplace offer. ID was formerly the Azure Subscription GUID.	Marketplace Subscription Id
MonthStartDate	Month Start Date	Month Start Date represents month of Purchase. The format is yyyy-mm-dd.	MonthStartDate
Offer Type	Offer Type	The type of commercial marketplace offering.	OfferType

Azure License Type	Azure License Type	The type of licensing agreement used by customers to purchase Azure. Also known as Channel. The possible values are:  Cloud Solution Provider Enterprise Enterprise through Reseller Pay as You Go	AzureLicenseType
Marketplace License Type	Marketplace License Type	The billing method of the commercial marketplace offer. The different values are:  Billed Through Azure Bring Your Own License Free Microsoft as Reseller	MarketplaceLicenseType
SKU	SKU	The plan associated with the offer	SKU
Customer Country	Customer Country/Region	The country/region name provided by the customer. Country/region could be different than the country/region in a customer's Azure subscription.	CustomerCountry
Is Preview SKU	Is Preview SKU	The value will let you know if you have tagged the SKU as "preview". Value will be "Yes" if the SKU has been tagged accordingly, and only Azure subscriptions authorized by you can deploy and use this image. Value will be "No" if the SKU has not been identified as "preview".	IsPreviewSKU
Order Id	Order ID	The unique identifier of the customer order for your commercial marketplace service. Virtual Machine usage-based offers are not associated with an order.	Orderld
Order Quantity	Order Quantity	Number of assets associated with the order ID for active orders	OrderQuantity
Cloud Instance Name	Cloud Instance Name	The Microsoft Cloud instance name in which a VM deployment occurred.	CloudInstanceName
Is New Customer	Is New Customer	The value identifies whether a new customer acquired one or more of your offers for the first time. Value will be "Yes" if within the same calendar month for "Date Acquired". Value will be "No" if the customer has purchased any of your offers prior to the calendar month reported.	IsNewCustomer
Order Status	Order Status	The status of a commercial marketplace order at the time the data was last refreshed.	OrderStatus
Order Cancel Date	Order Cancel Date	The date the commercial marketplace order was canceled.	OrderCancelDate
Customer Company Name	Customer Company Name	The company name provided by the customer. Name could be different than the city in a customer's Azure subscription.	CustomerCompanyName
Order Purchase Date	Order Purchase Date	The date the commercial marketplace order was created. The format is yyyy-mm-dd.	OrderPurchaseDate
Offer Name	Offer Name	The name of the commercial marketplace offering.	OfferName
Trial End Date	Trial End Date	The date the trial period for this order will end or has ended.	TrialEndDate

Customer Id	Customer ID	The unique identifier assigned to a customer. A customer may have one or more Azure Marketplace subscriptions.	CustomerId
Billing Account Id	Billing Account ID	The identifier of the account on which billing is generated. Map <b>Billing Account ID</b> to <b>customerID</b> to connect your Payout Transaction Report with the Customer, Order, and Usage Reports.	
AssetCount	Asset Count	The number of assets associated with the order ID.	Deprecated

# 8.1.2. Usage Report

Column Name in PC UI	Attribute Name	Definition	Column in Programmatic Access Reports
Marketplace Subscription Id	Marketplace Subscription ID	The unique identifier associated with the Azure subscription the customer used to purchase your commercial marketplace offer. ID was formerly the Azure Subscription GUID.	MarketplaceSubscriptionId
MonthStartDate	Month Start Date	Month Start Date represents the month of Purchase.	MonthStartDate
Offer Type	Offer Type	The type of commercial marketplace offering.	OfferType
Azure License Type	Azure License Type	The type of licensing agreement used by customers to purchase Azure. Also known as the Channel. The possible values are:  Cloud Solution Provider Enterprise Enterprise through Reseller Pay as You Go	AzureLicenseType
Marketplace License Type	Marketplace License Type	The billing method of the commercial marketplace offer. The possible values are:  Billed Through Azure Bring Your Own License Free Microsoft as Reseller	MarketplaceLicenseType
SKU	SKU	The plan associated with the offer.	SKU
Customer Country	Customer Country/Region	The country/region name provided by the customer. Country/region could be different than the country/region in a customer's Azure subscription.	CustomerCountry
Is Preview SKU	Is Preview SKU	The value shows if you have tagged the SKU as "preview". Value will be "Yes" if the SKU has been tagged accordingly, and only Azure subscriptions authorized by you can deploy and use this image. Value will be "No" if the SKU has not been identified as "preview".	IsPreviewSKU
SKU Billing Type	SKU Billing Type	The Billing type associated with each SKU in the offer. The possible values are:	SKUBillingType

