

Data as a Service (DaaS)

Development Handbook

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Data as a Service Development

Data as a Service

Access and Integrate Data

Data as a Service is a gateway to the automotive data produced by MOTOR. Using these web services, MOTOR data may be easily integrated into other applications without the effort associated with maintaining and updating data.

Data as a Service web service products include:

- Component Locations
- Diagnostic Trouble Codes
- Estimated Work Times
- Fluids
- Maintenance Schedules
- Part Vector Illustrations
- Parts
- Service Procedures
- Specifications
- Technical Service Bulletins
- Wiring Diagrams
- Vehicle Identification and Premium Options

RESTful API

MOTOR web services adhere to the RESTful (REpresentational State Transfer) API principles. These include a base URL, a defined Internet media type for the data, standard HTTP methods, and hypertext links.

The API is designed using plural nouns to highlight collections and to make the URL read like a sentence. The HTTP verb usage is designed using idempotency, meaning that the result will be the same, independent of the number of times the call is executed. According to the HTTP 1.1 specification GET, HEAD, PUT, and DELETE are all idempotent.

The API uses the following best practices:

- **Error codes** –The error codes correlate with the HTTP status code. When errors are generated in the API, the HTTP status code will match up with the error. For example, if the request is malformed, a Bad Request error will be displayed, with the HTTP status code 400.
- **Version** –The version of the API is included near the beginning of the URL, ensuring the user is aware of the API version and to prevent a request being moved to a new version of the API without the user's knowledge.
- **Paging** –In some of the collections, the amount of data in the response may be large and difficult to manage. To resolve this, the API includes the ability to request specific pages of data.
- **Multiple formats** –The API uses a pure RESTful way to allow the user to specify in which format the response should be returned. This is done by using the Accept header to pass the type. If nothing is specified, XML will be used as the default response language.

Development Kits

To assist application developers in using Data as a Service, MOTOR created Development Kits. The Development Kits include documentation and developer resources that are necessary to develop applications using the MOTOR web services.

The typical development kit includes:

- **Development Handbook** - Provides information on the API configurations that are required to use the web services and global principles that are required for all web services. Topics covered in the Handbook include:
 - Authentication information
 - Rate limiting
 - HTTP authorization header
 - Correlation support
 - MOTOR and VCdb standards
 - Error Codes
- **API References** - There is an API Reference for each product offered as Data as a Service. The API Reference contains detailed information about the web services included in each product, including:
 - Request details
 - Resource URL
 - Route parameters
 - Query string parameters
 - Sequence and object model diagrams
 - Sample requests
 - Sample responses in XML.

Note: Examples of the XML responses are provided for reference. They are examples only and the data contained within the responses may have been changed since the publication of this document.

Intended Audience

The contents of this document and other documents included in the Development Kit are technical in nature and therefore intended for a developer. These documents are written for an audience that understands web programming and is familiar with consuming information via web services through HTTP Rest requests.

It is assumed that a developer is familiar with:

- RESTful web services
- Object oriented programming concepts
- HTTP verbs and how they are used (Create = POST, Retrieve = GET, Update = PUT, Delete = DELETE)
- HTTP message construction and general knowledge of HTTP headers and standards
- Stateless and cacheable programming
- Identifying the relationships between resources
- Secure Socket Layer (SSL) programming

Help and Support

For support with Data as a Service development, or to obtain your API key, contact the customer service team:

By email: accountservices@motor.com

By website: support.motor.com

An account is required to request support via the web. If you do not have an account, visit support.motor.com and create an account.

API Configuration

Authentication

Overview

Authentication is required to gain access to MOTOR web services. The process of authentication will prove your identity to the web services, which will grant you access to the Data as a Service products. Authentication information must be provided on every request. The web services do not maintain session information. Following RESTful best practices, the services are stateless. Each request must be signed with an appropriate HTTP request header.

When a request is received by the MOTOR Web Services it will rebuild the signature based on the HTTP headers and information that the system expected to receive in a request. The two signatures are compared and if the signature provided matches the expected signature, the user has properly authenticated and has access to the system. If the signatures do not match the request, the request is terminated. The error HTTP '401 Unauthorized' status code will be displayed, accompanied with a custom error code in the response body.

The request signing process uses a keyed Hash Message Authentication Code (HMAC) and a custom HTTP scheme. The MOTOR web services support a custom scheme of 'Shared' which tells the MOTOR web services that you are authenticating via a shared public and private key.

Example of an Authenticated REST Request:

```
GET https://api.motor.com/v1/HelloWorld HTTP/1.1
Host: api.motor.com
Date: Thu, 02 Apr 2015 18:25:10 GMT
Authorization: Shared example:4FH6ntrovwSKpgC8Q50bwVsLeQ3NahP3nIGUM1BwDoI=
```

Note: Prior versions of the API allowed for a third authentication scheme of 'MWS' to be used. This was based off a keyed-SHA256 hashing algorithm. This scheme is no longer supported but is maintained for backwards compatibility. Any clients using the 'MWS' authentication scheme must start using the 'Shared' authentication scheme.

HelloWorld Examples

To assist developers in accessing the web services, there are HelloWorld examples in multiple languages available on the MOTOR web site. See <http://www.motor.com/products-services/data-services/>.

Public and Private API Keys

To access MOTOR web services public and private API keys are required. The public key is your public identity, similar to a user name. The private key is similar to a password and is used to sign requests. The private key is never transmitted during web service requests. Keep the API keys private and do not distribute them.

Authentication Header

The MOTOR web services use an HTTP authorization header to supply authentication information and a signature on each request. Note that “Authorization” is the name of the header.

Example of a valid authorization header:

```
Authorization: Shared PublicKey:Signature
```

Time-stamping Requests

Every request to the MOTOR web services requires a valid time stamp. A time stamp can be provided in the standard HTTP ‘Date’ Header or by using a custom ‘X-Date’ HTTP Header.

The time stamp provided must be in one of the RFC 2616 formats (<http://www.ietf.org/rfc/rfc2616.txt>). A time stamp can also be supplied in the ‘xdate’ query string variable. If this method is used the time stamp must be a UNIX Epoch time stamp (http://en.wikipedia.org/wiki/Unix_time) rather than a formatted date string. All dates supplied are assumed to be in UTC time unless specified with the UTC offset.

The first properly formatted time stamp that is used will override any other time stamp provided on the request, with precedence given in the following order:

- Query string epoch using the ‘xdate’ parameter
- Custom ‘X-Date’ HTTP Header
- Standard HTTP ‘Date’ header

The time stamp that is used in a request must exactly match the time stamp used in generating the authentication signature.

The time stamp provided must fall within 15 minutes plus or minus of the server time of the web services. If the time stamp provided falls outside of this range the request will be denied access and responded with an HTTP 403 Forbidden response. This is to prevent against Replay Attacks (http://en.wikipedia.org/wiki/Replay_attack).

