

THOMSON REUTERS

TICK HISTORY

REST API

RELEASE 11.0

USER GUIDE

VERSION 1.0

Issued: 10 March 2017



THOMSON REUTERS

© Thomson Reuters 2017. All Rights Reserved.

Thomson Reuters disclaims any and all liability arising from the use of this document and does not guarantee that any information contained herein is accurate or complete. This document contains information proprietary to Thomson Reuters and may not be reproduced, transmitted, or distributed in whole or part without the express written permission of Thomson Reuters.

Contents

Chapter 1	About This Document	9
Support	9	
Chapter 2	Introduction	11
Chapter 3	Product Interfaces	12
Application Programming Interface (API)		12
Product Website		13
Chapter 4	Using the REST API	14
URI Structure		15
Client Firewall Access		15
Verbs		15
Message Structure		16
Headers		17
Conditions		17
REST API Reference Tree		18
Asynchronous Services and Clients		19
Request		19
Response		19
Concurrent Requests		19
Polling Request Status		20
Request		20
Response		20
Request File Download		21
Request		21
Response		21
Best Practices for the Tick History REST API		22
Specify Only the Dates, Fields, and Instruments You Need		22
Set a Realistic Polling Interval		22
Querying Multiple Instruments Together Is Faster Than One at a Time		22
Retrieve Reports When Completed, Not in the Sequence Submitted		22
Do Not Resubmit After a Timeout		22
Use the Appropriate Report Format		23
Chapter 5	Authentication	25
Verify Access		25
Verify Permissions		26
Session Tokens		27
Create a Session Token		27
Request		27
Response		27
Applying the Session Token		28
Request		28
Response		28

Chapter 6 Search Functions	29
Historical Instruments.....	29
Request	29
Response.....	29
Historical Chains.....	31
Request	31
Response.....	31
Other Searches	33
Speed Guide Pages	34
What Kinds of Content Should I Retrieve as a Speed Guide Page?	34
How to Retrieve a Speed Guide Page	34
Example: Speed Guide Retrieval Request & Response.....	35
Example: Comparing Page Refreshes and Updates.....	36
Chapter 7 Tick History Workflows	37
On-Demand Workflow	38
Stored & Scheduled Workflow.....	39
Venue by Day Workflow.....	40
Workflow Comparison.....	41
Chapter 8 On-Demand Workflow	42
Request	42
Response.....	43
Chapter 9 Tick History Reports	44
Time & Sales.....	45
Time & Sales Fields.....	45
Request	45
Response.....	45
Submit Report Request.....	46
Request	46
Response.....	46
Market Depth.....	47
Market Depth Fields.....	47
Request	47
Response.....	47
Submit Report Request.....	48
Request	48
Response.....	48
Intraday Summaries.....	49
Intraday Summaries Fields.....	49
Request	49
Response.....	49
Submit Report Request.....	50
Request	50
Response.....	51
Raw Report	52
Submit Report Request.....	52
Request	52
Response.....	52
Check Report Status.....	53
Request	53
Response.....	53
Download the Report in GZIP.....	54
Request	54

Response.....	54
Elektron Timeseries.....	54
Elektron Timeseries Fields.....	54
Request	54
Response.....	55
Submit Report Request.....	55
Request	55
Response.....	57
Download the Report in GZIP.....	58
Request	58
Response.....	58
Standard Events	59
Standard Events Fields	59
Request	59
Response.....	59
Submit Report Request.....	60
Request	60
Response.....	61
Terms and Conditions	62
Terms and Conditions Fields.....	62
Request	62
Response.....	62
Submit Report Request.....	63
Request	63
Response.....	64
Historical Reference.....	65
Historical Reference Fields	65
Request	65
Response.....	65
Submit Report Request.....	66
Request	66
Response.....	66
Chapter 10 Stored & Scheduled Workflow	67
Step 1 – Instrument List – Create a New List.....	67
Request	67
Response.....	67
Step 2 – Instrument List - Add instrument(s).....	68
Request	68
Response.....	68
Step 3 - Report Template – Create Report Profile.....	69
Request	69
Response.....	70
Step 4 – Submit Report Request.....	72
Request	72
Response.....	72
Step 5 – Request Report Status	73
Request	73
Response.....	73
Step 6 – List Report Files	74
Request	74
Response.....	74
Step 7 - Download Report Files	75
Request	75
Response.....	75
Chapter 11 Administration.....	76

Instrument Lists.....	76
Create an Instrument List.....	76
Request	76
Response.....	76
View All Instrument Lists	77
Request	77
Response.....	77
View an Instrument List by ListId.....	78
Request	78
Response.....	78
View an Instrument List by Name	79
Request	79
Response.....	79
Rename an Instrument List.....	80
Request	80
Response.....	80
Rename Confirmation.....	80
Request	80
Response.....	80
Delete an Instrument List.....	81
Request	81
Response.....	81
Delete Confirmation.....	81
Request	81
Response.....	81
View Instrument List Contents.....	82
Request	82
Response.....	82
Add an Instrument	84
Request	84
Response.....	84
Confirm Addition.....	84
Remove an Instrument.....	85
Request	85
Response.....	85
Confirm Removal.....	85
 Report Templates.....	 86
View All Report Templates	87
Request	87
Response.....	87
Look up the Content Fields for a Report Template	88
Request	88
Response.....	88
Create a Custom Report.....	91
Request	91
Response.....	92
 Schedules	 94
Create a Schedule	94
Request	94
Response.....	95
View All Schedules.....	96
Request	96
Response.....	96
View a Schedule by ID.....	97
Request	97
Response.....	97
View a Schedule by Name.....	98
Request	98
Response.....	98
Cancel a Scheduled Extraction	99
Request	99
Confirm Cancellation.....	99
Request	99
Response.....	99
Delete a Schedule	99
Request	99

Response.....	100
Report Retrieval	101
Process Status.....	101
Content Access.....	101
View all Report Submissions.....	102
Request	102
Response.....	102
View Report Extraction Status	103
Request	103
Response.....	103
View the Status of the Latest Submission	104
Request	104
Response.....	104
View Scheduled Submissions by Date	105
Request	105
Response.....	105
View Available Files.....	107
Request	107
Response.....	107
View Available Files by Date Range.....	108
Request	108
Response.....	108
View Files Associated to a Report.....	110
Request	110
Response.....	110
Download Report Files.....	111
Request File 1.....	111
Response.....	111
Request File 2.....	111
Response.....	111
Clean Up.....	112
Request	112
Response.....	112
File Look Up.....	112
Request	112
Response.....	112
Chapter 12 Venue by Day Workflow	114
Content Access	115
Content Heirarchy.....	115
View the Available Venue Files.....	116
Step 1 - Retrieve Your List of Venues	116
Request	116
Response.....	116
Step 2 - Look Up the Associated Venue Files.....	118
Request	118
Response.....	118
Look Up the Available Venue Files within a Date Range.....	120
Step 1 – View Data Feed Product Subscription on the system.....	120
Request	120
Response.....	120
Step 2 - Search for Venue Files within a Date Range Search.....	120
Request	121
Response.....	121
Download Your Venue Files	122
Step 1 - Retrieve the List of Venue Files.....	123
Request	123
Response.....	123
Step 2 - Download the Venue Files.....	125
Request	125
Response.....	125
Step 3 - Repeat.....	125
Validating Downloads.....	125

Chapter 13 Learning Tools.....	127
REST API Example Application	127
Postman.....	129
Getting Started.....	129
Authorization.....	129
Header Parameters.....	130
Response.....	130
Submitting a Request	131
Chapter 14 Appendix	133
API Resources.....	133
Thomson Reuters Developer Community.....	133
REST API Help Site.....	133
REST API Example Application + .NET SDK.....	133
Client Tools.....	133
Identifier Types	134
ContentField Properties	134
HTTP Response Codes	134
Successful Responses	134
Client Error Responses.....	135
Server Error Responses	136
Product Attributes	137
Data Types.....	137
File Compression.....	138
File Names.....	138
Daily Time Periods Covered	138
ISO 8601 Date and Time Format	139
Checking Request Status	140
Request	142
Headers for File Download.....	143
Headers for Minimizing Response Information.....	143
Errors.....	143

Chapter 1 About This Document

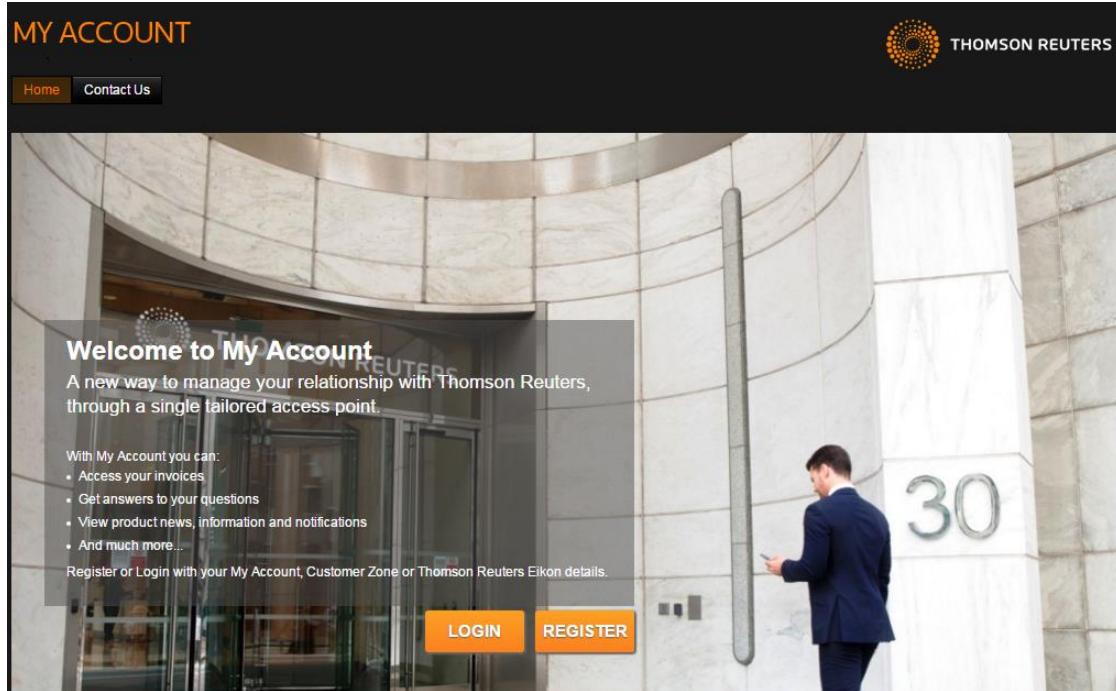
This user guide provides details on the Tick History REST Application Programming Interface (API), working environment, and supporting resources available. This document does not describe the contents of the Tick History database, OData specification or its operation, XML specification, HTTP specification, tools required for API operation nor the operation of the Tick History Graphical User Interface (GUI) website.

This document is intended for software engineers who are familiar with the general principles of APIs. It assumes they are also familiar with their intended programming language.

We invite your comments, corrections, and suggestions about this reference: contact the Thomson Reuters Support Center (TRSC) at 1-800-738-8377, or your local account manager or sales specialist. Your feedback helps us continue to improve our user assistance.

Support

[My Account](#) is a Thomson Reuters portal that provides a single access point for timesaving support services, along with billing, user management, and information. For support using DataScope Select, please raise a query online via [Contact Us](#).



The following support channels are available to keep informed of product changes and service issues. All DataScope Select clients are encouraged to subscribe to these support channels on My Account:

- **Product Change Notifications**

Product change notifications detail new and enhanced functionality or product changes that may require client action.

- **Service Alerts**

Service alerts provide notifications of weekly maintenance activities and planned and unplanned service issues as they happen. They are available via SMS or email.

All weekly maintenance activities are communicated in advance to clients who subscribe to DataScope Select Service Alerts. An alert is issued each Monday to announce the following Sunday scheduled maintenance (Tuesday, in the event of a Monday market holiday). During the maintenance window, the alert is updated periodically for client tracking purposes.

As part of the weekly maintenance activities, DataScope Select is subject to scheduled outages that can expand beyond the 0:00-18:00 maintenance window. Such activities include, but are not limited to, hardware upgrades, network changes, and product enhancements. In these instances, the weekly issued alert will be amended to indicate the client impact and changes in the maintenance duration.

Chapter 2 Introduction

Tick History now resides on the DataScope Select platform and delivers product functionality and content through the REST API and GUI.

Note that Tick History is occasionally abbreviated as TH (Tick History) or TRTH (Thomson Reuters Tick History).

Objectives

This document will describe how to use the REST API to access Tick History. The GUI may be used as a learning aid as the API and GUI provide access to the same Tick History objects and functionality.

This document will:

- Describe the REST API and how it applies to Tick History.
- Illustrate the 3 types of reporting workflows.
- Explain how requests are made and responses are interpreted.
- Outline the API functions and methods applicable to each step.
- List the REST API resources and tools available.

Chapter 3 Product Interfaces

Users are provided user IDs to access Tick History on the DataScope Select platform through the following web resources:

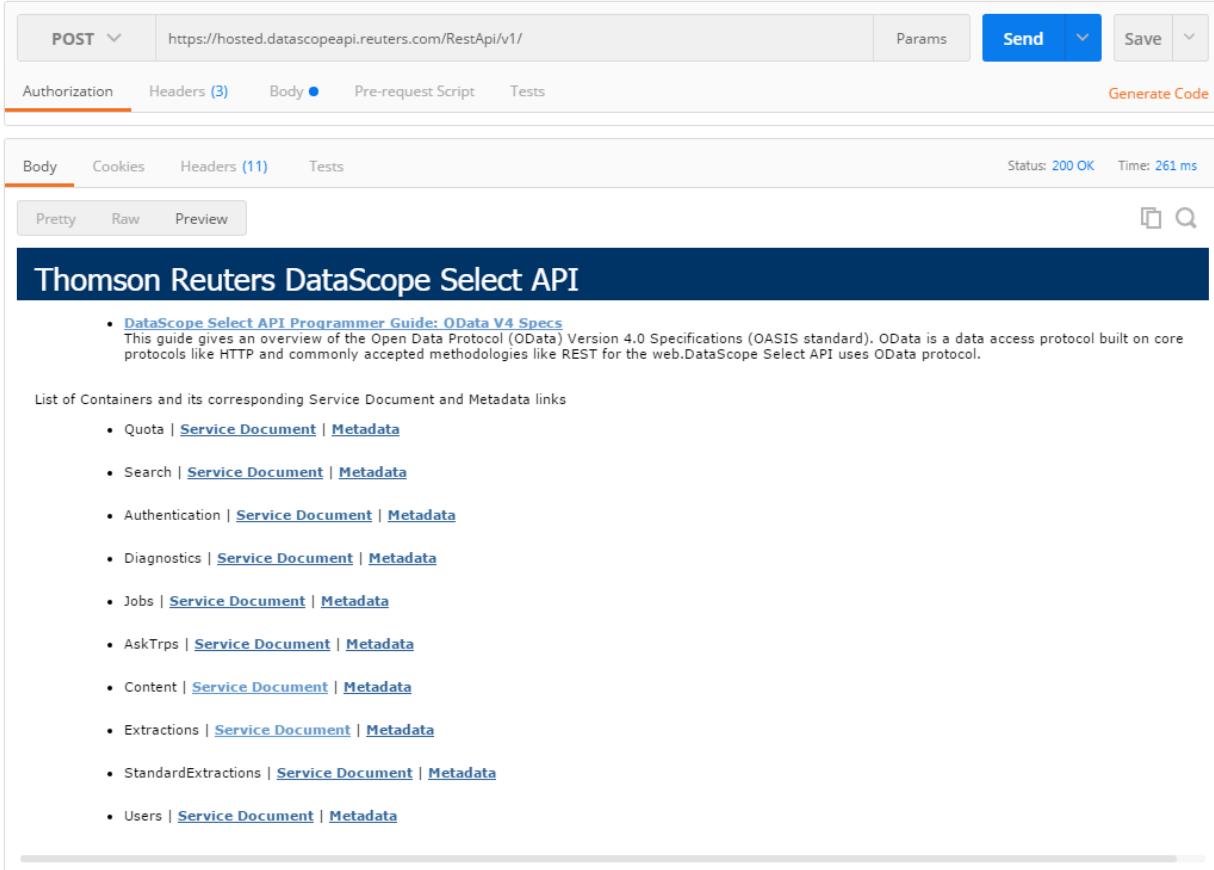
API	https://hosted.datascopeapi.reuters.com/RestApi/v1/
Graphical user interface (GUI) website	https://hosted.datascope.reuters.com/DataScope/

Tick History Intraday Summaries, Market Depth, Time and Sales, and Raw reports are available under Custom Solutions on the GUI. Venue by Day content is available under Standard Solutions.

Tick History's GUI website and API provide identical functionality and content access.

Application Programming Interface (API)

The REST API viewed through Postman, a 3rd party REST API application.



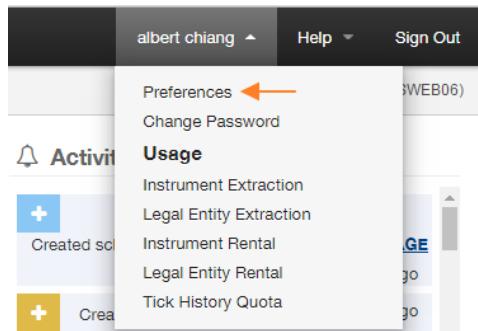
The screenshot shows the Postman application interface. At the top, there is a header with 'POST' selected, the URL 'https://hosted.datascopeapi.reuters.com/RestApi/v1/', and buttons for 'Send', 'Save', and 'Generate Code'. Below the header, there are tabs for 'Authorization', 'Headers (3)', 'Body', 'Pre-request Script', and 'Tests'. The 'Body' tab is selected, showing 'Status: 200 OK' and 'Time: 261 ms'. Under the 'Body' tab, there are three sub-options: 'Pretty', 'Raw', and 'Preview'. The main content area is titled 'Thomson Reuters DataScope Select API' and contains a list of API endpoints. The list includes:

- [DataScope Select API Programmer Guide: OData V4 Specs](#)
This guide gives an overview of the Open Data Protocol (OData) Version 4.0 Specifications (OASIS standard). OData is a data access protocol built on core protocols like HTTP and commonly accepted methodologies like REST for the web. DataScope Select API uses OData protocol.
- List of Containers and its corresponding Service Document and Metadata links
 - Quota | [Service Document](#) | [Metadata](#)
 - Search | [Service Document](#) | [Metadata](#)
 - Authentication | [Service Document](#) | [Metadata](#)
 - Diagnostics | [Service Document](#) | [Metadata](#)
 - Jobs | [Service Document](#) | [Metadata](#)
 - AskTrps | [Service Document](#) | [Metadata](#)
 - Content | [Service Document](#) | [Metadata](#)
 - Extractions | [Service Document](#) | [Metadata](#)
 - StandardExtractions | [Service Document](#) | [Metadata](#)
 - Users | [Service Document](#) | [Metadata](#)

Note: The URI may be viewed in any web browser as it operates over HTTPS protocol.

Product Website

Users must visit the Tick History website, via the [Datascope Select home page](#), to set their preferences. Refer to the Tick History User Guide for further details about the GUI version of the product.



Preferences is available from the User Name drop menu on the navigation bar.

Chapter 4 Using the REST API

REST, which stands for Representational State Transfer, is an architectural style based on a stateless, client-server, cacheable communications protocol, usually HTTP/HTTPS.

To the extent that systems conform to the constraints of REST they can be called RESTful. RESTful systems typically, but not always, communicate over Hypertext Transfer Protocol (HTTP) with the same HTTP verbs (GET, POST, PUT, DELETE, etc.) that web browsers use to send/retrieve data to and from remote web servers.

The Tick History REST API is based on the Open Data Protocol (OData) which is an application level protocol for interacting with data via RESTful interfaces. The protocol supports the description of data models and the editing and querying of data according to those models.

RESTful systems interface with external systems as web resources identified by Uniform Resource Identifiers (URIs), for example `/fruit/apple`, which can be operated upon using standard verbs such as `GET /fruit/apple`.

This document assumes readers understand these concepts. More information on the terms can be found on the following Wikipedia links:

REST	https://en.wikipedia.org/wiki/Representational_state_transfer
JSON	https://en.wikipedia.org/wiki/JSON
HTTP Methods	https://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol#Request_methods
HTTPS	https://en.wikipedia.org/wiki/HTTPS
URI	https://en.wikipedia.org/wiki/Uniform_Resource_Identifier
OData Protocol	https://docs.oasis-open.org/odata/odata/v4.0/errata03/os/complete/part1-protocol/odata-v4.0-errata03-os-part1-protocol-complete.html

URI Structure

The Tick History API web service is accessed through the Uniform Resource Identifier (URI):

<https://hosted.datascopeapi.reuters.com/RestApi/v1/>

The Version 1 in the URI refers to the API definition version in DataScope Select and not of the Oasis OData version, which is currently 4.0.

The service on this URI is available 24 hours a day, seven days a week with the exception of maintenance periods published ahead of schedule. Service alerts and product change notifications are available for subscription through the [Thomson Reuters My account portal](#).

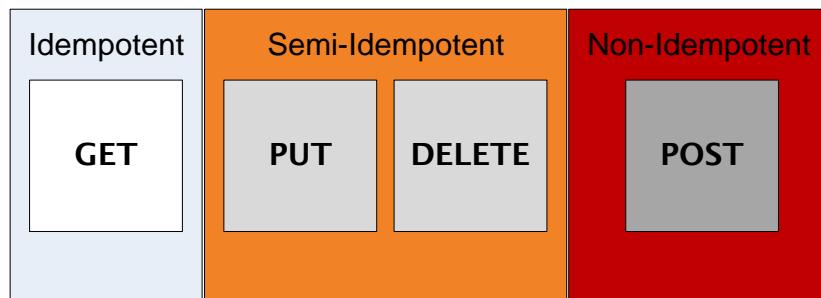
Client Firewall Access

Client firewalls must allow connectivity to https://hosted.datascopeapi.reuters.com/RestApi/v1/ on port 443.

Verbs

These indicate the desired action to be performed on a resource. The resource may be pre-existing data or data that is generated dynamically and depends on the server implementation. Servers can be configured to support any combination of methods. The most Common are GET, POST, PUT and DELETE. For the purposes of Tick History, these are the 4 verbs used with the REST API.

The concept of *idempotence* is important to understand, as a verb that is idempotent will produce the same result no matter how many times you do it. A simple analogy of this is multiplying something by 1 where the results will always be the same no matter how many times a number is multiplied by it.



GET behaves like a read-only function which means the results from the first and subsequent requests are identical.

PUT and DELETE are semi-idempotent as the result of the initial request differs from all the subsequent requests. The initial PUT request creates an object while subsequent PUT requests overwrite the same newly created object. The initial DELETE request purges an object. Subsequent DELETE requests are no longer effective as the purged object no longer exists.

POST is viewed as the only non-idempotent method as it creates new objects with subsequent requests creating even more, so exercise caution in this situation while testing and learning the API.

Message Structure

Tick History relies on JavaScript Object Notation (JSON), a lightweight data interchange format based on a subset of the JavaScript programming language standard, for exchanging structured information in the implementation of web services, and relies on other application layer protocols, most notably HTTPS for message negotiation and transmission. JSON is a text format that is language independent, but uses conventions that are familiar to programmers of the C-family of languages (C, C++, JavaScript, and so on)

Collections of data represent a set of entries. Collections are represented as an array of objects with one object for each entry within the collection. When representing collection level metadata, the array of objects representing a set of entries is included as the value of a "results" name/value pair.

```
ODATA v1: {
  "d" : [
    { ... },
    { ... },
    { ... }
  ]
}
ODATA v2: {
  "d" : {
    "results": [
      { ... },
      { ... },
      { ... }
    ]
  }
}
```

ODATA v2 supports two or more pieces of collection-level metadata: an entry count (number of entities for a collection) and "next links" when a partial listing of a collection is represented. This capability is particularly useful for pagination when requesting large data collections that cannot be retrieved all at once.

```
ODATA v2: {
  "d" : {
    "results": [ {
      "__metadata": {
        "uri": "https://services.odata.org/ODATA/ODATA.svc/Categories(0)",
        "type": "DataServiceProviderDemo.Category" }, "ID": 0, "Name": "Food",
        "Products": {
          "__deferred": {
            "uri": "https://services.odata.org/ODATA/ODATA.svc/Categories(0)/Products"
          }
        }
      },
      /* another Category Entry */,
      /* another Category Entry */,
      /* another Category Entry */
    ],
    "__count": "3",
    "__next": "https://services.odata.org/ODATA/ODATA.svc$skiptoken=12"
  }
}
```

Headers

Headers are a component of HTTP messages and define the operating parameters of the transaction. All header fields are name-value pairs separated by a colon and terminated by a new line. Long lines can be folded into multiple lines; continuation lines start with either a blank space or tab character. The end of the header fields is indicated by an empty line, followed by the body of the message.

They should not contain actual data and should be used for things that do not involve the name of the resource (included in the URL), state of the resource (included in the body) or parameters directly affecting the resource (included in the URL).

Tick History supports a variety of headers that covers everything delivered on the REST API. Here is list of common headers.

Header Field Name	Description	Example
Accept	Content-Types that are acceptable for the response	Accept: application/json; <i>odata.metadata=minimal</i>
Accept-Charset	Character sets that are acceptable	Accept-Charset: utf-8
Accept-Encoding	List of acceptable encodings	Accept-Encoding: gzip, deflate
Accept-Language	List of acceptable human languages for response	Accept-Language: en-CA
Content-Length	The length of the request body in octets (8-bit bytes)	Content-Length: 348
Content-MD5	A Base64-encoded binary MD5 checksum of the content of the request body, for Venue by Day requests. For more information, see <i>Validating Downloads</i> on page 125.	Content-MD5: Q2hIY2sgSW50ZWdyaXR5IQ==
Content-Type	The MIME type of the body of the request (used with POST and PUT requests)	Content-Type: application/x-www-form-urlencoded
Authorization	Authentication credentials for HTTP authentication	Token <your_auth_token_goes_here>

The REST API supports *odata.metadata* = 'none' or 'minimal'. 'full' is not currently supported. Minimal and none help to diminish the number of tags in the JSON code, which makes parsing a far simpler task to do while minimizing the payload size and bandwidth used.

Conditions

Conditions are settings in the report request that influence or determine the manner of outcome on the report data. Each report template uniquely applies conditions based on the content type.

REST API Reference Tree

You are encouraged to visit the REST API Reference tree at the [REST API Help Home Page](https://hosted.datascoopeapi.reuters.com/RestApi.Help/Context/Entity?ctx=Extractions&ent=TickHistoryIntradaySummariesReportTemplate&grp=Report%20Template) as a primary source of reference for all restful functions and supported conditions.

The screenshot shows the REST API Reference Tree interface. On the left, a tree view lists various report templates, with 'TickHistoryIntradaySummariesReportTemplate' selected. On the right, a detailed configuration form is displayed for this template. The 'Condition' section is highlighted with a red box. The configuration includes fields like 'CompressionType' (ReportCompressionType, GZip), 'DaysAgo' (int?, 1), 'ExtractBy' (TickHistoryExtractByMode, Entity), and 'SummaryInterval' (TickHistorySummaryInterval, FifteenMinutes). The 'ContentFields' section shows field definitions for 'FieldName', 'Format', 'Justification', 'Label', 'Width', and 'WidthStyle'. The 'Headers' section lists 'ReportHeaderField'.

Each API function (also known as an endpoint) is described in the API Reference tree. The Help menu also provides access to sample code and to information about development techniques.

The desktop API Example Application should also be the first tool to reach for when embracing REST for Thomson Reuters.

The screenshot shows the REST API Reference Tree interface. The left pane shows the tree structure with 'HistoricalSearchResult' selected. The right pane displays the details for 'HistoricalSearchResult'. It includes a summary: 'A ValidatedInstrument with additional historical information. Returned from historical search. Returned identifiers are always RICs.' It shows inheritance from 'ValidatedInstrument'. The 'Properties' table lists 'DomainCode' (string, 'The RIC/Domain where this instrument has data.'), 'FirstDate' (DateTimeOffset, 'The first date that there is data for the RIC/Domain pair.'), 'History' (IList<HistoricalInstrumentRicChangeHistory>, 'RIC name change history. This history is indexed by date range specified in the search request. Note: This is overriden by searchRequest.ResultBy = 'Entity' AND a RIC rename occurred.'), and 'LastDate' (DateTimeOffset, 'The last date that there is data for the RIC/Domain pair.').

Asynchronous Services and Clients

Tick History reporting requires time to process and is more suitable for an asynchronous mode of processing. This means that a client connection may be released after the server responds with an HTTP status code acknowledgement.

While the use of server-side asynchronous processing will not improve the request processing time perceived by the client, it will however increase the throughput of the server, by releasing the initial request thread back and be ready to accept and process new incoming request connections.

It is important to note that the asynchronous response does not need to be resumed from the thread started from the resource method. The asynchronous response can be resumed even from a different request processing thread.