		<ul><li>Free</li><li>Paid</li></ul>	
IsInternal	Deprecated	Deprecated	Deprecated
VM Size	Virtual Machine Size	For VM based offer types, this entity signifies the size of the VM associated with the SKU of the offer.	VMSize
Cloud Instance Name	Cloud Instance Name	The Microsoft Cloud in which a VM deployment occurred.	CloudInstanceName
ServicePlanName	Deprecated	Deprecated (Same definition as SKU)	ServicePlanName
Offer Name	Offer Name	The name of the commercial marketplace offering.	OfferName
DeploymentMethod	Deprecated	Deprecated (Same definition as Offer type)	DeploymentMethod
Customer Company Name	Customer Company Name	The company name provided by the customer. The name could be different than the city in a customer's Azure subscription.	CustomerCompanyName
Usage Date	Usage Date	The date of usage event generation for usage-based assets.	UsageDate
IsMultisolution	Is Multisolution	Signifies whether the offer is a Multisolution offer type.	IsMultisolution
Is New Customer	Deprecated	Deprecated	IsNewCustomer
Core Size	Core Size	Number of cores associated with the VM-based offer.	CoreSize
Usage Type	Usage Type	Signifies whether the usage event associated with the offer is one of the following:  Normalized usage Raw usage Metered usage	UsageType
Trial End Date	Trial End Date	The date the trial period for this order will end or has ended.	TrialEndDate
Customer Currency (CC)	Customer Currency	The currency used by the customer for the commercial marketplace transaction.	CustomerCurrencyCC
Price (CC)	Price	Unit price of the SKU shown in customer currency.	PriceCC
Payout Currency (PC)	Payout Currency	Publisher is paid for the usage events associated with the asset in the currency configured by the publisher.	PayoutCurrencyPC
Estimated Price (PC)	Estimated Price	Unit price of the SKU in the currency configured by the publisher.	EstimatedPricePC
Usage Reference	Usage Reference	A concatenated GUID that is used to connect the Usage Report (in commercial marketplace analytics) with the Payout transaction report. Usage Reference is connected with Orderld and LineltemId in the Payout transaction report.	UsageReference
Usage Unit	Usage Unit	Unit of consumption associated with the SKU.	UsageUnit
Customer Id	Customer ID	The unique identifier assigned to a customer. A customer may have zero or more Azure Marketplace subscriptions.	CustomerId
Billing Account Id	Billing Account ID	The identifier of the account on which billing is generated. Map <b>Billing Account ID</b> to <b>customerID</b> to connect your Payout Transaction Report with the Customer, Order, and Usage Reports.	BillingAccountId
Usage Quantity	Usage Quantity	The total usage units consumed by the asset which is deployed by the customer.	UsageQuantity

		This is based on Usage type item. For example, if the Usage Type is Normalized usage, then Usage Quantity is for Normalized Usage.	
Normalized Usage	Normalized Usage	The total normalized usage units consumed by the asset which is deployed by the customer. Normalized usage hours are defined as the usage hours normalized to account for the number of VM cores ([number of VM cores] x [hours of raw usage]). VMs designated as "SHAREDCORE" use 1/6 (or 0.1666) as the [number of VM cores] multiplier.	Normalized Usage
MeteredUsage	Metered Usage	The total usage units consumed by the meters that are configured with the offer which is deployed by the customer.	MeteredUsage
RawUsage	Raw Usage	The total raw usage units consumed by the asset which is deployed by the customer. Raw usage hours are defined as the amount of time VMs have been running in terms of usage units.	RawUsage
Estimated Extended Charge (CC)	Estimated Extended Charge in Customer Currency	Signifies the charges associated with the usage. The column is the product of Price (CC) and Usage Quantity.	Estimated Extended Charge CC
Estimated Extended Charge (PC)	Estimated Extended Charge in Payout Currency	Signifies the charges associated with the usage. The column is the product of Estimated Price (PC) and Usage Quantity.	EstimatedExtended ChargePC