Supported Data Formats

Mon, 15 Jun 2015 15:00:54 GMT	Mon, 15-Jun-15 15:00:54 GMT
Mon, 15 Jun 2015 15:00:54 UTC	Mon, 15-Jun-15 15:00:54 UTC
Mon, 15 Jun 2015 15:00:54 UT	Mon, 15-Jun-15 15:00:54 UT
Mon, 15 Jun 2015 15:00:54	Mon, 15-Jun-15 15:00:54
Mon, 15 Jun 2015 11:00:54 -0400	Mon, 15-Jun-15 11:00:54 -0400
Mon, 15 Jun 2015 11:00:54 -04:00	Mon, 15-Jun-15 11:00:54 -04:00
Mon Jun 15 15:00:54 2015	

Signing a Request

The public and private API keys are required to build the request signature. To create the signature, build the Signature Data string to sign the request. This string contains information about the request and will be used to generate the signature. The Signature Data is built using the following HTTP request information:

Public Key	Your public key (case sensitive).
HTTP Verb	GET, POST, PUT, DELETE
Time stamp	The time stamp of the request, converted to a UNIX epoch.
URI Path	<p>The entire path portion of the URI in the request. This must exactly match the URI path on the HTTP request, including case sensitivity. It must start with a leading '/' character and include everything after the host and port. It should not include the query string portion of the URI or the separating '?' character.</p> <p>Example:</p> <p><code>https://api.motor.com/v1/Information/YMME/ Years?min=1990</code></p> <p>Use:</p> <p><code>/v1/Information/YMME/Years</code></p>

Example of a valid authorization header:

The following is an example of the steps required to generate the Authorization header (this code is provided as a sample only):

```
Authorization = "Shared" + " " + YourPublicKey + ":" + Signature;

Signature = Base64(HMAC-SHA256(YourPrivateKey, SignatureData));

SignatureData = YourPublicKey + "\n" + HTTP Verb + "\n" +
Timestamp(Date) + "\n" + URIPath(URI);
```

Authentication Examples

The following are provided as examples only:

Example API Key Credentials

Public Key	L6yPPubKey
Private Key	90PolbjdUdhY9Hmfrin7JoEVo

Example GET Request

```
GET https://api.motor.com/v1/Information/YMME/Years?min=1990 HTTP/1.1
Date: Thu, 16 Apr 2015 16:12:01 GMT
Authorization: Shared L6yPPubKey:q+FhRKNYtWNCsUiip9e92yPw73ZEIfm4ZETGoh+o1Rs=
Host: api.motor.com
```

Example Signature Data

```
L6yPPubKey\n
GET\n
1429200721\n
/v1/Information/YMME/Years
```

Example Authentication Header

The example below creates an authorization header by using the (non-working) credentials and Epoch from the table. In a real world request, use the assigned public key, private key, and the current Epoch at the time of request.

Parameter	Value
PublicKey	Rg8SYj4nXt
PrivateKey	Ru33Qm24SWAcD7rMxjzatVVz2
UTC DateTime / Epoch	DateTime: Thu, 31 Jul 2014 16:41:30 GMT EPOCH: 1406824890

```
Authorization: MWS
Rg8SYj4nXt:59b448a87fea374ab7b8f62de687cd3366a90f99290a1b2769b2442ee67239
1b
```

Temporary Access Tokens

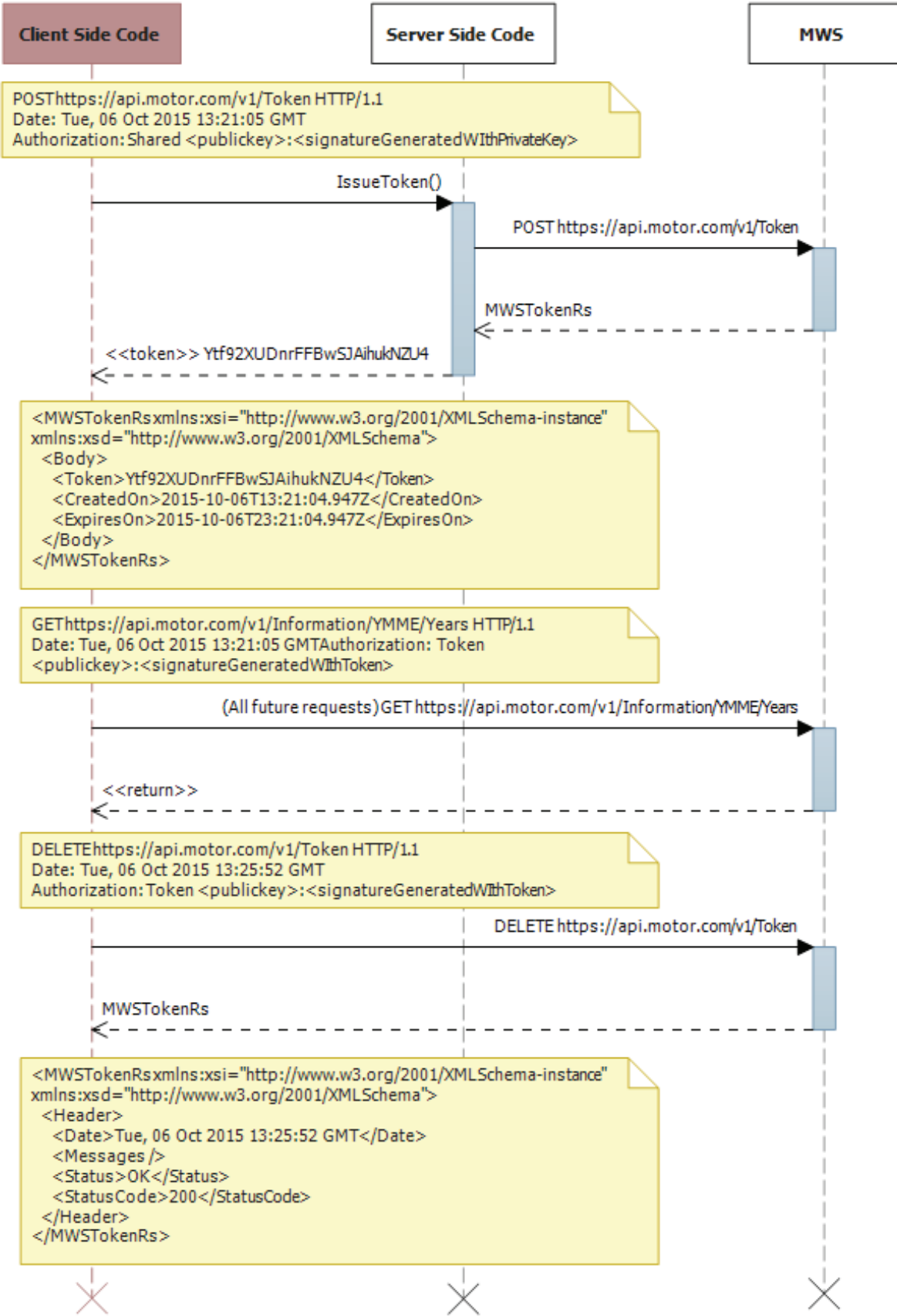
Temporary access tokens can be used in place of a private API key. They provide greater security since the private key is not stored on or used by the client to access the services. Also, the token is only valid for a fixed amount of time before expiring, providing additional security.

Generating an Access Token

To generate a temporary access token, you will need a public and private key to access the token service. Both keys will be sent from National Accounts Service to new DaaS customers. If you do not have your public or private key, contact accountservices@motor.com.