To set this parameter, the HTTP Header (per [RFC7240](#)) is applied with a respond-async preference. This allows clients to request that the service processes the request asynchronously.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Extract
Prefer: respond-async
{
    "ExtractionRequest": ...
}
```

Response

```
HTTP/1.1 202 Accepted
Status:InProgress
Progress: 1
Preference-Applied: respond-async
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/monitor/'0x05432da4dd2e2e3f'
```

This 202 Accepted response produced a **status** of **InProgress** and returned the location of the report job (highlighted above). You will issue a GET against this location to poll the report to determine when it has completed.

Concurrent Requests

Each API request triggers a function to run and return an acknowledgement response. While some functions, like reference requests, respond quickly, most create a job in a queue which subsequently runs at a time after the function call has received its HTTP response acknowledgement. While only one Tick History function can be active at any given moment, multiple background jobs can be processed simultaneously. There is a limit of two concurrent reports allowed to process per report template. Users are allowed to have up to four concurrent connections for downloads. Each connection may see speeds up to 1 MB/s.

Polling Request Status

Report requests that process asynchronously will return a 202 Accepted status code. This request will need to be queried to monitor the processing status. The polling function is illustrated here:

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/monitor/'0x05432da4dd2e2e3f'
Authorization: Token <your_auth_token_goes_here>
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/\$metadata#RawExtractionResults/\$entity",
  "JobId": "0x05432da4dd2e2e3f",
  "Notes": [
    "Extraction Services Version 10.7.35662 (6a8afc92e222), Built Sep 30 2016 17:07:16\nUser ID: 9007660\nExtraction ID: 2000000000533706\nschedule: 0x0570a0ea31ec3156 (ID = 0x000000000000000000)\nInput List (1 items): (ID = 0x0570a0ea31ec3156) Created: 10/05/2016 13:58:59 Last Modified: 10/05/2016 13:58:59\nReport Template (10 fields): _ond_0x0570a0ea31ec3156 (ID = 0x0570a0ea39bc3156) Created: 10/05/2016 13:54:46 Last Modified: 10/05/2016 13:54:46\nschedule dispatched via message queue (0x0570a0ea31ec3156), Data source identifier (9d186d4a108140f29a916e05621b1704)\nSchedule Time: 10/05/2016 13:54:46\nProcessing started at 10/05/2016 13:54:46\nProcessing completed successfully at 10/05/2016 13:58:59\nExtraction finished at 10/05/2016 17:58:59 UTC, with servers: tm04n01, TRTH (245.58 secs)\nHistorical Instrument <RIC,.AD.N> expanded to 1 RIC: .AD.N.\nManifest: #RIC,Domain,Start,End,Status,Count\nManifest: .AD.N,Market Price,,,Inactive,0\n"
  ]
}
```

Once a 200 OK status code is returned, then it is time to retrieve the report by JobID '0x05432da4dd2e2e3f'

Request File Download

The file download is initiated by using the RawExtractionResults operation with the JobID. This example shows JobID '0x05432da4dd2e2e3f' continued from the previous section.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/RawExtractionResults('0x05432da4dd2e2e3f')/$value
Authorization: Token <your_auth_token_goes_here>
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
Accept-Ranges: bytes
#RIC,Domain,Date-Time,Type,MsgClass/FID number,UpdateType/Action,FID Name,FID Value,FID Enum Stri
ng,PE Code,Template Number,Key/Msg Sequence Number,Number of FIDs
ICBK.NS,Market Price,2016-07-25T23:35:53.323542895Z,Raw,UPDATE,UNSPECIFIED,,,5438,,6320,2
,,,FID,3823,,VMA_5D,9942140,
,,,FID,3824,,VMA_30D,12602179,
ICBK.NS,Market Price,2016-07-25T23:35:53.363555423Z,Raw,UPDATE,UNSPECIFIED,,,5438,,6336,2
,,,FID,3823,,VMA_5D,9942140,
,,,FID,3824,,VMA_30D,12602179,
ICBK.NS,Market Price,2016-07-26T00:10:03.549885078Z,Raw,UPDATE,CLOSING_RUN,,,5438,,6366,83
,,,FID,21,,HST_CLOSE,268.65,
,,,FID,79,,HSTCLSDATE,2016-07-25,
,,,FID,1465,,ADJUST_CLS,268.65,
,,,FID,5,,TIACT,
,,,FID,6,,TRDPRC_1,
,,,FID,7,,TRDPRC_2,
,,,FID,8,,TRDPRC_3,
```

Best Practices for the Tick History REST API

Specify Only the Dates, Fields, and Instruments You Need

Report performance can be very sensitive to the length of the date range on which you are reporting, to the number of fields you are reporting on (even if some are empty), and to the number of instruments. Specify only the date range, fields, and instruments that you need.

Set a Realistic Polling Interval

A large report that will take a long time to execute does not need a short polling interval. The more frequently you poll, the more system resources are consumed, so set the interval to an appropriate period relative to the report.

Querying Multiple Instruments Together Is Faster Than One at a Time

Submitting a single job that reports on multiple instruments is generally faster than submitting several jobs that each report on one instrument.

Retrieve Reports When Completed, Not in the Sequence Submitted

Reports of the same type (for example, Tick History Market Depth reports) run sequentially, and complete in the order in which you submitted them. Reports of different types run in parallel (independently of each other) and complete when they are done. You can poll report jobs to determine when each one is done, which enables you to retrieve each one as soon as possible.

Do Not Resubmit After a Timeout

If your procedure that polls a report job times out on your system, do not resubmit the report job. It is only your polling procedure that has timed out: the original report job is still queued to execute, or is still executing, on the DataScope Select platform. Resubmitting the report job will not get you the report faster. (In fact, resubmitting it might have the opposite effect, because you will now have an additional instance of the job running.)

If your polling procedure frequently times out, consider increasing your timeout period, or contact Thomson Reuters Support to investigate.

Use the Appropriate Report Format

Tick History reports can be produced in up to two formats. Format selection depends upon how the report is requested.

ExtractWithNotes will produce JSON formatted content in the body of the HTTP response. It works with Corporate Actions / Standard Events, Reference Data / Terms and Conditions, Reference Data / Historical Reference, and Pricing Data / Elektron Timeseries reports.

POST ▼ https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractWithNotes

```
1 {  
2   "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ThomsonReuters.Dss.Api.Extractions  
3 .ExtractionRequests.ExtractionResult",  
4   "Contents": [  
5     {  
6       "IdentifierType": "Ric",  
7       "Identifier": "VOD.L",  
8       "Corporate Actions Type": "SHO",  
9       "Currency Code": "GBp",  
10      "Fitch Issuer ID": "80360240",  
11      "Instrument ID": "VOD.L",  
12      "Instrument ID Type": "RIC",  
13      "ISIN": "GB008H4HKS39",  
14      "Issue Level Event ID": 18062220,  
15      "MIC": "XLON",  
16      "Moody's Issuer ID": "600018164",  
17      "OPOL": "XLON",  
18      "PILC": "105207",  
19      "RIC": "VOD.L",  
20      "S&P Issuer ID": "336641",  
21      "Security Description": "VODAFONE GROUP ORD",  
22      "Security Long Description": "Vodafone Group Ord Shs",  
23      "SEDOL": "B4H4HKS3",  
24      "Shares Amount": 26500105011,  
25      "Shares Amount Date": "2016-06-06",  
26      "Shares Amount In Thousands": 26500105.011,  
27      "Shares Amount Type": "FFL",  
28      "Shares Amount Type Default Flag": "N",  
29      "Shares Amount Type Description": "Free Float"  
30    },  
31    ],  
32    "Notes": [  
33      "Extraction Services Version 10.7.35743 (b74a502e64b0), Built Oct 18 2016 07:29:06\r\nProcessing started at 11/08/2016 12  
34      :45:24.\r\nUser ID: 9009503\r\nExtraction ID: 236370955\r\nSchedule: _OnD_0x057b91e1875b3026 (ID = 0x057b91e33c2b3026  
35      )\r\n\r\nReporting corporate actions between 06/01/2016 and 06/08/2016, inclusive.\r\n\r\nSuppressing Deleted Events\r\n\r\nInput  
36      List (1 items): _OnD_0x057b91e1875b3026 (ID = 057b91e2052b3026) Created: 11/08/2016 12:45:14 Last Modified: 11/08/2016  
37      12:45:18\r\nSchedule Time: 11/08/2016 12:45:19\r\nReport Template (25 fields): _OnD_0x057b91e1875b3026 (ID =  
38      0x057b91e1e0b3026) Created: 11/08/2016 12:45:14 Last Modified: 11/08/2016 12:45:14\r\n\r\nProcessing completed  
39      successfully at 11/08/2016 12:45:25, taking 2.009 Secs.\r\n\r\nExtraction finished at 11/08/2016 17:45:25 UTC, with  
40      servers: x01A05, QSHA02 (0.0 secs), QSHC05 (1.7 secs)\r\n\r\nUsage Summary for User 9009503, Client 65510, Template Type  
41      Corporate Actions, Standard Events\r\n\r\nBase Usage  
42      Instrument  
43      Terms          Price\r\n        Count Type          Subtype          Source  
44      Source\r\n        -----  
45      -----  
46      /A          N/A\r\n        -----  
47      1 Total instrument charged.\r\n        0 Instruments with no reported data.\r\n        1 Instrument in the input list.\r\n
```

Notes provide job details associated with the request.

ExtractRaw generates a comma separated archive and requires an additional step to download the file. It works with all report types supported by Tick History.

This example uses the `RawExtractionResults` function with the `JobID` to download the file.

GET	https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/RawExtractionResults('0x057b92d93a8b3026')/\$value	Params	Send	Save
Body	Cookies	Headers (13)	Tests	Status: 200 OK Time: 3027 ms
Accept-Ranges → bytes				
Cache-Control → no-cache				
Content-Encoding → gzip				
Content-Type → text/plain				
Date → Tue, 08 Nov 2016 18:05:01 GMT				
Expires → -1				
Pragma → no-cache				
Server → Microsoft-IIS/7.5				
Transfer-Encoding → chunked				
Vary → Accept-Encoding				
X-App-Id → Custom.RestApi				
X-App-Version → 10.7.315.64				
X-Request-Execution-Correlation-Id → c518541c-87da-4523-a74b-290ba2a5721c				

The downloaded .CSV.GZ file can be uncompressed to display this:

C:\Users\b009200\Desktop\RESULTS\ExtractRaw.txt - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
ExtractRaw.txt
1 Corporate Actions Type,Currency Code,Fitch Issuer ID,Instrument ID,Instrument ID Type,ISIN,Issue Level Event ID,MIC,Moody's Issuer ID,OPOL,PILC,
2 SHO,GBP,80360240,VOD,L,RIC,GB00BH4HKS39,18062220,XLON,600018164,XLON,105207,VOD,L,336641,VODAFONE GROUP ORD,Vodafone Group Ord Sha,BH4HKS3,2650
3
Normal text file length:550 lines:3 Ln:3 Col:1 Sel:0 | 0 Dos/Windows UTF-8 w/o BOM INS

The content is identical regardless of the chosen method. It is suggested that you use the format that best suits your workflow process.

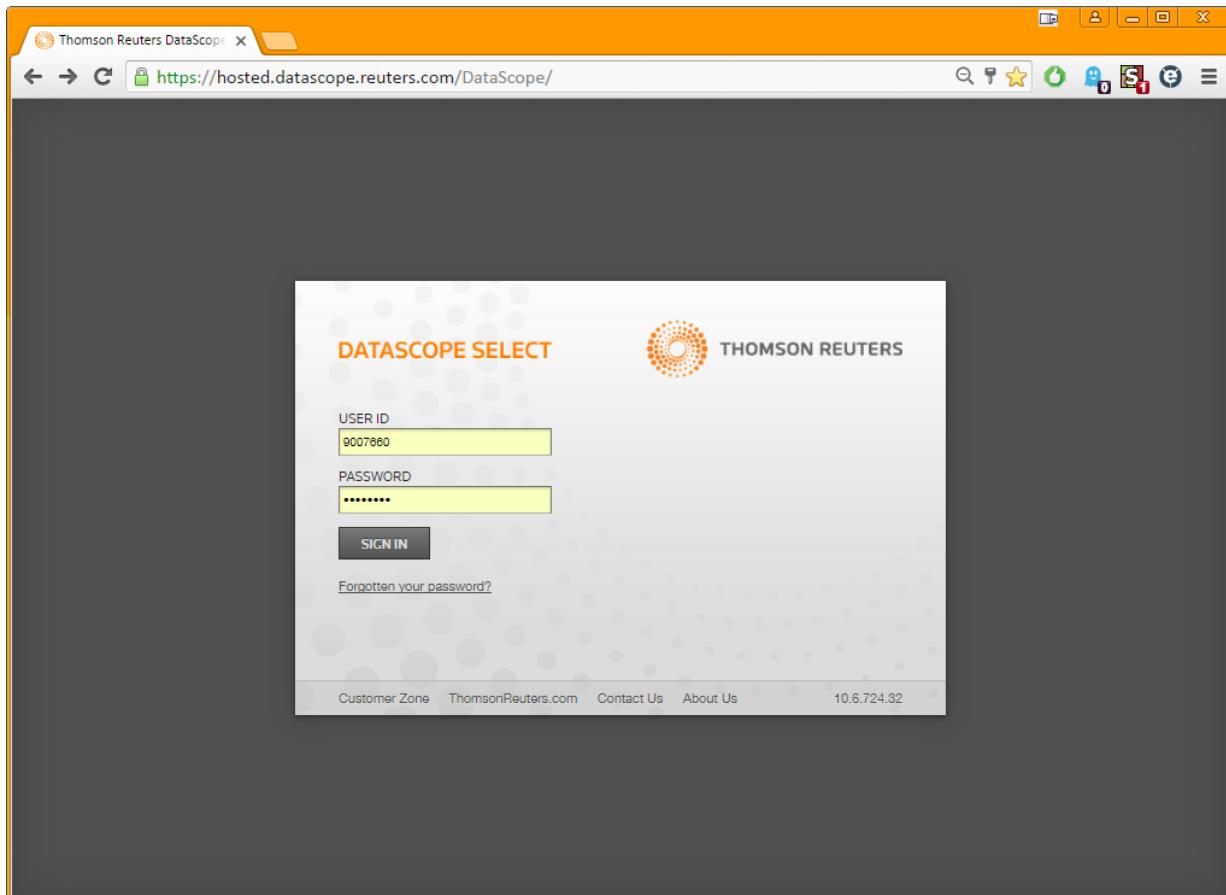
Chapter 5 Authentication

Authentication is the process of proving your identity to the system. Identity is an important factor in access control decisions as requests are allowed or denied in part based on the identity of the requester. Your Tick History User ID grants access to both website and API.

Verify Access

Before attempting your first API request, it is recommended that you test the User ID. Use a web browser and visit the Tick History website (<https://hosted.datascope.reuters.com/DataScope/Home>) then log in with your User ID.

A successful log in confirms that your User ID will work on the API as well.

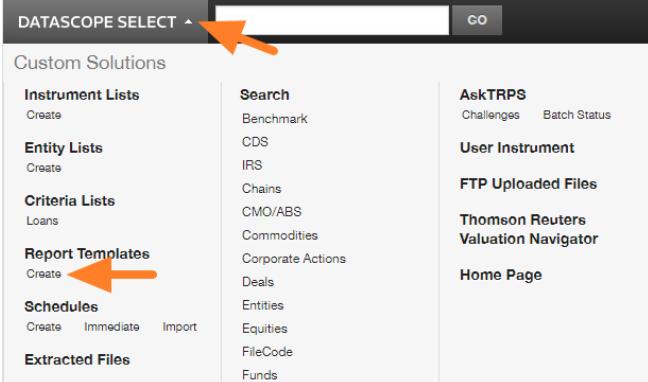


If your log in reports an error, you may either click the "Forgotten Your Password?" link below the sign in button or visit my.thomsonreuters.com to raise a support case for assistance.

Note that all users are asked to change their passwords upon initial sign in. This ensures that the password is defined by the user at this point in time. While this prompt will not be repeated thereafter, the password can be changed on the Tick History website under the user preferences menu.

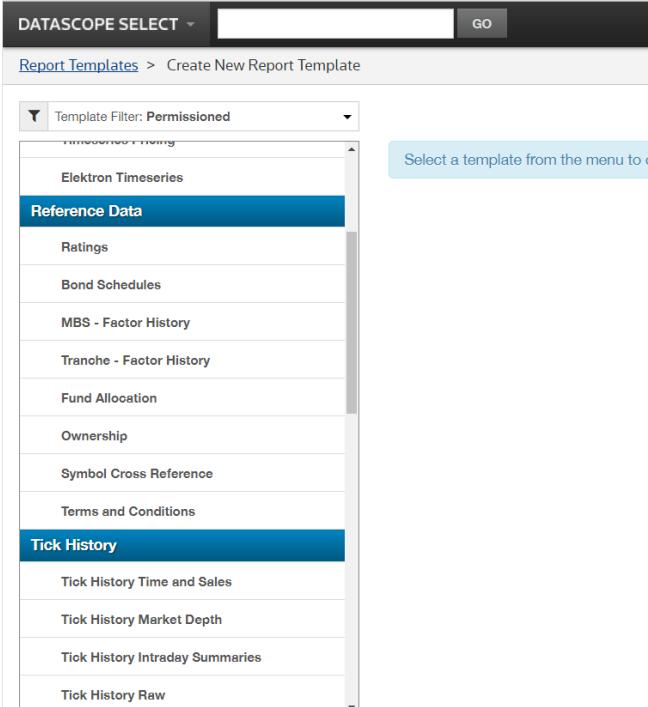
Verify Permissions

After login we must verify that the Tick History report templates are accessible.



The screenshot shows the DATASCOPE SELECT menu. The 'Report Templates' option is highlighted with an orange arrow. The menu includes sections for Custom Solutions, Instrument Lists, Entity Lists, Criteria Lists, Schedules, and Extracted Files. The 'Report Templates' section contains a 'Create' link. Other menu items include Search, AskTRPS, User Instrument, FTP Uploaded Files, Thomson Reuters Valuation Navigator, and Home Page.

Click the DATASCOPE SELECT menu button, and then click Report Templates or Create.



The screenshot shows the 'Report Templates' page. The 'Create New Report Template' section is visible. On the left, a sidebar lists categories: Reference Data, Tick History, and Pricing Data. The 'Tick History' category is highlighted with an orange arrow. The main area shows a list of report templates: Elektron Timeseries, Reference Data, and Tick History. The 'Tick History' section is expanded, showing sub-options: Tick History Time and Sales, Tick History Market Depth, Tick History Intraday Summaries, and Tick History Raw. A message 'Select a template from the menu to c' is displayed.

Scroll through the list of report templates to see if the Tick History reports are listed.

Consider using the template filter above the list and select "Permissioned" to shorten the report list.

Category	Report
Tick History	Time and Sales
	Market Depth
	Intraday Summaries
	Raw
Reference Data	Terms and Conditions
	Historical Reference
Corporate Actions	Standard Events
Pricing Data	Elektron Time Series (End of Day)

Session Tokens

User credentials must accompany each API function when submitted. A session token is applied to the header of each request to avoid transmitting the user credentials in each API transaction.

Create a Session Token

Session tokens are acquired through the API and valid for a 24 hour period. Here is an example of how to request a session token. Your Tick History UserID and Password must be furnished in the appropriate fields.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Authentication/RequestToken
Content-Type: application/json
Prefer: respond-async
{
  "Credentials": {
    "Username": "Your Username",
    "Password": "Your Password"
  }
}
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Edm.String",
  "value": "iM3nRfyPwmrKF7RNjs7H12JGijkAt_1ErD3LEhB6Ayn6CkMQ48a08meIiij0L4SC1VN1ZcRs1GBntJT7A01
34c1Xv4epjcw5E_OabHmYVtq-j3mz_X-BW2Y2zFsntwv31ngtLV6qvwGEs12fcXvsUZL9LSx5Bu1D2RvSR4IU_47Adx7eXLRs
dmk122_u1I0CuvLGJg-va0keX-Iw4FBokye5kSqcq9-aIQeryjkP35Dn11afR7hLNUACPx2kjwojLgTvJDPsX4w1ckQuJroX3
4e9mLZ4fy1rk81Y2qMQKYE="
}
```

NOTE: When a session token is used beyond 24 hours, the API will respond with a HTTP/1.1 401 (Authentication required) status code. The 401 status response reflects your need to request a new session token.

Applying the Session Token

This example shows how a session token is applied when performing a UserID 9005463 lookup.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Users/Users(9005463)
Authorization: Token <"iM3nRfyPwmrKF7RNjS7H12JGijkAtTerD3LEhB6Ayn6CkMQ48a08meIiij0L4SC1VN1Zcrs1G
BntjT7A0134c1x4epjcw5E_OabHmYVtq-J3mz_X-BW2Y2zFsntwv31ngtLV6qVwGEs12fcXvsUZL9LSx5BU1D2RvsR41U_47
Adx7eXLRsdmK122_U1I0CuvLGJg-vAOkeX-Iw4FBokye5k5qcq9-aIQeryjkP35Dn11afR7hLNUACPx2kjwojLgTvJDPsX4w1
CkQuJrOx34e9mLz4fy1rk8iY2qMQKYE=>
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Users/$entity",
  "UserId": 9005463,
  "UserName": "John Smith",
  "Email": "firstname.lastname@thomsonreuters.com",
  "Phone": "12126877421"
}
```

Each API Request example in this document includes the Authorization parameter in the header with a placeholder where your session token should be applied. Remember that session tokens are applied with the Token prefix.

Chapter 6 Search Functions

This section introduces the search functions available in the REST API to aid in the development of your report requests. It also explains when and how to retrieve Speed Guide pages.

Historical Instruments

Instrument identifiers are the fundamental content roots in Tick History. To determine the appropriate identifiers to use for search, conducting a Historical Instrument Search will help determine whether the identifiers of interest are found on the platform. When using alternative identifiers like ISIN, CUSIP and SEDOLs, you may use this function to identify the RIC equivalent or identify the source identifiers which may be attributed to your reporting.

This example demonstrates how to conduct a historical instrument search with [ISIN US4592001014](#) for a single day.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Search/HistoricalSearch
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "Request": {
    "Identifier": "us4592001014",
    "IdentifierType": "Isin",
    "Range": {
      "Start": "2008-01-01T00:00:00.000Z",
      "End": "2008-01-01T00:00:00.000Z"
    }
  }
}
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi:8211/v1/$metadata#Collection(ThomsonReuters.Dss.Api.Search.HistoricalSearchResult)",
  "value": [
    {
      "Identifier": "IBM",
      "IdentifierType": "Ric",
      "Source": "",
      "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMDAwMHx8fHx8fHxJQk18",
      "Description": "Historical Instrument",
      "InstrumentType": "Unknown",
      "Status": "Valid",
      "DomainCode": "6",
      "FirstDate": "1996-01-02T00:00:00.000Z",
      "LastDate": "2016-09-08T00:00:00.000Z",
      "History": [
      ]
    },
    {
      "Identifier": "IBM.C",
      "IdentifierType": "Ric",
      "Source": "",
      "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMDAwMHx8fHx8fHxJQk0uQ3w",
      "Description": "Historical Instrument",
      "InstrumentType": "Unknown",
      "Status": "Valid",
      "DomainCode": "6",
      "FirstDate": "1996-01-02T00:00:00.000Z",
    }
  ]
}
```

```
        "LastDate": "2016-09-08T00:00:00.000Z",
        "History": [
        ],
    },
    {
        "Identifier": "IBM.DF",
        "IdentifierType": "Ric",
        "Source": "",
        "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMDAwMHx8fHx8fHxJQk0uREZ8",
        "Description": "Historical Instrument",
        "InstrumentType": "Unknown",
        "Status": "Valid",
        "DomainCode": "6",
        "FirstDate": "2006-05-13T00:00:00.000Z",
        "LastDate": "2016-09-08T00:00:00.000Z",
        "History": [
        ],
    },
    {
        "Identifier": "IBM.F",
        "IdentifierType": "Ric",
        "Source": "",
        "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMDAwMHx8fHx8fHxJQk0uRnw",
        "Description": "Historical Instrument",
        "InstrumentType": "Unknown",
        "Status": "Valid",
        "DomainCode": "6",
        "FirstDate": "1996-01-01T00:00:00.000Z",
        "LastDate": "2016-09-08T00:00:00.000Z",
        "History": [
        ],
    }
}
...
]
```

This ISIN [us4592001014](#) resolves to dozens of RICs.

- DATASCOPE SELECT ▾**
- Custom Solutions
- Instrument Lists**
 - Create
- Entity Lists**
 - Create
- Criteria Lists**
 - Loans
- Report Templates**
 - Create Import
- Schedules**
 - Create Immediate Import
- Extracted Files**
 - Historical 
 - Loans
 - Money
 - Mort Pass-Thru (MBS)
 - OTC Equity Options
 - US Municipals

Tick History Instrument Search is available via both the API and the website. The Tick History website refers to this feature simply as Historical.

Historical Chains

A list of identifier constituents for [ChainRics](#) can be retrieved for a specific point in time. This example shows the search for the [ChainRic 0#HO:](#) on the date of [2008-01-01T00:00:00.000Z](#). It is recommended that you use a single date range and adjust as needed.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/search/HistoricalChainResolution
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "Request": {
    "ChainRics": [
      "0#HO:"
    ],
    "Range": {
      "Start": "2008-01-01T00:00:00.000Z",
      "End": "2008-01-01T00:00:00.000Z"
    }
  }
}
```

Response

HTTP/1.1 200 OK

```
{ "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi:8211/v1/$metadata#Collection(ThomsonReuters.Dss.Api.Search.HistoricalChainInstrument)", "value": [ { "Identifier": "0#HO:", "IdentifierType": "ChainRIC", "Source": "", "Key": "VjF8MHgxMDAwMDAwMDAwMDAwMDAwfDB4MTAwMDAwMDAwMDAwMHx8Q0hsfENIUnxDSFJ8SHx8MCNITzp8", "Description": "Historical Chain", "InstrumentType": "Unknown", "Status": "Valid", "Constituents": [ { "Identifier": "HOF0", "IdentifierType": "Ric", "Source": "", "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMDAwMHx8fHx8fHxIT0YwfA", "Description": "Historical Instrument", "InstrumentType": "Unknown", "Status": "Valid", "DomainCode": "6", "Start": "2008-01-01T00:00:00.000Z", "End": "2008-01-01T00:00:00.000Z" }, { "Identifier": "HOF8", "IdentifierType": "Ric", "Source": "", "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMHx8fHx8fHxIT0YwfA", "Description": "Historical Instrument", "InstrumentType": "Unknown", "Status": "Valid", "DomainCode": "6", "Start": "2008-01-01T00:00:00.000Z", "End": "2008-01-01T00:00:00.000Z" }, { "Identifier": "HOF9", "IdentifierType": "Ric", "Source": "", "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMHx8fHx8fHxIT0YwfA", "Description": "Historical Instrument", "InstrumentType": "Unknown", "Status": "Valid", "DomainCode": "6", "Start": "2008-01-01T00:00:00.000Z", "End": "2008-01-01T00:00:00.000Z" } ] } ] }
```

```

        "IdentifierType": "Ric",
        "Source": "",
        "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMHx8fhx8fhxIT0Y5f
A",
        "Description": "Historical Instrument",
        "InstrumentType": "Unknown",
        "Status": "Valid",
        "DomainCode": "6",
        "Start": "2008-01-01T00:00:00.000Z",
        "End": "2008-01-01T00:00:00.000Z"
    },
    {
        "Identifier": "HOX9",
        "IdentifierType": "Ric",
        "Source": "",
        "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMHx8fhx8fhxIT1g5f
A",
        "Description": "Historical Instrument",
        "InstrumentType": "Unknown",
        "Status": "Valid",
        "DomainCode": "6",
        "Start": "2008-01-01T00:00:00.000Z",
        "End": "2008-01-01T00:00:00.000Z"
    },
    {
        "Identifier": "HOZ0",
        "IdentifierType": "Ric",
        "Source": "",
        "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMHx8fhx8fhxIT1owf
A",
        "Description": "Historical Instrument",
        "InstrumentType": "Unknown",
        "Status": "Valid",
        "DomainCode": "6",
        "Start": "2008-01-01T00:00:00.000Z",
        "End": "2008-01-01T00:00:00.000Z"
    },
    {
        "Identifier": "HOZ8",
        "IdentifierType": "Ric",
        "Source": "",
        "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMHx8fhx8fhxIT1o4f
A",
        "Description": "Historical Instrument",
        "InstrumentType": "Unknown",
        "Status": "Valid",
        "DomainCode": "6",
        "Start": "2008-01-01T00:00:00.000Z",
        "End": "2008-01-01T00:00:00.000Z"
    },
    ...
    {
        "Identifier": "HOZ9",
        "IdentifierType": "Ric",
        "Source": "",
        "Key": "VjF8MHgzMDAwMDAwMDAwMDAwMDAwfDB4MzAwMDAwMDAwMDAwMHx8fhx8fhxIT1o5f
A",
        "Description": "Historical Instrument",
        "InstrumentType": "Unknown",
        "Status": "Valid",
        "DomainCode": "6",
        "Start": "2008-01-01T00:00:00.000Z",
        "End": "2008-01-01T00:00:00.000Z"
    }
]
}
}

```

Other Searches

In addition to using `HistoricalSearch` and `HistoricalChainResolution`, you can perform searches using the following search functions:

- **HistoricalCriteriaSearch** enables you to search for instruments using a variety of criteria, including country, exchange, instrument type, and maturity date.
- **ReferenceHistory** returns reference history events within a date range for one or more RICs.
- **PeLookup** returns permissioning entity (PE) codes for one or more RICs.

These search functions are described, with parameters and examples, in the [API Reference Tree](#).

Speed Guide Pages

Speed Guides are a tool for navigating Thomson Reuters content, and for retrieving that content formatted as character-based pages. Although these pages are usually viewed by analysts on a screen, you can also use the API to retrieve these pages and access the data that is encoded on the page. This is an alternative method to retrieving data as field/value pairs in a conventional report extraction.

The following table provides RICs of some standard Speed Guide pages:

Speed Guide Page Name	Description
ALERT	Access service alerts for an earlier period by specifying the period's date range in the report request. This can be helpful if you need to know what alerts, if any, were in effect at an earlier point in time.
THOMSONREUTERS	Home page.
SPEED/GUIDE2, SPEED/GUIDE3	Speed Guide codes.

What Kinds of Content Should I Retrieve as a Speed Guide Page?

Some kinds of relatively static content, such as contract specifications, exchange trading hours, and past service alerts, may be available only as Speed Guide pages, and you must retrieve them that way.

However, you can retrieve most other kinds of data, including most financial data, more effectively by having the API retrieve their fields in a conventional field-based report extraction (using `ExtractRaw` or `ExtractWithNotes`), as illustrated in the other chapters of this *Tick History REST API User Guide* and in the *Tick History REST API Use Cases Reference*. Retrieving data in this conventional way is more direct, simpler to process, and less prone to update complications, than is retrieving it as a Speed Guide page.

How to Retrieve a Speed Guide Page

To retrieve a Speed Guide page using the Tick History REST API, use the `ExtractRaw` endpoint against the `Raw` report template, and specify the page's RIC. In the request, set `AllowHistoricalInstruments` to true, and set the date range to at least seven days. You can see this illustrated in *Example: Speed Guide Retrieval Request & Response* on page 35.

The date range is important, because a page's information is brought up to date in two kinds of ways:

- **Refreshes**, which present the current state of an entire page. It supplies a snapshot of the page at one point in time. Most pages are refreshed at least once in seven days, although some pages are refreshed at a different rate.
- **Updates**, which indicate changes to an individual page row, or to individual page characters. (Different pages use different kinds of updates.) Updates to a page are usually issued more frequently than refreshes.

To understand how an update affects a page, you need to apply all of a page's updates, in sequence, to the page's previous refresh.

A page retrieval often retrieves a combination of updates and refreshes, and you must distinguish the two kinds of data from each other, and process each kind accordingly. For an illustration of how refreshes and updates compare to each other, see *Example: Comparing Page Refreshes and Updates* on page 36.

Example: Speed Guide Retrieval Request & Response

The following request retrieves the Speed Guide page CBT/TY, which defines the contract specifications for the U.S. Treasury 10-year futures traded on the CBOT exchange. Important elements of page retrieval (allowing historical instruments, and setting the date range to at least seven days) are highlighted.

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractRaw
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.TickHistoryRawExtractionRequest",
    "IdentifierList": {
      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
      "ValidationOptions": {
        "AllowHistoricalInstruments": true
      },
      "UseUserPreferencesForValidationOptions": false,
      "InstrumentIdentifiers": [
        {
          "Identifier": "CBT/TY",
          "IdentifierType": "Ric"
        }
      ]
    },
    "Condition": {
      "MessageTimeStampIn": "GmtUtc",
      "ReportDateRangeType": "Range",
      "QueryStartDate": "2016-12-28T00:00:00.000Z",
      "QueryEndDate": "2017-01-05T00:00:00.000Z",
      "ExtractBy": "Ric",
      "SortBy": "SingleByRic",
      "DomainCode": "MarketPrice",
      "DisplaySourceRIC": true
    }
  }
}
```

After polling the report job, the following page of information is returned. The label indicating that the content is a refresh (as opposed to an update) is highlighted.

```
HTTP/1.1 200 OK
#RIC,Domain,Date-Time,Type,MsgClass/FID number,UpdateType/Action,FID Name,FID Value,FID Enum String,PE Code,Template
Number,Key/Msg Sequence Number,Number of FIDs
CBT/TY/Market Price,2016-12-31T06:43:37.300583102Z,Raw,REFRESH, , , ,3245,82,95,32
,,,FID,1,,PROD_PERM,3245,
,,,FID,2,,RDNDISPLAY,151,
,,,FID,259,,RECORDTYPE,234,
,,,FID,315,,ROW80_1,"CBOT 10 YEAR US T-NOTES PIT TRADED",CBT/TY",
,,,FID,316,,ROW80_2,"Contract Details, Trading Hours for the CBOT 10 year US T-Note Future.",CBT/TY",
,,,FID,317,,ROW80_3,"",
,,,FID,318,,ROW80_4,"",
,,,FID,319,,ROW80_5,"CHAIN RIC" - <0#2TY:>for(Delisted) <0#TY:>for composite,
,,,FID,320,,ROW80_6,"" - <0#1TY:> for Globex <0#3TY:> for all-or none
,,,FID,321,,ROW80_7,"MARKET DEPTH RIC" - <1TY>+<month code>+<year>+<M> eg: <1TYU9m>
,,,FID,322,,ROW80_8,"" - and 0#+1TY+M+Y eg: <0#1TYU9>
,,,FID,323,,ROW80_9,"OPTIONS CHAIN RIC" - <0#2TY>+<0#2TY++<0#1TY+>,*<0#3TY+> for AON.
,,,FID,324,,ROW80_10,"" - Weekly Pit <0#2TYW+> Globex <0#1TYW+>
,,,FID,325,,ROW80_11,"" - m=month, u= year; <0#3TY+> for All or None
,,,FID,326,,ROW80_12,"UNIT OF TRADING" - US Dollar
,,,FID,327,,ROW80_13,"CONTRACT SIZE" - $100,000
,,,FID,329,,ROW80_15,"" - The first three consecutive contracts in the March,
,,,FID,330,,ROW80_16,"" - June, September, and December quarterly cycle
,,,FID,331,,ROW80_17,"MINIMUM PRICE LIMIT" - Points ($1,000) and 1/2 of 1/32 of a point ($15.625
,,,FID,332,,ROW80_18,"" - per contract) i.e., 84-16 equals 84 16/32, 84-165
,,,FID,333,,ROW80_19,"" - equals 84 16.5/32
,,,FID,334,,ROW80_20,"SPREADS" - <0#2TY-> <0#2TU-TY:> <0#2FV-TY:> <0#2TY-US:>
,,,FID,335,,ROW80_21,"" - PIT (Delisted) <0#1TY-US:>
,,,FID,336,,ROW80_22,"" - Reduced Tick <0#1TYRT->
,,,FID,337,,ROW80_23,"" - <0#1BON-> <0#1NOL->
,,,FID,338,,ROW80_24,"Last Trading Day" - Seventh business day preceding the last business day,
,,,FID,339,,ROW80_25,"" - of the delivery month. Trading in expiring contracts",
,,,FID,5357,,CONTEXT_ID,2704,
,,,FID,6401,,DDS_DSO_ID,12337,
```

```
,,,FID,6480,,SPS_SP_RIC,.[SPSDC4,
,,,FID,8635,,RCS_AS_CL2,,
```

Example: Comparing Page Refreshes and Updates

The following example retrieves the page CNTSYFIX1 over several days at the end of December 2016. The example highlights the labels that indicate which content is an update and which content is a refresh. Note that the refresh returns the entire page, complete with all its values, while each update returns only the values that have changed.