# 8.1.3. Customers Report

Column Name in PC UI	Attribute Name	Definition	Column in Programmatic Access Reports
Marketplace Subscription Id	Marketplace Subscription ID	The unique identifier associated with the Azure subscription the customer used to purchase your commercial marketplace offer. ID was formerly the Azure Subscription GUID.	MarketplaceSubscriptionId
DateAcquired	Date Acquired	The first date the customer purchased any offer you published.	DateAcquired
DateLost	Date Lost	The last date the customer canceled the last of all previously purchased offers.	DateLost
Provider Name	Provider Name	The name of the provider involved in the relationship between Microsoft and the customer. If the customer is an Enterprise through Reseller, this will be the reseller. If a Cloud Solution Provider (CSP) is involved, this will be the CSP.	ProviderName
Provider Email	Provider Email	The email address of the provider involved in the relationship between Microsoft and the customer. If the customer is an	ProviderEmail

		Enterprise through Reseller, this will be the reseller. If a Cloud Solution Provider (CSP) is involved, this will be the CSP.	
FirstName	Customer First Name	The first name provided by the customer. Name could be different than the name provided in a customer's Azure subscription.	FirstName
LastName	Customer Last Name	The last name provided by the customer. Name could be different than the name provided in a customer's Azure subscription.	LastName
Email	Customer Email	The e-mail address provided by the end customer. Email could be different than the e-mail address in a customer's Azure subscription.	Email
Customer Company Name	Customer Company Name	The company name provided by the customer. Name could be different than the city in a customer's Azure subscription.	CustomerCompany Name
CustomerCity	Customer City	The city name provided by the customer. City could be different than the city in a customer's Azure subscription.	CustomerCity
Customer Postal Code	Customer Postal Code	The postal code provided by the customer. Code could be different than the postal code provided in a customer's Azure subscription.	CustomerPostal Code
CustomerCommunicationCulture	Customer Communication Language	The language preferred by the customer for communication.	CustomerCommunicationCulture
CustomerCountryRegion	Customer Country/Region	The country/region name provided by the customer. Country/region could be different than the country/region in a customer's Azure subscription.	CustomerCountryRegion
AzureLicenseType	Azure License Type	The type of licensing agreement used by customers to purchase Azure. Also known as the <i>channel</i> . The possible values are:  Cloud Solution Provider  Enterprise  Enterprise through Reseller  Pay as You Go	AzureLicenseType
PromotionalCustomers	Is Promotional Contact Opt In	The value will let you know if the customer proactively opted in for promotional contact from publishers. At this time, we are not presenting the option to customers, so we have indicated "No" across the board. After this feature is deployed, we will start updating accordingly.	PromotionalCustomers
CustomerState	Customer State	The state of residence provided by the customer. State could be different than the state provided in a customer's Azure subscription.	CustomerState
CommerceRootCustomer	Commerce Root Customer	One Billing Account ID can be associated with multiple Customer IDs.  One combination of a Billing Account ID and a Customer ID	CommerceRootCustomer

		can be associated with multiple commercial marketplace subscriptions. The Commerce Root Customer signifies the name of the subscription's customer.	
Customer Id	Customer ID	The unique identifier assigned to a customer. A customer may have zero or more Azure Marketplace subscriptions.	CustomerId
Billing Account Id	Billing Account ID	The identifier of the account on which billing is generated. Map <b>Billing Account ID</b> to <b>customerID</b> to connect your Payout Transaction Report with the Customer, Order, and Usage Reports.	BillingAccountId

# 8.1.4. Marketplace Insights Report

Column Name in PC UI Attribute Name		Definition	Column in Programmatic Access Reports
Date of Visit		The date of page visit and/or CTA click event generation on the offer's page in Azure Marketplace and/or AppSource.	Date
Offer Name	Offer Name	The name of the commercial marketplace offering.	OfferName
Referral Domain Referral Domain		The name of the referral domain from where the page visit has happened. If there are no referral domains captured for the page visit, then the corresponding entry is "Referral domain not present"	ReferralDomain
Country Name	Country Name	The name of the country from where the page visit has happened.	CountryName
Page Visits	Page Visits	The number of page visits associated with the Offer Name for a particular date.	PageVisits
Get It Now Get It Now		The number of clicks to the "Get It Now" CTA on the offer's page for a particular date.	GetltNow
Contact Me Contact Me		The number of clicks to the "Contact Me" CTA on the offer's page for a particular date.	ContactMe
Test Drive	Test Drive	The number of clicks to the "Test Drive" CTA on the offer's page for a particular date.	TestDrive
Free Trial Free Trial		The number of clicks to the "Free Trial" CTA on the offer's page for a particular date.	FreeTrial

# 8.2. Custom Query Specification

Partners can use this query specification for easy formulation of custom queries for extracting data from analytics tables. The queries can be used to select only the desired columns and metrics which match a certain criterion. At the heart of language specification is the dataset definition on which a custom query can be written.

