

United States Department of Agriculture

Agricultural Marketing Service

Creating Opportunities for American Farmers and Businesses



Creating Opportunities for American Farmers and Businesses

MARS Application Programming Interface (API)

February 7, 2018



Today's Speaker

Srihari Akiri

MARS/My Market News Application Architect AMS Market News



Theme for discussion

- Discuss the idea behind MARS API
- Describe features of MARS API
- Describes how data can be pulled using the MARS API
 - Learn more about what available
 - Access Market News data and reports
- What's Next?

MARS – Delivering Market Data to Agricultural Producers Around the Globe Faster and Easier





Introduction

- MARS APIs are implemented using the industry standard REST methodology.
- HTTP Codes are used for error notification
 - 401 for access denied
 - 200 for success response
- HTTP GET is used to pull the data
- HTTP request parameters are used to filter, sort response data
- Responses are in JSON Format



MARS API

- URL to access the APIs
 - PROD: <u>https://marsapi.ams.usda.gov/services/v1/reports/</u>
 - DEV : <u>https://marsapidev.ams.usda.gov/services/v1/reports/</u>
- Version management is done through the endpoint url
 - We will publish documentation as how the urls are changes
- This request will return the list of reports which are available for the public.
- Only published report data is available for download



Example 1 (Postman)

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21	},	
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24		"slug_name": "MD_DA953",
25		"report_name": "Cold Storage Weekly Report"
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30		"report_name": "National Retail Dairy"
31	},	
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33		"slug_id": "1591",
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35		"report_name": "Dairy International Dairy Market News Worksheet"
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Example 2 (curl)

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Report Data

- To access data for each of the report the following fields are used
 - slug_id
 - slug_id is a unique identifier which is generated by MARS for all the reports which are generated in MARS
 - slug_name is a name picked by the report owner
- Access data using slug_id
 - Syntax
 - /reports/<<slug_id>>
 - /reports/id/<<slug_id>>
- Access data using slug_name
 - Syntax
 - /reports/<<slug_name>>
- Access data via the slug_id is the preferred way since it never changes for the life of the report in an environment



Example 1(Postman)

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Report Data - Response

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8	"office_code": "DA-MO",
9	"office_city": "Madison",
10	"office_state": "WI",
11	"market_location_name": "National Cold Storage",
12	"market_location_city": "",
13	"market_location_state": "NI",
14	"group": null,
15	"category": "Hard Products",
16	"commodity": "Cheese",
17	"market_type": "Cold Storage",
18	"market_type_category": "Dairy Market",
19	"slug_id": "1095",
20	"slug_name": "MD_DA953",
21	"community": "Dairy",
22	"quality": "N/A",
23	"holdings_unit": "LBS",
24	"holdings_current_lbs": "96009227",
25	"holdings_1stDayMTH_lbs": "96245049",
26	"holdings_change_lbs": "-235822",
27	"holdings_change_percent": "0.0000",
28	"currentMTH_1stDay": "2018-01-01",
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34	"report_begin_date": "2018-01-08",
35	"report_end_date": "2018-01-08",



Example 2 (curl)

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Authentication

- MARS APIs use Basic Authentication to authenticate the account.
 - API key as the user name to access the public data
- To get access to an API key, the users need to login to the MMN portal <u>https://mymarketnews.ams.usda.gov</u>
- Once you register/login to the MMN the user can click on the My Profile to access the profile of the user.
- Use the Show API key button to get access to the API key.
- Do not share your secret API keys, these are unique to each account.



Request for API Key

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Authentication Example 1

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Authentication Example 2

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Sorting Response Data

- The default sort order is *report_begin_date* DESC to show the latest data on the top
 - The request parameter "sort" can be used to sort data
 - Syntax

sort=<<field_name>>

- The <<field_name>> should be the fields which are available in the response data
- Response will be sorted based on the *field_name* in the ASC order
- To sort in the descending order
- Syntax

sort=-<<field_name>>

- the prefix "-" is used
- Response will be sorted based on the *field_name* in the DESC order



Sorting ASC - Example

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Sorting DESC - Example

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Sorting - 2

- To enable sorting by multiple fields
 - Syntax
 - sort=[-]<<field_name1>>,[-]<<field_name2>>
 - "," as the field separator
 - The <<field_name1>> and <<field_name2>> should be the fields which are available in the response data
 - Response will be sorted based on the *field_name1* and on *field_name2*



Sorting 2 - Example

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Filtering Response Data

- Response can be filtered to pull specific data
 - The request parameter "q" can be used to filter data
 - Syntax
 - q=<<field_name>>=<<value>>
 - The <<field_name>> should be the fields which are available in the response data
 - All the record matching the *field_name=value* will be returned
 - Since the sort order is not available, the response data will be sorted in the default sort order.