HTTP/1.1 200 OK					
#RIC,Domain,Date-Time,Type,MsgClass/FID number,UpdateType/Action,FID Name,FID Value,FID Enum String,PE					
Code,Template Number,Key/Msg Sequence Number,Number of FIDs					
CNTSYFIX1,Market Price,2016-12-24T00:35:39.030674948Z,Raw,REFRESH,.,.,5144,82,399,32					
,,,FID,1,,PROD_PERM,5144,					
,,,FID,2,,RDNDISPLAY,151,					
,,,FID,259,,RECORDTYPE,41,					
,,,FID,315,,ROW80_1,12:30 23DEC16 FIXING@11:30					
CN91290 CNY TREASURY BONDS REFERENCE RATES					
,,,FID,316,,ROW80_2,"					
,,,FID,317,,ROW80_3,"					
,,,FID,318,,ROW80_4,"					
,,,FID,319,,ROW80_5,"BMK Bond Code					
1Y 160012 BID/ ASK					
2Y 160009 BID/ ASK					
3Y 160022 BID/ ASK					
5Y 160021 BID/ ASK					
,,,FID,320,,ROW80_6,"					
,,,FID,321,,ROW80_7,BOC CN					
2.9829/ 2.8829 3.0824/ 2.9824 3.1061/ 3.0061 3.1150/ 3.,					
,,,FID,322,,ROW80_8,BOCI CN					
2.9800/ 2.9200 3.0800/ 3.0200 3.1000/ 3.0400 3.1100/ 3.,					
,,,FID,323,,ROW80_9,PING AN SECS					
2.9700/ 2.8700 3.0800/ 2.9800 3.1100/ 3.0100 3.1100/ 3.,					
,,,FID,324,,ROW80_10,"CIB SH					
UNQ/ UNQ UNQ/ UNQ UNQ/ UNQ UNQ/ UNQ					
,,,FID,325,,ROW80_11,CMB CN					
3.3000/ 3.1000 3.1600/ 3.0100 3.1700/ 3.0200 3.2300/ 3.,					
,,,FID,326,,ROW80_12,CITIC BK					
2.9500/ 2.8700 3.0500/ 2.9700 3.0800/ 3.0000 3.0900/ 3.,					
,,,FID,327,,ROW80_13,EVRBRIT BK					
3.2200/ 2.7000 3.1500/ 2.8000 3.1500/ 2.8100 3.3000/ 2.,					
,,,FID,328,,ROW80_14,GTJA SECS					
2.9800/ 2.8800 3.0800/ 2.9800 3.1100/ 3.0100 3.1200/ 3.,					
,,,FID,329,,ROW80_15,SEALAND SECS					
2.9400/ 2.9100 3.0500/ 3.0100 3.0800/ 3.0300 3.0700/ 3.,					
,,,FID,330,,ROW80_16,ICBC CN					
2.9500/ 2.9300 3.0500/ 3.0300 3.0800/ 3.0500 3.0900/ 3.,					
,,,FID,331,,ROW80_17,NANJING BK					
2.9700/ 2.9200 3.0600/ 3.0200 3.0700/ 3.0400 3.1000/ 3.,					
,,,FID,332,,ROW80_18,SHANGHAI BK					
2.9600/ 2.9000 3.0600/ 3.0000 3.0900/ 3.0300 3.1000/ 3.,					
,,,FID,333,,ROW80_19,SWHY SECS					
2.9800/ 2.8800 3.0800/ 2.9800 3.1100/ 3.0100 3.1200/ 3.,					
,,,FID,334,,ROW80_20,-					
,,,FID,335,,ROW80_21,TODAY'S MID					
2.9354 3.0328 3.0589 3.,					
,,,FID,336,,ROW80_22,NET CHG.					
-0.0385 -0.0007 0.0084 -0.,					
,,,FID,337,,ROW80_23,PREV MID					
2.9739 3.0335 3.0505 3.,					
,,,FID,338,,ROW80_24,-					
,,,FID,339,,ROW80_25,TODAY'S RATES					
2.9716/ 2.8954 3.0716/ 2.9953 3.0983/ 3.0195 3.1081/ 3.,					
,,,FID,5357,,CONTEXT_ID,2704,					
,,,FID,6401,,DDS_DSO_ID,4117,					
,,,FID,6480,,SPS_SP_RIC,.[SPSDC8,					
,,,FID,8635,,RCS_AS_CL2,,					
CNTSYFIX1,Market Price,2016-12-26T03:25:01.884342145Z,Raw,UPDATE,UNSPECIFIED,,,5144,,414,18					
,,,FID,321,,ROW80_7,"[0`BOC CN					
,,,FID,322,,ROW80_8,"[0`BOCI CN					
,,,FID,323,,ROW80_9,"[0`PING AN SECS					
,,,FID,324,,ROW80_10,"[0`CIB SH					
,,,FID,325,,ROW80_11,"[0`CMB CN					
,,,FID,326,,ROW80_12,"[0`CITIC BK					
,,,FID,327,,ROW80_13,"[0`EVBRIT BK					
,,,FID,328,,ROW80_14,"[0`GTJA SECS					
,,,FID,329,,ROW80_15,"[0`SEALAND SECS					
,,,FID,330,,ROW80_16,"[0`ICBC CN					
,,,FID,331,,ROW80_17,"[0`NANJING BK					
,,,FID,332,,ROW80_18,"[0`SHANGHAI BK					
,,,FID,333,,ROW80_19,"[0`SWHY SECS					
,,,FID,335,,ROW80_21,"[0`TODAY'S MID					
,,,FID,336,,ROW80_22,"[0`NET CHG.					
,,,FID,337,,ROW80_23,"[0`PREV MID					
2.9354 3.0328 3.0589 3.,					
,,,FID,339,,ROW80_25,"[0`TODAY'S RATES					
/ / / / / /					
,,,FID,315,,ROW80_1,"[0`12:25 26DEC16",					
CNTSYFIX1,Market Price,2016-12-26T03:30:01.996851773Z,Raw,UPDATE,UNSPECIFIED,,,5144,,430,17					
,,,FID,321,,ROW80_7,"[0`BOC CN					
2.8397/ 2.7397 3.0124/ 2.9124 3.0479/ 2.9479 3.0491/ 2.,					
,,,FID,322,,ROW80_8,"[0`BOCI CN					
2.8300/ 2.7700 3.0100/ 2.9500 3.0400/ 2.9800 3.0400/ 2.,					
,,,FID,323,,ROW80_9,"[0`PING AN SECS					
2.8300/ 2.7300 3.0100/ 2.9100 3.0500/ 2.9500 3.0400/ 2.,					
,,,FID,324,,ROW80_10,"[0`CIB SH					
3.0000/ 2.8500 3.1000/ 2.9500 3.1500/ 2.9500 3.1500/ 2.,					
,,,FID,325,,ROW80_11,"[0`CMB CN					
2.8900/ 2.7400 3.0200/ 2.9200 3.0500/ 2.9000 3.0200/ 2.,					
,,,FID,326,,ROW80_12,"[0`CITIC BK					
2.8100/ 2.7300 2.9800/ 2.9000 3.0200/ 2.9400 3.0200/ 2.,					
,,,FID,327,,ROW80_13,"[0`EVBRIT BK					
3.2200/ 2.7000 3.1500/ 2.8000 3.1500/ 2.8100 3.3000/ 2.,					
,,,FID,328,,ROW80_14,"[0`GTJA SECS					
2.8400/ 2.7400 3.0100/ 2.9100 3.0500/ 2.9500 3.0500/ 2.,					
,,,FID,329,,ROW80_15,"[0`SEALAND SECS					
2.7900/ 2.7600 2.9800/ 2.9400 3.0200/ 2.9700 3.0000/ 2.,					
,,,FID,330,,ROW80_16,"[0`ICBC CN					
2.8100/ 2.7800 2.9800/ 2.9600 3.0200/ 2.9900 3.0200/ 2.,					
,,,FID,331,,ROW80_17,"[0`NANJING BK					
2.8200/ 2.7700 2.9900/ 2.9500 3.0100/ 2.9800 3.0300/ 2.,					
,,,FID,332,,ROW80_18,"[0`SHANGHAI BK					
2.8200/ 2.7600 2.9900/ 2.9300 3.0300/ 2.9700 3.0300/ 2.,					
,,,FID,333,,ROW80_19,"[0`SWHY SECS					
2.8400/ 2.7400 3.0100/ 2.9100 3.0500/ 2.9500 3.0500/ 2.,					
,,,FID,335,,ROW80_21,"[0`TODAY'S MID					
2.7928 2.9646 2.9983 2.,					
,,,FID,336,,ROW80_22,"[0`NET CHG.					
-0.1426 -0.0682 -0.0606 -0.,					
,,,FID,339,,ROW80_25,"[0`TODAY'S RATES					
2.8314/ 2.7500 3.0046/ 2.9246 3.0411/ 2.9554 3.0370/ 2.,					
,,,FID,315,,ROW80_1,"[0`12:30 26DEC16 ",					

Chapter 7 Tick History Workflows

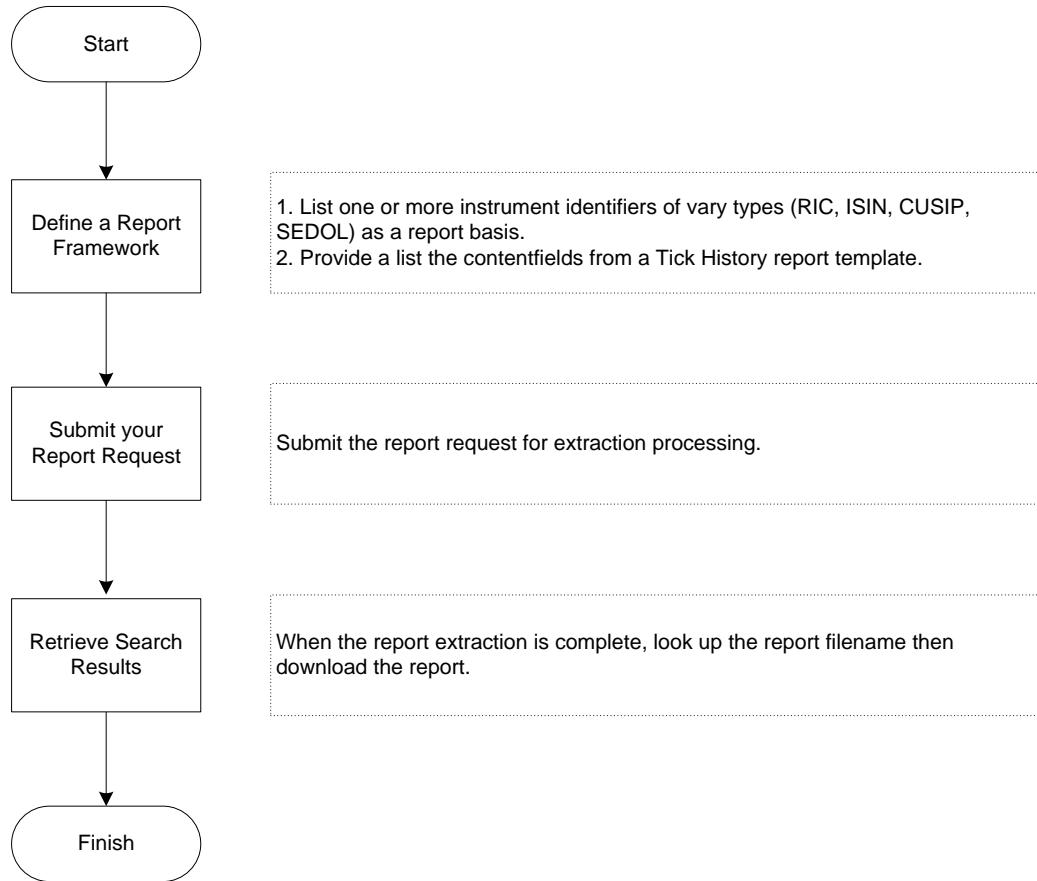
You can request Tick History data in several ways:

- **Tick History custom solution (reporting).** You can run reports that are:
 - **On demand**, with all report attributes specified in a single HTTP request that is submitted to run immediately.
 - **Stored & scheduled**. You define report attributes in instrument lists and report templates that are stored for future use, and schedule the report to run at set times or when triggered by events.
- **Tick History standard solution (Venue by Day)** automatically generates a day's complete trading data for a given exchange and enables you to download it.

Each of these methods has its own workflow, as described in this chapter.

On-Demand Workflow

In this reporting workflow, you specify the fields and instruments directly in a single HTTP request. The report begins running as soon as you submit the request. You check on the report's status until it's ready to download. This workflow is faster to code and more concise than the stored & scheduled workflow.

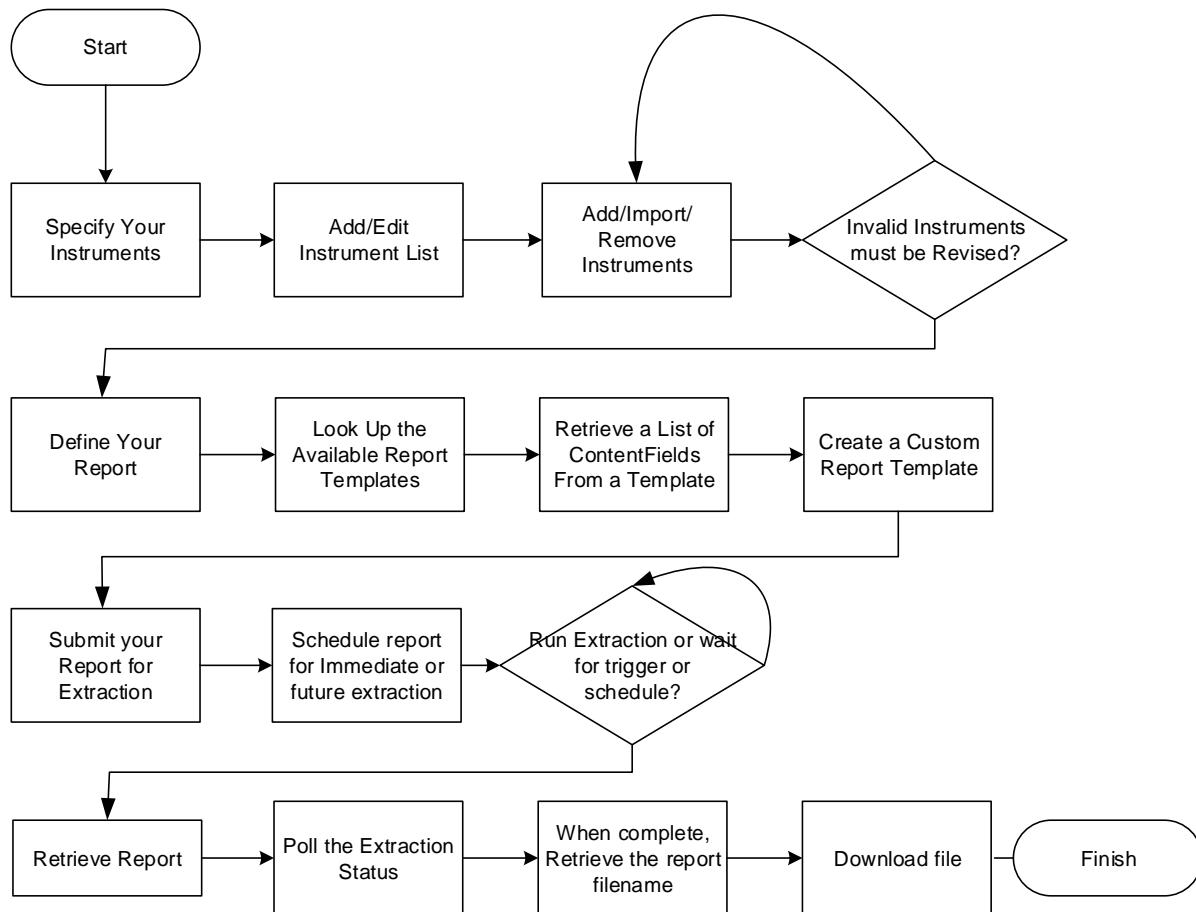


For more information see Chapter 8, *On-Demand Workflow*, on page 42.

Stored & Scheduled Workflow

In this reporting workflow, you specify the instruments in an instrument list; specify the report's fields, conditions, and formatting in a report template; and specify the timing in a schedule. The instrument list, report template, and schedule are stored in your DataScope Select account, and persist beyond the current API request, providing you with a way of easily specifying the same instruments, and the same report fields and formatting, in other requests. You can revise instrument lists, report templates, and schedules using Tick History's graphic user interface (GUI) or its API. The report begins running at the time at which you have scheduled it to begin (which can be immediately or in the future) or when it is triggered by an event that you have specified.

This workflow requires more HTTP requests than the on-demand workflow. It is very effective for managing bulk scheduled tasks.

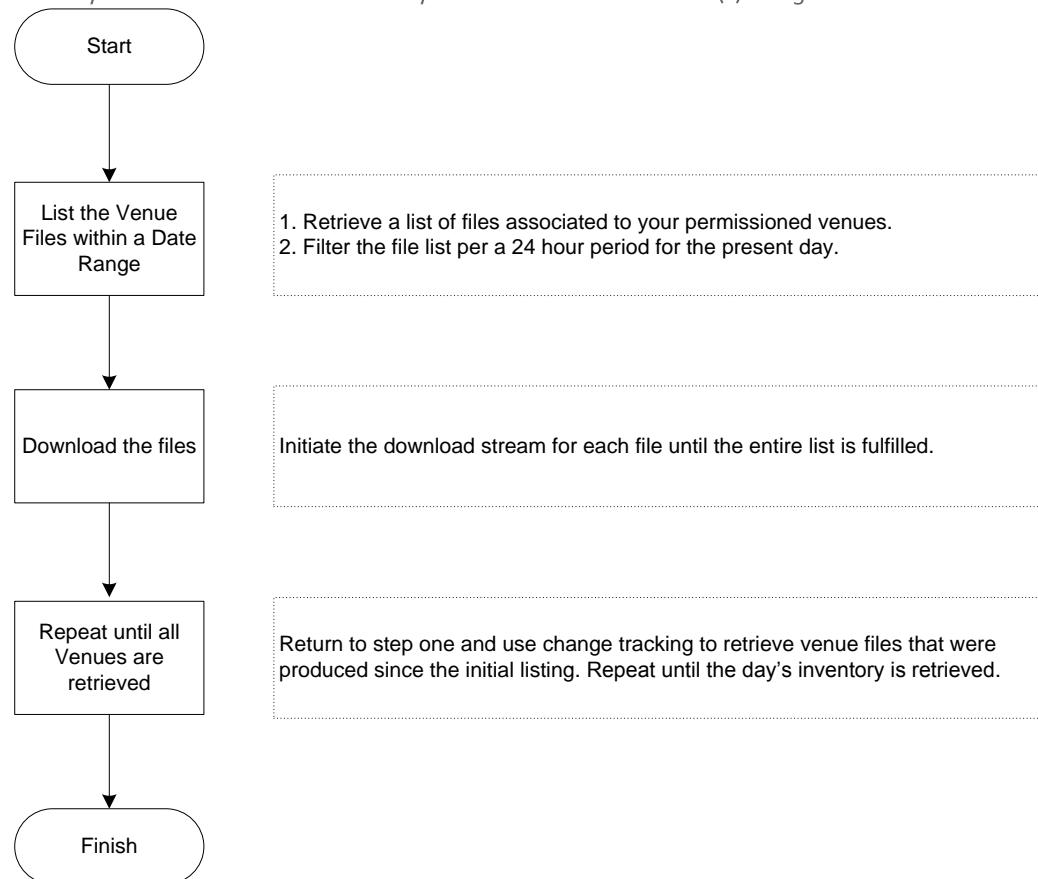


Note that the report output parameters `Destination`, `DeliveryType`, `CompressionType`, and `OutputFormat` are not supported for the Tick History Time and Sales, Market Depth, Intraday Summaries, and Raw report types.

For more information see Chapter 10, *Stored & Scheduled Workflow*, on page 67.

Venue by Day Workflow

These files are system-generated at the close of each business day, and contain all of an exchange's trading data for that day. Users check for file availability and then download the file(s) using the API.



For more information see Chapter 12, *Venue by Day Workflow*, on page 114.

Workflow Comparison

Objects	On Demand	Stored & Scheduled	Venue by Day
InstrumentLists	<p>Not applicable.</p> <p>Users will specify the RICs in each report request.</p>	<p>Users manage instrument lists on the DataScope Platform. These objects can be referred to on a re-occurring and for future reporting use.</p>	<p>Not applicable.</p> <p>All Instruments per venue will be listed.</p>
Report Templates	<p>Not applicable.</p> <p>Users will specify the content fields per report template in each report request.</p>	<p>Users can take the standard report template to select only the relevant fields of interest to derive a custom template. Numerous custom templates may be created and be referred to for re-occurring and future reporting.</p>	<p>Not applicable.</p> <p>The report format is fixed.</p>
Scheduling	<p>Not applicable.</p> <p>Users will submit the report request as needed through their client application.</p>	<p>Users can create pre-defined schedules on the DataScope Select platform to be triggered at set intervals for specific instrument lists and report templates.</p>	<p>Venue files are produced per publishing cycle in an elapsed 24-hour period, from the previous day's cycle cut-off to the current day's cut-off point.</p>

Chapter 8 On-Demand Workflow

On-demand reporting is the most direct and efficient way to access Tick History data in the API. This method of reporting consolidates multiple elements of a Scheduled report into a single request and allows users to reach the same result in fewer steps.

An On-Demand report is an immediate search based on a list of instruments and content fields embodied in the request itself. Users will need to provide valid instruments (RIC, ISIN, CUSIP, etc) and ContentFieldNames taken from a single Tick History report template.

This example demonstrates an On-Demand request for Times Series data.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractWithNotes
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.ElektronTimeseriesExtractionRequest",
    "ContentFieldNames": [
      "Ask",
      "Bid",
      "Close Ask",
      "Close Bid",
      "High",
      "Last",
      "Low",
      "Trade Date"
    ],
    "IdentifierList": {
      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
      "InstrumentIdentifiers": [
        {
          "Identifier": "TRI.N",
          "IdentifierType": "Ric"
        }
      ],
      "ValidationOptions": null,
      "UseUserPreferencesForValidationOptions": false
    },
    "Condition": {
      "StartDate": "2015-12-01T13:00:00.000Z",
      "EndDate": "2015-12-02T13:05:00.000Z"
    }
  }
}
```

Response

```

HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ThomsonReuters.
Dss.Api.Extractions.ExtractionRequests.ExtractionResult",
  "Contents": [
    {
      "IdentifierType": "Ric",
      "Identifier": "TRI.N",
      "Ask": 41.07,
      "Bid": 41.05,
      "Close Ask": null,
      "Close Bid": null,
      "High": 41.15,
      "Last": 41.05,
      "Low": 40.45,
      "Trade Date": "2015-12-01"
    },
    {
      "IdentifierType": "Ric",
      "Identifier": "TRI.N",
      "Ask": 41.08,
      "Bid": 41.07,
      "Close Ask": null,
      "Close Bid": null,
      "High": 41.23,
      "Last": 41.07,
      "Low": 40.91,
      "Trade Date": "2015-12-02"
    }
  ],
  "Notes": [
    "Extraction Services Version 10.7.35743 (b74a502e64b0), Built Oct 18 2016 08:55:26\r\n
    Processing started at 11/08/2016 11:05:14.\r\n
    User ID: 9009503\r\n
    Extraction ID: 2000000000138657\r\n
    Schedule: 0x057b8c2788ab3026 (ID = 0x0000000000000000)\r\n
    Input List (1 items): (ID = 0x057b8c2788ab3026) Created: 11/08/2016 11:05:14\r\n
    Report Template (11 files): _ond_0x057b8c2788ab3026 (ID = 0x057b8c27983b3026) Created: 11/08/2016 11:05:07 Last Modified: 11/08/2016 11:05:07\r\n
    schedule dispatched via message queue (0x057b8c2788ab3026)\r\n
    Time: 11/08/2016 11:05:09\r\n
    nTimeseries Date Range: 12/01/2015 to 12/02/2015\r\n
    Processing completed successfully at 11/08/2016 11:05:14, taking 0.109 secs.\r\n
    Extraction finished at 11/08/2016 16:05:14 UTC, with servers: x02q14, ETS (0.0 secs), QSHA02 (0.0 secs), QSHC07 (0.0 secs)\r\n
    Usage Summary for User 9009503, client 65510, Template Type Elektron Timeseries\r\n
    Base Usage\r\n
    Instrument          Instrument          Terms          Price\r\n
    nt Type             Subtype            Source         Source\r\n
    ---\r\n
    ---\r\n
    1 Equities\r\n
    N/A          N/A\r\n
    with no reported data.\r\n
    =====\r\n
    1 Total instrument charged.\r\n
    1 Instrument in the input list.\r\n
    0 Instruments\r\n
  ]
}

```

Chapter 9 Tick History Reports

This chapter describes the types of reports that are available to Tick History. They belong to several categories:

- **Tick History**
 - [Time and Sales](#)
 - [Market Depth](#)
 - [Intraday Summaries](#)
 - [Raw](#)
- **End of Day Pricing**
 - [Elektron Timeseries](#)
- **Corporate Actions**
 - [Standard Events](#)
- **Reference Data**
 - [Terms and Conditions](#)
 - [Historical Reference](#)

This chapter illustrates these report types using the on-demand workflow.

Time & Sales

Time and sales is a display of market trading information, showing a view of every detail of a market's price movement. This example demonstrates how to request a Time & Sales report.

Time & Sales Fields

Collect a list of content fields specific to Time & Sales.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypes(ReportTemplateType=ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ReportTemplateTypes'TickHistoryTimeAndSales')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ContentFieldTypes",
  "value": [
    {
      "Code": "THT.Auction - Exchange Time",
      "Name": "Auction - Exchange Time",
      "Description": "Exchange supplied exchange time (Local or GMT depending on the exchange)",
      "FormatType": "Text",
      "FieldGroup": "Auction"
    },
    {
      "Code": "THT.Auction - Price",
      "Name": "Auction - Price",
      "Description": "Auction Price",
      "FormatType": "Number",
      "FieldGroup": "Auction"
    },
    {
      "Code": "THT.Auction - Qualifiers",
      "Name": "Auction - Qualifiers",
      "Description": "Trade qualifiers or market condition indicator; See Qualifiers for more details",
      "FormatType": "Text",
      "FieldGroup": "Auction"
    },
    {
      "Code": "THT.Auction - Volume",
      "Name": "Auction - Volume",
      "Description": "Auction Volume",
      "FormatType": "Number",
      "FieldGroup": "Auction"
    },
    {
      "Code": "THT.Correction - Accumulated Volume",
      "Name": "Correction - Accumulated Volume",
      "Description": "Accumulated number of shares, lots or contracts traded",
      "FormatType": "Number",
      "FieldGroup": "Correction"
    }
  ...
  ]
}
```

Submit Report Request

This report is only available through ExtractRaw. ExtractWithNotes is not supported.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractRaw
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async

{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.TickHistoryTimeAndSalesExtractionRequest",
    "ContentFieldNames": [
      "Auction - Exchange Time",
      "Auction - Price",
      "Auction - Qualifiers",
      "Auction - Volume",
      "Correction - Accumulated volume",
      "Correction - Ask Price",
      "Correction - Bid Price",
      "Correction - Buyer ID",
      "Correction - Exchange Time",
      "Correction - Exchange/Contributor ID"
    ],
    "IdentifierList": {
      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
      "InstrumentIdentifiers": [
        {
          "Identifier": ".AD.N",
          "IdentifierType": "RIC"
        }
      ],
      "ValidationOptions": null,
      "UseUserPreferencesForValidationOptions": false
    },
    "Condition": {
      "MessageTimeStampIn": "GmtUtc",
      "ApplyCorrectionsAndCancellations": false,
      "ReportDateRangeType": "Range",
      "QueryStartDate": "1996-01-02T00:00:00.000Z",
      "QueryEndDate": "2007-03-03T00:00:00.000Z",
      "DisplaySourceRIC": true
    }
  }
}
```

Response

```
HTTP/1.1 202 Accepted
Status: InProgress
Progress: 1
Preference-Applied: respond-async
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/monitor/'0x0570a0ea31ec3156'
```

The request returns a 202 Accepted status, indicating that it is being processed asynchronously. It also returns the location of the report job (highlighted above). You will issue a GET against this location to poll the report to determine when it has completed.

Refer to *Polling Request Status* and *Request File Download* on pp. 20-21 for instructions on retrieving the report result.

Market Depth

Market Depth is the measure of the number of orders for a security or currency that must be traded before the price moves.

Market Depth Fields

Collect a list of content fields specific to Market Depth.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypes(Repo
rtTemplateType=ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ReportTemplateTypes'TickHistory
MarketDepth')
```

Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ContentFieldT
ypes",
  "value": [
    {
      "Code": "THM.Ask Price",
      "Name": "Ask Price",
      "Description": "Best Ask Price at level x",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "THM.Ask Size",
      "Name": "Ask Size",
      "Description": "Total size of all market makers at Ask level x",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "THM.Bid Price",
      "Name": "Bid Price",
      "Description": "Best Bid Price at level x",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "THM.Bid Size",
      "Name": "Bid Size",
      "Description": "Total size of all market makers at Bid level x",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "THM.Domain",
      "Name": "Domain",
      "Description": "Internal field to support instrument preview",
      "FormatType": "Text",
      "FieldGroup": " "
    },
    ...
  ]
}
```

Submit Report Request

This request reflects the RIC **VOD.L** with 13 Market Depth fields. You may set the **NumberOfLevels** under Condition. This report is only available through ExtractRaw. ExtractWithNotes is not supported.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractRaw
Authorization: Token <your_auth_token_goes_here>
Prefer: respond-async
Content-Type: application/json
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.TickHistoryMarketDepthExtractionRequest",
    "ContentFieldNames": [
      "Ask Price",
      "Ask Size",
      "Bid Price",
      "Bid Size",
      "Domain",
      "History End",
      "History Start",
      "Instrument ID",
      "Instrument ID Type",
      "Number of Buyers",
      "Number of Sellers",
      "RIC",
      "Sample Data"
    ],
    "IdentifierList": {
      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
      "InstrumentIdentifiers": [
        {
          "Identifier": "VOD.L",
          "IdentifierType": "Ric"
        }
      ],
      "ValidationOptions": null,
      "UseUserPreferencesForValidationOptions": false
    },
    "Condition": {
      "View": "NormalizedLL2",
      "NumberOfLevels": 10,
      "MessageTimeStampIn": "GmtUtc",
      "ReportDateRangeType": "Range",
      "QueryStartDate": "2008-10-13T13:00:00.000-05:00",
      "QueryEndDate": "2008-11-12T13:00:00.000-05:00",
      "DisplaySourceRIC": true
    }
  }
}
```

Response

```
HTTP/1.1 202 Accepted
Status: InProgress
Progress: 1
Preference-Applied: respond-async
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/monitor/'0x05713e6146bc44c6'
```

The request returns a **202 Accepted** status, indicating that it is being processed asynchronously. It also returns the location of the report job (highlighted above). You will issue a GET against this location to poll the report to determine when it has completed.

Refer to *Polling Request Status* and *Request File Download* on pp. 20-21 for instructions on retrieving the report result.

Intraday Summaries

Intraday Summaries reports summarize market data into discrete time series intervals ranging from one second to one hour. These steps show how to request the report.

Intraday Summaries Fields

Collect a list of content fields specific to Intraday Summaries.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypes(ReportTemplateType=ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ReportTemplateTypes'TickHistoryIntradaySummaries')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ContentFieldTypes",
  "value": [
    {
      "Code": "THI.Close_Ask",
      "Name": "Close Ask",
      "Description": "Last Ask price in the interval",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "THI.Close_Bid",
      "Name": "Close Bid",
      "Description": "Last Bid price in the interval",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "THI.Domain",
      "Name": "Domain",
      "Description": "Internal field to support instrument preview",
      "FormatType": "Text",
      "FieldGroup": " "
    },
    {
      "Code": "THI.High",
      "Name": "High",
      "Description": "Highest price over the interval",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "THI.High_Ask",
      "Name": "High Ask",
      "Description": "Highest reported Ask price over the interval",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    ...
  ]
}
```

Submit Report Request

This example reflects the RIC `EUR=` with 23 Intraday Summaries fields. This report is only available through `ExtractRaw`. `ExtractWithNotes` is not supported.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/V1/Extractions/ExtractRaw
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.TickHistoryIntradaySummariesExtractionRequest",
    "ContentFieldNames": [
      "Close Ask",
      "Close Bid",
      "Domain",
      "High",
      "High Ask",
      "High Bid",
      "History End",
      "History Start",
      "Instrument ID",
      "Instrument ID Type",
      "Last",
      "Low",
      "Low Ask",
      "Low Bid",
      "No. Asks",
      "No. Bids",
      "No. Trades",
      "Open",
      "Open Ask",
      "Open Bid",
      "RIC",
      "Sample Data",
      "Volume"
    ],
    "IdentifierList": {
      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
      "InstrumentIdentifiers": [
        {
          "Identifier": "EUR=",
          "IdentifierType": "RIC"
        }
      ],
      "validationOptions": null,
      "useUserPreferencesForValidationOptions": false
    },
    "Condition": {
      "MessageTimeStampIn": "GmtUtc",
      "ApplyLegacySummaryTimeLabel": false,
      "ReportDateRangeType": "Range",
      "QueryStartDate": "2008-10-13T13:00:00.000-05:00",
      "QueryEndDate": "2008-10-13T14:00:00.000-05:00",
      "SummaryInterval": "OneMinute",
      "TimebarPersistence": true,
      "DisplaySourceRIC": true
    }
  }
}
```

Response

```
HTTP/1.1 202 Accepted
Status: InProgress
Progress: 1
Preference-Applied: respond-async
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/monitor/'0x0571568dcf5c2f03'
```

The request returns a **202 Accepted** status, indicating that it is being processed asynchronously. It also returns the location of the report job (highlighted above). You will issue a GET against this location to poll the report to determine when it has completed.

Refer to *Polling Request Status* and *Request File Download* on pp. 20-21 for instructions on retrieving the report result.

Raw Report

Raw reports are delivered message-per-message as reported by the exchange venues. Unlike other report types, you cannot select which fields to include: they are all included. ExtractRaw returns data in a gzip formatted file.

You can filter the instruments you are reporting on based on which of them have a value for a specified FID. The report returns all the values that appear for that FID for those instruments within the specified date range. FID filtering is supported for the Raw report type's Market Price domain only.