To generate a temporary access token, create a request signature using your public and private key to call the token service. See [Token Authentication—Create Token](#). After retrieving the temporary token, change the authentication scheme in the Authorization header to Token.

The sequence diagram illustrates the sequence of service calls to generate a temporary access token and use that token in future requests. It also includes an optional call to revoke the token. It is not necessary to revoke temporary access tokens since they will expire at a fixed time, however if a token has been created but will not be used, it is best practice to revoke it.



Troubleshooting Signature Errors

If you receive a response status code of 401 Unauthorized, your signature could not be verified. The body of the request will contain a response header message with one or more error codes that can help identify why the authorization was denied. The example below is an example of a response with a response message.

```
GET https://api.motor.com/v1/Information/YMME/Years HTTP/1.1
Date: Thu, 23 Apr 2015 12:13:17 GMT
Authorization: Shared
L6yPPubKey:MKI796n13fTYH4JtJGEChDDS8BUIHrjg650BwbP6q5w=
Host: api.motor.com

HTTP/1.1 401 Unauthorized
Content-Type: text/xml
WWW-Authenticate: Shared realm="MOTOR Web Services"
Date: Thu, 23 Apr 2015 12:13:17 GMT
Content-Length: 587

<?xml version="1.0"?>
<MWSVehicleYearsRS xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Header>
    <Date>Thu, 23 Apr 2015 12:13:17 GMT</Date>
    <Messages>
      <ResponseMessage>
        <Code>401.000051</Code>
        <LongDescription>Invalid authentication.</LongDescription>
        <ShortDescription>Invalid Authentication</ShortDescription>
        <Type>Error</Type>
      </ResponseMessage>
    </Messages>
    <Status>Unauthorized</Status>
    <StatusCode>401</StatusCode>
  </Header>
</MWSVehicleYearsRS>
```

Query String Requests as a Signing Alternative

Another option for authentication is to provide the authentication information in the query string parameters. This is useful when you do not have the ability to proxy the requests from 3rd party applications such as web browsers.

ApiKey	Your public key (case sensitive).
Sig	The URL encoding of the Base64 encoding of the HMAC-SHA256 of the Signature Data.
Scheme	The MOTOR web services support a custom scheme of 'Shared' which tells the MOTOR web services that you are authenticating via a shared public and private key.
XDate	The time stamp of the request converted to a UNIX epoch. This must exactly match the value used to generate your request signature.

The following example illustrates the steps required to generate the signature.

Note the URL encoding of the signature data, it is different from using the HTTP authorization header because encoding is not needed in the header data.

The Signature Data is Base64 encoded into simple ASCII string characters such as the plus (+), forward slash (/), and equals (=). If the Base64 encoded signature includes a plus (+) sign, encode it as %2B in the request. Encode a forward slash (/) as %2F, and the equal sign (=) as %3D.

Example GET Request using Query String Signatures

```
GET https://api.motor.com/v1/Information/YMME/  
Years?ApiKey=L6yPPubKey&Sig=eCYX%2b3IM8AHB2z1ivcdmKmfZrSMz83FOU36ku6h6hRA  
%3d&Scheme=Shared&xDate=1429800511 HTTP/1.1  
Host: api.motor.com
```

Rate limiting

Overview

Rate limiting controls the number of requests that a user can make during a specific amount of time using their access token. This is a control method that prevents the web services from being overwhelmed by requests, either legitimate or of a malicious nature.

Each user access token is granted 1500 requests per 15 minutes. If the rate limit for an access token is exceeded in the 15-minute window, the user will receive the error code 429 Too Many Requests.

HTTP Headers and Response Codes

A user can identify the current state of their rate limit using the HTTP header. The rate limiting headers are contextual and represent the current state of rate limiting for the access token that is used in the request.

Use the information in the headers to ensure requests do not exceed the rate limit:

Parameter	Value
X-Rate-Limit-Limit	The total number of requests allowed for the given access token.
X-Rate-Limit-Remaining	The number of requests that are left for the given access token within the 15 minute window.
X-Rate-Limit-Reset	The remaining window before the rate limit resets in UNIX epoch seconds.

Request Example

```
GET http://api.motor.com/v1/Getting/Started/HelloWorld HTTP/1.1  
Date: Mon, 22 Sep 2014 13:41:05 GMT  
Accept: application/json  
Authorization: Shared PublicKey:Signature  
Host: api.motor.com
```


HTTP Response

```
HTTP/1.1 200 OK
Cache-Control: no-store, no-cache
Pragma: no-cache
Content-Type: application/json
Content-Language: en-US
X-MWS-Version: v1
X-Rate-Limit-Limit: 500
X-Rate-Limit-Remaining: 472
X-Rate-Limit-Reset: 1411396865
Date: Mon, 22 May 2015 13:41:05 GMT
Content-Length: 122

{"Body":{"Hello":"world"}, "Header":{"Date":" Mon, 22 Sep 2014 13:41:05 GMT", "Messages": [], "Status":"OK", "StatusCode":200}}
```

Correlation support

Correlation support is a method of identifying each request with a specific ID and including that ID in the return response.

The user can provide a specific string with the request. That unique string will be included in the return response from the API. This allows the request and response messages to be linked for easy identification.

Correlation support is handled in the HTTP Request/Response Headers. The correlation ID may be any length and may contain any alphanumeric character. The correlation ID is specified in the request header by using the ID: X-CorrelationID.

If your application cannot write to a request header, use the query string “xcorrelationid” instead of the response header.

For example:

```
http://api.motor.com/14.07.1/Getting/Started/HelloWorld?xcorrelationid=123456-AA
```

Example HTTP Request & Response

In this example, the HelloWorld web service is called, using the X-CorrelationID 123456-AA:

```
GET https://api.motor.com/v1/Getting/Started/HelloWorld HTTP/1.1
Date: Thu, 17 Jul 2014 18:53:23 GMT
Accept: application/json
X-CorrelationID: 123456-AA
Authorization: Shared PublicKey:Signature
Host: api.motor.com
```

The response is:

```
HTTP/1.1 200 OK
Cache-Control: no-store, no-cache
Pragma: no-cache
Content-Type: application/json
Content-Language: en-US
X-MWS-Version: v1
X-CorrelationID: 123456-AA X-RateLimit-Limit: 5000
X-RateLimit-Remaining: 4999
X-RateLimit-Reset: Thu, 17 Jul 2014 19:53:23 GMT
Date: Thu, 17 Jul 2014 18:53:23 GMT
Content-Length: 122

{"Body":{"Hello":"world" }, "Header":{"Date":"Thu, 17 Jul 2014 18:53:23 GMT", "Messages":[], "Status":"OK", "StatusCode":200}}
```

Paging

Responses may contain a large number of records, which could be difficult to interpret unless the records are separated into pages. Paging allows you to specify the number of items per page in a response.

The query parameter `ItemsPerPage` allows you to specify the number of items returned on each page.