Filtering Example

		(777875-58	Postman			
🔸 New 🔻 Impo	rt Runner 属	Build	er Team Library	SYNC OFF	• • •	🖤 Sign In
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12 13 14 15 16 17 18 19 20 21 22 23	<pre>"market_locatio "market_locatio "group": null, "category": "Ha "commodity": "C "market_typec: "market_type_ca" "slug_id": "109 "slug_name": "M "community": "D "quality": "NA" "holdings_unit"</pre>	n_state": "WI", rd Products", heese", "Cold Storage", tegory": "Dairy Market", 5", D_DA953", airy", ",				
					\$) 🔲 📼 1



Filtering - 2

- Filter data using multiple values for the same field
 - The request parameter "q" can be used to filter data
 - Syntax
 - q=<<field_name>>=<<value1>>,<<value2>>
 - "," is the value separator
 - The <<field_name>> should be the fields which are available in the response data
 - Records matching the condition *field_name in ('value1', 'value2')* will be returned
 - Default sort order will be applied



Filtering - 2 Example

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https://marsani.ams.u							No Environ	ment		~ ©	\$
GET 🗸	https://mar	sapi.ams.usda.	gov/services/v1/report	s/1095?q=com	modity=Cheese,Butter		Params	Send	~	Save	~
Authoriza on •	Headers (1)	Body	Pre-request Script	Tests						Cookies	Code
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Filtering - 3

- Filter data using a **between** values
 - The request parameter "q" can be used to filter data
 - Syntax
 - q=<<field_name1>>=<<value1>>:<<value2>>
 - ":" is the between separator
 - The <<field_name>> should be the fields which are available in the response data
 - Records matching the condition *field_name between ('value1', 'value2')* will be returned
 - Default sort order will be applied



Filtering - 3 Example

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GET 🗸	https://marsapi.ams.usda.j	gov/services/v1/reports/1095?q=report	_begin_date=01/01/2018:01/0	08/20 Params	Send 🗠	Save 🗠	
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and the second se	<pre>ults": [{ "report_begin_date "report_end_date": "published_date": "office_code": "DA "office_city": "Ma "office_state": "W "market_location_c "market_location_c</pre>	"2018-01-08", "2018-02-06", dison", -MD", dison", I", ame": "National Cold Storage",					
	market_tocacton_c	,			Q		0



Filtering - 4

- Filter data using multiple fields
 - The request parameter "q" can be used to filter data
 - Syntax
 - q=<<field_name1>>=<<value1>>;<<field_name2>>=<<value2
 >>
 - ";" is the field condition separator
 - The <<*field_name1>>* and <<*field_name2>>* should be the fields which are available in the response data
 - Records matching the condition *field_name1 in ('value1') and field_name 2 in ('value2')* will be returned
 - Default sort order will be applied



Filtering - 4 Example

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GE 🗸	https://mar	sapi.ams.usda.	gov/services/v1/rep	orts/1095?q=con	nmodity=Cheese;holdings	s_unit=LBS	Params	Ser	d N	Sav	e ~
uthorization 🔵	Headers (1)	Body	Pre-request Script	Tests						Cookie	s Cod
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	note	arnys_unit .							5	2 [[]	[222]



Filtering & Sorting

- Filter and sort the data
 - The request parameter "q" can be used to filter data
 - And the request parameter "sort" can be combined to sort data
 - Syntax
 - q=<<field_name1>>=<<value1>>;<<field_name2>>=<<value2
 >&sort=<<field_name3>>
 - "&" request parameters separator
 - The <<*field_name1>>*, <<*field_name2>>* and <<*field_name3>>* should be the fields which are available in the response data
 - Records matching the condition *field_name1 in ('value1') and field_name 2 in ('value2')* will be returned
 - The response data will be sorted by <<*field_name3*>>ASC order.

Filtering & Sorting Example

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ТҮРЕ			Heads up! Th	ese parameter	rs hold sensitive data. To l	keep this data se	cure while w	orking in a c	ollabora	ative	×
Basic Auth		\sim	environment	, we recommen	nd using variables. Learn	more about varia	ables				
The authorization header will be automatically generated when you send the request. Learn more about authorization		Username marketnews_252252 Password Password									
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Additional information

- MARS API documentation is available on MyMarketNews
 - https://mymarketnews.ams.usda.gov/mars-api-documentation
 - We will be updating it frequently to keep in sync with latest features
- cUrl is a command line tool
 - Curl is available in most of the UNIX flavors
 - It can be installed to the Windows machine
- PostMan is a third party UI tool
 - Tool is available at https://www.getpostman.com/
 - Get the free trail version