Submit Report Request

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractRaw
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.TickHistoryRawExtractionRequest",
    "ContentFieldNames": [
      ],
      "IdentifierList": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
        "InstrumentIdentifiers": [
          {
            "Identifier": "ICBK.NS",
            "IdentifierType": "Ric"
          }
        ],
        "ValidationOptions": null,
        "UseUserPreferencesForValidationOptions": false
      },
      "Condition": {
        "MessageTimeStampIn": "GmtUtc",
        "ReportDateRangeType": "Range",
        "QueryStartDate": "2016-07-25T20:00:00.000Z",
        "QueryEndDate": "2016-08-02T19:59:59.000Z",
        "DisplaySourceRIC": true
      }
    }
}
```

Response

```
HTTP/1.1 202 Accepted
Status: InProgress
Progress: 1
Preference-Applied: respond-async
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/monitor/'0x05709cc5aadc3156'
```

The request returns a 202 Accepted status, indicating that it is being processed asynchronously. It also returns the location of the report job (highlighted above). You will issue a GET against this location to poll the report to determine when it has completed.

Check Report Status

Issue a GET against the value of the Location header field in the previous HTTP response to monitor the progress of Job ID **0x05709cc5aadc3156**.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/monitor/'0x05709cc5aadc3156'
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#RawExtraction
Results/$entity",
  "JobId": "0x05709cc5aadc3156",
  "Notes": [
    "Extraction Services version 10.7.35662 (6a8afc92e222), Built Sep 30 2016 17:07:16\nUser
ID: 9007660\nExtraction ID: 200000000533701\nSchedule: 0x05709cc5aadc3156 (ID = 0x0000000000000000
00)\nInput List (1 items): (ID = 0x05709cc5aadc3156) Created: 10/05/2016 12:43:54 Last Modified:
10/05/2016 12:43:54\nReport Template: _Ond_0x05709cc5aadc3156 (ID = 0x05709cc5b2ac3156) Created:
10/05/2016 12:42:22 Last Modified: 10/05/2016 12:42:22\nSchedule dispatched via message queue (0
x05709cc5aadc3156), Data source identifier (9FD2F2462A2E47948B6557E45DE32331)\nSchedule Time: 10/
05/2016 12:42:23\nProcessing started at 10/05/2016 12:42:23\nProcessing completed successfully at
10/05/2016 12:45:18\nExtraction finished at 10/05/2016 16:45:18 UTC, with servers: tm04n01, TRTH
(83.376 secs)\nHistorical Instrument <RIC,ICBK.NS> expanded to 1 RIC: ICBK.NS.\nManifest: #RIC,D
omain,Start,End,Status,Count\nManifest: ICBK.NS,Market Price,2016-07-25T23:35:53.323542895Z,2016-
08-02T19:47:33.777582804Z,Active,136681\n"
  ]
}
```

The 'HTTP/1.1 200 OK' status signals that the report job has completed and the report is ready to be retrieved.

Download the Report in GZIP

Retrieve the results of JobID 0x05709cc5aadc3156.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/RawExtractionResults('0x05709c  
c5aadc3156')/value  
Authorization: Token <your_auth_token_goes_here>  
Content-Type: application/json  
Accept-Charset: UTF-8  
Prefer: respond-async
```

Here is the binary output when the header “Accept-Encoding: gzip, deflate” is omitted.

Response

HTTP/1.1 200 OK
Accept-Ranges: bytes
BINARY:
1F 8B 08 00 00 00 00 00 00 00 CC BD 59 B3 1E 39 72 A6 79 DF BF 22 2D 75 7B 14 02 DC B1 E6 5D 8A
C9 AA E2 54 6E CA A5 A4 EE 1B 5A 8D 3A A7 AD 6C B4 8D 16 6B EB 7F 3F C0 C7 2A 12 1E E1 0B 02 8C
C8 8F D4 52 D2 81 1F 9C 08 20 1E 6C FE C2 FD AF 7E 78 F3 EA E5 AB 7F FD E7 3F FE E9 5F 5E BE FA
E3 7F FE F2 D7 3F FD E9 9F 7F 79 F9 E9 FF FC DB 2F 2F DF FC C7 FF 7A F5 4F 7F FC 8F FF F8 9B DF
BC F9 EA B3 7F 9F AF 7F FE BF 7F F9 F7 97 9F FF ED 7F 36 A3 5E FC 37 5F FE E3 7F FE E9 5F FF E5
A5 17 7E FB C7 F6 3B FD FF F8 C3 1F FF E9 BF DE FD 5F AF DB 2F 7C F6 E3 7F FE FB 9F FE E5 7F BD
7C FF FA B3 57 FF FA 3F 5B AD BF FC F3 BF FD 53 FB F5 CF BE 7D 57 D9 EF 7F F9 3F 7F D3 FE C8 67
3F FE F2 FF FD D7 2F FF F2 8F EF 7F FE EE 3F 3E FB D7 FF E7 B3 56 D3 7F FC B7 37 AF FE F6 F7 DB
B7 3F BE 7C F3 C7 7F FF 7F 7F 9F CF CF BE FF F7 3F FD E3 2F 2F E0 7C FA 6B 97 FF 1A E2 4F 80 5F
60 FC 22 E2 86 80 31 40 A9 F1 7F BC FC F0 C7 FF FD F2 F3 F7 5F 7D F9 3D EB 97 9F BB FD F1 FB D7
AF DE FC E6 CD EB AF 5E DA BF 18 B0 BC BC 24 04 F7 02 FF AD FF ED 4F 2C 60 01 7C 79 F9 C3 37
5F BE 8D 5F BD D4 1A C0 07 F7 32 14 86 77 85 E8 BE 7A F1 90 1C F8 5C 5F 4E 3C 56 C2 18 DB 83 E1
CC 63 61 BA F5 B1 D2 4F CE 7D E1 DD 17 0E B7 18 6A 29 D1 E5 42 1E EB D5 D7 DF FD F8 E6 DB DF BE
FD E1 E7 6F C7 C7 4A E9 A5 E0 5F FE 34 F8 97 97 DF FD F8 D3 DB 6E FB FA 05 52 D9 52 7C FF 5C ED
7A 7E 1A BA AF 7F 7C D4 F7 A1 41 DE 5B 8F D0 CC 5F BE FC EA FF FA F9 51 C7 8F FB 1A 5A 1E 4F 6F
BE F9 F2 D5 4F 2F EF 7F 94 DA 8F 7E F8 EA FB 1F 5E BD F5 1F 7E 98 DF FF 10 3E FC B0 BC FF 21 7E
F8 61 7D FF C3 F0 E1 87 DE BD FF 69 1C 7E DA FE CO B7 AF 7F 7A F5 BB D6 06 C3 DF F2 ED 4F FC EE
CD 6F 7F 47 7E 6D FE C2 D7 DF FD 3D F9 51 FB 4B DF 7D FF FA DB B7 AD D6 0F 3F 85 F6 CB 7F DB FE
F3 C3 0F FA FB FF F8 FB 0F 3F 40 F7 B0 F8 F1 CD FF 78 3D FC D0 3F AC 76 3F 6C 75 7D F9 EA 0F DF
7D 3D FE D9 D0 FF C0 D7 BF 7F F5 DD CF DF 0E 8D 16 F0 F1 D3 66 FB F3 37 1F 7E 1A 5B 5B 7E FF EA
F1 82 43 53 B6 07 FA F9 FB AF DF 7C F3 66 F8 FD 9C FA FB ED 7F D8 5A FD DB 9F BF 79 FB CD 77 7F
78 FD E3 D8 98 BD 35 7F FE E1 DB F6 E3 1F 86 1F E7 77 FD B1 7B DE EC FA 57 F5 D3 EF 5E 7F 7F F6
EB 9F 5A D9 CB 87 CF BA E1 FB 78 EB 87 8F C7 1E 5F 3C B7 97 7C F3 C3 6F 49 CB 62 C6 C7 0F 7B 1D
C3 0F 5B 15 3F 7E F9 75 FB 88 86 4F A0 BF 62 FB A6 DE FE E6 B8 2F 7E FB C7 9F AE 1Z 0F 3F 87 F1 E7

Elektron Timeseries

Elektron Timeseries provides historical Elektron end of day prices.

Elektron Timeseries Fields

Collect a list of content fields specific to Elektron Timeseries.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypes(ReportTemplateType='ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ReportTemplateTypes' ElektronTimeSeries')  
Authorization: Token <your_auth_token_goes_here>  
Content-Type: application/json  
Accept-Charset: UTF-8  
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ContentFieldTypes",
  "value": [
    {
      "Code": "ETS.Advancing_Issues",
      "Name": "Advancing Issues",
      "Description": "Number of issues which have advanced today",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "ETS.Advancing_Volume",
      "Name": "Advancing Volume",
      "Description": "Accumulated volume of issues that have advanced today",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "ETS.Alternate_Close",
      "Name": "Alternate Close",
      "Description": "Used to denote a secondary close price for particular instrument",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "ETS.Ask",
      "Name": "Ask",
      "Description": "Instrument's last ask price for the trading day",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "ETS.Asset_ID",
      "Name": "Asset ID",
      "Description": "Unique system-assigned identifier for the instrument",
      "FormatType": "Text",
      "FieldGroup": " "
    },
    ...
  ]
}
```

Submit Report Request

This example shows how to request your Elektron Timeseries (End of Day) report as a gzip archive file using `ExtractRaw`. This report supports both `ExtractWithNotes` and `ExtractRaw`.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractRaw
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.ElektronTimeseriesExtractionRequest",
    "ContentFieldNames": [
      "Ask",
      "Asset_ID",
      "Asset_Status",
    ]
  }
}
```

```

    "Asset Status Description",
    "Asset SubType",
    "Asset SubType Description",
    "Asset Type",
    "Asset Type Description",
    "Bid",
    "Block Volume",
    "Country of Incorporation",
    "Country of Incorporation Description",
    "Currency Code",
    "Currency Code Description",
    "CUSIP",
    "Exchange Code",
    "Exchange Description",
    "File Code",
    "GICS Industry Code",
    "GICS Industry Code Description",
    "High",
    "Instrument ID",
    "Instrument ID Type",
    "ISIN",
    "Issuer Name",
    "Issuer OrgID",
    "Last",
    "Low",
    "Market MIC",
    "MIC",
    "MIFID Indicator",
    "MIFID Indicator Description",
    "Number of Price Moves",
    "Open",
    "OPOL",
    "PE Code",
    "PILC",
    "Primary Execution Venue",
    "Primary Reference Market Quote",
    "Quote ID",
    "RBSS Code",
    "RBSS Code Description",
    "RCP ID",
    "Reference Company",
    "Reuters Editorial RIC",
    "Round Lot Size",
    "Security Description",
    "Security Long Description",
    "SEDOL",
    "Thomson Reuters Classification Scheme Description",
    "Ticker",
    "Trade Date",
    "Trading Symbol",
    "TRBC Business Sector Code",
    "TRBC Business Sector Code Description",
    "TRBC Economic Sector Code",
    "TRBC Economic Sector Code Description",
    "TRBC Industry Code",
    "TRBC Industry Code Description",
    "TRBC Industry Group Code",
    "TRBC Industry Group Code Description",
    "Usage Instrument Type",
    "Valoren",
    "VWAP",
    "Wertpapier"
  ],
  "IdentifierList": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
    "InstrumentIdentifiers": [
      {
        "Identifier": "IBM.N",
        "IdentifierType": "Ric"
      }
    ],
    "ValidationOptions": null,
    "UseUserPreferencesForValidationOptions": false
  },
  "Condition": {
    "StartDate": "2008-10-15T13:00:00.000-05:00",
    "EndDate": "2008-10-16T13:00:00.000-05:00"
  }
}

```

```

        "EndDate": "2008-10-22T13:00:00.000-05:00"
    }
}

```

Response

```

HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#RawExtractionRe
sults/$entity",
  "JobId": "0x0576190ac44b2f86",
  "Notes": [
    "Extraction Services Version 10.7.35695 (b1e94346bd15), Built Oct 7 2016 18:40:28\r\nProcess
ing started at 10/22/2016 13:43:56.\r\nUser ID: 9009503\r\nExtraction ID: 2000000000131541\r\nSch
edule: 0x0576190ac44b2f86 (ID = 0x0000000000000000)\r\nInput List (1 items): (ID = 0x0576190ac44
b2f86) Created: 10/22/2016 13:43:56 Last Modified: 10/22/2016 13:43:56\r\nReport Template (65 fie
lds): _ond_0x0576190ac44b2f86 (ID = 0x0576190ace0b2f86) Created: 10/22/2016 13:43:46 Last Modifie
d: 10/22/2016 13:43:46\r\nschedule dispatched via message queue (0x0576190ac44b2f86)\r\nschedule
Time: 10/22/2016 13:43:46\r\nTimeseries Date Range: 10/15/2008 to 10/22/2008\r\nProcessing comple
ted successfully at 10/22/2016 13:43:57, taking 0.943 secs.\r\nExtraction finished at 10/22/2016
17:43:57 UTC, with servers: x02q14, ETS (0.0 secs), QSHA02 (0.0 secs), QSHC09 (0.9 secs)\r\nUsage
Summary for user 9009503, Client 65510, Template Type Elektron Timeseries\r\nBase Usage\r\n
  Instrument           Instrument          Terms          Price\r\n
  Subtype              Subtype            Source          Source\r\n
  -----\r\n
  ----- 1 Equities
  N/A          N/A\r\n
  ----- 1 Total instrument charged.\r\n
  with no reported data.\r\n
  ===== 1 Instrument in the input list.\r\n
]
}

```

A 200 OK status was returned along with JobID **0x0576190ac44b2f86**. This indicates that the report is ready for immediate download. The report can be retrieved using the RawExtractionResults endpoint.

Download the Report in GZIP

The RawExtractionsResults endpoint is used to download the file for JobID `0x0576190ac44b2f86`. Add the `zip`, `deflate` encoding header to unpack the gzip format in the response.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/V1/Extractions/RawExtractionsResults('0x0576190ac44b2f86')/value
Authorization: Token <your_auth_token_goes_here>
Accept-Encoding: gzip, deflate
Accept-Charset: UTF-8
Prefer: respond-asynchronous
```

Response

```
HTTP/1.1 200 OK
Content-Encoding: gzip
Content-Type: text/plain
Transfer-Encoding: chunked
Vary: Accept-Encoding

Ask,Asset ID,Asset Status,Asset Status Description,Asset SubType,Asset SubType Description,Asset Type,Asset Type Description,Bid,Block Volume,Country of Incorporation,Country of Incorporation Description,Currency Code,Currency Code Description,CUSIP,Exchange Code,Exchange Description,File Code,GICS Industry Code,GICS Industry Code Description,High,Instrument ID,Instrument ID Type,ISIN,Issuer Name,Issuer OrgID,Last,Low,Market MIC,MIC,MIFID Indicator,MIFID Indicator Description,Number of Price Moves,Open,OPOL,PE Code,PILC,Primary Execution Venue,Primary Reference Market Quote,Quote ID,RBSS Code,RBSS Code Description,RCP ID,Reference Company,Reuters Editorial RIC,Round Lot Size,Security Description,Security Long Description,SEDOL,Thomson Reuters Classification Scheme Description,Ticker,Trade Date,Trading Symbol,TRBC Business Sector Code,TRBC Business Sector Code Description,TRBC Economic Sector Code,TRBC Economic Sector Code Description,TRBC Industry Code,TRBC Industry Code Description,TRBC Industry Group Code,TRBC Industry Group Code Description,Usage Instrument Type,Valoren,VWAP,Wertpapier
88.3,0x0003dd001379d460,ISS,Issued,ODSH,Ordinary shares,EQTY,Equities,88.01,1494300,us,United States,USD,U.S. Dollar,459200101,NYS,New York Stock Exchange,77,45102010,IT Consulting & Other Services,94.92,IBM.N,RIC,US4592001014,International Business Machines Corp,18228,88.29,87.91,XNYS,XNY S,MIFID-E,MIFID Eligible Security,,93.11,XNYS,62,144477,XETB,IBM.DE,0x0003dc004a024fd8,1793,Technology Consulting & Outsourcing Services,300018228,INTL BUS MACHINE,IBM.N,100,INTERNATIONAL BUSINESS MACHINES ORD,International Business Machines Ord Shs,2005973,Ordinary Shares,IBM,2008/10/15,IBM,5720,Software & IT Services,57,Technology,57201010,IT Services & Consulting,572010,Software & IT Services,Equities,941800,90.7106,851399
91.8,0x0003dd001379d460,ISS,Issued,ODSH,Ordinary shares,EQTY,Equities,91.41,1040500,us,United States,USD,U.S. Dollar,459200101,NYS,New York Stock Exchange,77,45102010,IT Consulting & Other Services,92,IBM.N,RIC,US4592001014,International Business Machines Corp,18228,91.52,84.35,XNYS,XNYS,MIFID-E,MIFID Eligible Security,,89.33,XNYS,62,144477,XETB,IBM.DE,0x0003dc004a024fd8,1793,Technology Consulting & Outsourcing Services,300018228,INTL BUS MACHINE,IBM.N,100,INTERNATIONAL BUSINESS MACHINES ORD,International Business Machines Ord Shs,2005973,Ordinary Shares,IBM,2008/10/16,IBM,5720,Software & IT Services,57,Technology,57201010,IT Services & Consulting,572010,Software & IT Services,Equities,941800,88.6586,851399
90.79,0x0003dd001379d460,ISS,Issued,ODSH,Ordinary shares,EQTY,Equities,90.68,1550300,us,United States,USD,U.S. Dollar,459200101,NYS,New York Stock Exchange,77,45102010,IT Consulting & Other Services,95.88,IBM.N,RIC,US4592001014,International Business Machines Corp,18228,90.78,89.58,XNYS,XNY S,MIFID-E,MIFID Eligible Security,,91.03,XNYS,62,144477,XETB,IBM.DE,0x0003dc004a024fd8,1793,Technology Consulting & Outsourcing Services,300018228,INTL BUS MACHINE,IBM.N,100,INTERNATIONAL BUSINESS MACHINES ORD,International Business Machines Ord Shs,2005973,Ordinary Shares,IBM,2008/10/17,IBM,5720,Software & IT Services,57,Technology,57201010,IT Services & Consulting,572010,Software & IT Services,Equities,941800,91.9489,851399
92.7,0x0003dd001379d460,ISS,Issued,ODSH,Ordinary shares,EQTY,Equities,92.5,731600,us,United States,USD,U.S. Dollar,459200101,NYS,New York Stock Exchange,77,45102010,IT Consulting & Other Services,93.28,IBM.N,RIC,US4592001014,International Business Machines Corp,18228,92.51,89.36,XNYS,XNYS,MIFID-E,MIFID Eligible Security,,92.44,XNYS,62,144477,XETB,IBM.DE,0x0003dc004a024fd8,1793,Technology Consulting & Outsourcing Services,300018228,INTL BUS MACHINE,IBM.N,100,INTERNATIONAL BUSINESS MACHINES ORD,International Business Machines Ord Shs,2005973,Ordinary Shares,IBM,2008/10/20,IBM,5720,Software & IT Services,57,Technology,57201010,IT Services & Consulting,572010,Software & IT Services,Equities,941800,91.4073,851399
...
```

Standard Events

Corporate actions standard events are events that bring material change to a company and affect its stakeholders, including shareholders, both common and preferred, as well as bondholders. These events are generally approved by the company's board of directors; shareholders may be permitted to vote on some events as well.

Standard Events Fields

Collect a list of content fields specific to Corporate Actions.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypes(ReportTemplateType=ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ReportTemplateTypes'CorporateActions')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ContentFieldTypes",
  "value": [
    {
      "Code": "COR.Accounting Standard",
      "Name": "Accounting Standard",
      "Description": "Code indicating the accounting standard used in accounts in which the EPS figure is reported",
      "FormatType": "Text",
      "FieldGroup": "Tick History Corporate Actions"
    },
    {
      "Code": "COR.Acquirer Company Name",
      "Name": "Acquirer Company Name",
      "Description": "Name of the acquiring party",
      "FormatType": "Text",
      "FieldGroup": "Tick History Corporate Actions"
    },
    {
      "Code": "COR.Acquirer RIC",
      "Name": "Acquirer RIC",
      "Description": "RIC of primary issue of acquirer",
      "FormatType": "Text",
      "FieldGroup": "Tick History Corporate Actions"
    },
    {
      "Code": "COR.Acquirer Row ID",
      "Name": "Acquirer Row ID",
      "Description": "Unique system-assigned identifier for the acquiring party",
      "FormatType": "Number",
      "FieldGroup": "Tick History Corporate Actions"
    },
    ...
  ]
}
```

Refer to the field **Name** when referring to the fields in the Standard Events report request.

Submit Report Request

This example shows how to request the Standard Events report in file format using `ExtractWithNotes`. Add the fields of interest along with your chosen instrument(s) to the report request, then submit. This report supports both `ExtractWithNotes` and `ExtractRaw`.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractWithNotes
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.CorporateActionsStandardExtractionRequest",
    "ContentFieldNames": [
      "Corporate Actions Type",
      "Currency Code",
      "Fitch Issuer ID",
      "Instrument ID",
      "Instrument ID Type",
      "ISIN",
      "Issue Level Event ID",
      "MIC",
      "Moody's Issuer ID",
      "OPOL",
      "PILC",
      "RIC",
      "S&P Issuer ID",
      "Security Description",
      "Security Long Description",
      "SEDOL",
      "Shares Amount",
      "Shares Amount Date",
      "Shares Amount In Thousands",
      "Shares Amount Type",
      "Shares Amount Type Default Flag",
      "Shares Amount Type Description"
    ],
    "IdentifierList": {
      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
      "InstrumentIdentifiers": [
        {
          "Identifier": "VOD.L",
          "IdentifierType": "Ric"
        }
      ],
      "ValidationOptions": null,
      "UseUserPreferencesForValidationOptions": false
    },
    "Condition": {
      "ReportDateRangeType": "Range",
      "QueryStartDate": "2016-06-01T00:00:00.000Z",
      "QueryEndDate": "2016-06-08T00:00:00.000Z",
      "IncludeInstrumentswithNoEvents": true,
      "IncludeNullDates": false,
      "ExcludeDeletedEvents": true,
      "IncludeCapitalChangeEvents": true,
      "IncludeDividendEvents": true,
      "IncludeEarningsEvents": true,
      "IncludeMergersAndAcquisitionsEvents": true,
      "IncludeNominalValueEvents": true,
      "IncludePublicEquityOfferingsEvents": true,
      "IncludeSharesOutstandingEvents": true,
      "IncludeVotingRightsEvents": true,
      "CorporateActionsDividendsType": "DividendPayDate",
      "CorporateActionsEarningsType": "PeriodEndDate",
      "CorporateActionsStandardEventsType": "SHO",
      "ShareAmountChoice": "All",
      "ShareAmountTypes": []
    }
  }
}
```

}

Response

HTTP/1.1 200 OK

```
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.ExtractionResult",
  "Contents": [
    {
      "IdentifierType": "Ric",
      "Identifier": "VOD.L",
      "Corporate Actions Type": "SHO",
      "Currency Code": "GBP",
      "Fitch Issuer ID": "80360240",
      "Instrument ID": "VOD.L",
      "Instrument ID Type": "RIC",
      "ISIN": "GB00BH4HKS39",
      "Issue Level Event ID": 18062220,
      "MIC": "XLON",
      "Moody's Issuer ID": "600018164",
      "OPOL": "XLON",
      "PILC": "105207",
      "RIC": "VOD.L",
      "S&P Issuer ID": "336641",
      "Security Description": "VODAFONE GROUP ORD",
      "Security Long Description": "Vodafone Group ord shs",
      "SEDOL": "BH4HKS3",
      "Shares Amount": 26500105011,
      "Shares Amount Date": "2016-06-06",
      "Shares Amount In Thousands": 26500105.011,
      "Shares Amount Type": "FFL",
      "Shares Amount Type Default Flag": "N",
      "Shares Amount Type Description": "Free Float"
    }
  ],
  "Notes": [
    "Extraction Services Version 10.7.35695 (b1e94346bd15), Built Oct 7 2016 16:23:43\r\nUser has overridden estimates broker entitlements.\r\nProcessing started at 10/20/2016 13:56:53.\r\nUser ID: 9007660\r\nExtraction ID: 234470400\r\nSchedule: _ond_0x057574fd777b2f86 (ID = 0x057574fd03b2f86)\r\nReporting corporate actions between 06/01/2016 and 06/08/2016, inclusive.\r\nSuppressing deleted Events\r\nInput List (1 items): _ond_0x057574fd777b2f86 (ID = 0x057574fd8ceb2f86) Create d: 10/20/2016 13:56:45 Last Modified: 10/20/2016 13:56:46\r\nSchedule Time: 10/20/2016 13:56:46\r\nReport Template (27 fields): _ond_0x057574fd777b2f86 (ID = 0x057574fd787b2f86) Created: 10/20/2016 13:56:45 Last Modified: 10/20/2016 13:56:45\r\nProcessing completed successfully at 10/20/2016 13:56:53, taking 0.366 Secs.\r\nExtraction finished at 10/20/2016 17:56:53 UTC, with servers: x03E03, QSHA02 (0.0 secs), QSHC09 (0.1 secs)\r\nUsage Summary for User 9007660, Client 65510, Temp late Type Corporate Actions, Standard Events\r\nBase Usage\r\nInstrument
Instrument          Terms          Price\r\nSubtype           Source          Source\r\n-----\r\n1 Equities          1 Total instrument charged.\r\n1 Instrument in the input list.\r\n"
  ]
}
```

When an HTTP 200 status is returned, the data arrives in the body of the response.

Terms and Conditions

Terms and conditions describe counterparty and security identifiers used when making a trade, specifically used to complete financial transactions and settle those transactions. At the most complex application, reference data covers all relevant particulars for highly complex transactions with multiple dependencies, entities and contingencies.

Terms and Conditions Fields

Collect a list of content fields specific to Terms and Conditions.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypes(ReportTemplateType=ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ReportTemplateTypes'TermsAndConditions')
Content-Type: application/json
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ContentFieldTypes",
  "value": [
    {
      "Code": "TNC.144A Registered Flag",
      "Name": "144A Registered Flag",
      "Description": "Y/N flag indicating whether the issue is registered for the 144A rule",
      "FormatType": "Text",
      "FieldGroup": ""
    },
    {
      "Code": "TNC.ABI Life Scheme Classification",
      "Name": "ABI Life Scheme Classification",
      "Description": "Indicates the ABI Life Scheme classification for a fund",
      "FormatType": "Text",
      "FieldGroup": ""
    },
    {
      "Code": "TNC.ABI Pension Scheme Classification",
      "Name": "ABI Pension Scheme Classification",
      "Description": "Indicates the ABI Pension Classification for a fund",
      "FormatType": "Text",
      "FieldGroup": ""
    },
    {
      "Code": "TNC.Accrual Bond Code",
      "Name": "Accrual Bond Code",
      "Description": "Code indicating how the bond's interest accrues",
      "FormatType": "Text",
      "FieldGroup": ""
    },
    {
      "Code": "TNC.Accrual Bond Code Description",
      "Name": "Accrual Bond Code Description",
      "Description": "Description of Accrual Bond Code",
      "FormatType": "Text",
      "FieldGroup": ""
    },
    ...
  ]
}
```

Submit Report Request

This example shows how to request the Terms and Conditions report in file format using `ExtractRaw`. This report supports both `ExtractWithNotes` and `ExtractRaw`.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/V1/Extractions/ExtractWithNotes
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async
{
  "ExtractionRequest": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.TermsAndConditionsExtractionRequest",
    "ContentFieldNames": [
      "Asset Category",
      "Asset Category Description",
      "Asset Type Description",
      "CESR EEA Regulated",
      "CFI Code",
      "Company Name",
      "Consolidated RIC",
      "Contributor Code",
      "Contributor Code Description",
      "Convertible Flag",
      "Country of Incorporation",
      "Country of Incorporation Description",
      "Country of Taxation Code",
      "Country of Taxation Description",
      "Index Principal Flag",
      "Conversion Terms Start Date",
      "RIC",
      "Round Lot Size",
      "Redemption Value",
      "Original Issue Amount",
      "Issue Price",
      "First Coupon Date",
      "Issue Date",
      "Par Value",
      "Accrual Date",
      "Base Index",
      "Factor",
      "Original Issue Discount Flag",
      "End Of Month Payment Flag",
      "ISIN",
      "Index Linked Bond Base Index",
      "Coupon Frequency Description",
      "Total Amount Outstanding",
      "Maturity Date",
      "Total Amount Issued",
      "Capitilization Flag",
      "Currency Code",
      "Trading Status"
    ],
    "IdentifierList": {
      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
      "InstrumentIdentifiers": [
        {
          "Identifier": "BA.N",
          "IdentifierType": "Ric"
        },
        {
          "Identifier": "CAT.N",
          "IdentifierType": "Ric"
        },
        {
          "Identifier": "IBM.N",
          "IdentifierType": "Ric"
        }
      ],
      "ValidationOptions": {
        "AllowOpenAccessInstruments": true,
      }
    }
  }
}
```

```

        "AllowHistoricalInstruments": true,
        "ExcludeFinrAsPricingSourceForBonds": true,
        "UseExchangeCodeInsteadOfLipper": true,
        "UseUsQuoteInsteadOfCanadian": true,
        "UseConsolidatedQuoteSourceForUsa": true,
        "UseConsolidatedQuoteSourceForCanada": true
    },
    "UseUserPreferencesForValidationOptions": false
},
"Condition": {
    "IssuerAssetClassType": "Equities",
    "ExcludeWarrants": true,
    "StartDate": "2015-01-01T00:00:00.000-05:00",
    "FixedIncomeRatingSources": "Fitch",
    "UseRelativeAnalytics": true
}
}
}

```

Response

```

HTTP/1.1 200 OK
{
    "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.ExtractionResult",
    "Contents": [],
    "Notes": [
        "Extraction Services Version 10.7.35695 (b1e94346bd15), Built Oct 7 2016 16:23:43\r\nuser has overridden estimates broker entitlements.\r\nProcessing started at 10/20/2016 15:18:13.\r\nUser ID: 9007660\r\nExtraction ID: 234475815\r\nSchedule: _OnD_0x057579a4e94b2f86 (ID = 0x057579a53b2b2f86)\r\nInput List (1 items): _OnD_0x057579a4e94b2f86 (ID = 0x057579a4fdb2f86) Created: 10/20/2016 15:18:05 Last Modified: 10/20/2016 15:18:06\r\nSchedule Time: 10/20/2016 15:18:06\r\nReport Template (28 fields): _OnD_0x057579a4e94b2f86 (ID = 0x057579a4ea3b2f86) Created: 10/20/2016 15:18:05 Last Modified: 10/20/2016 15:18:05\r\n1 Instrument suppressed due to rating date not on or after 01/01/2015.\r\nProcessing completed successfully at 10/20/2016 15:18:13, taking 0.262 Secs.\r\nExtraction finished at 10/20/2016 19:18:13 UTC, with servers: x1ln04, QSHA02 (0.0 secs), QSHC09 (0.0 secs)\r\nNo usage to report -- 1 Instrument in the input list had no reported data.\r\n"
    ]
}

```

The 'HTTP/1.1 202 Accepted' status is returned with Job ID **0x05709cc5aadc3156**. The 202 Accepted status indicates that the job is being processed asynchronously, and the report will be available when the job completes.

Refer to *Polling Request Status* and *Request File Download* on pp. 20-21 for instructions on retrieving the report result.

Historical Reference

This template retrieves historical reference data for a specified date range, going back to 1996 where available.

Historical Reference Fields

Collect a list of content fields specific to Historical Reference.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypes(ReportTemplateType=ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ReportTemplateTypes'HistoricalReference')
Content-Type: application/json
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ContentFieldTypes",
  "value": [
    {
      "Code": "HRD.Asset Category",
      "Name": "Asset Category",
      "Description": "Reuters security classification type.",
      "FormatType": "Text",
      "FieldGroup": " "
    },
    {
      "Code": "HRD.Australia Code",
      "Name": "Australia Code",
      "Description": "Code for the Australian Stock Exchange",
      "FormatType": "Text",
      "FieldGroup": " "
    },
    {
      "Code": "HRD.CESR Average Daily Turnover",
      "Name": "CESR Average Daily Turnover",
      "Description": "Average daily turnover of the security as supplied by CESR",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    {
      "Code": "HRD.CESR Average Daily Turnover Currency Code",
      "Name": "CESR Average Daily Turnover Currency Code",
      "Description": "Code indicating the currency of the security's average daily turnover as supplied by CESR",
      "FormatType": "Text",
      "FieldGroup": " "
    },
    {
      "Code": "HRD.CESR Average Value of Orders Executed",
      "Name": "CESR Average Value of Orders Executed",
      "Description": "Average value of the transaction as provided by CESR",
      "FormatType": "Number",
      "FieldGroup": " "
    },
    ...
  ]
}
```

Submit Report Request

This example shows how to request the Historical Reference report in file format using `ExtractWithNotes`. This report supports both `ExtractWithNotes` and `ExtractRaw`.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/V1/Extractions/ExtractWithNotes
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json; odata=minimalmetadata
Prefer: respond-async
{
    "ExtractionRequest": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.HistoricalReferenceExtractionRequest",
        "ContentFieldNames": [
            "Ticker",
            "Trading_Status",
            "Security_Description",
            "Company_Name",
            "Exchange_Code",
            "RIC",
            "Issue_PermitID",
            "CFI_Code"
        ],
        "IdentifierList": {
            "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
            "InstrumentIdentifiers": [
                {
                    "Identifier": "BA.N",
                    "IdentifierType": "Ric"
                },
                {
                    "Identifier": "CAT.N",
                    "IdentifierType": "Ric"
                },
                {
                    "Identifier": "IBM.N",
                    "IdentifierType": "Ric"
                }
            ],
            "Condition": {
                "StartDate": "2015-01-01T00:00:00.000-05:00",
                "EndDate": "2016-01-01T00:00:00.000-05:00"
            }
        }
    }
}
```

Response

```
HTTP/1.1 202 Accepted
Status: InProgress
Progress: 1
Preference-Applied: respond-async
Location: https://hosted.datascopeapi.reuters.com/RestApi/V1/Extractions/ExtractWithNotesResult(ExtractionId='0x059e0d3be7eb5871')
```

The request returns a `202 Accepted` status, indicating that it is being processed asynchronously. It also returns the location of the report job (highlighted above). You will issue a GET against this location to poll the report to determine when it has completed.

Refer to *Polling Request Status* and *Request File Download* on pp. 20-21 for instructions on retrieving the report result.