An example request with paging:

```
/Information/Vehicles/Attributes/BaseVehicleID/22123/Content/Summaries/
Of/EstimatedWorkTimes? Contentsilos=28&Include=U&ItemsPerPage=10&Page
Index=2&AttributeStandard=MOTOR
```

Global Routes

Application Relation Type

Request Details

The AppRelationType service is used across DaaS products with the exception of Vehicle Identification.

This service returns a list of application relation type mappings categorized by content data type. The application relation type IDs can be used as a comma separated list to filter all summary and taxonomy services.

Resource URL

/Information/Content/Details/Of/AppRelationTypes

Resource Verb

GET

Route Parameters

N/A

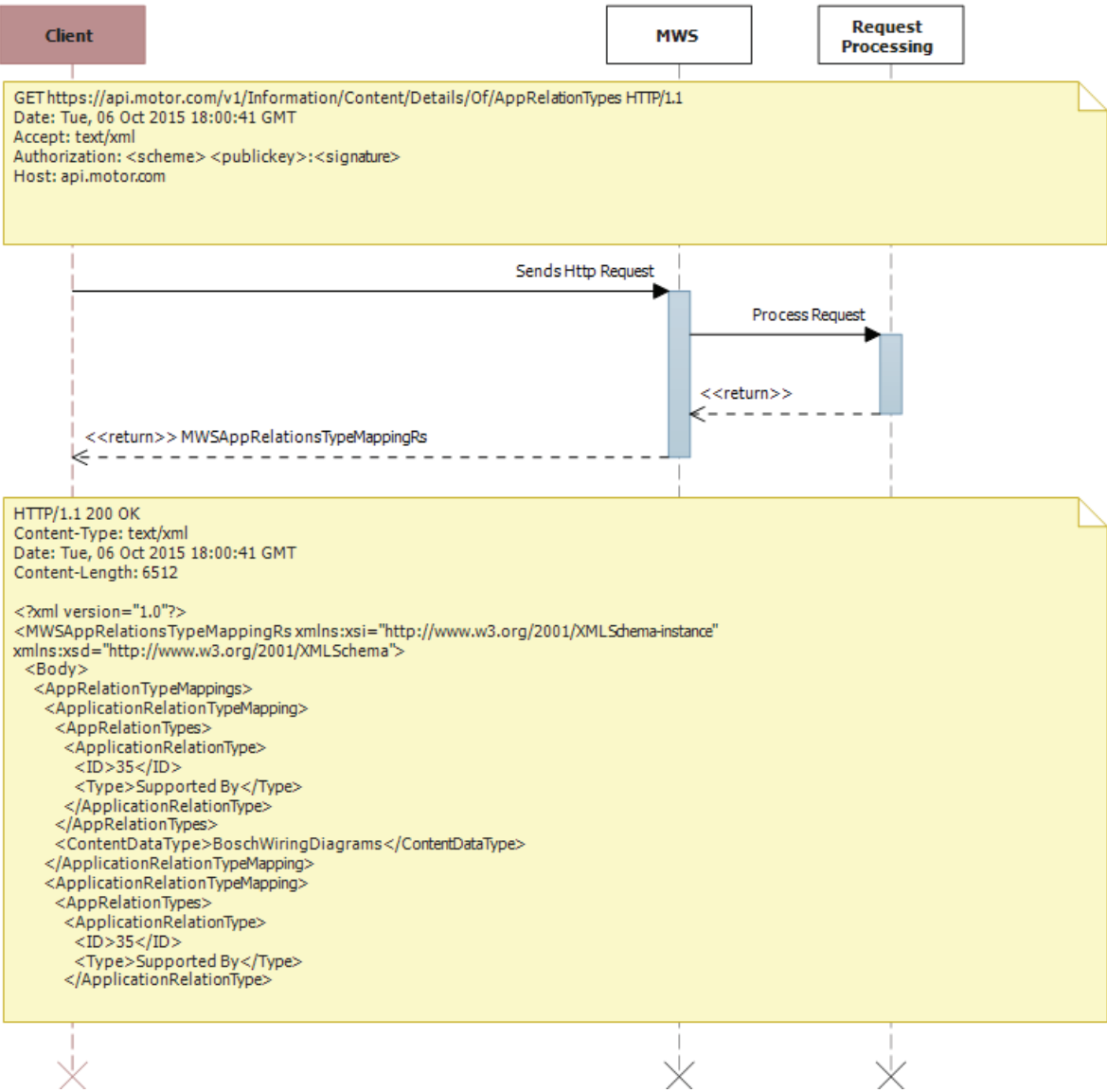
Query String Parameters

N/A

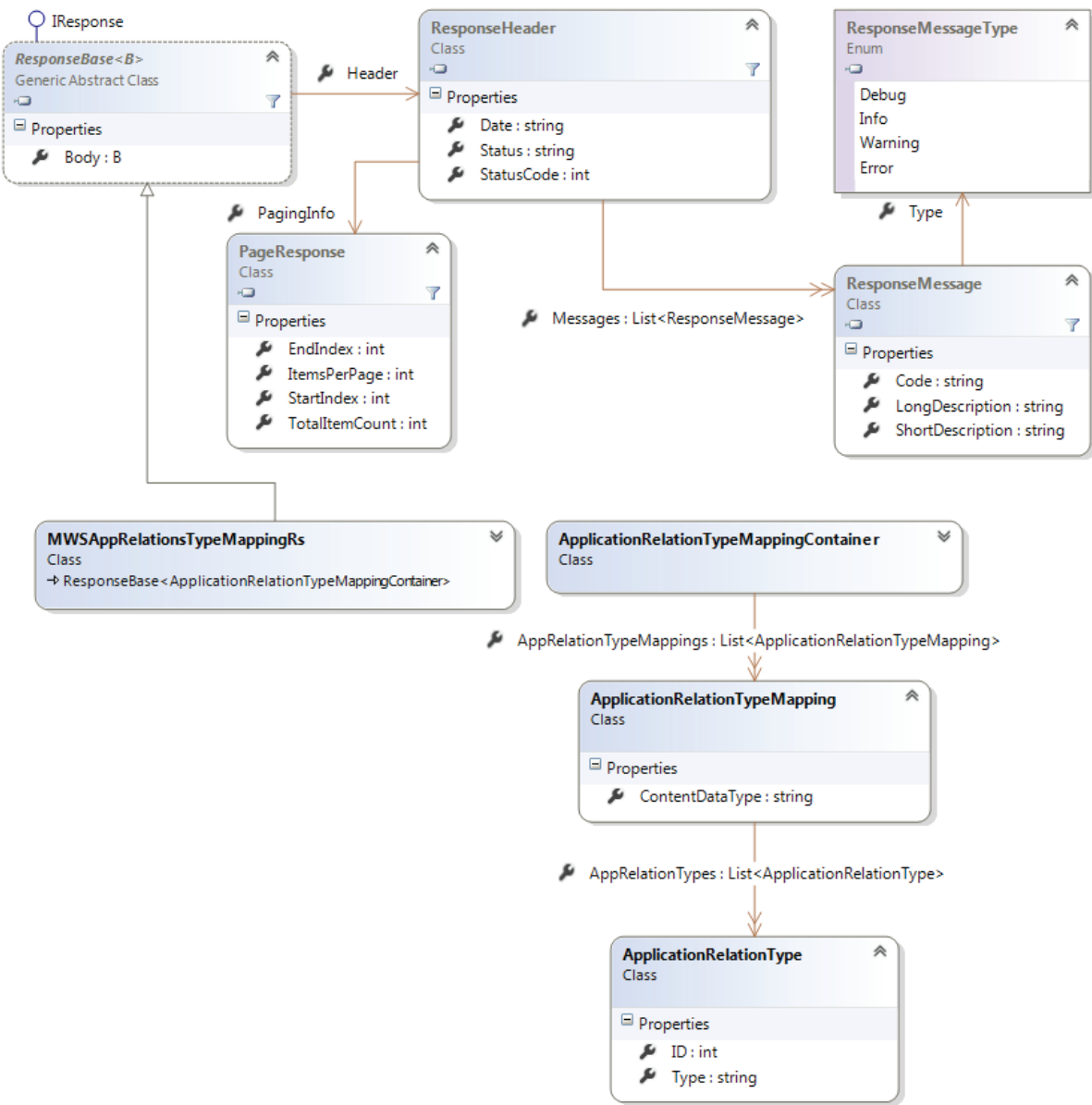
Sample Request

/Information/Content/Details/Of/AppRelationTypes

Sequence Diagram



Object Model Diagram



Sample Response

```
<MWSAppRelationsTypeMappingRs xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Body>
    <AppRelationTypeMappings>
      <ApplicationRelationTypeMapping>
        <AppRelationTypes>
          <ApplicationRelationType>
            <ID>35</ID>
            <Type>Supported By</Type>
          </ApplicationRelationType>
        </AppRelationTypes>
        <ContentDataType>BoschwiringDiagrams</ContentDataType>
      </ApplicationRelationTypeMapping>
      <ApplicationRelationTypeMapping>
        <AppRelationTypes>
          <ApplicationRelationType>
            <ID>35</ID>
            <Type>Supported By</Type>
          </ApplicationRelationType>
        </AppRelationTypes>
        <ContentDataType>ComponentLocations</ContentDataType>
      </ApplicationRelationTypeMapping>
      <ApplicationRelationTypeMapping>
        <AppRelationTypes>
          <ApplicationRelationType>
            <ID>35</ID>
            <Type>Supported By</Type>
          </ApplicationRelationType>
        </AppRelationTypes>
        <ContentDataType>DiagnosticTroubleCodes</ContentDataType>
      </ApplicationRelationTypeMapping>
      <ApplicationRelationTypeMapping>
        <AppRelationTypes>
          <ApplicationRelationType>
            <ID>1</ID>
            <Type>Main Operation to Optional Operation</Type>
          </ApplicationRelationType>
          <ApplicationRelationType>
            <ID>32</ID>
            <Type>Diagnosed By</Type>
          </ApplicationRelationType>
          <ApplicationRelationType>
            <ID>35</ID>
            <Type>Supported By</Type>
          </ApplicationRelationType>
          <ApplicationRelationType>
            <ID>36</ID>
            <Type>Selects</Type>
          </ApplicationRelationType>
          <ApplicationRelationType>
            <ID>37</ID>
            <Type>Replaces</Type>
          </ApplicationRelationType>
        </AppRelationTypes>
        <ContentDataType>EstimatedWorkTimes</ContentDataType>
      </ApplicationRelationTypeMapping>
      <ApplicationRelationTypeMapping>
        <AppRelationTypes>
          <ApplicationRelationType>
            <ID>35</ID>
```

```

        <Type>Supported By</Type>
      </ApplicationRelationType>
    <ApplicationRelationType>
      <ID>37</ID>
      <Type>Replaces</Type>
    </ApplicationRelationType>
  </AppRelationTypes>
  <ContentDataType>Fluids</ContentDataType>
</ApplicationRelationTypeMapping>
<ApplicationRelationTypeMapping>
  <AppRelationTypes>
    <ApplicationRelationType>