#### **Datasets**

Like how a database has tables and columns, query works on Datasets which has columns and metrics. The full list of available datasets for formulating a query can be obtained by hitting the datasets API. An example of a dataset is as shown below as a JSON:

```
"datasetName": "ISVUsage",
"selectableColumns":[
"MarketplaceSubscriptionId",
 "OfferName",
     "CustomerId",
"MonthStartDate",
 "SKU"
"availableMetrics":[
"NormalizedUsage",
 "RawUsage",
     "EstimatedExtendedChargeCC"
"availableDateRanges": [
"LAST MONTH",
"LAST 3 MONTHS",
 "LAST_6_MONTHS",
"LIFETIME"
```

### Parts of a dataset

- A dataset name is like a database table name. (Ex: ISVUsage)
- A dataset has a list of columns that can be selected. (Ex: MarketplaceSubscriptionId)
- A dataset also has metrics, which are like aggregation functions in database. (Ex: NormalizedUsage)

There are fixed time spans over which data can be exported.

## Formulating a query on a dataset

Below are some sample queries and what data they will extract:

- SELECT MarketplaceSubscriptionId,CustomerId FROM ISVUsage TIMESPAN LAST MONTH
  - This query will get every unique MarketplaceSubscriptionId and its corresponding CustomerId in the last 1 month.
- SELECT MarketplaceSubscriptionId, EstimatedExtendedChargeCC FROM ISVUsage ORDER

BY EstimatedExtendedChargeCC LIMIT 10

- This query will get the top 10 subscriptions in descreasing order of the number of licenses sold under each subscription.
- SELECT Customerld, NormalizedUsage, RawUsage FROM ISVUsage ORDER

BY NormalizedUsage WHERE NormalizedUsage > 100000 ORDER BY NormalizedUsage TIMESPAN LAST\_6\_MONTHS

- This query will get the NormalizedUsage and RawUsage of all the Customers who have NormalizedUsage greater than 100000
- **SELECT** MarketplaceSubscriptionId, MonthStartDate, NormalizedUsage **FROM** ISVUsage **WHERE** CustomerId **IN** ('2 a31c234-1f4e-4c60-909e-76d234f93161', '80780748-3f9a-11eb-b378-0242ac130002')
  - This query will get the MarketplaceSubscriptionId and the revenue generated for every month by the two CustomerId: '2a31c234-1f4e-4c60-909e-76d234f93161', '80780748-3f9a-11eb-b378-0242ac130002'

# Query specification's grammar reference

Legend

Symbol	Meaning
?	Optional
*	Zero or more
+	One or more
	Or / One of the list

### **Definition**

- Query Statement: SelectClause FromClause WhereClause? OrderClause? LimitClause? TimeSpan?
- SelectClause: SELECT ColumOrMetricName (, ColumOrMetricName)\*
  - o ColumOrMetricName: Columns and Metrics defined within the Dataset

- FromClause: FROM DatasetName
  - o **DatasetName:** Dataset name defined within the Dataset
- WhereClause: WHERE FilterCondition (AND FilterCondition)\*
  - o **FilterCondition:** ColumOrMetricName Operator Value
    - Operator: = | > | < | > = | <= | != | LIKE | NOT LIKE | IN | NOT IN</li>
    - Value: Number | StringLiteral | MultiNumberList | MultiStringList
      - **Number:** -? [0-9] + (. [0-9] [0-9]\*)?
      - StringLiteral: '[a-zA-Z0-9\_]\*'
      - **MultiNumberList:** (Number (,Number)\*)
      - MultiStringList: (StringLiteral (,StringLiteral)\*)
- OrderClause: ORDER BY OrderCondition (,OrderCondition)\*
  - OrderCondition: ColumOrMetricName (ASC | DESC)\*
- LimitClause: LIMIT [0-9]+
- TimeSpan: TIMESPAN (TODAY | YESTERDAY | LAST\_7\_DAYS | LAST\_14\_DAYS |

LAST\_30\_DAYS | LAST\_90\_DAYS | LAST\_180\_DAYS | LAST\_365\_DAYS |

LAST\_MONTH | LAST\_3\_MONTHS | LAST\_6\_MONTHS | LAST\_1\_YEAR | LIFETIME)

# **Query Structure**

Report query is made up of multiple parts:

- SELECT
- FROM
- WHERE
- ORDER BY
- LIMIT
- TIMESPAN

Each part is described below.