Chapter 10 Stored & Scheduled Workflow

This example demonstrates a request of quote and trade data for RIC IBM.N using the stored & scheduled reporting workflow. There are seven steps involved for this task and we will step through each and highlight the parameters relevant to accomplish the task. Certain steps require an identifier from the previous step to proceed. These conditions will be noted and highlighted.

Chapter 11, *Administration*, on page 76, describes how to manage and maintain the lists, report templates, and schedules that you create in this chapter.

Step 1 – Instrument List – Create a New List

Create an Instrument List to capture one or more instrument identifiers for the purposes of reporting. Provide a friendly name for the instrument list like "Sample Instrument List".

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.SubjectLists.InstrumentList",
    "Name": "Sample Instrument List"
}
```

Response

```
HTTP/1.1 201 Created
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('')
{
    "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#InstrumentLists/$entity",
    "ListId": "0x0538339affe40856",
    "Name": "Sample Instrument List",
    "Count": 0,
    "Created": "0001-01-01T00:00:00.000Z",
    "Modified": "0001-01-01T00:00:00.000Z"
}
```

"Sample Instrument List" has been created with ListId **0x0538339affe40856** which will be used later to build your search. It currently contains no instruments and cannot be used for search until at least one instrument is added.

Step 2 – Instrument List - Add instrument(s)

The instrument IBM.N will be added to the instrument list, [Sample Instrument List](#), per ListId 0x0538339affe40856.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('0x0538339affe40856')/ThomsonReuters.Dss.Api.Extractions.InstrumentListAppendIdentifiers
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "Identifiers": [
    {
      "@odata.type": "#ThomsonReuters.Dss.Api.Search.HistoricalSearchResult",
      "Identifier": "IBM.N",
      "IdentifierType": "Ric"
    }
  ],
  "KeepDuplicates": true
}
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi:8211/v1/$metadata#ThomsonReuters.Dss.Api.Extractions.SubjectLists.InstrumentsAppendIdentifiersResult",
  "ValidationResult": {
    "ValidInstrumentCount": 1,
    "OpenAccessSegments": [
    ],
    "StandardSegments": [
      {
        "Code": "E",
        "Description": "Equity",
        "Count": 1
      }
    ],
    "ValidationDuplicates": [
    ],
    "Messages": [
    ]
  },
  "AppendResult": {
    "AppendedInstrumentCount": 1,
    "AppendDuplicates": [
    ]
  }
}
```

The ValidationResult and AppendResult values will show the number of RICs successfully processed through their respective operations.

Step 3 - Report Template – Create Report Profile

Select a report template, then choose the fields of interest to use for reporting. Viewing the list of fields available in a report template is explained later in this document. This example uses four quote fields taken from the Time and Sales report template (TickHistoryTimeAndSalesReportTemplate).



ContentFieldNames are specific to the type of report.
Please refer to the [list of available Tick History report](#) templates.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/TickHistoryTimeAndSalesReportTemplates
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.TickHistoryTimeAndSalesReportTemplate",
  "ShowColumnHeaders": false,
  "Name": "sample-TAS",
  "Headers": [
  ],
  "Trailers": [
  ],
  "ContentFields": [
    {
      "FieldName": "Quote - Ask Price",
      "Format": null
    },
    {
      "FieldName": "Quote - Ask size",
      "Format": null
    },
    {
      "FieldName": "Quote - Ask Yield",
      "Format": null
    },
    {
      "FieldName": "Quote - Bid Price",
      "Format": null
    }
  ],
  "Condition": {
    "MessageTimeStampIn": "GmtUtc",
    "ApplyCorrectionsAndCancellations": false,
    "ReportDateRangeType": "Range",
    "QueryStartDate": "2015-12-01T00:00:00.000-06:00",
    "QueryEndDate": "2015-12-04T23:59:59.000-06:00"
  }
}
```

The request will create a Tick History Time and Sales report template with four fields.

Response

```

HTTP/1.1 201 Created
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/TickHistoryTimeAndSalesReportTemplates('')
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#TickHistoryTimeAndSalesReportTemplates/$entity",
  "ReportTemplateId": "0x05414d1fc85e2e3f",
  "ShowColumnHeaders": false,
  "CompressionType": "None",
  "CreateDate": "2016-05-11T21:55:58.853Z",
  "LastChangedDate": "2016-05-11T21:55:58.853Z",
  "Name": "sample-TAS",
  "OutputFormat": "CommaSeparatedValues",
  "ReportFieldCount": 4,
  "Delimiter": "None",
  "DeliveryType": "None",
  "TemplateTypeCode": "THT",
  "Headers": [
  ],
  "Trailers": [
  ],
  "ContentFields": [
    {
      "FieldName": "Quote - Ask Price",
      "Justification": "Center",
      "WidthStyle": "Variablewidth",
      "Format": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
        "DecimalPlaces": 9,
        "DecimalSeparator": "Period",
        "IntegerPlaces": 18,
        "UseLeadingZero": false,
        "NegativeSignPosition": "Before",
        "ThousandsSeparator": "Comma",
        "UseThousandsSeparator": true,
        "UseTrailingZero": false
      }
    },
    {
      "FieldName": "Quote - Ask Size",
      "Justification": "Center",
      "WidthStyle": "Variablewidth",
      "Format": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
        "DecimalPlaces": 9,
        "DecimalSeparator": "Period",
        "IntegerPlaces": 18,
        "UseLeadingZero": false,
        "NegativeSignPosition": "Before",
        "ThousandsSeparator": "Comma",
        "UseThousandsSeparator": true,
        "UseTrailingZero": false
      }
    },
    {
      "FieldName": "Quote - Ask Yield",
      "Justification": "Center",
      "WidthStyle": "Variablewidth",
      "Format": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
        "DecimalPlaces": 9,
        "DecimalSeparator": "Period",
        "IntegerPlaces": 18,
        "UseLeadingZero": false,
        "NegativeSignPosition": "Before",
        "ThousandsSeparator": "Comma",
        "UseThousandsSeparator": true,
        "UseTrailingZero": false
      }
    }
  ]
}

```

```
        },
        {
            "FieldName": "Quote - Bid Price",
            "Justification": "Center",
            "WidthStyle": "Variablewidth",
            "Format": {
                "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
                "DecimalPlaces": 9,
                "DecimalSeparator": "Period",
                "IntegerPlaces": 18,
                "UseLeadingZero": false,
                "NegativeSignPosition": "Before",
                "ThousandsSeparator": "Comma",
                "UseThousandsSeparator": true,
                "UseTrailingZero": false
            }
        }
    ],
    "Condition": {
        "SortBy": "SingleByRic",
        "MessageTimeStampIn": "GmtUtc",
        "ApplyCorrectionsAndCancellations": false,
        "ReportDateRangeType": "Range",
        "QueryStartDate": "2015-12-01T00:00:00.000Z",
        "QueryEndDate": "2015-12-04T23:59:59.000Z",
        "Preview": "None",
        "ExtractBy": "Ric"
    }
}
```

The Response returns a new report template id **0x05414d1fc85e2e3f** and a list of associated fields.

Step 4 – Submit Report Request

This example shows how to schedule a report extraction with the `ExtractionDateTime` (2016-04-13T10:40:05.846-12:00) with instrument `ListId` `0x05383479a7640856` and `ReportTemplateId` `0x05414d1fc85e2e3f` in your request.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "Name": "sample-TAS",
  "TimeZone": "Central Standard Time",
  "Recurrence": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.SingleRecurrence",
    "ExtractionDateTime": "2016-04-13T10:40:05.846-12:00",
    "IsImmediate": true
  },
  "Trigger": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.ImmediateTrigger",
    "LimitReportToTodaysData": true
  },
  "ListId": "0x05383479a7640856",
  "ReportTemplateId": "0x05414d1fc85e2e3f"
}
```

Response

```
HTTP/1.1 201 Created
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules('')
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Schedules/$entity",
  "ScheduleId": "0x0538347cae640856",
  "Name": "sample-TAS",
  "TimeZone": "Central Standard Time",
  "Recurrence": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.SingleRecurrence",
    "ExtractionDateTime": "2016-04-13T10:40:05.846Z",
    "IsImmediate": true
  },
  "Trigger": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.ImmediateTrigger",
    "LimitReportToTodaysData": true
  },
  "UserId": 9001552,
  "CreateDate": "2016-04-13T22:40:05.862Z",
  "LastChangeDate": "2016-04-13T22:40:05.862Z",
  "ListId": "0x05383479a7640856",
  "ReportTemplateId": "0x05414d1fc85e2e3f"
}
```

The Report Request is submitted for immediate extraction with a ScheduleID of `0x0538347cae640856` created for reference. Scheduling by date/time or triggers is optional.

Step 5 – Request Report Status

The report status may be polled by referencing the ScheduleId `0x0538347cae640856`. Repeat this request until the `Status` shows "Completed".

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules('0x0538347cae640856')/LastExtraction
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportExtractions/$entity",
  "ReportExtractionId": "300213029419",
  "ScheduleId": "0x0538347cae640856",
  "Status": "Completed",
  "DetailedStatus": "done",
  "ExtractionDateUtc": "2016-04-13T22:50:18.280Z",
  "ScheduleName": "sample-TAS",
  "IsTriggered": false,
  "ExtractionStartUtc": "2016-04-13T22:50:20.000Z",
  "ExtractionEndUtc": "2016-04-13T22:50:20.000Z"
}
```

When completed, the `ReportExtractionId` `300213029419` is created. This `ReportExtractionId` will be used to retrieve the list of files associated with the search results.

Step 6 – List Report Files

Request a list of files available under **ReportExtractionId** 300213029419.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractions('300213029419')/Files
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ExtractedFiles",
  "value": [
    {
      "ExtractedFileId": "VjF8fDEXODk1NTg3MQ",
      "ReportExtractionId": "300213029419",
      "ScheduleId": "0x0555f0aedd2b5871",
      "FileType": "Full",
      "ExtractedFileName": "9007660.sample-TAS.20160714.155253.300213029419.x01A05.csv.gz",
      "LastWriteTimeUtc": "2016-07-14T19:52:53.809Z",
      "ContentsExists": true,
      "Size": 122,
      "ReceivedDateUtc": "2016-07-14T19:52:53.809Z"
    },
    {
      "ExtractedFileId": "VjF8fDEXODk1NTg3MA",
      "ReportExtractionId": "300213029419",
      "ScheduleId": "0x0555f0aedd2b5871",
      "FileType": "Note",
      "ExtractedFileName": "9007660.sample-TAS.20160714.155253.300213029419.x01A05.csv.gz.notes.txt",
      "LastWriteTimeUtc": "2016-07-14T19:52:53.814Z",
      "ContentsExists": true,
      "Size": 1706,
      "ReceivedDateUtc": "2016-07-14T19:52:53.814Z"
    }
  ]
}
```

The associated files identified are identified by the **ExtractedFileId**. You will refer to the "ExtractedFileId" to request the download streams for each.

Step 7 - Download Report Files

Refer to the `ExtractedFileDialog` `VjF8fDEXODk1NTg3MQ` to download your files.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractions('VjF8fDEXODK1NTg3MQ')/Files
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ExtractedFiles",
  "value": [
    {
      "ExtractedFileDialog": "VjF8fDEXODk1NTg3MQ",
      "ReportExtractionId": "300213029419",
      "ScheduleId": "0x0555f0aedd2b5871",
      "FileType": "Full",
      "ExtractedFileName": "9007660.sample-TAS.20160714.155253.300213029419.x01A05.csv",
      "LastWriteTimeUtc": "2016-07-14T19:52:53.809Z",
      "ContentsExists": true,
      "Size": 122,
      "ReceivedDateUtc": "2016-07-14T19:52:53.809Z"
    }
  ]
}
```

Repeat the request the second file ExtractedFileDialog : `VjF8fDEXODk1NTg3MA`.

Chapter 11 Administration

This chapter describes API functions for managing and maintaining of elements of the stored & scheduled workflow:

- Instrument lists
- Report templates
- Schedules
- Report retrieval

Instrument Lists

Instrument selection is the basis for all reporting. Instrument lists provide a way to group instrument identifiers with some commonality for use with reporting. While Instrument Lists are mandatory for reporting on the product website, they are not for reporting through API. The return on time invested in creating these lists comes when reporting is required on a more frequent basis. For clients who solely rely on the web portal, managing a large number of instruments through the Instrument list becomes a very practical method of work.

Lists can be maintained through individually adding and removing instruments or by replacing the entire list. The ability to import and export lists makes this a practical alternative to specifying all instruments in every report request.

This section will describe how instrument lists can be managed and how to create, edit and delete lists. Within the lists, you will see how to add and remove instruments and to do the same in bulk through import and export functions on the API.

Create an Instrument List

Add a new instrument list to capture a grouping of instrument identifiers for reporting. The friendly name **Sample Instrument List Name** will be used.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.SubjectLists.InstrumentList",
  "Name": "Sample Instrument List Name"
}
```

Response

```
HTTP/1.1 201 Created
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('')
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#InstrumentLists/$entity",
  "ListId": "0x05586cf82ab59cb1",
  "Name": "Sample Instrument List Name",
  "Count": 0,
  "Created": "2016-07-22T18:12:46.508Z",
  "Modified": "2016-07-22T18:12:46.508Z"
}
```

The **ListId** is the unique Instrument list identifier. Use **ListId** [0x05586cf82ab59cb1](https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('0x05586cf82ab59cb1')) in future API calls to reference this specific Instrument list.

View All Instrument Lists

You may list all available Instrument Lists to show the name, number of instrument identifiers within and when it was created and last edited. The example shows how to conduct this look up for all instrument lists available under this User Id.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#InstrumentLists",
  "value": [
    {
      "ListId": "0x056079ae842c24e5",
      "Name": "Currencies",
      "Count": 18,
      "Created": "2016-08-16T13:26:19.986Z",
      "Modified": "2016-08-16T13:48:03.686Z"
    },
    {
      "ListId": "0x0560795be1dc3156",
      "Name": "Equities",
      "Count": 18,
      "Created": "2016-08-16T13:20:41.500Z",
      "Modified": "2016-08-16T13:54:19.133Z"
    },
    {
      "ListId": "0x056079d4f6dc24e5",
      "Name": "Historical",
      "Count": 9,
      "Created": "2016-08-16T13:28:57.453Z",
      "Modified": "2016-08-16T13:37:48.886Z"
    },
    {
      "ListId": "0x05586cf82ab59cb1",
      "Name": "Sample Instrument List Name",
      "Count": 0,
      "Created": "2016-07-22T18:12:46.508Z",
      "Modified": "2016-07-22T18:12:46.508Z"
    }
  ]
}
```

The full list of available instrument lists is provided, each with a unique ListId (e.g. `0x056079ae842c24e5`). The ListId is the reference used in your API calls for that specific List. To look into the contents of an Instrument list requires a separate API function with the appropriate ListId.

Note: `Currencies`, `Equities` and `Historical` are friendly names used to identify the instrument lists. These need not refer to an asset type and may refer to a report requestor name, type of report or anything that would make supporting the workflow easier.

View an Instrument List by ListId

You may view a single Instrument Lists per their **ListId** which will return the list name, number of instrument identifiers within and when it was created and last edited. The example shows how to conduct this operation using the ListId '0x056079ae842c24e5'.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('0x056079ae842c24e5')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#InstrumentLists
/$entity",
  "ListId": "0x056079ae842c24e5",
  "Name": "Currencies",
  "Count": 18,
  "Created": "2016-08-16T13:26:19.986Z",
  "Modified": "2016-08-16T13:48:03.686Z"
}
```

View an Instrument List by Name

Instrument Lists may be retrieved by their friendly name to return the number of instrument identifiers within and when it was created and last edited. The example shows how to conduct this look up operation using the Instrument List Name 'GetByName'.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentListGetByName(ListNa  
me='Sample Instrument List Name')  
Authorization: Token <your_auth_token_goes_here>  
Content-Type: application/json  
Accept-Charset: UTF-8  
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK  
{  
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#InstrumentLists/$  
  entity",  
  "ListId": "0x05586cf82ab59cb1",  
  "Name": "Sample Instrument List Name",  
  "Count": 0,  
  "Created": "2016-08-16T13:20:41.500Z",  
  "Modified": "2016-08-16T13:54:19.133Z"  
}
```

Note: The Instrument List above shows a newly created instrument list which is empty. If there were instruments within, the "Count" would reflect the number of instruments contained within.

Rename an Instrument List

An instrument list may have the friendly name relabeled. The example shows how to re-label an instrument list from "Sample Instrument List Name" to "Options" by referring to its ListID '0x05586cf82ab59cb1'.

Request

```
PUT https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('0x05586cf82ab59cb1')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async

{
  "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.SubjectLists.InstrumentList",
  "ListID": "0x05586cf82ab59cb1",
  "Name": "Options"
}
```

Response

```
HTTP/1.1 204 NoContent
```

The HTTP response will only acknowledge the PUT request. The change can be confirmed by simply:

- Re-viewing the individual InstrumentList by List ID.
- Request to view all InstrumentLists.

Rename Confirmation

Retrieve the instrument list by the new name 'Options'.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentListGetByName(ListName='Options')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#InstrumentLists/$entity",
  "ListID": "0x05586cf82ab59cb1",
  "Name": "Options",
  "Count": 0,
  "Created": "2016-07-22T18:12:46.508Z",
  "Modified": "2016-09-30T08:18:03.538Z"
```

Delete an Instrument List

An instrument list may be removed when no longer needed. Removing the list also purges the contents within. These purged instruments will not be available for use unless they are added to another instrument list. This example demonstrates a deletion upon the Instrument List with ListId '0x05586cec01e59cb1'.

Request

```
DELETE https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('0x05586cec01e59cb1')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 204 NoContent
```

The response will only provide an HTTP confirmation to acknowledge the DELETE request. To confirm the change, you may either request to:

- Re-view the individual InstrumentList by List ID
- Request to view all InstrumentLists. The deleted list will no longer appear.

Delete Confirmation

Retrieve the instrument list by ListId '0x05586cec01e59cb1'.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('0x05586cec01e59cb1')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 404 Not Found
{
  "error": {
    "message": "InstrumentList of id '0x05586cec01e59cb1' not found."
  }
}
```

View Instrument List Contents

Instrument lists need to be maintained for efficient use. Here are a set of functions to maintain the items within these lists.

This example demonstrates how to view the items of an instrument list per the ListId [0x056079ae842c24e5](#).

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists
('0x056079d4f6dc24e5')/ThomsonReuters.Dss.Api.Extractions.InstrumentListGetAllInstruments
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#InstrumentListItems",
  "value": [
    {
      "ListId": "0x056079d4f6dc24e5",
      "Identifier": "AAPL.OQ",
      "IdentifierType": "Ric",
      "Source": "NSM",
      "UserDefinedIdentifier": "",
      "UserDefinedIdentifier2": "",
      "UserDefinedIdentifier3": "",
      "Order": 1,
      "Description": "APPLE ORD",
      "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fDE",
      "InstrumentKey": "VjF8MHgwMDAZZGQwMDEZN2U2NGQ3fDB4MDAwM2RjMDA0GQ2OTZhN3xOU018RVFRVXXFUVRZF
E9EU0h8Rxx8QUFQTC5PUXwxMzAz"
    },
    {
      "ListId": "0x056079d4f6dc24e5",
      "Identifier": "BA.N",
      "IdentifierType": "Ric",
      "Source": "NYS",
      "UserDefinedIdentifier": "",
      "UserDefinedIdentifier2": "",
      "UserDefinedIdentifier3": "",
      "Order": 2,
      "Description": "BOEING ORD",
      "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fDI",
      "InstrumentKey": "VjF8MHgwMDAZZGQwMDEZN2V1YTA5fDB4MDAwM2RjMDA0OWY1MTI3MXX0VN8RVFRVXXFUVRZF
E9EU0h8Rxx8QkEuTnwwMDC3"
    },
    {
      "ListId": "0x056079d4f6dc24e5",
      "Identifier": "CSCO.OQ",
      "IdentifierType": "Ric",
      "Source": "NSM",
      "UserDefinedIdentifier": "",
      "UserDefinedIdentifier2": "",
      "UserDefinedIdentifier3": "",
      "Order": 3,
      "Description": "CISCO SYSTEMS ORD",
      "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fDM",
      "InstrumentKey": "VjF8MHgwMDAZZGQwMDEZNWZ1MjIwfDB4MDAwM2RjMDA0GQ5NWM2MnxOU018RVFRVXXFUVRZF
E9EU0h8Rxx8Q1NDTy5PUXwxMzAz"
    },
    ...
    {
      "ListId": "0x056079d4f6dc24e5",
      "Identifier": "V.N",
      "IdentifierType": "Ric",
      "Source": "NYS",
      "UserDefinedIdentifier": ""
    }
  ]
}
```

```

    "UserDefinedIdentifier2": "",  

    "UserDefinedIdentifier3": "",  

    "Order": 5,  

    "Description": "VISA CL A ORD",  

    "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fDU",  

    "InstrumentKey": "VjF8MHgwMDAzzjgwMD11YThiYzcxfDB4MDAwM2Y4MDA5ZWE4YmQ3MHx0wVN8RVFRVXXFUVRZF  

E9EU0h8Rxx8V150fDAwNzc"  

},  

{  

    "ListId": "0x056079d4f6dc24e5",  

    "Identifier": "NKE.N",  

    "IdentifierType": "Ric",  

    "Source": "NYS",  

    "UserDefinedIdentifier": "",  

    "UserDefinedIdentifier2": "",  

    "UserDefinedIdentifier3": "",  

    "Order": 6,  

    "Description": "NIKE CL B ORD",  

    "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fDY",  

    "InstrumentKey": "VjF8MHgwMDAzzGQwMDE0zmi0YtdifDB4MDAwM2RjMDA0YTA4ZmE2N3x0wVN8RVFRVXXFUVRZF  

E9EU0h8Rxx8TktFLk58MDA3Nw"  

},  

{  

    "ListId": "0x056079d4f6dc24e5",  

    "Identifier": "INTC.OQ",  

    "IdentifierType": "Ric",  

    "Source": "NSM",  

    "UserDefinedIdentifier": "",  

    "UserDefinedIdentifier2": "",  

    "UserDefinedIdentifier3": "",  

    "Order": 7,  

    "Description": "INTEL ORD",  

    "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fDc",  

    "InstrumentKey": "VjF8MHgwMDAzzGQwMDEzNz1nti3fDB4MDAwM2RjMDA0GrjN2i0Mhx0u018RVFRVXXFUVRZF  

E9EU0h8Rxx8SU5UQy5PUxwzMaz"  

},  

{  

    "ListId": "0x056079d4f6dc24e5",  

    "Identifier": "DD.N",  

    "IdentifierType": "Ric",  

    "Source": "NYS",  

    "UserDefinedIdentifier": "",  

    "UserDefinedIdentifier2": "",  

    "UserDefinedIdentifier3": "",  

    "Order": 8,  

    "Description": "E I DU PONT DE NEMOURS ORD",  

    "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fDg",  

    "InstrumentKey": "VjF8MHgwMDAzzGQwMDEzNz1jNtCxfDB4MDAwM2RjMDA00wzhjY5Yxx0wVN8RVFRVXXFUVRZF  

E9EU0h8Rxx8REQuTnwwMDc3"  

},  

{  

    "ListId": "0x056079d4f6dc24e5",  

    "Identifier": "DIS.N",  

    "IdentifierType": "Ric",  

    "Source": "NYS",  

    "UserDefinedIdentifier": "",  

    "UserDefinedIdentifier2": "",  

    "UserDefinedIdentifier3": "",  

    "Order": 9,  

    "Description": "WALT DISNEY ORD",  

    "InstrumentListItemKey": "VjF8MHgwNTYwNz1kNGY2ZGMyNGU1fdk",  

    "InstrumentKey": "VjF8MHgwMDAzzGQwMDEzNz1jNdcwfDB4MDAwM2RjMDA00wz1ndayzhx0wVN8RVFRVXXFUVRZF  

E9EU0h8Rxx8RE1TLk58MDA3Nw"  

}
]
}

```

InstrumentListItemKey is the unique instrument identifier within that instrument list.

InstrumentKey is the unique identifier for the instrument across the platform.

Add an Instrument

Single and multiple Instruments may be added to an InstrumentList by providing the Identifier code and IdentifierType (e.g. RIC, ISIN, CUSIP, SEDOL). This example shows how to add the RIC "[IBM.N](#)" to the instrument list per ListId [0x055cee55cfffe2e3f](#).

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentLists('0x055cee55cfffe2e3f')/ThomsonReuters.Dss.Api.Extractions.InstrumentListAppendIdentifiers
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async

{
  "Identifiers": [
    {
      "Identifier": "IBM.N",
      "IdentifierType": "Ric"
    }
  ],
  "KeepDuplicates": false
}
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ThomsonReuters.Dss.Api.Extractions.SubjectLists.InstrumentsAppendIdentifiersResult",
  "ValidationResult": {
    "ValidInstrumentCount": 1,
    "OpenAccessSegments": [
    ],
    "StandardSegments": [
      {
        "Code": "E",
        "Description": "Equity",
        "Count": 1
      }
    ],
    "ValidationDuplicates": [
    ],
    "Messages": [
    ]
  },
  "AppendResult": {
    "AppendedInstrumentCount": 1,
    "AppendDuplicates": [
    ]
  }
}
```

Note: Behind the scenes, each instrument amendment request validates each instrument and check for duplicates within the same request. This validation ensures that the RICs applied actually exist on the platform for use.

Confirm Addition

This appended instrument can be confirmed by viewing the entire instrument List

Remove an Instrument

When an instrument of a list is no longer needed, it may be removed individually by referring to the `InstrumentListItemKey` in a deletion request. The `InstrumentListItemKey` value is an instrument's unique identifier across all instrument lists under a single user id. The example shows the removal of one by referring to the `InstrumentListItemKey` `'VjF8MHgwNTYwZDM0MDE1YWEyZWFi fDE'`.

Request

```
DELETE https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/InstrumentListItems('VjF8MHgwNTYwZDM0MDE1YWEyZWFi fDE')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 204 NoContent
```

Confirm Removal

The instrument removal may be confirmed either by:

- Viewing the `InstrumentList` to see that the purged instrument is no longer listed.
- Retrieving the `InstrumentList` inventory to show the `InstrumentList` hosting the instrument will have a `Count` decrease by 1.

Report Templates

Templates are search profiles for content, each containing a unique set of ContentFields to capture information for a specific asset type. The Tick History Report templates are fixed and cannot be modified. They can be applied for reporting as- or be derived to create custom report templates to focus on specific reporting needs.

Note: Report templates and content fields have a unique relationship. Content fields co-mingled from various report templates will not be processed. When data points from separate reports are needed, it is recommended that reports be run independently.

Category	Report Template	API Name	API Code
Tick History	Time and Sales	TickHistoryTimeAndSalesReportTemplate	THT
Tick History	Intraday Summaries	TickHistoryIntradaySummariesReportTemplate	THI
Tick History	Market Depth	TickHistoryMarketDepthReportTemplate	THM
Tick History	Raw	TickHistoryRawReportTemplate	THR
Corporate Actions	Standard Events	CorporateActionsStandardReportTemplate	COR-STND
Reference Data	Terms and Conditions	TermsAndConditionsReportTemplate	TNC
Reference Data	Historical Reference	HistoricalReferenceReportTemplate	HRD
Pricing Data	Elektron Timeseries (End of Day)	ElektronTimeseriesReportTemplate	ETS

View All Report Templates

Retrieve a list of Report Templates available under your User Id. Tick History offers eight report templates. This example shows how to view the available report templates to use.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportTemplateTypes
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportTemplateTypes",
  "value": [
    {
      "Code": "COR-IPOS",
      "Name": "Corporate Actions IPO Events",
      "Permissions": [
        "CorporateActions"
      ]
    },
    {
      "Code": "DCE",
      "Name": "Estimates ADC",
      "Permissions": [
        "InternalUser"
      ]
    },
    {
      "Code": "THR",
      "Name": "Tick History Raw",
      "Permissions": [
        "TickHistoryRaw"
      ]
    },
    {
      "Code": "THI",
      "Name": "Tick History Intraday Summaries",
      "Permissions": [
        "TickHistoryIntradaySummaries"
      ]
    },
    {
      "Code": "THT",
      "Name": "Tick History Time and Sales",
      "Permissions": [
        "TickHistoryTimeAndSales"
      ]
    },
    ...
    {
      "Code": "THM",
      "Name": "Tick History Market Depth",
      "Permissions": [
        "TickHistoryMarketDepth"
      ]
    }
  ]
}
```

The **Code** is the unique Report Template ID or Report Template Type Code.

Look up the Content Fields for a Report Template

Content Fields are the data elements that make up a report template. The content field labels are predefined and fixed. This example shows how to retrieve a list of content fields associated to a report template by referring to a Report Template Code Id 'THI' for Tick History Intraday Summaries.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/GetValidContentFieldTypesForTemplateCode(ReportTemplateCode='THI')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi:8211/v1/$metadata#ContentFieldTypes",
  "value": [
    {
      "Code": "THI.Close_Ask",
      "Name": "Close Ask",
      "Description": "Last Ask price in the interval",
      "FormatType": "Number",
      "FieldGroup": ""
    },
    {
      "Code": "THI.Close_Bid",
      "Name": "Close Bid",
      "Description": "Last Bid price in the interval",
      "FormatType": "Number",
      "FieldGroup": ""
    },
    {
      "Code": "THI.High",
      "Name": "High",
      "Description": "Highest price over the interval",
      "FormatType": "Number",
      "FieldGroup": ""
    },
    {
      "Code": "THI.High_Ask",
      "Name": "High Ask",
      "Description": "Highest reported Ask price over the interval",
      "FormatType": "Number",
      "FieldGroup": ""
    },
    {
      "Code": "THI.High_Bid",
      "Name": "High Bid",
      "Description": "Highest reported Bid price over the interval",
      "FormatType": "Number",
      "FieldGroup": ""
    },
    {
      "Code": "THI.Last",
      "Name": "Last",
      "Description": "Last price in the interval",
      "FormatType": "Number",
      "FieldGroup": ""
    },
    {
      "Code": "THI.Low",
      "Name": "Low",
      "Description": "Lowest price over the interval",
      "FormatType": "Number",
      "FieldGroup": ""
    }
  ]
}
```

```
{
  "Code": "THI.Low_Ask",
  "Name": "Low Ask",
  "Description": "Lowest reported Ask price over the interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.Low_Bid",
  "Name": "Low Bid",
  "Description": "Lowest reported Bid price over the interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.No_Ask",
  "Name": "No. Asks",
  "Description": "Number of Asks reported during the Interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.No_Bids",
  "Name": "No. Bids",
  "Description": "Number of Bids reported during the Interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.No_Trades",
  "Name": "No. Trades",
  "Description": "Total number of trades over the interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.Open",
  "Name": "Open",
  "Description": "Opening price in the interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.Open_Ask",
  "Name": "Open Ask",
  "Description": "Ask price prevalent at the beginning of the interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.Open_Bid",
  "Name": "Open Bid",
  "Description": "Bid price prevalent at the beginning of the interval",
  "FormatType": "Number",
  "FieldGroup": " "
},
{
  "Code": "THI.Sample_Data",
  "Name": "Sample Data",
  "Description": "Sample data. For internal use only.",
  "FormatType": "Text",
  "FieldGroup": " "
},
{
  "Code": "THI.Volume",
  "Name": "Volume",
  "Description": "Last traded volume",
  "FormatType": "Number",
  "FieldGroup": " "
}
]
```

Tick History Intraday Summaries Content Fields List

ContentFieldName	ContentFieldCode	Format Type	Description
Close Ask	THI.Close Ask	Number	Last ask Price in the interval
Close Bid	THI.Close Bid	Number	Last bid price in the interval
High	THI.High	Number	Highest price over the interval
High Ask	THI.High Ask	Number	Highest reported Ask price over the interval
High Bid	THI.High Bid	Number	Highest reported Bid price over the interval
Last	THI.Last	Number	Last price in the interval
Low	THI.Low	Number	Lowest price over the interval
Low Ask	THI.Low Ask	Number	Lowest reported Ask price over the interval
Low Bid	THI.Low Bid	Number	Lowest reported Bid price over the interval
No. Asks	THI.No. Asks	Number	Number of Asks reported during the interval
No. Bids	THI.No. Bids	Number	Number of Bids reported during the interval
No. Trades	THI.No. Trades	Number	Total number of trades over the interval
Open	THI.Open	Number	Opening price in the interval
Open Ask	THI.Open Ask	Number	Ask price prevalent at the beginning of the interval
Open Bid	THI.Open Bid	Number	Bid price prevalent at the beginning of the interval
Sample Data	THI.Sample Data	Number	Sample data. For internal use only.
Volume	THI.Volume	Number	Last traded volume

Create a Custom Report

The Tick History report templates can be used as-is or derived to deliver only the desired information. A derived report template means selecting only the fields of interest from a pre-defined Tick History report template and saving it under a new friendly name for future use. This example shows a 4 field report template derived from the Tick History Time and Sales report template.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/TickHistoryTimeAndSalesReportTemplates
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async

{
  "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.TickHistoryTimeAndSalesReportTemplate",
  "ShowColumnHeaders": false,
  "Name": "example-cancel",
  "Headers": [
  ],
  "Trailers": [
  ],
  "ContentFields": [
    {
      "FieldName": "Quote - Ask Price",
      "Format": null
    },
    {
      "FieldName": "Quote - Ask Size",
      "Format": null
    },
    {
      "FieldName": "Quote - Ask Yield",
      "Format": null
    },
    {
      "FieldName": "Quote - Bid Price",
      "Format": null
    }
  ],
  "Condition": {
    "MessageTimeStampIn": "GmtUtc",
    "ApplyCorrectionsAndCancellations": false,
    "ReportDateRangeType": "Range",
    "QueryStartDate": "2015-12-01T00:00:00.000-06:00",
    "QueryEndDate": "2015-12-04T23:59:59.000-06:00"
  }
}
```

Response

```

HTTP/1.1 201 Created
X-Validation-Messages: [{"Id": "TH_ShowColumnHeaders_DoesNotApply", "ItemType": null, "ItemId": null, "PropertyName": null, "Severity": 2, "Message": "ShowColumnHeaders does not apply to this template type - property ignored", "DiagnosticMessage": null}, {"Id": "TH_CompressionType_DoesNotApply", "ItemType": null, "ItemId": null, "PropertyName": null, "Severity": 2, "Message": "CompressionType does not apply to this template type - property ignored", "DiagnosticMessage": null}]
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/TickHistoryTimeAndSalesReportTemplates('')
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#TickHistoryTimeAndSalesReportTemplates/$entity",
  "ReportTemplateId": "0x05586fac0d559cb1",
  "ShowColumnHeaders": true,
  "CompressionType": "Gzip",
  "CreateDate": "2016-07-22T19:00:00.469Z",
  "LastChangedDate": "2016-07-22T19:00:00.469Z",
  "Name": "example-cancel",
  "OutputFormat": "CommaSeparatedValues",
  "ReportFieldCount": 4,
  "Delimiter": "None",
  "DeliveryType": "None",
  "TemplateTypeCode": "THT",
  "Headers": [
  ],
  "Trailers": [
  ],
  "ContentFields": [
    {
      "FieldName": "Quote - Ask Price",
      "Justification": "Center",
      "WidthStyle": "Variablewidth",
      "Format": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
        "DecimalPlaces": 9,
        "DecimalSeparator": "Period",
        "IntegerPlaces": 18,
        "UseLeadingZero": false,
        "NegativesignPosition": "Before",
        "ThousandsSeparator": "Comma",
        "UseThousandsSeparator": true,
        "UseTrailingZero": false
      }
    },
    {
      "FieldName": "Quote - Ask Size",
      "Justification": "Center",
      "WidthStyle": "Variablewidth",
      "Format": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
        "DecimalPlaces": 9,
        "DecimalSeparator": "Period",
        "IntegerPlaces": 18,
        "UseLeadingZero": false,
        "NegativesignPosition": "Before",
        "ThousandsSeparator": "Comma",
        "UseThousandsSeparator": true,
        "UseTrailingZero": false
      }
    },
    {
      "FieldName": "Quote - Ask Yield",
      "Justification": "Center",
      "WidthStyle": "Variablewidth",
      "Format": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
        "DecimalPlaces": 9,
        "DecimalSeparator": "Period",
        "IntegerPlaces": 18,
        "UseLeadingZero": false,
        "NegativesignPosition": "Before",
        "ThousandsSeparator": "Comma",
        "UseThousandsSeparator": true,
        "UseTrailingZero": false
      }
    }
  ]
}

```

```
        "UseLeadingZero": false,
        "NegativeSignPosition": "Before",
        "ThousandsSeparator": "Comma",
        "UseThousandsSeparator": true,
        "UseTrailingZero": false
    },
    {
        "FieldName": "Quote - Bid Price",
        "Justification": "Center",
        "WidthStyle": "Variablewidth",
        "Format": {
            "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ReportTemplates.ContentFieldNumberFormat",
            "DecimalPlaces": 9,
            "DecimalSeparator": "Period",
            "IntegerPlaces": 18,
            "UseLeadingZero": false,
            "NegativesignPosition": "Before",
            "ThousandsSeparator": "Comma",
            "UseThousandsSeparator": true,
            "UseTrailingZero": false
        }
    }
],
"Condition": {
    "SortBy": "SingleByRic",
    "MessageTimeStampIn": "GmtUtc",
    "ApplyCorrectionsAndCancellations": false,
    "ReportDateRangeType": "Range",
    "QueryStartDate": "2015-12-01T00:00:00.000Z",
    "QueryEndDate": "2015-12-04T23:59:59.000Z",
    "Preview": "None",
    "ExtractBy": "Ric"
}
}
```

Schedules

Scheduling determines when a report request will be processed (data extracted from the data sources). On-demand reports are acted upon immediately while stored & scheduled reports may run by calendar day, week, and day of the month or at an hour of a day in a reoccurring manner.