      <ID>32</ID>
      <Type>Diagnosed By</Type>
    </ApplicationRelationType>
    <ApplicationRelationType>
      <ID>35</ID>
      <Type>Supported By</Type>
    </ApplicationRelationType>
    <ApplicationRelationType>
      <ID>36</ID>
      <Type>Selects</Type>
    </ApplicationRelationType>
    <ApplicationRelationType>
      <ID>37</ID>
      <Type>Replaces</Type>
    </ApplicationRelationType>
  </AppRelationTypes>
  <ContentDataType>MaintenanceSchedules</ContentDataType>
</ApplicationRelationTypeMapping>
<ApplicationRelationTypeMapping>
  <AppRelationTypes>
    <ApplicationRelationType>
      <ID>35</ID>
      <Type>Supported By</Type>
    </ApplicationRelationType>
    <ApplicationRelationType>
      <ID>37</ID>
      <Type>Replaces</Type>
    </ApplicationRelationType>
  </AppRelationTypes>
  <ContentDataType>Parts</ContentDataType>
</ApplicationRelationTypeMapping>
<ApplicationRelationTypeMapping>
  <AppRelationTypes>
    <ApplicationRelationType>
      <ID>33</ID>
      <Type>Described By</Type>
    </ApplicationRelationType>
    <ApplicationRelationType>
      <ID>35</ID>
      <Type>Supported By</Type>
    </ApplicationRelationType>
    <ApplicationRelationType>
      <ID>36</ID>
      <Type>Selects</Type>
    </ApplicationRelationType>
  </AppRelationTypes>
  <ContentDataType>PartVectorIllustrationLayers</ContentDataType>
</ApplicationRelationTypeMapping>
<ApplicationRelationTypeMapping>
  <AppRelationTypes>
    <ApplicationRelationType>

```

```

        <ID>33</ID>
        <Type>Described By</Type>
      </ApplicationRelationType>
    </AppRelationTypes>
    <ContentDataType>PartVectorIllustrations</ContentDataType>
  </ApplicationRelationTypeMapping>
  <ApplicationRelationTypeMapping>
    <AppRelationTypes>
      <ApplicationRelationType>
        <ID>35</ID>
        <Type>Supported By</Type>
      </ApplicationRelationType>
      <ApplicationRelationType>
        <ID>40</ID>
        <Type>Service Procedure To Procedure</Type>
      </ApplicationRelationType>
    </AppRelationTypes>
    <ContentDataType>ServiceProcedures</ContentDataType>
  </ApplicationRelationTypeMapping>
  <ApplicationRelationTypeMapping>
    <AppRelationTypes>
      <ApplicationRelationType>
        <ID>35</ID>
        <Type>Supported By</Type>
      </ApplicationRelationType>
    </AppRelationTypes>
    <ContentDataType>Specifications</ContentDataType>
  </ApplicationRelationTypeMapping>
  <ApplicationRelationTypeMapping>
    <AppRelationTypes>
      <ApplicationRelationType>
        <ID>35</ID>
        <Type>Supported By</Type>
      </ApplicationRelationType>
    </AppRelationTypes>
    <ContentDataType>TechnicalServiceBulletins</ContentDataType>
  </ApplicationRelationTypeMapping>
  <ApplicationRelationTypeMapping>
    <AppRelationTypes>
      <ApplicationRelationType>
        <ID>35</ID>
        <Type>Supported By</Type>
      </ApplicationRelationType>
    </AppRelationTypes>
    <ContentDataType>WiringDiagrams</ContentDataType>
  </ApplicationRelationTypeMapping>
</AppRelationTypeMappings>
</Body>
<Header>
  <Date>Tue, 06 Oct 2015 18:00:42 GMT</Date>
  <Messages />
  <Status>OK</Status>
  <StatusCode>200</StatusCode>
</Header>
</MWSAppRelationsTypeMappingRs>

```

Content Silo

Request Details

The Content Silo service is used with most DaaS products. This service returns a list of content silos. Content silos are a category of data by which you can filter results.