### **SELECT**

This part of the query decides the columns that will get exported. The columns that can be selected are the fields listed in "selectableColumns" and "availableMetrics" sections of a dataset. The final exported rows will always contain distinct values selected columns, i.e., there will be no duplicate rows in the final exported file. Metrics will be calculated for every distinct combination of the selected columns.

**Example: SELECT** OfferName, NormalizedUsage

**FROM** 

This part of the query indicates the dataset from which data needs to be exported. The dataset name given here needs to be a valid dataset name returned by the datasets API.

# **Example:**

- FROM ISVUsage
- FROM ISVOrder

#### WHERE

This part of the query is used to specify filter conditions on the dataset. Only rows matching all the conditions listed in this clause will be present in the final exported file. The filter condition can be on any of the columns listed in "selectableColumns" and "availableMetrics". The values specified in the filter condition can be a list of numbers or list of string only when the operator is "IN" or "NOT IN". The values can always be given as a string literal and they will be converted to the native types of columns. Multiple filter conditions need to be separated with an AND operation.

## **Example:**

- MarketplaceSubscriptionId = '868368da-957d-4959-8992-3c12dc7e6260'
- CustomerName LIKE '%Contosso%'
- Customerld **NOT IN** (1000, 1001, 1002)
- OrderQuantity=100
- OrderQuantity='100'
- MarketplaceSubscriptionId='7b487ac0-ce12-b732-dcd6-91a1e4e74a50' AND CustomerId='0f8b7fa0-eb83-a183-1225-ca153ef807aa'

### **ORDER BY**

This part of the query specifies the ordering criteria for the rows exported. The columns on which ordering can be defined need to be from the "selectableColumns" and "availableMetrics" from the dataset. If there is no ordering direction specified, it will be defaulted to DESC on the column. Ordering can be defined on multiple columns by comma separating the criteria.

# **Example:**

- ORDER BY NormalizedUsage ASC, EstimatedExtendedCharge(CC) DESC
- ORDER BY CustomerName ASC, NormalizedUsage

### **LIMIT**

This part of the query specifies the number of rows that will be exported. The number specified needs to be a positive nonzero integer.

### **TIMESPAN**

This part of the query specifies the time duration for which the data needs to be exported. The possible values should be from the "availableDateRanges" field in the dataset definition.

# Case sensitivity in query specification

The specification is completely case insensitive. Predefined keywords, column names and values can be specified in any case.

# 8.3. API Specification

The specifications for <u>Create Report Query</u>, <u>Create Report</u> and <u>Get Report Executions</u> APIs are already provided in <u>Programmatic</u> <u>Access Paradigm</u> section.

### 8.3.1. GET all Datasets

The API helps to get all the available datasets. Datasets list the tables, columns, metrics, and time ranges.

### **Request syntax**

Method	Request URI
GET	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledDataset?datasetName={Dataset
	Name}

### Request header

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

#### **Path Parameter**

None

## **Query Parameter**

Parameter Name	Туре	Required	Description
datasetName	string	No	Filter to get details of only one dataset

### **Request Payload**

None

None

### Response

The response payload is structured as follows:

## Glossary

Key definitions of elements in the response are articulated below:

Parameter	Description	
DatasetName	Name of the dataset that this array object defines	
SelectableColumns	Raw columns which can be specified in the select columns	
AvailableMetrics	Aggregation/metric column names that can be specified in the select column	
AvailableDateRanges	Date range which can be used in report queries for the dataset	
NextLink	Link to Next page if data paginated	

TotalCount	Number of datasets in the Value array	
StatusCode	Result Code. The possible values are 200, 400, 401, 403, 500	

# 8.3.2. GET Report Queries

The API gets all the queries available for use in reports. Gets all the system and user defined queries by default.

# **Request syntax**

Meth	Request URI
od	
GET	https://partneranalytics-api.azure-
	api.net/analytics/cmp/ScheduledQueries?queryId={QueryID}&queryName={QueryName}&includeSystemQueries={include_system_queries}&i
	ncludeOnlySystemQueries={include_only_system_queries}

## **Request header**

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

### **Path Parameter**

None

Parameter Name	Туре	Required	Description
queryld	string	No	Filter to get details of only query with the ID given in this argument
queryName	string	No	Filter to get details of only queries with the name given in this argument
IncludeSystemQueries	boolean	No	Include predefined system queries in the response
IncludeOnlySystemQueries	boolean	No	Include only system queries in the response

## **Request Payload**

None

### Glossary

None

### Response

The response payload is structured as follows:

# Glossary

Key definitions of elements in the response are articulated below:

Parameter	Description	
Queryld	Unique UUID of the query	
Name	Name given to the query at the time of query creation	
Description	Description given during creation of the query	
Query	Report query string	

Туре	Set to "userDefined' for <u>user created queries</u> and "system" for <u>predefined</u>		
	system queries		
User	User ID who created the query		
CreatedTime	Time of creation of query		
TotalCount	Number of datasets in the Value array		
StatusCode	Result Code. The possible values are 200, 400, 401, 403, 500		

# 8.3.3. DELETE Report Queries

The API deletes user defined queries.