Create a Schedule

To create a schedule, `InstrumentList` and `ReportTemplate` must be pre-defined for this type of report extraction to process.

This example uses the following Tick History objects:

Object	Value	ID Type	Value	Contents
InstrumentList	"example-eod"	ListId	0x05586d507c959cb1	1 Ric
ReportTemplate	"example-eod"	ReportTemplateId	0x05586d5175459cb1	4 ContentFields

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/schedules
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
{
  "Name": "example-eod",
  "TimeZone": "Central Standard Time",
  "Recurrence": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.SingleRecurrence",
    "ExtractionDateTime": "2016-07-23T00:00:00.000Z",
    "IsImmediate": false
  },
  "Trigger": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.TimeTrigger",
    "LimitReportToTodaysData": false,
    "At": [
      {
        "Hour": 16,
        "Minute": 0
      }
    ]
  },
  "ListId": "0x05586d507c959cb1",
  "ReportTemplateId": "0x05586d5175459cb1"
}
```

Response

```
HTTP/1.1 201 Created
Location: https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules(' ')
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Schedules/$entity",
  "ScheduleId": "0x05586d51b1759cb1",
  "Name": "example-eod",
  "TimeZone": "Central Standard Time",
  "Recurrence": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.SingleRecurrence",
    "ExtractionDateTime": "2016-07-23T00:00:00Z",
    "IsImmediate": false
  },
  "Trigger": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.TimeTrigger",
    "LimitReportToTodaysData": false,
    "At": [
      {
        "Hour": 16,
        "Minute": 0
      }
    ],
    "UserId": 9005463,
    "CreateDate": "2016-07-22T18:18:53.208Z",
    "LastChangeDate": "2016-07-22T18:18:53.208Z",
    "ListId": "0x05586d507c959cb1",
    "ReportTemplateId": "0x05586d5175459cb1"
}
```

This function generates a **ScheduleId** of **0x05586d51b1759cb1** which we will poll for job status..

View All Schedules

An inventory of previously requested schedules is available for review. This example shows how to retrieve a list of reports that were scheduled under your User Id.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Schedules",
  "value": [
    {
      "ScheduleId": "0x056ebcc052dc4b7f",
      "Name": "bfa sept 22 one hour mp",
      "OutputfileName": "bfa sept 22 one hour mp",
      "TimeZone": "Eastern Standard Time",
      "Recurrence": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.SingleRecurrence",
        "ExtractionDateTime": "2016-09-30T00:00:00Z",
        "IsImmediate": true
      },
      "Trigger": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.ImmediateTrigger",
        "LimitReportToTodaysData": false
      },
      "UserId": 9007660,
      "CreateDate": "2016-09-29T20:53:25.103Z",
      "LastChangeDate": "2016-09-29T20:53:25.103Z",
      "ListId": "0x056ebc1cdfac3156",
      "ReportTemplateId": "0x056ebcb0330c24e5"
    }
  ]
}
```

This example shows one schedule defined. If multiple were available, all would be listed in the same request.

View a Schedule by ID

The parameters for a scheduled report request are available for review. The example shows how to retrieve the details associated with ScheduleId **0x05630aa394ab5861**.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules('0x05630aa394ab5861')
)
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Schedules",
  "value": [
    {
      "ScheduleId": "0x05630aa394ab5861",
      "Name": "example-eod",
      "OutputFileName": "",
      "TimeZone": "Central Standard Time",
      "Recurrence": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.WeeklyRecurrence",
        "Days": [
          "Monday",
          "Friday"
        ]
      },
      "Trigger": {
        "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.TimeTrigger",
        "LimitReportToTodaysData": false,
        "At": [
          {
            "Hour": 16,
            "Minute": 0
          }
        ]
      },
      "UserId": 9007660,
      "CreatedDate": "2016-08-24T12:47:33.260Z",
      "LastChangeDate": "2016-08-24T12:47:33.260Z",
      "ListId": "0x05630aa0aecb5871",
      "ReportTemplateId": "0x05630aa2860b5831"
    }
  ]
}
```

View a Schedule by Name

Schedules can be retrieved by their friendly schedule name.

This example shows how to retrieve the details related to the schedule named 'example-eod'.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ScheduleGetByName('example-eod')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Schedules/$entity",
  "ScheduleId": "0x05586d48dec59cb1",
  "Name": "example-eod",
  "OutputFileName": "",
  "TimeZone": "Central Standard Time",
  "Recurrence": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.WeeklyRecurrence",
    "Days": [
      "Monday",
      "Friday"
    ]
  },
  "Trigger": {
    "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.Schedules.TimeTrigger",
    "LimitReportToTodaysData": false,
    "At": [
      {
        "Hour": 16,
        "Minute": 0
      }
    ]
  },
  "UserId": 9005463,
  "CreateDate": "2016-07-22T18:18:18.476Z",
  "LastChangeDate": "2016-07-22T18:18:18.476Z",
  "ListId": "0x05586d477d359cb1",
  "ReportTemplateId": "0x05586d4884d59cb1"
}
```

Cancel a Scheduled Extraction

A scheduled extraction may be cancelled while processing if it is no longer needed. This example shows a cancellation to ScheduleID `0x05586d5b0ad59cb1`.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules('0x05586d5db6459cb1')
')/ThomsonReuters.Dss.Api.Extractions.ScheduleRequestCancellationOfInProcessExtractions
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Confirm Cancellation-

To confirm success, the extraction status on the same ScheduleId may be queried.

Request

```
POST https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractionGetBySchedule
Id(ScheduleId='0x05586d5db6459cb1')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportExtrac
tions",
  "value": [
    {
      "ReportExtractionId": "40000135456",
      "ScheduleId": "0x05586d5db6459cb1",
      "Status": "Pending",
      "DetailedStatus": "Queued",
      "ExtractionDateUtc": "2016-07-22T18:19:43.586Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false
    }
  ]
}
```

The status after cancellation will show that it is `Pending`

Delete a Schedule

A scheduled report may be purged when no longer needed. This example shows the delete request of ScheduleID `0x05586d5b0ad59cb1`.

Request

```
DELETE https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules('0x05586d5b0ad59c
b1')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
```

Prefer: respond-async

Response

HTTP/1.1 204 No Content

Report Retrieval

Report extractions are the process by which a requested report is retrieved and compiled to the metadata and content. Content may include report files, partial report files, maintenance and extraction notes.

Process Status

Extractions that are triggered by date-time or other criteria will remain in **Pending** state. **Processing** extractions are those whose data is actively being extracted from the data sources. **Completed** reflect requests that have files available.

Content Access

API Access to these data entities is limited to the user that requested it. Report extractions and extracted files will reside on the platform for 60 days.

View all Report Submissions

View all available report extractions under your UserId.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractions
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportExtractions",
  "value": [
    {
      "ReportExtractionId": "6043221",
      "ScheduleId": "0x05586a946ef59cb1",
      "Status": "Pending",
      "DetailedStatus": "Queued",
      "ExtractionDateUtc": "2020-07-22T22:31:00.000Z",
      "ScheduleName": "_ond_0x05586a9353b59cb1",
      "IsTriggered": false
    },
    {
      "ReportExtractionId": "6043219",
      "ScheduleId": "0x05586a93ea259cb1",
      "Status": "Pending",
      "DetailedStatus": "Queued",
      "ExtractionDateUtc": "2020-07-22T22:30:00.000Z",
      "ScheduleName": "_ond_0x05586a92ba759cb1",
      "IsTriggered": false
    },
    {
      "ReportExtractionId": "6042955",
      "ScheduleId": "0x055868203a759cb1",
      "Status": "Pending",
      "DetailedStatus": "Queued",
      "ExtractionDateUtc": "2020-07-22T21:48:00.000Z",
      "ScheduleName": "_ond_0x0558681f05c59cb1",
      "IsTriggered": false
    }
  ]
}
```

The response will list all previously requested reports and the associate ReportExtractionId, ScheduleId, Status, date of extraction which will be of most interest. Over time, the list of extractions may grow to be quite lengthy having the extractions accumulate over time.

Either the **ReportExtractionId** or **ScheduleId** may be used to check on processing status.

View Report Extraction Status

Query the status of a report extraction by `ReportExtractionId`. This example refers to `ReportExtractionId 234826895`.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractions('234826895')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
    "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportExtractions/$entity",
    "ReportExtractionId": "234826895",
    "ScheduleId": "0x0576b8d1991b2f86",
    "Status": "Completed",
    "DetailedStatus": "Done",
    "ExtractionDateUtc": "2016-10-28T22:45:43.790Z",
    "ScheduleName": "GetById",
    "IsTriggered": false,
    "ExtractionStartUtc": "2016-10-28T22:45:53.000Z",
    "ExtractionEndUtc": "2016-10-28T22:45:53.000Z"
}
```

View the Status of the Latest Submission

Query the status of the last scheduled report by the Schedule ID.
This example shows a schedule look up by the Schedule ID '0x05586d6ac2259cb1'.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/Schedules('0x05586d6ac2259cb1',  
)/LastExtraction  
Authorization: Token <your_auth_token_goes_here>  
Content-Type: application/json  
Accept-Charset: UTF-8  
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK  
{  
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportExtrac-  
tions/$entity",  
  "ReportExtractionId": "6043717",  
  "ScheduleId": "0x05586d6ac2259cb1",  
  "Status": "Completed",  
  "DetailedStatus": "Done",  
  "ExtractionDateUtc": "2016-07-22T18:20:39.510Z",  
  "ScheduleName": "example-eod",  
  "IsTriggered": false,  
  "ExtractionStartUtc": "2016-07-22T18:20:40.000Z",  
  "ExtractionEndUtc": "2016-07-22T18:20:40.000Z"  
}
```

Continue polling until the status return as `Completed` with `ReportExtractionId` of `6043717`.

View Scheduled Submissions by Date

This method of viewing scheduled extractions applies a date criteria which returns only the most recent activities or to look up past activities for a specific time period. The Start/End dates should capture the period of time the Extraction was processed.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractionGetCompletedByDateRange(StartDate=2016-07-22T00:00:00.000Z,EndDate=2016-07-22T19:02:22.836Z)
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportExtractions",
  "value": [
    {
      "ReportExtractionId": "6043769",
      "ScheduleId": "0x05586f83db459cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:57:17.180Z",
      "ScheduleName": "GetCompletedByDateRange",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:57:19.000Z",
      "ExtractionEndUtc": "2016-07-22T18:57:20.000Z"
    },
    {
      "ReportExtractionId": "6043728",
      "ScheduleId": "0x05586d75fc759cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:21:24.996Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:21:25.000Z",
      "ExtractionEndUtc": "2016-07-22T18:21:26.000Z"
    },
    {
      "ReportExtractionId": "6043717",
      "ScheduleId": "0x05586d6ac2259cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:20:39.510Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:20:40.000Z",
      "ExtractionEndUtc": "2016-07-22T18:20:40.000Z"
    },
    {
      "ReportExtractionId": "6043711",
      "ScheduleId": "0x05586d5f45d59cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:19:52.203Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:19:55.000Z",
      "ExtractionEndUtc": "2016-07-22T18:20:03.000Z"
    },
    {
      "ReportExtractionId": "40000135456",
      "ScheduleId": "0x05586d5db6459cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:19:55.000Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:19:55.000Z",
      "ExtractionEndUtc": "2016-07-22T18:20:03.000Z"
    }
  ]
}
```

```

        "Status": "Completed",
        "DetailedStatus": "Done",
        "ExtractionDateUtc": "2016-07-22T18:19:43.586Z",
        "ScheduleName": "example-eod",
        "IsTriggered": false
    },
    {
        "ReportExtractionId": "6043695",
        "ScheduleId": "0x05586d56eb359cb1",
        "Status": "Completed",
        "DetailedStatus": "Done",
        "ExtractionDateUtc": "2016-07-22T18:19:16.126Z",
        "ScheduleName": "example-eod",
        "IsTriggered": false,
        "ExtractionStartUtc": "2016-07-22T18:19:17.000Z",
        "ExtractionEndUtc": "2016-07-22T18:19:000Z"
    },
    {
        "ReportExtractionId": "6043046",
        "ScheduleId": "0x0558691eccb59cb1",
        "Status": "Completed",
        "DetailedStatus": "Done",
        "ExtractionDateUtc": "2016-07-22T17:05:31.870Z",
        "ScheduleName": "PartialFiles",
        "IsTriggered": false,
        "ExtractionStartUtc": "2016-07-22T17:05:33.000Z",
        "ExtractionEndUtc": "2016-07-22T17:05:34.000Z"
    },
    {
        "ReportExtractionId": "6043036",
        "ScheduleId": "0x055868ecc9c59cb1",
        "Status": "Completed",
        "DetailedStatus": "Done",
        "ExtractionDateUtc": "2016-07-22T17:02:08.840Z",
        "ScheduleName": "example-eod",
        "IsTriggered": false,
        "ExtractionStartUtc": "2016-07-22T17:02:09.000Z",
        "ExtractionEndUtc": "2016-07-22T17:02:09.000Z"
    },
    {
        "ReportExtractionId": "6043025",
        "ScheduleId": "0x055868e516259cb1",
        "Status": "Completed",
        "DetailedStatus": "Done",
        "ExtractionDateUtc": "2016-07-22T17:01:37.340Z",
        "ScheduleName": "example-eod",
        "IsTriggered": false,
        "ExtractionStartUtc": "2016-07-22T17:01:38.000Z",
        "ExtractionEndUtc": "2016-07-22T17:01:39.000Z"
    },
    {
        "ReportExtractionId": "6043019",
        "ScheduleId": "0x055868de04959cb1",
        "Status": "Completed",
        "DetailedStatus": "Done",
        "ExtractionDateUtc": "2016-07-22T17:01:08.256Z",
        "ScheduleName": "example-eod",
        "IsTriggered": false,
        "ExtractionStartUtc": "2016-07-22T17:01:09.000Z",
        "ExtractionEndUtc": "2016-07-22T17:01:09.000Z"
    },
    ...
]
}

```

View Available Files

Retrieve a list of report filenames extracted.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractedFiles
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ExtractedFiles",
  "value": [
    {
      "Extracted fileId": "VjF8fdI2MTU2NTE5Mg",
      "Report Extraction Id": "234826895",
      "Schedule Id": "0x0576b8d1991b2f86",
      "File Type": "Full",
      "Extracted File Name": "_OnD_0x0576b8d02f5b2f86.csv",
      "Last Write Time Utc": "2016-10-24T16:16:07.902Z",
      "Contents Exists": true,
      "Size": 657,
      "Received Date Utc": "2016-10-24T16:16:07.902Z"
    },
    {
      "Extracted fileId": "VjF8fdI2MTU2NTE5MQ",
      "Report Extraction Id": "234826895",
      "Schedule Id": "0x0576b8d1991b2f86",
      "File Type": "Note",
      "Extracted File Name": "_OnD_0x0576b8d02f5b2f86.csv.notes.txt",
      "Last Write Time Utc": "2016-10-24T16:16:07.905Z",
      "Contents Exists": true,
      "Size": 935,
      "Received Date Utc": "2016-10-24T16:16:07.905Z"
    },
    {
      "Extracted fileId": "VjF8fdI2MTU2NDc0Nw",
      "Report Extraction Id": "234826671",
      "Schedule Id": "0x0576b8bfa8db2f86",
      "File Type": "Full",
      "Extracted File Name": "_OnD_0x0576b8bf10bb2f86.csv",
      "Last Write Time Utc": "2016-10-24T16:14:53.946Z",
      "Contents Exists": true,
      "Size": 657,
      "Received Date Utc": "2016-10-24T16:14:53.946Z"
    },
    {
      "Extracted fileId": "VjF8fdI2MTU2NDc0Ng",
      "Report Extraction Id": "234826671",
      "Schedule Id": "0x0576b8bfa8db2f86",
      "File Type": "Note",
      "Extracted File Name": "_OnD_0x0576b8bf10bb2f86.csv.notes.txt",
      "Last Write Time Utc": "2016-10-24T16:14:53.949Z",
      "Contents Exists": true,
      "Size": 935,
      "Received Date Utc": "2016-10-24T16:14:53.949Z"
    },
    ...
  ]
}
```

View Available Files by Date Range

Retrieve a list of all extracted files between a specific date period. The only parameter that needs to be defined in the URL is the `StartDate` and `EndDate` in ISO-8601 format.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractionGetCompletedByDateRange(StartDate=2016-07-22T00:00:00.000Z,EndDate=2016-07-22T19:02:22.836Z)
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ReportExtractions",
  "value": [
    {
      "ReportExtractionId": "6043769",
      "ScheduleId": "0x05586f83db459cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:57:17.180Z",
      "ScheduleName": "GetCompletedByDateRange",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:57:19.000Z",
      "ExtractionEndUtc": "2016-07-22T18:57:20.000Z"
    },
    {
      "ReportExtractionId": "6043728",
      "ScheduleId": "0x05586d75fc759cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:21:24.996Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:21:25.000Z",
      "ExtractionEndUtc": "2016-07-22T18:21:26.000Z"
    },
    {
      "ReportExtractionId": "6043717",
      "ScheduleId": "0x05586d6ac2259cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:20:39.510Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:20:40.000Z",
      "ExtractionEndUtc": "2016-07-22T18:20:40.000Z"
    },
    {
      "ReportExtractionId": "6043711",
      "ScheduleId": "0x05586d5f45d59cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:19:52.203Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-07-22T18:19:55.000Z",
      "ExtractionEndUtc": "2016-07-22T18:20:03.000Z"
    },
    {
      "ReportExtractionId": "40000135456",
      "ScheduleId": "0x05586d5db6459cb1",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-07-22T18:19:43.586Z",
      "ScheduleName": "example-eod",
      "IsTriggered": false
    }
  ]
}
```

```
{
  "ReportExtractionId": "6043695",
  "ScheduleId": "0x05586d56eb359cb1",
  "Status": "Completed",
  "DetailedStatus": "Done",
  "ExtractionDateUtc": "2016-07-22T18:19:16.126Z",
  "ScheduleName": "example-eod",
  "IsTriggered": false,
  "ExtractionStartUtc": "2016-07-22T18:19:17.000Z",
  "ExtractionEndUtc": "2016-07-22T18:19:19.000Z"
},
{
  "ReportExtractionId": "6043436",
  "ScheduleId": "0x05586be57ef59cb1",
  "Status": "Completed",
  "DetailedStatus": "Done",
  "ExtractionDateUtc": "2016-07-22T17:54:03.993Z",
  "ScheduleName": "_OND_0x05586be44ac59cb1",
  "IsTriggered": false,
  "ExtractionStartUtc": "2016-07-22T17:54:08.000Z",
  "ExtractionEndUtc": "2016-07-22T17:54:09.000Z"
},
{
  "ReportExtractionId": "6043378",
  "ScheduleId": "0x05586b3f02e59cb1",
  "Status": "Completed",
  "DetailedStatus": "Done",
  "ExtractionDateUtc": "2016-07-22T17:42:42.056Z",
  "ScheduleName": "_OND_0x05586b3df4759cb1",
  "IsTriggered": false,
  "ExtractionStartUtc": "2016-07-22T17:42:51.000Z",
  "ExtractionEndUtc": "2016-07-22T17:42:53.000Z"
},
{
  "ReportExtractionId": "6043224",
  "ScheduleId": "0x05586a9544959cb1",
  "Status": "Completed",
  "DetailedStatus": "Done",
  "ExtractionDateUtc": "2016-07-22T17:31:06.813Z",
  "ScheduleName": "_OND_0x05586a93f1f59cb1",
  "IsTriggered": false,
  "ExtractionStartUtc": "2016-07-22T17:31:08.000Z",
  "ExtractionEndUtc": "2016-07-22T17:31:08.000Z"
},
{
  "ReportExtractionId": "6038669",
  "ScheduleId": "0x05582f0868b59cb1",
  "Status": "Completed",
  "DetailedStatus": "Done",
  "ExtractionDateUtc": "2016-07-22T00:10:26.253Z",
  "ScheduleName": "_OND_0x05582f0642b59cb1",
  "IsTriggered": false,
  "ExtractionStartUtc": "2016-07-22T00:10:27.000Z",
  "ExtractionEndUtc": "2016-07-22T00:10:28.000Z"
}
]
```

View Files Associated to a Report

List all completed related to a report extractions by ReportExtractionID.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractions('6043775')/Files
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#ExtractedFiles",
  "value": [
    {
      "ExtractedFileDialog": "vjF8fdI4NTQ4ODY",
      "ReportExtractionId": "6043775",
      "ScheduleId": "0x05586f969d459cb1",
      "FileType": "Full",
      "ExtractedFileName": "9005463.FetchAllFiles.20160722.135834.6043775.x02T01.csv",
      "LastWriteTimeUtc": "2016-07-22T18:58:34.605Z",
      "ContentsExists": true,
      "Size": 122,
      "ReceivedDateUtc": "2016-07-22T18:58:34.605Z"
    },
    {
      "ExtractedFileDialog": "vjF8fdI4NTQ4ODU",
      "ReportExtractionId": "6043775",
      "ScheduleId": "0x05586f969d459cb1",
      "FileType": "Note",
      "ExtractedFileName": "9005463.FetchAllFiles.20160722.135834.6043775.x02T01.csv.notes.txt",
      "LastwriteTimeUtc": "2016-07-22T18:58:34.611Z",
      "ContentsExists": true,
      "Size": 1727,
      "ReceivedDateUtc": "2016-07-22T18:58:34.611Z"
    }
  ]
}
```

The **ReportExtractionID** look up returns the **ExtractedFileDialog** which is the file reference used to download each file.

Download Report Files

This example demonstrates how to download the two files associated with the report request using the `ExtractedFileIds` `VjF8fdI4NTQ4ODY` and `VjF8fdI4NTQ4ODU`.

Request File 1

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractedFiles('VjF8fdI4NTQ4OD
Y')/$value
Authorization: Token <your_auth_token_goes_here>
Prefer:respond-async
```

Response

```
HTTP/1.1 200 OK
Accept-Ranges: bytes
IBM.N,459200101,IBM,US4592001014,2005973,ORD,USD,152.61,10/28/2016
KO.N,191216100,KO,US1912161007,2206657,ORD,USD,42.23,10/28/2016
```

Request File 2

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ExtractedFiles('VjF8fdI4NTQ4OD
Y')/$value
Authorization: Token <your_auth_token_goes_here>
Prefer:respond-async
```

Response

```
HTTP/1.1 200 OK
Accept-Ranges: bytes
Extraction Services Version 10.7.35743 (b74a502e64b0), Built Oct 17 2016 20:52:51
Holiday Rollover of Universal Close Price waived.
User has overridden estimates broker entitlements.
Processing started at 10/28/2016 21:09:09.
User ID: 9007660
Extraction ID: 235379233
Schedule: FetchAllFiles (ID = 0x057820e78aab2f96)
Input List (2 items): FetchAllFiles (ID = 057820e43a1b3026) Created: 10/28/2016 21:08:47 Last Modified: 10/28/2016 21:08:52
Schedule Time: 10/28/2016 21:09:01
Report Template (9 fields): FetchAllFiles (ID = 0x057820e6f53b3026) Created: 10/28/2016 21:08:59 Last Modified: 10/28/2016 21:08:59
Processing completed successfully at 10/28/2016 21:09:09, taking 0.436 secs.
Extraction finished at 10/29/2016 01:09:09 UTC, with servers: x03t02, QSHA02 (0.1 secs), QSHC10 (0.1 secs)
Usage Summary for User 9007660, Client 65510, Template Type EOD Pricing
Base Usage
Instrument
Count Type
Instrument
Subtype
Terms
Source
Price
Source
-----
2 Equities
----- N/A N/A
-----
2 Total instruments charged.
0 Instruments with no reported data.
=====
2 Instruments in the input list.
No TRPS complex usage to report -- 2 Instruments in the input list had no reported data.
```

Clean Up

After the files are retrieved, the objects used to generate the report can be purged if they are no longer of use. These objects consist of the Schedule, ReportTemplate and Instrument Lists.

Identify the ExtractionID associated to the last ScheduleID.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractionGetByScheduleId('0x05782193560b2f96')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datasopeapi.reuters.com/RestApi/v1/$metadata#ReportExtractions",
  "value": [
    {
      "ReportExtractionId": "235379834",
      "ScheduleId": "0x05782193560b2f96",
      "Status": "Completed",
      "DetailedStatus": "Done",
      "ExtractionDateUtc": "2016-10-29T01:20:45.270Z",
      "ScheduleName": "Cleanup",
      "IsTriggered": false,
      "ExtractionStartUtc": "2016-10-29T01:20:53.000Z",
      "ExtractionEndUtc": "2016-10-29T01:20:53.000Z"
    }
  ]
}
```

The ReportExtractionId is the link between all of the associated files.

File Look Up

Look up the files associated with the Report extraction by the ReportExtractionId.

Request

```
GET https://hosted.datasopeapi.reuters.com/RestApi/v1/Extractions/ReportExtractions('235379834')/Files
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datasopeapi.reuters.com/RestApi/v1/$metadata#ExtractedFiles",
  "value": [
    {
      "Extracted fileId": "VjF8fdI2MjM4MTI30Q",
      "ReportExtractionId": "235379834",
      "ScheduleId": "0x05782193560b2f96",
      "FileType": "Full",
    }
  ]
}
```

```
        "ExtractedFileName": "9007660.cleanup.20161028.212053.235379834.x04t02.csv",
        "LastWriteTimeUtc": "2016-10-29T01:20:53.524Z",
        "ContentsExists": true,
        "Size": 133,
        "ReceivedDateUtc": "2016-10-29T01:20:53.524Z"
    },
    {
        "ExtractedFileId": "VjF8fdI2MjM4MTI30A",
        "ReportExtractionId": "235379834",
        "ScheduleId": "0x05782193560b2f96",
        "FileType": "Note",
        "ExtractedFileName": "9007660.cleanup.20161028.212053.235379834.x04t02.csv.notes.txt",
        "LastWriteTimeUtc": "2016-10-29T01:20:53.527Z",
        "ContentsExists": true,
        "Size": 1562,
        "ReceivedDateUtc": "2016-10-29T01:20:53.527Z"
    }
]
```

Chapter 12 Venue by Day Workflow

These are the system generated Venue files that reflect market activity. This product relies on a subset of the REST API functions as outlined.

Feature	Description
Get All Subscriptions	Retrieve a list of all subscriptions on DataScope Select.
Get all Packages	Retrieve a list of all available packages (Venues and the corresponding package ID).
Get all Packages by Subscription	Retrieve a list of all available packages by subscription (Equity regions, Institutional & Professional profiles).
Get my Packages*	Retrieve a list of packages for which this user is permissioned.
Get my Package Deliveries by Package*	Retrieve a list of files associated with the packages for which the user is permissioned.
Get my Package Deliveries by Date Range*	Retrieves a list of files associated with the package within a date criteria.
Download my Package Deliveries*	Retrieve a list of files associated per entitlement for download.
Paging	Return a list of user package deliveries in 250 row portions.
Change Tracking	Retrieve a list of user package deliveries in portions and continue where left off.

*Appropriate for retrieving Venue by Day venues and files

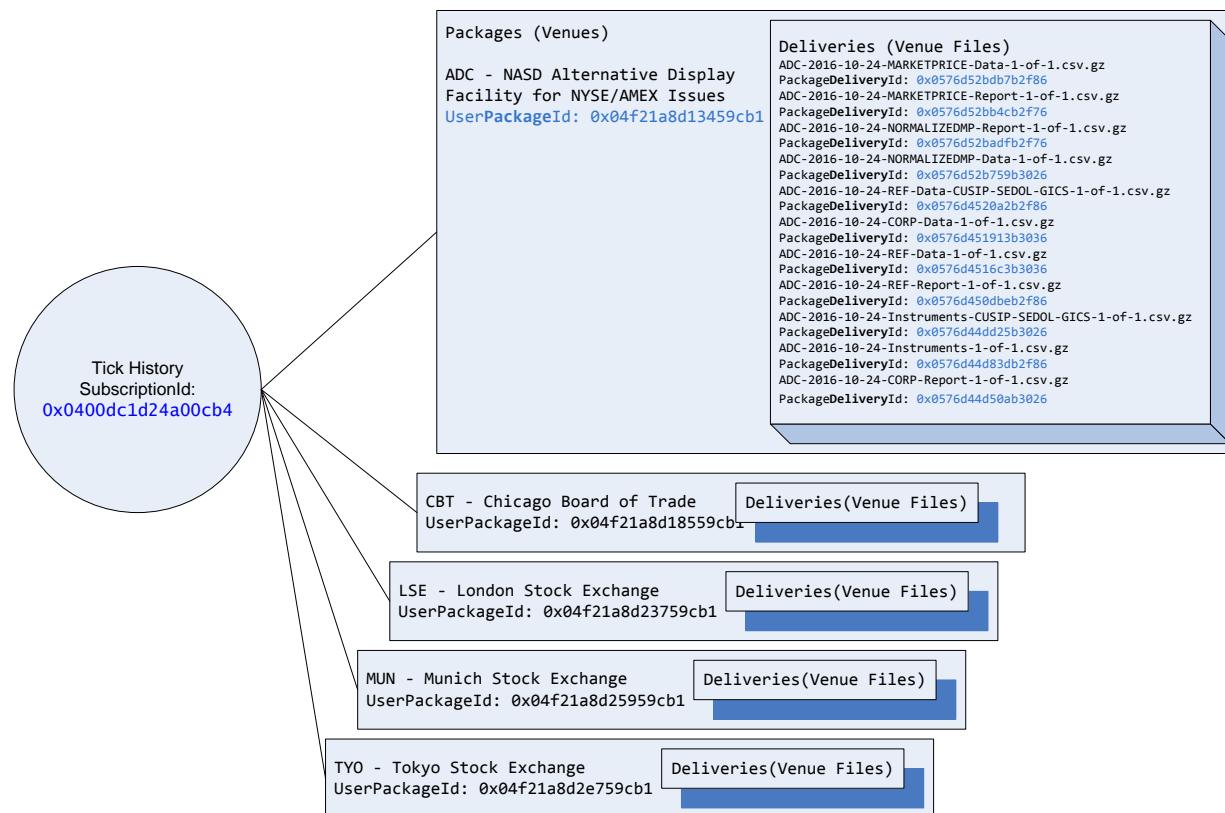
Content Access

Venue by Day content is limited by User ID. Venue files will reside on the platform for 30 days from the day of publication.