Resource URL

/Information/Content/Details/Of/ContentSilos

Resource Verb

GET

Route Parameters

N/A

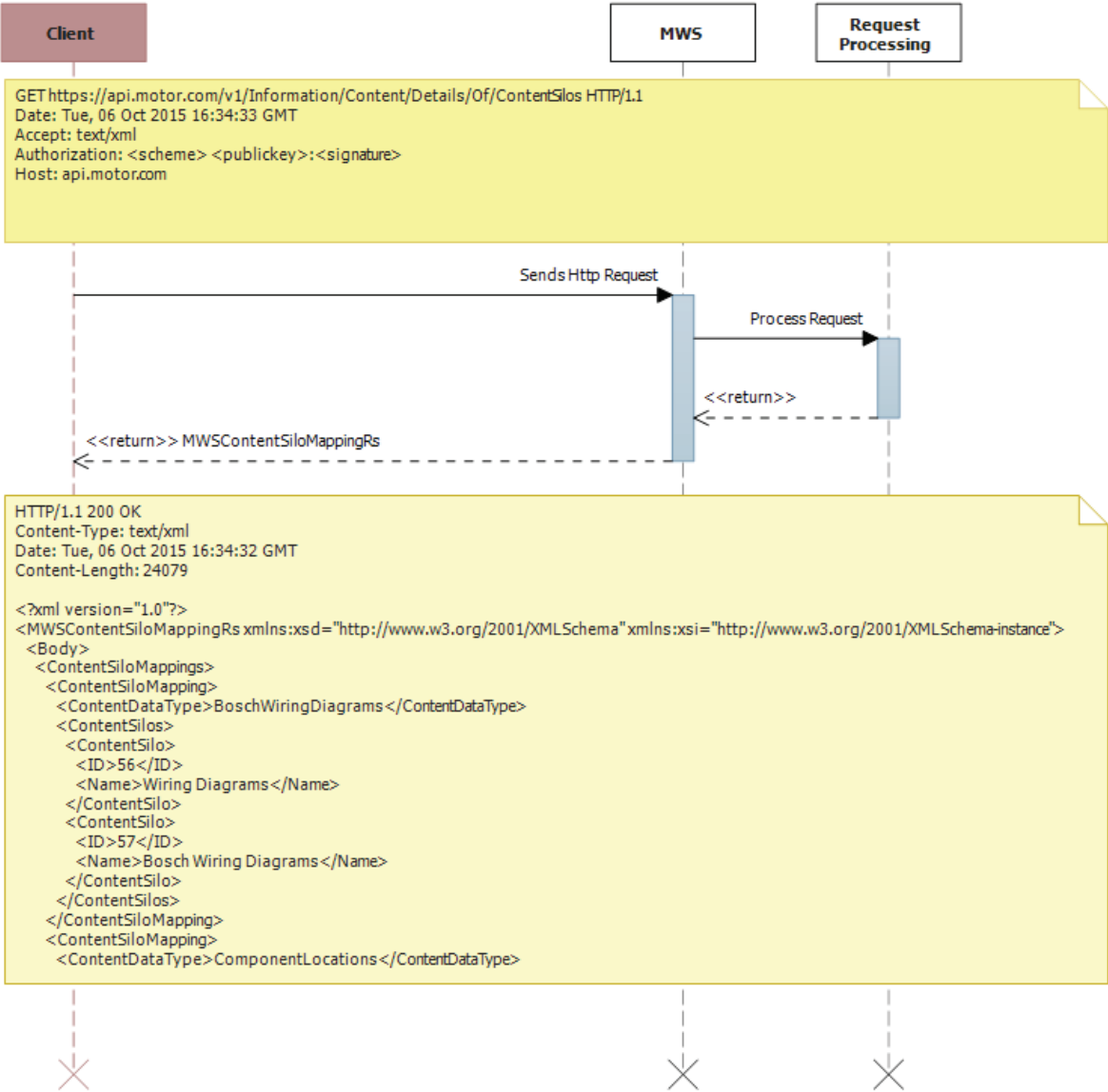
Query String Parameters

N/A

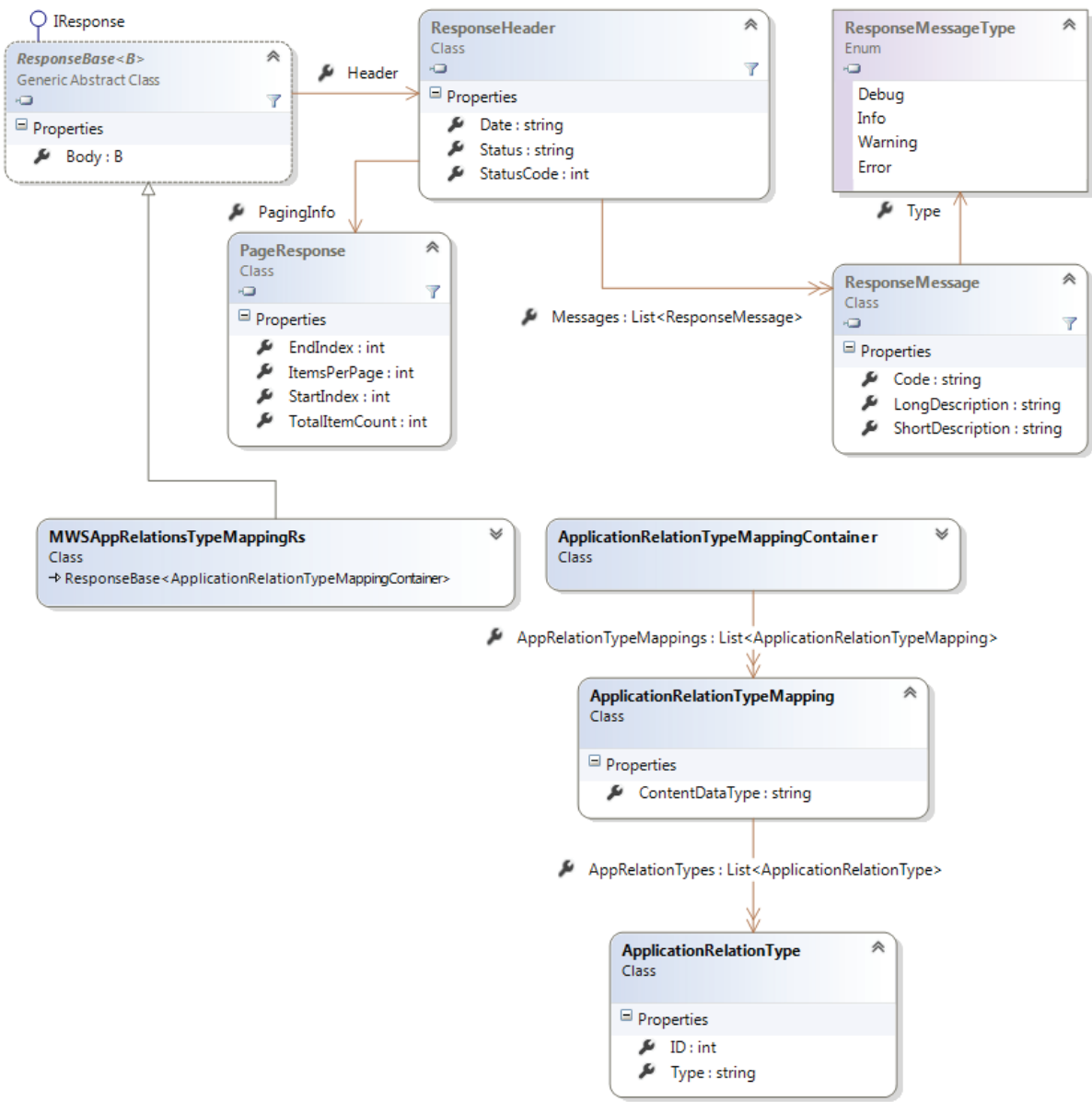
Sample Request

/Information/Content/Details/Of/ContentSilos

Sequence Diagram



Object Model Diagram



Sample Response

```
?xml version="1.0"?>
<MWSContentSiloMappingRs xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.
w3.org/2001/XMLSchema-instance">
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        </ContentsSilos>
    </ContentsSiloMapping>
</ContentsSiloMappings>
</Body>
<Header>
    <Date>Wed, 27 Jan 2016 21:40:47 GMT</Date>
    <Messages/>
    <Status>OK</Status>
    <StatusCode>200</StatusCode>
</Header>
</MWSContentsSiloMappingRs>

```

Token Authentication—Create Token

Request Details

The Token Authentication service is used across DaaS products. See [Temporary Access Tokens](#) for additional information.

This service creates a new temporary token that can be used in place of the a private key for generating the authentication signature. Future requests made with a temporary access token must be used in conjunction with the authentication scheme of the token.