## **Request syntax**

Method	Request URI
DELETE	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledQueries/{queryId}

# Request header

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

### **Path Parameter**

Parameter Name	Туре	Description
queryld	string	Filter to get details of only query with the ID given in this
		argument

## **Query Parameter**

None

# **Request Payload**

None

None

### Response

The response payload is structured as follows in JSON format.

### Glossary

Key definitions of elements in the response are articulated below:

Parameter	Description
Queryld	Unique UUID of the query which was deleted.
Name	Name of the query which was deleted
Description	Description of the deleted query
Query	Report query string of the deleted query
Туре	"userDefined"
User	User ID who created the query
CreatedTime	Time of creation of query
ModifiedTime	Null
TotalCount	Number of datasets in the Value array

StatusCode	Result Code. The possible values are 200, 400, 401, 403, 500

# 8.3.4. TRY Report Queries

The API executes a Report query statement. The API returns only 10 records which partner can use to verify if the data is as expected. **IMPORTANT NOTE:** This API has a query execution timeout of 100 seconds. If you notice the API is taking more than 100 seconds, it is highly likely that the query is syntactically correct or else you would have received an error code other than 200. The actual report generation will pass if query syntax is correct.

### **Request syntax**

Method	Request URI
GET	https://partneranalytics-api.azure-
	api.net/analytics/cmp/ScheduledQueries/testQueryResult?exportQuery={query text}

## **Request header**

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

### QueryParameter

Parameter Name	Туре	Description
exportQuery	string	Report query string which needs to be executed
queryld	string	A valid existing query ID

#### **Path Parameter**

None

## **Request Payload**

None

#### None

### Response

The response payload is structured as:

Response Code	200, 400, 401, 403, 404, 500	
Response payload	Top 10 rows of query execution	

# 8.3.5. Get Report

The API gets all the reports which have been scheduled.

## **Request syntax**

Method	Request URI
GET	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledReport?reportId={Report ID}&reportName={Report
	Name}&queryId={Query ID}

# **Request header**

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

#### **Path Parameter**

None

Parameter Name	Required	Туре	Description
reportId	No	string	Filter to get details of only reports with the
			reportId given in this argument
reportName	No	string	Filter to get details of only reports with the
			reportName given in this argument
queryld	No	boolean	Include predefined system queries in the response

None

### Response

The response payload is structured as follows in JSON format:

```
Response Code
                        200, 400, 401, 403, 404, 500
Response payload
                         "Value": [
                            "ReportId": "string",
                            "ReportName": "string",
                            "Description": "string",
                            "Queryld": "string",
                            "Query": "string",
                            "User": "string",
                            "CreatedTime": "string",
                            "ModifiedTime": "string",
                            "StartTime": "string",
                            "ReportStatus": "string",
                            "RecurrenceInterval": 0,
                            " RecurrenceCount": 0,
                            "CallbackUrl": "string",
                            "Format": "string"
                         "TotalCount": 0,
                         "Message": "string",
                         "StatusCode": 0
```

### Glossary

Key definitions of elements in the response are articulated below:

Parameter	Description
ReportId	Unique UUID of the report created

ReportName	Name given to the report in the request payload		
Description	Description given during creation of the report		
Queryld	Query Id passed at the time of creation of the report		
Query	Query text that will be executed for this report		
User	User ID used for creation of the report		
CreatedTime	Time of creation of report. The time format is yyyy-MM-ddTHH:mm:ssZ		
ModifiedTime	Time at which the report was last modified. The time format is yyyy-MM-		
	ddTHH:mm:ssZ		
StartTime	Time at which report execution will begin. The time format is yyyy-MM-		
	ddTHH:mm:ssZ		
ReportStatus	Status of the report execution. The possible values for Paused, Active and		
	Inactive.		
RecurrenceInterval	Recurrence interval provided during report creation		
RecurrenceCount	Recurrence count provided during report creation		
CallbackUrl	Callback URL provided in the request		
Format	Format of the report files		

# 8.3.6. Update Report

The API helps to modify a report parameter.