Content Hierarchy

Venue by Day content is organized by Subscription → Packages → Deliveries.

The respective references are SubscriptionId → UserPackageId → PackageDeliveryId



View the Available Venue Files

This task is requires two steps.

Step 1 - Retrieve Your List of Venues

Return a list of packages (venues) to collect their associated UserPackageIds.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/StandardExtractions/UserPackages
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#UserPackages",
  "value": [
    {
      "UserPackageId": "0x04f21a8d2d759cb1",
      "PackageId": "0x04f21a8d2d759cb1",
      "PackageName": "TFF - Tokyo Financial Futures Exchange",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "SubscriptionName": "TRTH Venue by Day"
    },
    {
      "UserPackageId": "0x04f21a8d2d859cb1",
      "PackageId": "0x04f21a8d2d859cb1",
      "PackageName": "TFX - Thailand Futures",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "SubscriptionName": "TRTH Venue by Day"
    },
    {
      "UserPackageId": "0x04f21a8d2da59cb1",
      "PackageId": "0x04f21a8d2da59cb1",
      "PackageName": "THM - NASDAQ InterMarket",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "SubscriptionName": "TRTH Venue by Day"
    },
    {
      "UserPackageId": "0x04f21a8d2db59cb1",
      "PackageId": "0x04f21a8d2db59cb1",
      "PackageName": "TIM - Taiwan Futures Exchange",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "SubscriptionName": "TRTH Venue by Day"
    },
    {
      "UserPackageId": "0x04f21a8d27c59cb1",
      "PackageId": "0x04f21a8d27c59cb1",
      "PackageName": "OBB - NASD OTC Bulletin Board Market",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "SubscriptionName": "TRTH Venue by Day"
    },
    {
      "UserPackageId": "0x04f21a8d27659cb1",
      "PackageId": "0x04f21a8d27659cb1",
      "PackageName": "NYQ - Consolidated Issue, listed by NYSE",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "SubscriptionName": "TRTH Venue by Day"
    },
    {
      "UserPackageId": "0x04f21a8d27859cb1",
      "PackageId": "0x04f21a8d27859cb1",
      "PackageName": "NYS - New York Stock Exchange",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "SubscriptionName": "TRTH Venue by Day"
    }
  ]
}
```

```

    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
{
    "UserPackageId": "0x04f21a8d27a59cb1",
    "PackageId": "0x04f21a8d27a59cb1",
    "PackageName": "NZC - New Zealand Total - Prices, Indices, News",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
{
    "UserPackageId": "0x04f21a8d28b59cb1",
    "PackageId": "0x04f21a8d28b59cb1",
    "PackageName": "PAR - Paris Stock Exchange",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
{
    "UserPackageId": "0x04f21a8d28d59cb1",
    "PackageId": "0x04f21a8d28d59cb1",
    "PackageName": "PCQ - CONSOLIDATED ISSUE LISTED BY NYSE Arca",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
{
    "UserPackageId": "0x04f21a8d28059cb1",
    "PackageId": "0x04f21a8d28059cb1",
    "PackageName": "ONE - OneChicago Exchange",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
{
    "UserPackageId": "0x04f21a8d28259cb1",
    "PackageId": "0x04f21a8d28259cb1",
    "PackageName": "OPQ - Options Price Reporting Authority BBO",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
{
    "UserPackageId": "0x04f21a8d28459cb1",
    "PackageId": "0x04f21a8d28459cb1",
    "PackageName": "OSA - OSAKA EXCHANGE INC.",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
{
    "UserPackageId": "0x04f21a8d28559cb1",
    "PackageId": "0x04f21a8d28559cb1",
    "PackageName": "OSL - Oslo Stock Exchange",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
},
...
{
    "UserPackageId": "0x04f9cf0080c59cb1",
    "PackageId": "0x04f9cf0080c59cb1",
    "PackageName": "UAX - OJSC UKRAINE EXCHANGE",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "SubscriptionName": "TRTH Venue by Day"
}
]
}

```

Step 2 - Look Up the Associated Venue Files.

Retrieve a list of files associated with a Venue using the UserPackageID `0x04f21a8d13459cb1`.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/StandardExtractions/UserPackageDeliveryGet
UserPackageDeliveriesByPackageId(PackageId='0x04f21a8d13459cb1')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://Hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#UserPackageDeliveries",
  "value": [
    {
      "PackageDeliveryId": "0x0569a825b7cc3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-NORMALIZEDMP-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 107460,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569a825ab1c3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-NORMALIZEDMP-Data-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 131717761,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569a7d3ec6c3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-MARKETPRICE-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 100174,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569a7d3ec3c24e5",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-MARKETPRICE-Data-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 549025508,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x056984538f0c3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-12-MARKETPRICE-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-13T15:37:40.846Z",
      "FileSizeBytes": 104542,
      "Frequency": "Daily",
      "ContentMd5": ""
    }
  ]
}
```

```

"PackageDeliveryId": "0x05698451460c3156",
"UserPackageId": "0x04f21a8d13459cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "ADC-2016-09-12-NORMALIZEDMP-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-13T15:37:31.486Z",
"FileSizeBytes": 109419,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x056984505c2c24e5",
"UserPackageId": "0x04f21a8d13459cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "ADC-2016-09-12-MARKETPRICE-Data-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-13T15:37:27.746Z",
"FileSizeBytes": 548847712,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0569844f7bec24e5",
"UserPackageId": "0x04f21a8d13459cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "ADC-2016-09-12-NORMALIZEDMP-Data-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-13T15:37:24.156Z",
"FileSizeBytes": 132452905,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0568fdcce8bc24e5",
"UserPackageId": "0x04f21a8d13459cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "ADC-2016-09-11-MARKETPRICE-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-12T04:00:00.000Z",
"FileSizeBytes": 92528,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0568fdccdb1c24e5",
"UserPackageId": "0x04f21a8d13459cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "ADC-2016-09-11-NORMALIZEDMP-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-12T04:00:00.000Z",
"FileSizeBytes": 15845,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0568ac621bbc24e5",
"UserPackageId": "0x04f21a8d13459cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "ADC-2016-09-10-NORMALIZEDMP-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-11T04:00:00.000Z",
"FileSizeBytes": 16517,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x05604cde4fdc3156",
"UserPackageId": "0x04f21a8d13459cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "ADC-2016-08-15-NORMALIZEDMP-Data-1-of-1.csv.gz",
"ReleaseDateTime": "2016-08-16T04:00:00.000Z",
"FileSizeBytes": 113641435,
"Frequency": "Daily",
"ContentMd5": ""
}
]
}

```

Look Up the Available Venue Files within a Date Range.

This example shows how to retrieve a list of available files published between specific points in time for download. This can be particularly useful to retrieve files that were previously missed. This task requires two steps.

Step 1 – View Data Feed Product Subscription on the system

Return a list of data feed products on the system to identify the Tick History 'SubscriptionId'.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/StandardExtractions/Subscriptions
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#Subscriptions",
  "value": [
    {
      "SubscriptionId": "0x0400dc1d24a00cb2",
      "Name": "StreetEvents",
      "Description": "Thomson Reuters StreetEvents is a one-stop corporate disclosure and brokerage event solution that provides the relevant information you need, when you need it. Thomson Reuters StreetEvents offers the largest available archive of global events and calendar information for the retail and institutional markets.",
      "RetentionDays": 0
    },
    {
      "SubscriptionId": "0x0400dc1d24a00cb3",
      "Name": "Insider",
      "Description": "Thomson Reuters Insider data feeds provide data on equity transactions by individuals and institutions classified as insiders in Asia, Canada, the UK and US markets. Insiders may include an officer, director, person with a policy-making role in a company or a beneficial owner of a company's stock, who are required by their respective governments to report stock transaction activity, direct or indirect holdings. Feeds are segmented by country - US, Canada or by region - UK, Asia (Australia, China, Hong Kong, India, Singapore and Taiwan). A US Insider Trading Model and StarMine US Insider Trading Model are also available.",
      "RetentionDays": 0
    },
    {
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "TRTH Venue by Day",
      "Description": "Venue by Day enables clients to download a day's complete trading data on a venue. It is the simplest way of downloading data because: There is no need to request data or specify particular instruments or fields of data. Clients simply select and download entire files for the venue(s) of interest. The data is always available at set times. The data is always in the same format.",
      "RetentionDays": 30
    }
  ]
}
```

Step 2 - Search for Venue Files within a Date Range Search

This example shows how to list the available Tick History Venue by Day Venue files by SubscriptionId 0x0400dc1d24a00cb4, FromDate 2016-09-12T14:03:49.300Z and ToDate 2016-09-13T14:03:49.300Z parameters defined.



Venue by Day files maintain a 30 day archive so the date range applied must be within this period of time.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/StandardExtractions/
UserPackageDelivery GetUserPackageDeliveriesByDateRange(SubscriptionId='0x0400dc1d24a00cb4',FromDate=2016-09-12T14:03:49.300Z,ToDate=2016-09-13T14:03:49.300Z)
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#UserPackageDeliveries",
  "value": [
    {
      "PackageDeliveryId": "0x0569515b2c1c24e5",
      "UserPackageId": "0x04f21a8d26659cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "NMQ-2016-09-12-MARKETPRICE-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-13T04:00:00.000Z",
      "FileSizeBytes": 17334,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569515b2a2c24e5",
      "UserPackageId": "0x04f21a8d25e59cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "NAQ-2016-09-12-NORMALIZEDMP-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-13T04:00:00.000Z",
      "FileSizeBytes": 18986,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569515b225c24e5",
      "UserPackageId": "0x04f21a8d27659cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "NYQ-2016-09-12-LEGACYLEVEL2-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-13T04:00:00.000Z",
      "FileSizeBytes": 79840,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569515b206c24e5",
      "UserPackageId": "0x04f21a8d30559cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "NYM-2016-09-12-NORMALIZEDMP-Report-5-of-7.csv.gz",
      "ReleaseDateTime": "2016-09-13T03:00:00.000Z",
      "FileSizeBytes": 1155071,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569515b1b8c24e5",
      "UserPackageId": "0x04f21a8d18359cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "CBF-2016-09-12-NORMALIZEDLL2-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-13T03:00:00.000Z",
      "FileSizeBytes": 1155071,
      "Frequency": "Daily",
      "ContentMd5": ""
    }
  ]
}
```

```

"ReleaseDateTime": "2016-09-13T04:00:00.000Z",
"FileSizeBytes": 6761,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0569515b1b7c3156",
"UserPackageId": "0x04f21a8d26859cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "NMS-2016-09-12-NORMALIZEDMP-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-13T04:00:00.000Z",
"FileSizeBytes": 18835,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0569515b198c3156",
"UserPackageId": "0x04f21a8d27059cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "NSQ-2016-09-12-NORMALIZEDMP-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-13T04:00:00.000Z",
"FileSizeBytes": 38345,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0569515b09fc24e5",
"UserPackageId": "0x04f21a8d30559cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "NYM-2016-09-12-NORMALIZEDMP-Report-6-of-7.csv.gz",
"ReleaseDateTime": "2016-09-13T03:00:00.000Z",
"FileSizeBytes": 1483990,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0569515b080c24e5",
"UserPackageId": "0x04f21a8d18359cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "CBF-2016-09-12-LEGACYLEVEL2-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-13T04:00:00.000Z",
"FileSizeBytes": 12100,
"Frequency": "Daily",
"ContentMd5": ""
},
{
"PackageDeliveryId": "0x0569515b042c24e5",
"UserPackageId": "0x04f21a8d18359cb1",
"SubscriptionId": "0x0400dc1d24a00cb4",
"Name": "CBF-2016-09-12-NORMALIZEDMP-Report-1-of-1.csv.gz",
"ReleaseDateTime": "2016-09-13T04:00:00.000Z",
"FileSizeBytes": 6938,
"Frequency": "Daily",
"ContentMd5": ""
},
],
"@odata.nextlink": "https://hosted.datascopeapi.reuters.com/RestApi/V1/StandardExtractions/UserPackageDelivery GetUserPackageDeliveriesByDateRange(SubscriptionId='0x0400dc1d24a00cb4',FromDate=2016-09-12T14:03:49.300Z,ToDate=2016-09-13T14:03:49.300Z)?$skiptoken='MjAxNi0wOS0xMlQyMzozD0zNC45OTMwMDAw'"
}

```

Download Your Venue Files

Download all available files for a venue. This is the most common task for Venue by Day customers. This task requires three steps.

Step 1 - Retrieve the List of Venue Files

Return the list of files associated to a venue. This example refers to "ADC – NASD Alternative Display Facility for NYSE/AMEX issues" venue with UserPackageId: **0x04f21a8d13459cb1**.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/StandardExtractions/UserPackageDeliveryGetUserPackageDeliveriesByPackageId(PackageId='0x04f21a8d13459cb1')
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
```

Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "https://hosted.datascopeapi.reuters.com/RestApi/v1/$metadata#UserPackageDeliveries",
  "value": [
    {
      "PackageDeliveryId": "0x0569a825b7cc3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-NORMALIZEDMP-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 107460,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569a825ab1c3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-NORMALIZEDMP-Data-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 131717761,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569a7d3ec6c3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-MARKETPRICE-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 100174,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x0569a7d3ec3c24e5",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-13-MARKETPRICE-Data-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-14T04:00:00.000Z",
      "FileSizeBytes": 549025508,
      "Frequency": "Daily",
      "ContentMd5": ""
    },
    {
      "PackageDeliveryId": "0x056984538f0c3156",
      "UserPackageId": "0x04f21a8d13459cb1",
      "SubscriptionId": "0x0400dc1d24a00cb4",
      "Name": "ADC-2016-09-12-MARKETPRICE-Report-1-of-1.csv.gz",
      "ReleaseDateTime": "2016-09-13T15:37:40.846Z",
      "FileSizeBytes": 104542,
      "Frequency": "Daily",
      "ContentMd5": ""
    }
  ]
}
```

```

    "ContentMd5": "",
  },
  {
    "PackageDeliveryId": "0x05698451460c3156",
    "UserPackageId": "0x04f21a8d13459cb1",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "Name": "ADC-2016-09-12-NORMALIZEDMP-Report-1-of-1.csv.gz",
    "ReleaseDateTime": "2016-09-13T15:37:31.486Z",
    "FileSizeBytes": 109419,
    "Frequency": "Daily",
    "ContentMd5": ""
  },
  {
    "PackageDeliveryId": "0x056984505c2c24e5",
    "UserPackageId": "0x04f21a8d13459cb1",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "Name": "ADC-2016-09-12-MARKETPRICE-Data-1-of-1.csv.gz",
    "ReleaseDateTime": "2016-09-13T15:37:27.746Z",
    "FileSizeBytes": 548847712,
    "Frequency": "Daily",
    "ContentMd5": ""
  },
  {
    "PackageDeliveryId": "0x0569844f7bec24e5",
    "UserPackageId": "0x04f21a8d13459cb1",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "Name": "ADC-2016-09-12-NORMALIZEDMP-Data-1-of-1.csv.gz",
    "ReleaseDateTime": "2016-09-13T15:37:24.156Z",
    "FileSizeBytes": 132452905,
    "Frequency": "Daily",
    "ContentMd5": ""
  },
  {
    "PackageDeliveryId": "0x05604cde4fdc3156",
    "UserPackageId": "0x04f21a8d13459cb1",
    "SubscriptionId": "0x0400dc1d24a00cb4",
    "Name": "ADC-2016-08-15-NORMALIZEDMP-Data-1-of-1.csv.gz",
    "ReleaseDateTime": "2016-08-16T04:00:00.000Z",
    "FileSizeBytes": 113641435,
    "Frequency": "Daily",
    "ContentMd5": ""
  }
]
}

```

This request returns the individual file identifiers **PackageDeliveryId** for each file associated with the selected venue.

Step 2 - Download the Venue Files

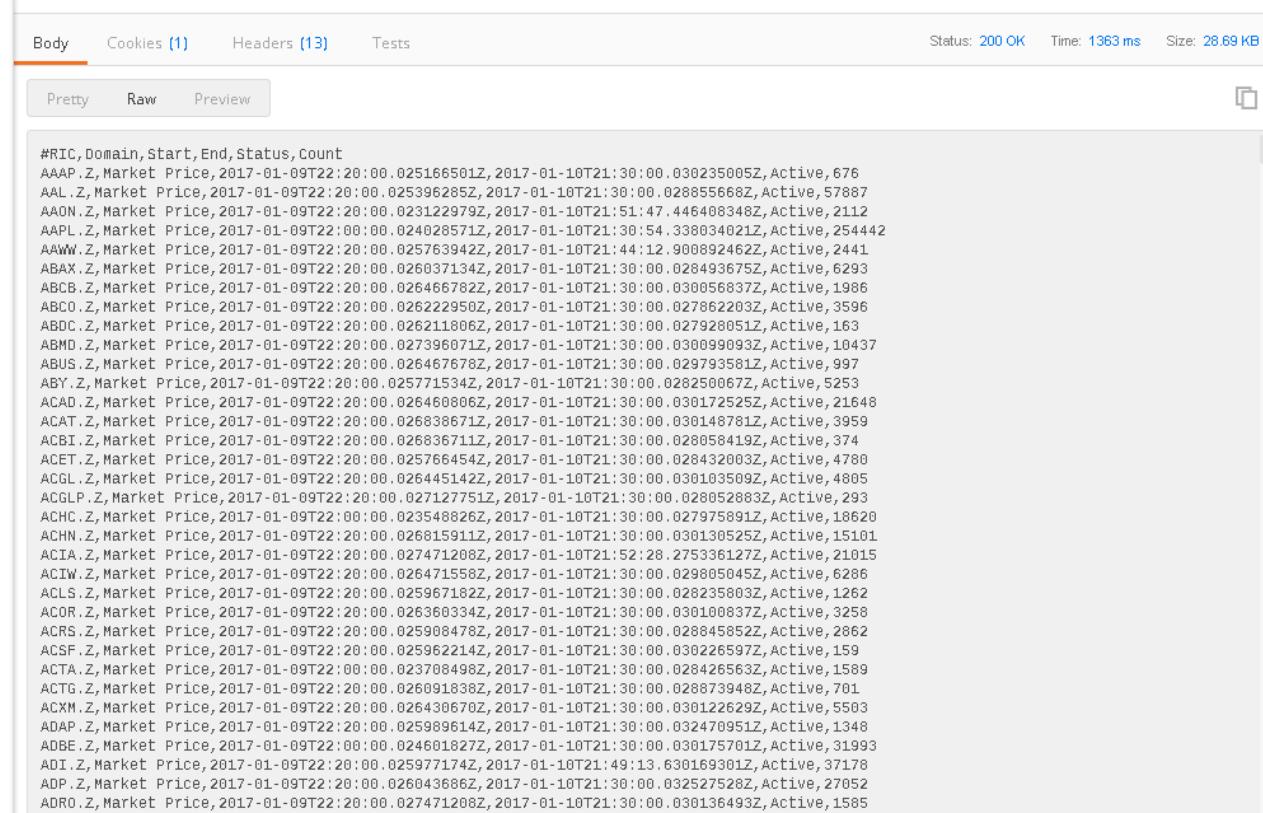
Run the UserPackageDeliveries request the file download. The files are referred to by their **PackageDeliveryId** **0x0569a825b7cc3156**.

Request

```
GET https://hosted.datascopeapi.reuters.com/RestApi/v1/StandardExtractions/UserPackageDeliveries('0x0569a825b7cc3156')/$value
```

Response

The HTTP response includes an encoded byte stream:



```
#RIC,Domain,Start,End,Status,Count
AAAP.Z,Market,Price,2017-01-09T22:20:00.025166501Z,2017-01-10T21:30:00.030235005Z,Active,676
AAL.Z,Market,Price,2017-01-09T22:20:00.025396285Z,2017-01-10T21:30:00.028855668Z,Active,57887
AAON.Z,Market,Price,2017-01-09T22:20:00.023122979Z,2017-01-10T21:51:47.446408348Z,Active,2112
AAPL.Z,Market,Price,2017-01-09T22:00:00.024028571Z,2017-01-10T21:30:54.338034021Z,Active,254442
AAWW.Z,Market,Price,2017-01-09T22:20:00.025763942Z,2017-01-10T21:44:12.900892462Z,Active,2441
ABAX.Z,Market,Price,2017-01-09T22:20:00.026037134Z,2017-01-10T21:30:00.028493675Z,Active,6293
ACBC.Z,Market,Price,2017-01-09T22:20:00.026466782Z,2017-01-10T21:30:00.030056837Z,Active,1986
ABCO.Z,Market,Price,2017-01-09T22:20:00.026222950Z,2017-01-10T21:30:00.027862203Z,Active,3596
ABDC.Z,Market,Price,2017-01-09T22:20:00.026211806Z,2017-01-10T21:30:00.027928051Z,Active,163
ABMD.Z,Market,Price,2017-01-09T22:20:00.027396071Z,2017-01-10T21:30:00.030099093Z,Active,10437
ABUS.Z,Market,Price,2017-01-09T22:20:00.026467678Z,2017-01-10T21:30:00.029793581Z,Active,997
ABY.Z,Market,Price,2017-01-09T22:20:00.025771534Z,2017-01-10T21:30:00.028250067Z,Active,5253
ACAD.Z,Market,Price,2017-01-09T22:20:00.026460806Z,2017-01-10T21:30:00.030175252Z,Active,21648
ACAT.Z,Market,Price,2017-01-09T22:20:00.026838671Z,2017-01-10T21:30:00.030148781Z,Active,3959
ACBI.Z,Market,Price,2017-01-09T22:20:00.026836711Z,2017-01-10T21:30:00.028058419Z,Active,374
ACET.Z,Market,Price,2017-01-09T22:20:00.025766454Z,2017-01-10T21:30:00.028432003Z,Active,4780
ACGL.Z,Market,Price,2017-01-09T22:20:00.026445142Z,2017-01-10T21:30:00.030103509Z,Active,4805
ACGLP.Z,Market,Price,2017-01-09T22:20:00.027127751Z,2017-01-10T21:30:00.028052883Z,Active,293
ACHC.Z,Market,Price,2017-01-09T22:00:00.023548826Z,2017-01-10T21:30:00.027975891Z,Active,18620
ACHN.Z,Market,Price,2017-01-09T22:20:00.026815911Z,2017-01-10T21:30:00.030130525Z,Active,15101
ACIA.Z,Market,Price,2017-01-09T22:20:00.027471208Z,2017-01-10T21:52:28.275336127Z,Active,21015
ACIW.Z,Market,Price,2017-01-09T22:20:00.026471558Z,2017-01-10T21:30:00.029805045Z,Active,6286
ACLS.Z,Market,Price,2017-01-09T22:20:00.025967182Z,2017-01-10T21:30:00.028235803Z,Active,1262
ACDR.Z,Market,Price,2017-01-09T22:20:00.026360334Z,2017-01-10T21:30:00.030100837Z,Active,3258
ACRS.Z,Market,Price,2017-01-09T22:20:00.025908478Z,2017-01-10T21:30:00.028845852Z,Active,2862
ACSF.Z,Market,Price,2017-01-09T22:20:00.025962214Z,2017-01-10T21:30:00.030226597Z,Active,159
ACTA.Z,Market,Price,2017-01-09T22:00:00.023708498Z,2017-01-10T21:30:00.028426563Z,Active,1589
ACTG.Z,Market,Price,2017-01-09T22:20:00.026091838Z,2017-01-10T21:30:00.028873948Z,Active,701
ACXM.Z,Market,Price,2017-01-09T22:20:00.026430670Z,2017-01-10T21:30:00.030122629Z,Active,5503
ADAP.Z,Market,Price,2017-01-09T22:20:00.025989614Z,2017-01-10T21:30:00.032470951Z,Active,1348
ADBE.Z,Market,Price,2017-01-09T22:00:00.024601827Z,2017-01-10T21:30:00.030175701Z,Active,31993
ADI.Z,Market,Price,2017-01-09T22:20:00.025977174Z,2017-01-10T21:49:13.630169301Z,Active,37178
ADP.Z,Market,Price,2017-01-09T22:20:00.026043686Z,2017-01-10T21:30:00.032527528Z,Active,27052
ADRO.Z,Market,Price,2017-01-09T22:20:00.027471208Z,2017-01-10T21:30:00.030136493Z,Active,1585
```

Step 3 - Repeat

Repeat step 1 to identify the next file, then step 2 to download that file.

The API pagination and change tracking features through `@odata.nextlink` and `@odata.deltalink` respectively, are optional API features available to help manage your download task as it would adjust the number of files to download each time and eliminate the listing of previously downloaded files.

Validating Downloads

Tick History uses MD5 checksums to enable you to validate that you have downloaded your VBD files with no unintentional loss or corruption.

When you retrieve a list of files available for downloading from a particular venue (via `StandardExtractions/UserPackageDelivery GetUserPackageDeliveriesByPackageId`), for each file you receive an MD5 checksum in the **ContentMd5** field in the response body. (If the venue did not publish a checksum for that file, the field's value is blank.)

When you download a package delivery file (via `StandardExtractions/UserPackageDeliveries`) you receive the file's MD5 checksum in the **Content-MD5** field in the response header. (If the venue did not publish a checksum for that file, the field's value is blank.)

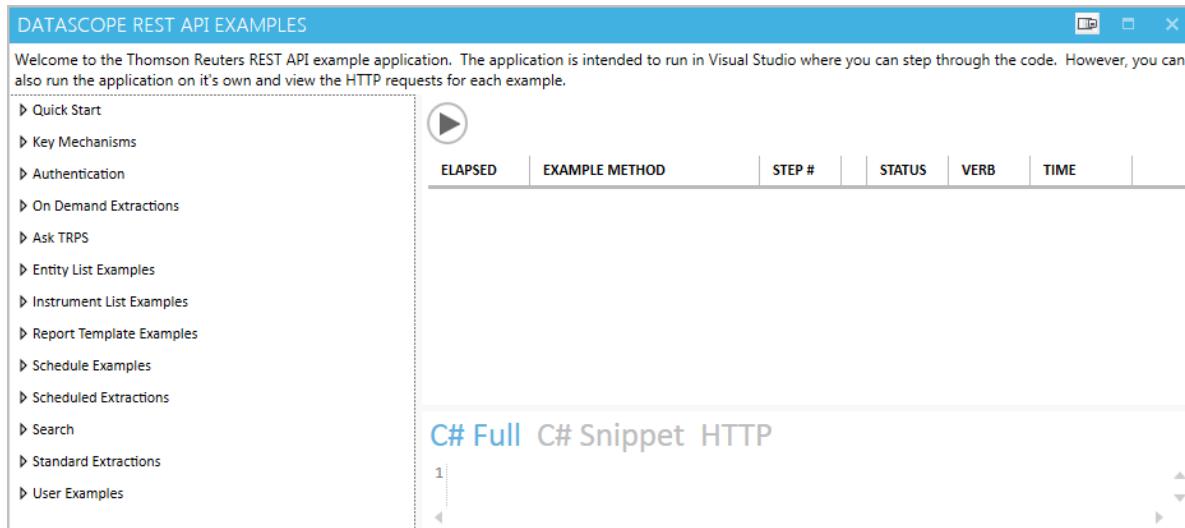
Once you have received the checksum and have downloaded the file, you can use the third-party utility of your choice to generate the checksum for the file as it exists on your local system, and compare that local checksum with the one you received from Tick History.

Chapter 13 Learning Tools

REST API Example Application

Thomson Reuters provides a REST API example application and .NET SDK to help customers learn about the interface. It provides working C# code examples with requests and responses. These are available for download from developers.thomsonreuters.com and the REST API [website](#).

The Interface navigation is organized by a function tree in the left pane.



DATASCOPE REST API EXAMPLES

Welcome to the Thomson Reuters REST API example application. The application is intended to run in Visual Studio where you can step through the code. However, you can also run the application on its own and view the HTTP requests for each example.

▶ Quick Start

▶ Key Mechanisms

▶ Authentication

▶ On Demand Extractions

▶ Ask TRPS

▶ Entity List Examples

▶ Instrument List Examples

▶ Report Template Examples

▶ Schedule Examples

▶ Scheduled Extractions

▶ Search

▶ Standard Extractions

▶ User Examples

ELAPSED	EXAMPLE METHOD	STEP #	STATUS	VERB	TIME

C# Full C# Snippet HTTP

1



While the example application provides C# code samples, the interactive HTTP request/responses generated in each example will benefit non-C# developers.

When a function is selected, the main pane will display the selected API task with the steps involved.

DATASCOPE REST API EXAMPLES

Welcome to the Thomson Reuters REST API example application. This application is intended to run in Visual Studio where you can step through the code. However, you can also run the application on its own and view the HTTP requests for each example.

Navigation

- Quick Start
- Key Mechanisms
- Authentication**
 - RequestToken**
 - On Demand Extractions
 - Ask TRPS
 - Entity List Examples
 - Historical Search
 - Instrument List Examples
 - Quota
 - Report Template Examples
 - Schedule Examples
 - Scheduled Extractions
 - Search
 - Standard Extractions
 - Tick History
 - User Examples

Steps

ELAPSED	EXAMPLE METHOD	STEP #	STEP REQUEST	STATUS	VERB	TIME
00:00:10.5905124	RequestToken	1	.RequestToken	200	POST	00:00:10.5753228

Switch views between C# code and HTTP messages

HTTP Request

```
POST https://restapi-cerberus.select.datascope.thomsonreuters.com/v1/Authentication/RequestToken HTTP/1.1
Prefer: respond-async
{
  "Credentials": {
    "Username": "<Your Username>",
    "Password": "<Your Password>"
  }
}
```

HTTP Response

```
HTTP/1.1 200 OK
{
  "@odata.context": "http://restapi-cerberus.select.datascope.thomsonreuters.com:8211/v1/$metadata#Edm.String",
  "value": "_Fq5yxRxAR3hoQvPXyauiY-QCgP09K5hLqjOhVQppa1_ejdK7ZRicCy1CkXoR1mIVz9ypVJ2t6s7H6v6ErgCYU87Quu8yxcczzUTfRToY"
}
```

Version 10.7.0.64, Copyright @2016 Thomson Reuters Ltd. All Rights Reserved

The view of the API messages can be toggled between C# Full, C# Snippet, and HTTP.

The HTTP Request is the actual message sent to the API, with response displayed below it.

You may model your application to simulate all of the functions in this application to help understand how to best use the REST API for Tick History.

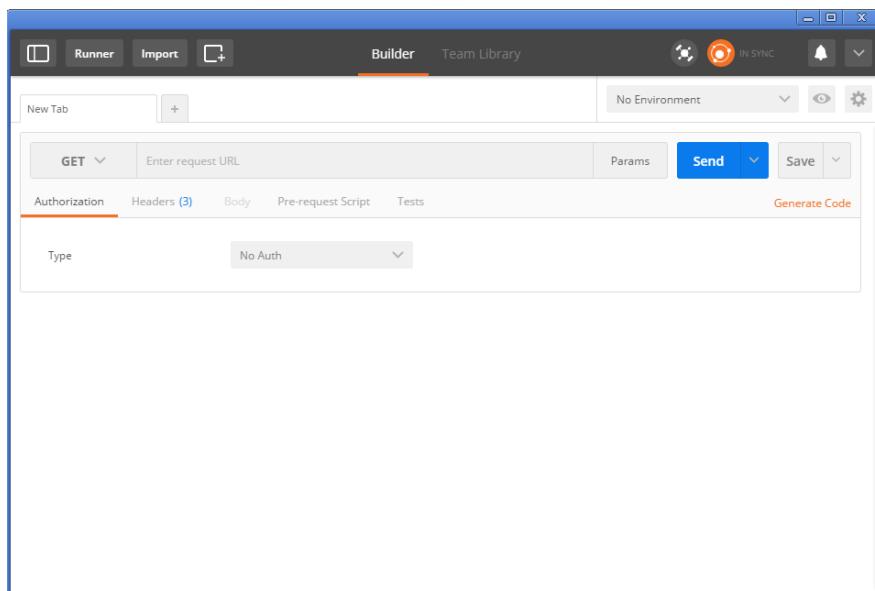
Postman

Postman is an API tool [available](#) as an app on Windows, Mac, Linux, and Chrome. It allows users to create and send any HTTP requests using the request builder, write test cases to validate response data, response times and more. While we do not endorse one tool over another, this client application makes tasks simple to do and allows users to focus on the product features and enhancements available in the new REST API.

Support documentation is available [here](#).

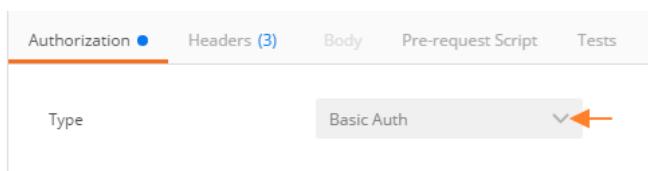
Getting Started

After installing Postman, launch the application from the start menu. The interface is clean and simple. The initial setup focuses on Authorization and Header definition and is only done once.