Resource URL

api.motor.com/v1/Token

Resource Verb

POST

Route Parameters

N/A

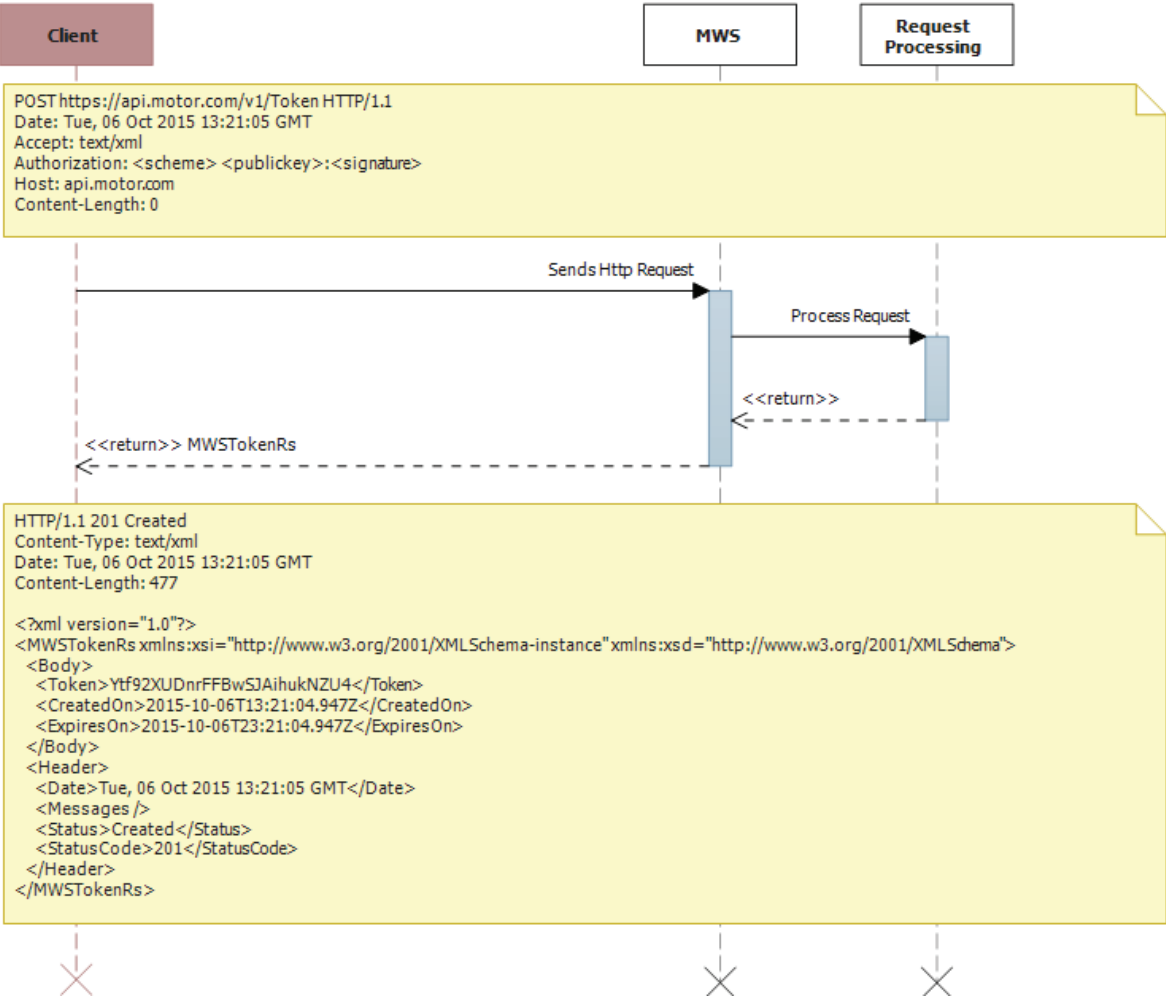
Query String Parameters

N/A

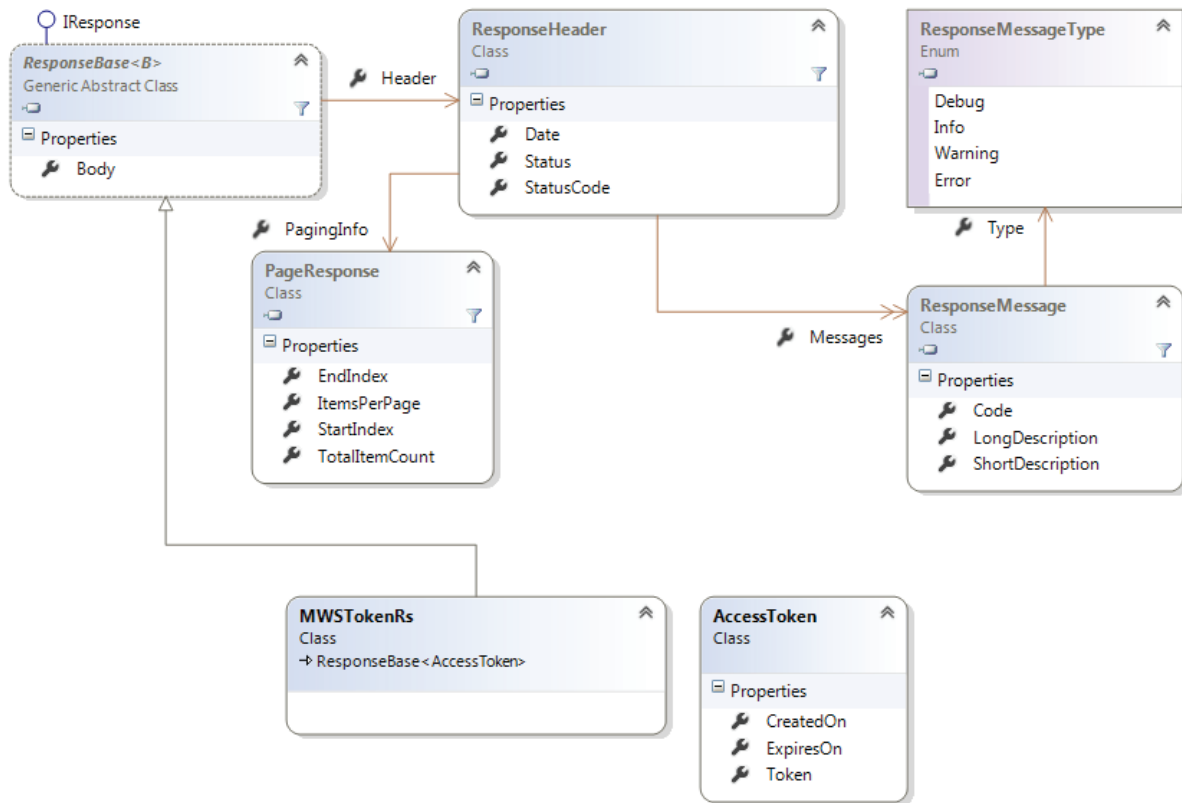
Sample Request

POST https://api.motor.com/v1/Token

Sequence Diagram



Object Model Diagram



Sample Response

```

<MWSTokenRs xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Body>
    <Token>Ytf92XUDnrFFBwSJAIhukNZU4</Token>
    <CreatedOn>2015-10-06T13:21:04.947Z</CreatedOn>
    <ExpiresOn>2015-10-06T23:21:04.947Z</ExpiresOn>
  </Body>
  <Header>
    <Date>Tue, 06 Oct 2015 13:21:05 GMT</Date>
    <Messages/>
    <Status>Created</Status>
    <StatusCode>201</StatusCode>