# **Request syntax**

Method	Request URI
PUT	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledReport/{Report ID}

# **Request header**

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

### **Path Parameter**

None

Parameter Name	Required	Туре	Description
reportId	Yes	string	Id of the report being modified

# **Request Payload**

```
{
    "ReportName": "string",
    "Description": "string",
    "StartTime": "string",
    "RecurrenceInterval": 0,
    "RecurrenceCount": 0,
    "Format": "string",
    "CallbackUrl": "string"
}
```

## Glossary

Key definitions of elements in the request payload are articulated below:

Parameter	Required	Description	Allowed Values
ReportName	Yes	Name to be assigned to the report	string
Description	No	Description of the created report	string
StartTime	Yes	Timestamp after which the report generation will begin	string
RecurrenceInterval	No	Frequency at which the report should be generated in hours. Minimum value is 4	integer
RecurrenceCount	No	Number of reports to be generated. Default is integer indefinite.	
Format	Yes	File format of the exported file. Default is CSV.	"CSV"/"TSV"
CallbackUrl	Yes	https callback URL to be called on report string generation	

# Glossary

None

### Response

The response payload is structured as follows:

```
Response Code
                        200, 400, 401, 403, 404, 500
Response payload
                         "Value": [
                            "ReportId": "string",
                           "ReportName": "string",
                           "Description": "string",
                           "Queryld": "string",
                            "Query": "string",
                           "User": "string",
                           "CreatedTime": "string",
                           "ModifiedTime": "string",
                           "StartTime": "string",
                           "ReportStatus": "string",
                           "RecurrenceInterval": 0,
                           "RecurrenceCount": 0,
                           "CallbackUrl": "string",
                           "Format": "string"
                         "TotalCount": 0,
                         "Message": "string",
                         "StatusCode": 0
```

Parameter	Description	
ReportId	Unique UUID of the report updated	
ReportName	Name given to the report in the request payload	
Description	Description given during creation of the report	
Queryld	Query Id passed at the time of creation of the report	
Query	Query text that will be executed for this report	

User	User ID used for creation of the report		
CreatedTime	Time of creation of report. The time format is yyyy-MM-ddTHH:mm:ssZ		
ModifiedTime	Time at which the report was last modified. The time format is yyyy-MM-ddTHH:mm:ssZ		
StartTime	Time at which report execution will begin. The time format is yyyy-MM-ddTHH:mm:ssZ		
ReportStatus	Status of the report execution. The possible values are Paused, Active and Inactive.		
RecurrenceInterval	Recurrence interval provided during report creation		
RecurrenceCount	Recurrence count provided during report creation		
CallbackUrl	Callback URL provided in the request		
Format	Format of the report files		

# 8.3.7. Delete Report

The API on execution deletes all the report and report execution records.

# **Request syntax**

Method	Request URI
DELETE	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledReport/{Report ID}

# **Request header**

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

### **Path Parameter**

None

Parameter Name	Required	Туре	Description
reportId	Yes	string	Id of the report being modified

None

### Response

The response payload is structured as follows:

```
Response Code
                       200, 400, 401, 403, 404, 500
Response payload
                         "Value": [
                           "ReportId": "string",
                           "ReportName": "string",
                           "Description": "string",
                           "Queryld": "string",
                           "Query": "string",
                           "User": "string",
                           "CreatedTime": "string",
                           "ModifiedTime": "string",
                           "StartTime": "string",
                           "ReportStatus": "string",
                           "RecurrenceInterval": 0,
                           "RecurrenceCount": 0,
                           "CallbackUrl": "string",
                           "Format": "string"
                         "TotalCount": 0,
                         "Message": "string",
                         "StatusCode": 0
```

Parameter	Description
ReportId	Unique UUID of the deleted report
ReportName	Name given to the report during creation
Description	Description given during creation of the report

Queryld	Query Id passed at the time of creation of the report
Query	Query text that will be executed for this report
User	User ID used for creation of the report
CreatedTime	Time of creation of report. The time format is yyyy-MM-ddTHH:mm:ssZ
ModifiedTime	Time at which the report was last modified. The time format is yyyy-MM-ddTHH:mm:ssZ
StartTime	Time at which report execution will begin. The time format is yyyy-MM-ddTHH:mm:ssZ
ReportStatus	Status of the report execution. The possible values are Paused, Active and Inactive
RecurrenceInterval	Recurrence interval provided during report creation
RecurrenceCount	Recurrence count provided during report creation
CallbackUrl	Callback URL provided in the request
Format	Format of the report files

# 8.3.8. Pause Report Executions

The API on execution temporarily pauses the scheduled execution of reports.