Authorization

1. A quick way to setup authentication is to click the Authorization tab, then select the Type: "Basic Auth"

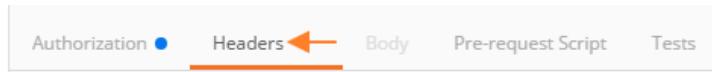


2. Populate your user credentials in the Username and Password fields.

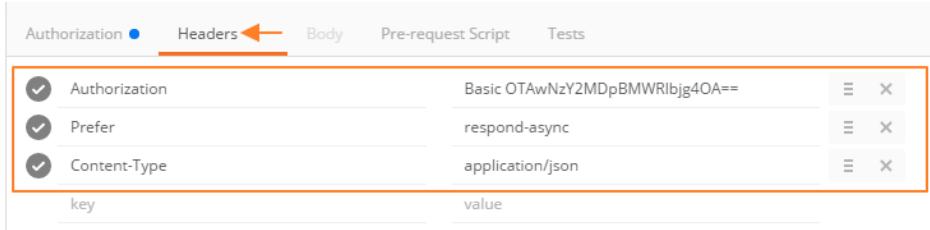
Username	<input type="text" value="9007660"/>
Password	<input type="password" value="*****"/>
<input type="checkbox"/> Show Password	

Header Parameters

1. Click the headers tab.



2. Add 3 header parameters



These ensure that the connection type and content format coincide with how we will interact with the REST API. The value for Authorization will dynamically populate so you only have to add the key.

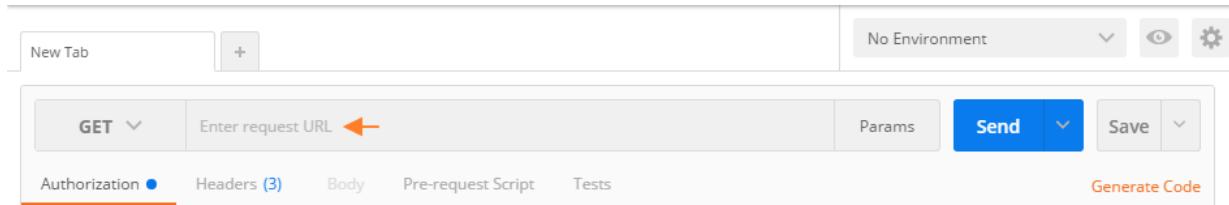
If you leave out the Content-Type is omitted the following error is returned:

Response

```
HTTP/1.1 415 Unsupported Media Type
{
  "error": {
    "message": "The request entity's media type 'text/plain' is not supported for this resource."
  }
}
```

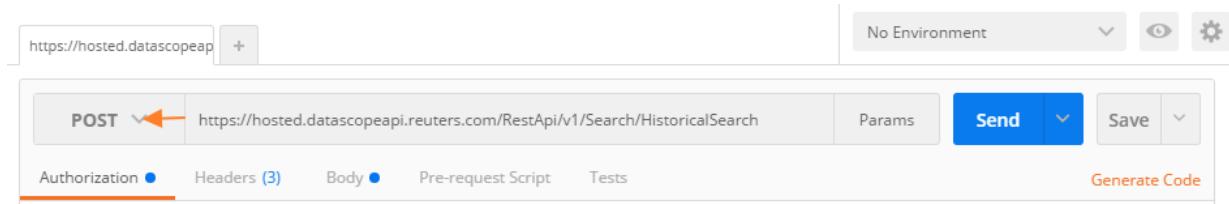
Submitting a Request

Let us conduct a historical instrument look up, the first request in this user guide, as an example. Refer to the Request URL field and enter the URI and the endpoint (<https://hosted.datascopeapi.reuters.com/RestApi/v1/Search/HistoricalSearch>).



The screenshot shows the Postman interface with a GET request. The 'Authorization' tab is selected. The URL field contains 'https://hosted.datascopeapi.reuters.com/RestApi/v1/Search/HistoricalSearch'. The 'Send' button is highlighted in blue.

1. This particular example requires an API verb change so click the pull down menu and select "POST".



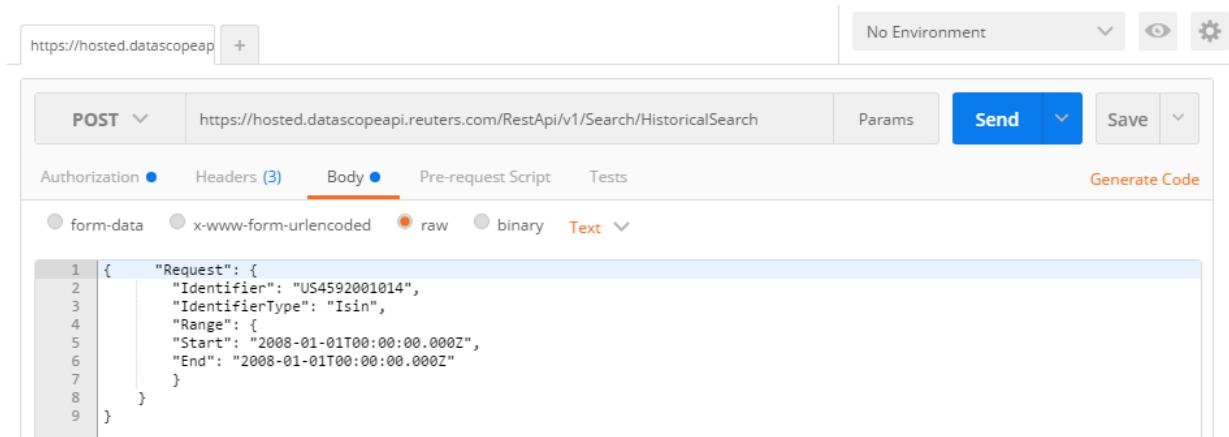
The screenshot shows the Postman interface with a POST request. The 'Authorization' tab is selected. The URL field contains 'https://hosted.datascopeapi.reuters.com/RestApi/v1/Search/HistoricalSearch'. The 'Send' button is highlighted in blue.

2. Click the Body tab to switch to the Body screen.



The screenshot shows the Postman interface with the 'Body' tab selected. The tabs are 'Authorization', 'Headers (3)', 'Body', 'Pre-request Script', and 'Tests'.

3. Enter the parameters of the request in the open form field below. Remember to select the **raw** radio button above. Click Send when ready.



The screenshot shows the Postman interface with the 'Body' tab selected. The 'raw' radio button is selected. The request body is a JSON object:

```

1  {
2      "Request": {
3          "Identifier": "US4592001014",
4          "IdentifierType": "Isin",
5          "Range": {
6              "Start": "2008-01-01T00:00:00.000Z",
7              "End": "2008-01-01T00:00:00.000Z"
8          }
9      }

```

4. You are now able to conduct all of the API functions by conducting steps outlined in this section.

Chapter 14 Appendix

API Resources

Thomson Reuters Developer Community

[Thomson Reuters Developer Community](#) provides information about Thomson Reuters APIs. Its [Tick History REST API](#) portal offers a Quick Start section, code samples, tutorials, and other documentation.

The portal requires free registration to download documentation and sample code.

REST API Help Site

The [Rest API Help site](#) hosts a wealth of information to assist clients to use the API. The portal provides an [overview](#) with instructions to create a test environment using the .NET SDK, .Net Example Application and an [API Reference Tree](#) with working C# code examples with HTTP requests, responses and comprehensive and authoritative documentation on REST API Functionality.

This site requires your DSS API login for access.

REST API Example Application + .NET SDK

The REST API example application is available on the DSS REST API Portal and Thomson Reuters Developer Community portal.

Please use this [Example application](#). Installation information is available [here](#).

The Example application will run in Visual Studio 2012+ as a Project or as standalone application (executable under \bin\debug\DsS.Api.Examples.exe or \bin\release depending on the version).

This site requires your DSS API login for access.

Client Tools

As the REST API is language and platform independent, here are some clients that may prove useful:

- [Postman](#) is a chrome browser extension that aids in the building, testing and documenting of RESTful APIs.
- [Fiddler](#) is an HTTP debugging proxy server application used for verifying APIs exposed over HTTP(S).
- [Swagger](#) is a language agnostic interface to REST APIs which allows both humans and computers to discover and understand the capabilities of the service without access to source code, documentation or through network traffic inspection. When properly defined via Swagger, a consumer can understand and interact with the remote service with minimal amount of implementation logic.
- [SoapUI](#) is a complete and automated testing solution. In a single test environment, it provides industry-leading technologies and standards support, from SOAP- and REST-based web services, to JMS enterprise messaging layers, databases, Rich Internet Applications, and much more.

This is by no means an endorsement of these products; these are just examples to help get you started. Feel free to use any other tools you might prefer.

Identifier Types

List of supported instrument formats

Value	Description
ChainRIC	Thomson Reuters Chain
Cusip	Issue-level code assigned by CUSIP for identifying North American securities. For loans, this is the CUSIP for the facility level of the loan.
Isin	International Securities Identification Number developed by the ISO.
Ric	Reuters Instrument Code; market-level identifier for instruments and pricing sources.
Sedol	Stock Exchange Daily Official List number

ContentField Properties

Name	Data Type	Description
FieldName	String	Field selected for the report
Format	ContentFieldFormat	Format specific to the field type (date, number or text). Value can be null.
Justification	ContentFieldJustification	Field justification (left, right or center)
Label	String	Field label
Width	int?	Field length. Value can be null.
WidthStyle	ContentFieldWidthStyle	Fixed or variable field width

HTTP Response Codes

The REST API uses HTTP status codes consistent with the [OData protocol specifications](#). This list shows the common HTTP response codes and some brief guidelines on how to use them. For the complete list of HTTP response codes, please refer to section 6 of [RFC 2616](#).

Successful Responses

Code	Name	Description
200	OK	A request that does not create a resource returns 200 OK if it is completed successfully and the value of the resource is not null. The response body will contain the value of the resource specified in the request URL.
201	Created	A Create Entity or Invoke Action request that successfully creates a resource, returns 201 Created. The response body will contain the resource created.

202	Accepted	Accepted indicates that the request has been accepted and has not yet completed executing asynchronously. See Async Key Mechanism async example or the OData async specification for more details.
204	No Content	A request returns 204 No Content if the requested resource has the null value.
3xx	Redirection	As per [RFC7231], a 3xx Redirection indicates that further action needs to be taken by the client in order to fulfill the request. In this case, the response will include a Location header, as appropriate, with the URL from which the result can be obtained; it <i>may</i> include a Retry-After header.

Client Error Responses

Code	Name	Exception Type	Description
400	Bad Request	ValidationException	Bad Request errors can be returned if the request is malformed and cannot be interpreted or if the request cannot be processed due to violation of business rules.
401	Unauthorized	UnauthorizedException	Unauthorized exception is returned if the username and password are invalid or if the supplied token is invalid or expired. See Validation Key Mechanism for details about requesting new tokens.
403	Forbidden	ForbiddenException	Forbidden errors are returned when the user does not have sufficient permissions to perform the requested operation. The body will contain details regarding this error. The request should not be repeated.
404	Not Found	NotFoundException	Not Found indicates that the resource specified by the request URL does not exist. The response body will typically include the entity type and id that could not be found.
405	Method Not Allowed	RequestException	Method Not Allowed indicates that the resource specified by the request URL does not support the request method.
410	Gone	RequestException	Gone indicates that the requested resource is no longer available. This can happen if a client has waited too long to follow a delta link or a status-monitor-resource link (async links).
412	Precondition Failed	RequestException	Precondition Failed indicates that the client has performed a conditional request and the resource fails the condition. The service MUST ensure that no observable change occurs as a result of the request.

Server Error Responses

As specified in [RFC7231], error codes in the 5xx range indicate server errors.

Code	Name	Exception Type	Description
500	Internal Server Error	RequestException	The server encountered an unexpected condition which prevented it from fulfilling the request.
501	Not Implemented	RequestException	The server encountered an unexpected condition which prevented it from fulfilling the request.
502	Bad Gateway	BadGatewayException	If the client requests functionality not implemented by the REST API, the service will respond with 501 Not Implemented.
503	Service Unavailable	RequestException	The server, while acting as a gateway or proxy, received an invalid response from the upstream server it accessed in attempting to fulfill the request.
504	Gateway Timeout	GatewayTimeoutException	The server, while acting as a gateway or proxy, did not receive a timely response from the upstream server specified by the URI (e.g. HTTP, FTP, LDAP) or some other auxiliary server (e.g. DNS) it needed to access in attempting to complete the request.

Product Attributes

Data Types

For most venues, the TRTH Venue by Day service publishes content in bulk under the following file types:

Recorded Trade & Quotes	Description
NORMALIZEDMP	Tick-by-tick trade execution messages for Auction, Corrections, Market Condition, Quotes and Trades.
MARKETPRICE	Tick-by-tick trade execution messages in original raw format.
NORMALIZEDL2	Aggregated market by price level quotes (1- 25). Each price level represents an aggregation of orders at that price from best (Level 1) to worst quotes for the market at the time of the update.
LEGACYLEVEL2	Aggregated market by price level quotes in original raw format.

Corporate Actions	Description
CORP	Corporate Actions Data (dividend, earnings, capital changes, share type and stock split events)

Reference Data	Description
REF	Asset specific reference data, including metadata, terms and conditions, symbology changes, etc.

Instruments	Description
INSTRUMENTS	<p>List of active instruments on the venue.</p> <p>Depending on your entitlements, you may receive one or more Instrument files with the provider(s) for which you are entitled:</p>

Reports	Description
REPORT	Files with REPORT appended indicate the availability of data for each instrument for that venue.

File Compression

The files are compressed into .gz format, requiring a gunzip utility for you to uncompress them. The uncompressed files present the data in .csv format. Compression ratios may vary from 10-30:1 depending on the file size and metadata.

For reference, a random sampling of compressed files measured at **12:1 ratio**. (e.g. 185,785 file size: 2,287,440 packed file size)

File Names

The files are named using the following convention:

Venue-YYYY-MM-DD-Format-Datatype-Part-of-Totalparts.csv.gz

For example: LSE-2016-03-20-NORMALIZEDLL2-DATA-1-of-1.csv.gz

Component	Description
Venue	Three letter identifier for the venue
YYYY-MM-DD	Numerical year, month and date
Format	NORMALIZEDMP, MARKETPRICE, NORMALIZEDLL2, LEGACYLEVEL2, CORAX, REF or INSTRUMENTS
Datatype	Data or Report
Part	The volume to the total number of parts.
Totalparts	The total number of parts.

Daily Time Periods Covered

The TRTH Venue by Data service generates daily-recorded trade and quotes files by venue for the previous trading session. The files contain market data for all currently trading instruments on the appropriate venue.

The corresponding report file indicates the availability of data for each instrument for that venue. For example, inactive instruments for which no data is available are identified in the report file.

All Venue by Day files, excluding Corporate Actions, span a 24-hour period from the previous day cycle cut-off to the current day's cut-off. For example, the US Cycle files contain all data from 21:00 GMT previous day to 21:00 GMT on the current day.

Corporate Actions and Reference files include all updates reflecting changes over the past 2 days. Files are generated for each day of the week, including weekends and non-trading days; weekend files include mostly Corporate Actions and Reference data.

ISO 8601 Date and Time Format

The formats are as follows. Exactly the components shown here must be present, with exactly this punctuation. Note that the "T" appears literally in the string, to indicate the beginning of the time element, as specified in ISO 8601.

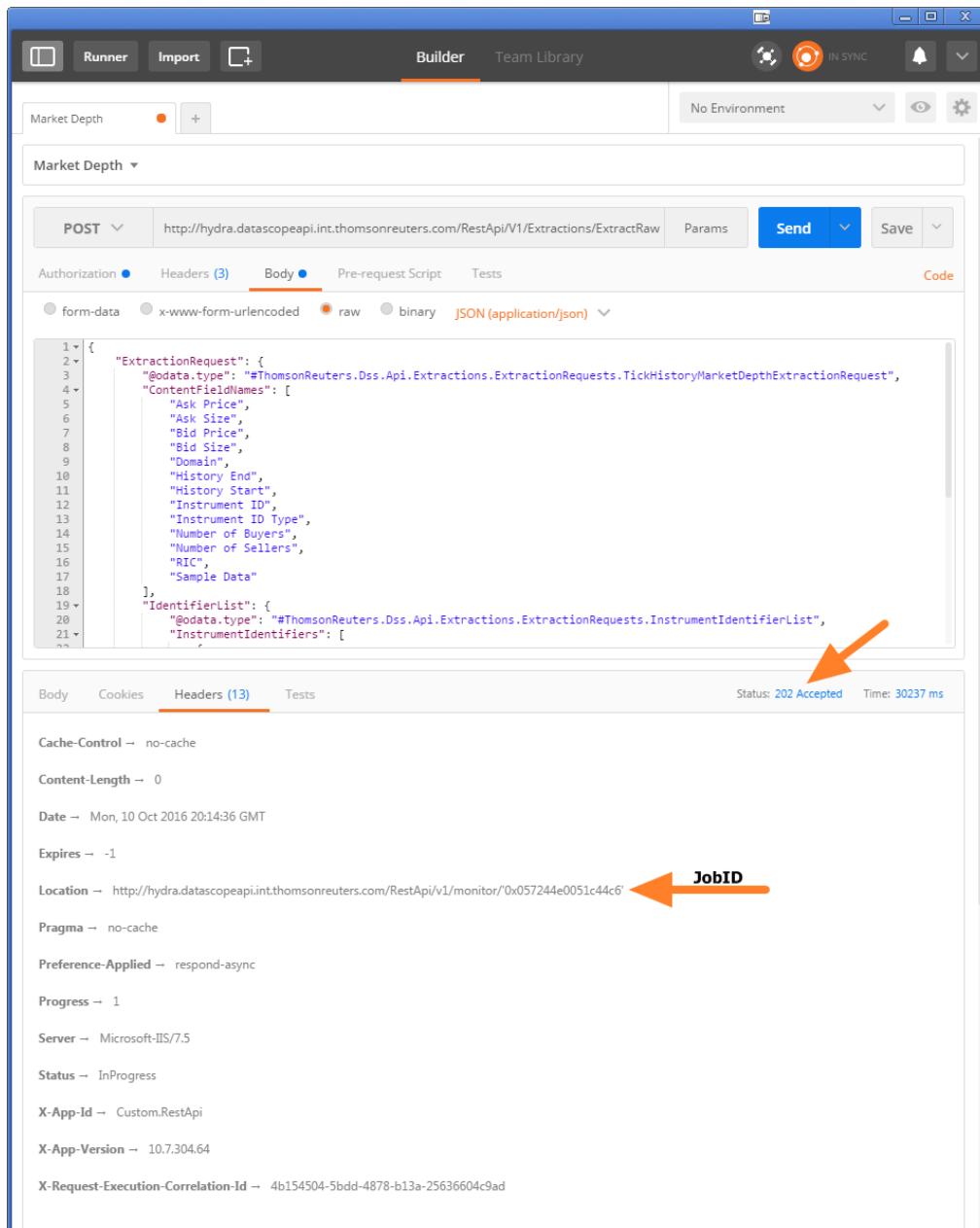
Date and Time	Format
Year	YYYY (e.g. 1997)
Year and month	YYYY-MM (e.g. 1997-07)
Complete date	YYYY-MM-DD (e.g. 1997-07-16)
Complete date plus hours and minutes	YYYY-MM-DDThh:mmTZD (e.g. 1997-07-16T19:20+01:00)
Complete date plus hours, minutes and seconds	YYYY-MM-DDThh:mm:ssTZD (e.g. 1997-07-16T19:20:30+01:00)
Complete date plus hours, minutes, seconds and a decimal fraction of a second	YYYY-MM-DDThh:mm:ss.sTZD (e.g. 1997-07-16T19:20:30.45+01:00)

Legend	Description
YYYY	Four-digit year
MM	Two-digit month (01=January, etc.)
DD	Two-digit day of month (01 through 31)
hh	Two digits of hour (00 through 23) (am/pm NOT allowed)
mm	Two digits of minute (00 through 59)
ss	Two digits of second (00 through 59)
TZD	Time zone designator (Z or +hh:mm or -hh:mm)

Checking Request Status

While small queries may return data in the response, it is reasonable for larger queries will require a considerable amount of time to process. These requests need to be checked to know when they are available for download. The key indicators are the HTTP status responses. The HTTP 202 is an acknowledgement of the request while HTTP 200 represents a completed report.

Here is a view from Postman where the HTTP Status and JobID are returned in the response header; No information is provided in the response body.



The screenshot shows the Postman interface with a POST request to <http://hydra.datascopeapi.int.thomsonreuters.com/RestApi/V1/Extractions/ExtractRaw>. The request body is a JSON object:

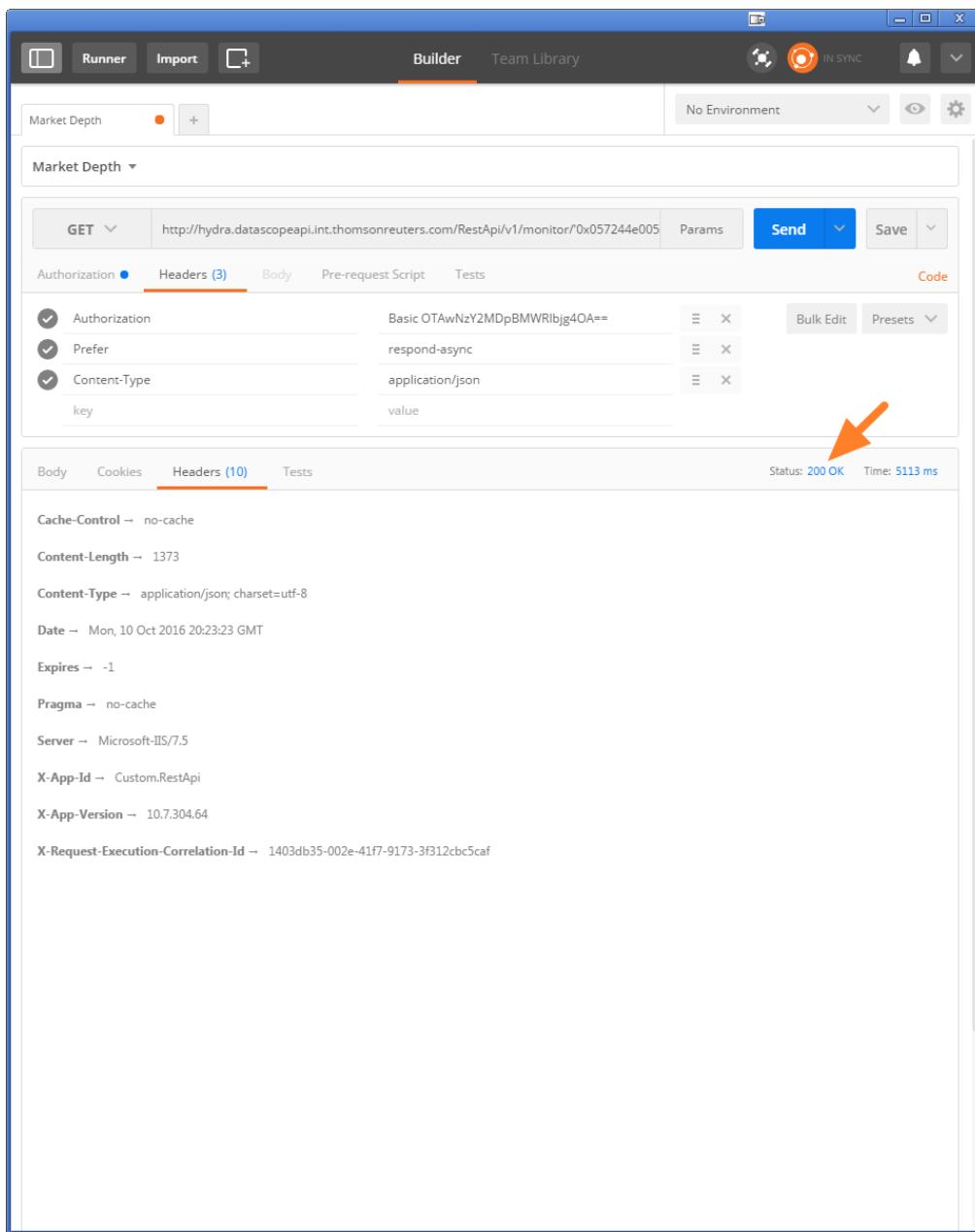
```

1+ {
2+   "ExtractionRequest": {
3+     "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.TickHistoryMarketDepthExtractionRequest",
4+     "ContentFieldNames": [
5+       "Ask Price",
6+       "Ask Size",
7+       "Bid Price",
8+       "Bid Size",
9+       "Domain",
10+      "History End",
11+      "History Start",
12+      "Instrument ID",
13+      "Instrument ID Type",
14+      "Number of Buyers",
15+      "Number of Sellers",
16+      "RIC",
17+      "Sample Data"
18+    ],
19+    "IdentifierList": {
20+      "@odata.type": "#ThomsonReuters.Dss.Api.Extractions.ExtractionRequests.InstrumentIdentifierList",
21+      "InstrumentIdentifiers": [
22+      ]
23+    }
24+  }
25+ }

```

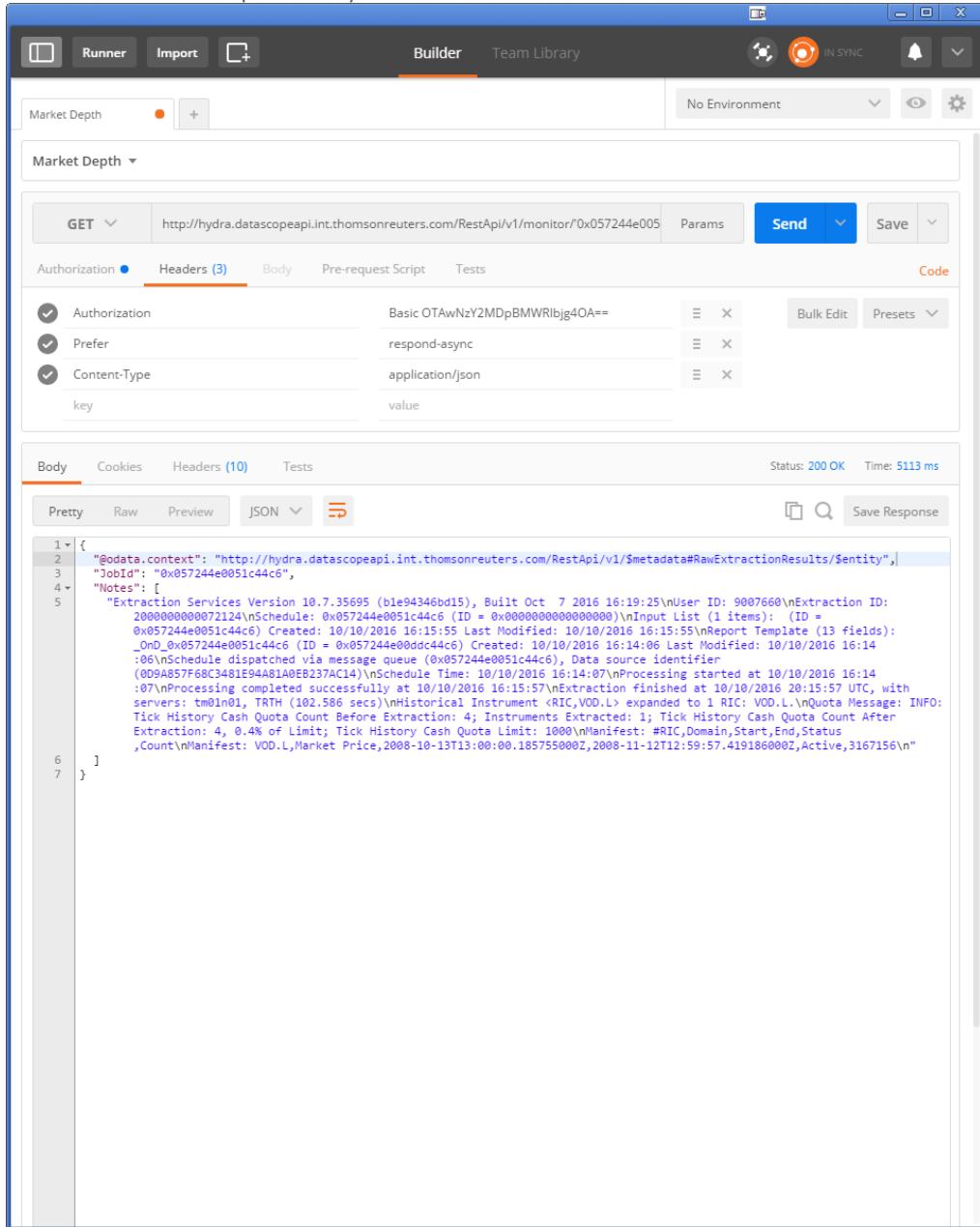
The response status is 202 Accepted. The **Location** header contains the JobID: <http://hydra.datascopeapi.int.thomsonreuters.com/RestApi/v1/monitor/0x057244e0051c44c6>.

When the job is complete, an HTTP 200 is returned. Here is a view of the header.



The screenshot shows the Postman application interface. The 'Builder' tab is selected. A request for 'Market Depth' is being made to the URL `http://hydra.datascopeapi.int.thomsonreuters.com/RestApi/v1/monitor/0x057244e005`. The 'Headers' tab is active, showing three headers: Authorization, Prefer, and Content-Type. The 'Status' bar at the bottom right indicates a successful response with `200 OK` and a response time of `5113 ms`. An orange arrow points to the 'Status: 200 OK' text in the status bar.

Here is a view of the response body.



The screenshot shows the Postman Builder interface with a GET request to `http://hydra.datascopeapi.int.thomsonreuters.com/RestApi/v1/monitor/0x057244e0051c44c6`. The response body is a JSON object with the following structure:

```

1  {
2      "@odata.context": "http://hydra.datascopeapi.int.thomsonreuters.com/RestApi/v1/$metadata#RawExtractionResults/$entity",
3      "JobId": "0x057244e0051c44c6",
4      "Notes": [
5          "Extraction Services Version 10.7.35695 (ble94346bd15), Built Oct 7 2016 16:19:25\nUser ID: 9007660\nExtraction ID: 200000000000072124\nSchedule: 0x057244e0051c44c6 (ID = 0x0000000000000000)\nInput List (1 items): (ID = 0x057244e0051c44c6) Created: 10/10/2016 16:15:55 Last Modified: 10/10/2016 16:15:55\nReport Template (13 fields): _On_0x057244e0051c44c6 (ID = 0x057244e0051c44c6) Created: 10/10/2016 16:14:06 Last Modified: 10/10/2016 16:14:06\nSchedule dispatched via message queue (0x057244e0051c44c6), Data source identifier (0D9A857F68C3481E94A81A0EB237AC14)\nSchedule Time: 10/10/2016 16:14:07\nProcessing started at 10/10/2016 16:14:07\nProcessing completed successfully at 10/10/2016 16:15:57\nExtraction finished at 10/10/2016 20:15:57 UTC, with servers: tmln01, TRTH (102.586 secs)\nHistorical Instrument <RIC, VOD.L> expanded to 1 RIC: VOD.L.\nQuota Message: INFO: Tick History Cash Quota Count Before Extraction: 4; Instruments Extracted: 1; Tick History Cash Quota Count After Extraction: 4, 0.4% of Limit; Tick History Cash Quota Limit: 1000\nManifest: #RIC,Domain,Start,End,Status ,Count\nManifest: VOD.L,Market Price,2008-10-13T13:00:00.185755000Z,2008-11-12T12:59:57.419186000Z,Active,3167156\n"
6      ]
7  }

```

The HTTP 200 OK should prompt report completion where JobId `0x057244e0051c44c6` can be used with the RawExtractionResults function to retrieve the results:

Request

```

GET https://hosted.datascopeapi.reuters.com/RestApi/v1/StandardExtractions/UserPackageDeliveries(
  '0x057244e0051c44c6')/$value
Authorization: Token <your_auth_token_goes_here>
Content-Type: application/json
Accept-Charset: UTF-8
Prefer: respond-async
  
```

Headers for File Download

There are optional headers that can be applied to report file retrieval.

`Content-Type: text/plain`
`Content-Disposition: attachment; filename="myextraction.gz"`
`Accept-Ranges: bytes`

Add the three header parameters as follows:

Authorization	Headers (4)	Body	Pre-request Script	Tests	Code
<input checked="" type="checkbox"/> Authorization		value		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> Bulk Edit Presets
<input checked="" type="checkbox"/> Content-Type		text/plain		<input type="checkbox"/> <input type="checkbox"/>	
<input checked="" type="checkbox"/> Content-Disposition		attachment; filename="myextraction.gz"		<input type="checkbox"/> <input type="checkbox"/>	
<input checked="" type="checkbox"/> Accept-Ranges		bytes		<input type="checkbox"/> <input type="checkbox"/>	
	key	value			

Headers for Minimizing Response Information

The amount of data returned in the response JSONs can be minimized to save bandwidth and allow easier parsing of data. This is accomplished by adding [odata.metadata](#) to the request header.

Header Field Name	Support
odata.metadata: full	Not at present
odata.metadata: minimal	Yes
odata.metadata: none	Yes

Header: Accept: application/json; odata.metadata: minimal

Header: Accept: application/json; odata.metadata: none

Errors

HTTP 400 Bad Request: Syntax error: character '' is not valid at position 0
 Resolution

Check the URL for single quotes surrounding any Identifiers. Often when pasting these values, the single quotes need to be typed in manually. Deleting ' then retying ' fixes this problem.

© Thomson Reuters 2017. All Rights Reserved.
Thomson Reuters disclaims any and all liability
arising from the use of this document and does not
guarantee that any information contained herein is
accurate or complete. This document contains
information proprietary to Thomson Reuters and
may not be reproduced, transmitted, or distributed
in whole or part without the express written
permission of Thomson Reuters.

For more information, visit
thomsonreuters.com

Or contact us at
thomsonreuters.com/business_units/financial