# **Request syntax**

Method	Request URI
PUT	https://partneranalytics-api.azure-api.net/analytics/cmp/ScheduledReport/pause/{Report ID}

# Request header

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

### **Path Parameter**

None

Parameter Name	Required	Type	Description
i didificter ivallic	ricquired	I I y P C	Description

reportId	Vac	ctring	Id of the report being modified
reportiu	165	string	ia of the report being modified

None

### Response

The response payload is structured as follows in JSON format:

```
Response Code
                        200, 400, 401, 403, 404, 500
Response payload
                         "Value": [
                            "ReportId": "string",
                            "ReportName": "string",
                            "Description": "string",
                            "Queryld": "string",
                            "Query": "string",
                            "User": "string",
                            "CreatedTime": "string",
                            "ModifiedTime": "string",
                            "StartTime": "string",
                            "ReportStatus": "string",
                            "RecurrenceInterval": 0,
                            "RecurrenceCount": 0,
                            "CallbackUrl": "string",
                            "Format": "string"
                         "TotalCount": 0,
                         "Message": "string",
                         "StatusCode": 0
```

Parameter	Description
-----------	-------------

ReportId	Unique UUID of the deleted report		
ReportName	Name given to the report during creation		
Description	Description given during creation of the report		
Queryld	Query Id passed at the time of creation of the report		
Query	Query text that will be executed for this report		
User	User ID used for creation of the report		
CreatedTime	Time of creation of report. The time format is yyyy-MM-ddTHH:mm:ssZ		
ModifiedTime	Time at which the report was last modified. The time format is yyyy-MM-		
	ddTHH:mm:ssZ		
StartTime	Time at which report execution will begin. The time format is yyyy-MM-		
	ddTHH:mm:ssZ		
ReportStatus	Status of the report execution. The possible values are Paused, Active and		
	Inactive.		
RecurrenceInterval	Recurrence interval provided during report creation		
RecurrenceCount	Recurrence count provided during report creation		
CallbackUrl	Callback URL provided in the request		
Format	Format of the report files		

# 8.3.9. Resume Report Executions

The API on execution resumes the scheduled execution of a paused report.

# **Request syntax**

Method	Request URI
PUT	https://partneranalytics-api.azure-api.net//analytics/cmp/ScheduledReport/resume/{reportId}

# Request header

Header	Туре	Description
Authorization	string	Required. The Azure AD access token in the form Bearer <token></token>
Content-Type	string	Application/JSON

### **Path Parameter**

None

# **Query Parameter**

Parameter Name	Required	Туре	Description
reportId	Yes	string	Id of the report being modified

# Glossary

None

## Response

The response payload is structured as follows in JSON format

Response Code	200, 400, 401, 403, 404, 500
Response payload	{
	"Value": [
	{
	"ReportId": "string",
	"ReportName": "string",
	"Description": "string",
	"Queryld": "string",
	"Query": "string",
	"User": "string",
	"CreatedTime": "string",
	"ModifiedTime": "string",
	"StartTime": "string",
	"ReportStatus": "string",
	"RecurrenceInterval": 0,
	"RecurrenceCount": 0,
	"CallbackUrl": "string",
	"Format": "string"
	}
	],
	"TotalCount": 0,
	"Message": "string",
	"StatusCode": 0
	}

Parameter	Description
ReportId	Unique UUID of the deleted report
ReportName	Name given to the report during creation
Description	Description given during creation of the report
Queryld	Query Id passed at the time of creation of the report
Query	Query text that will be executed for this report
User	User ID used for creation of the report
CreatedTime	Time of creation of report. The time format is yyyy-MM-ddTHH:mm:ssZ
ModifiedTime	Time at which the report was last modified. The time format is yyyy-MM-
	ddTHH:mm:ssZ
StartTime	Time at which report execution will begin. The time format is yyyy-MM-ddTHH:mm:ssZ
ReportStatus	Status of the report execution. The possible values are Paused, Active and
	Inactive.
RecurrenceInterval	Recurrence interval provided during report creation
RecurrenceCount	Recurrence count provided during report creation
CallbackUrl	Callback URL provided in the request
Format	Format of the report files