  </Header>
</MWSTokenRs>
  
```

Token Authentication—Delete Token

Request Details

The Token Authentication service is used across DaaS products. See [Temporary Access Tokens](#) for additional information.

This service removes a temporary access token. The signature used in this request must be made with the token that is being removed.

Note: If the token being removed has expired or is no longer in the system a response code of 401 (Unauthorized) will be issued along with a MOTOR Web Services error code 401.000052.

Resource URL

api.motor.com/v1/Token

Resource Verb

DELETE

Route Parameters

N/A

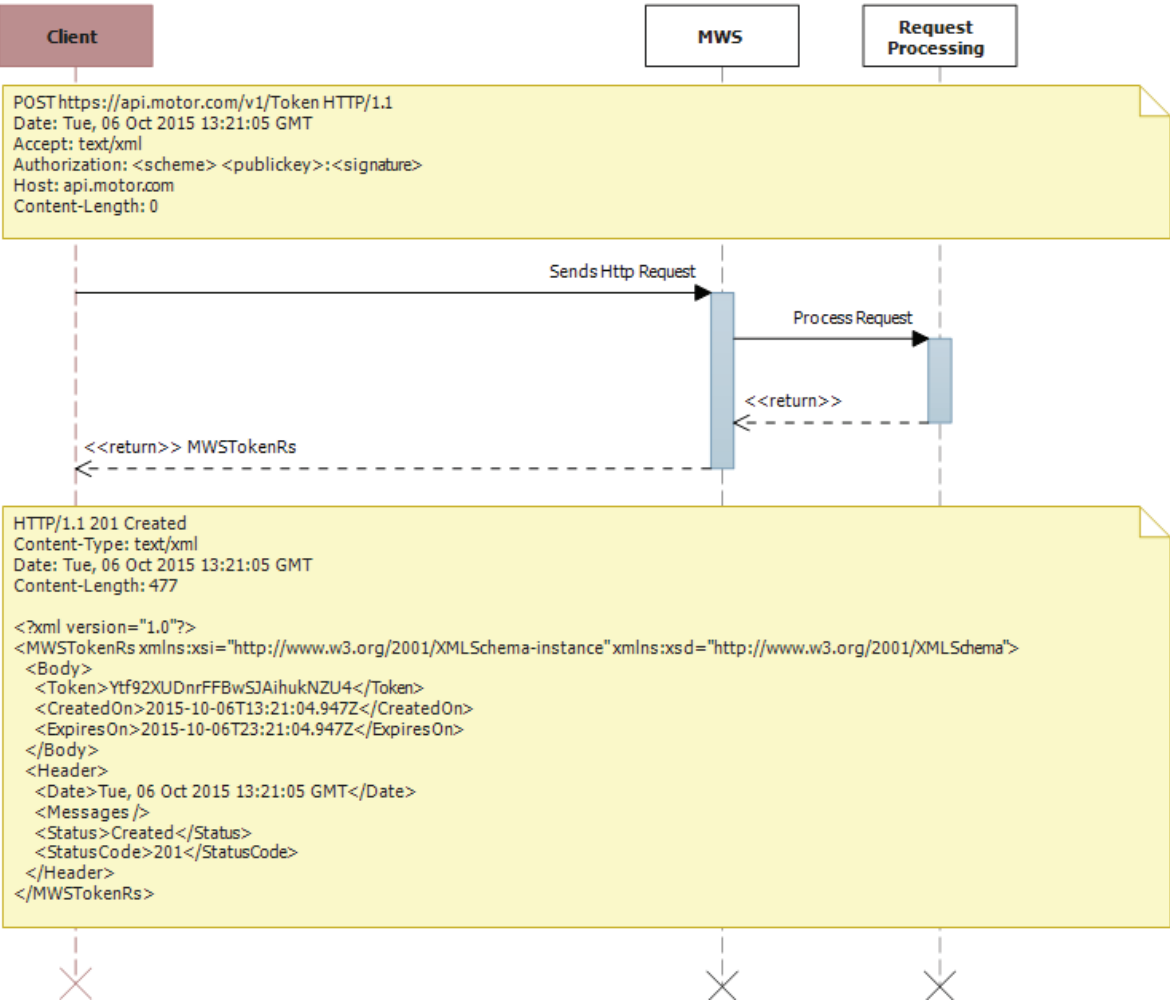
Query String Parameters

N/A

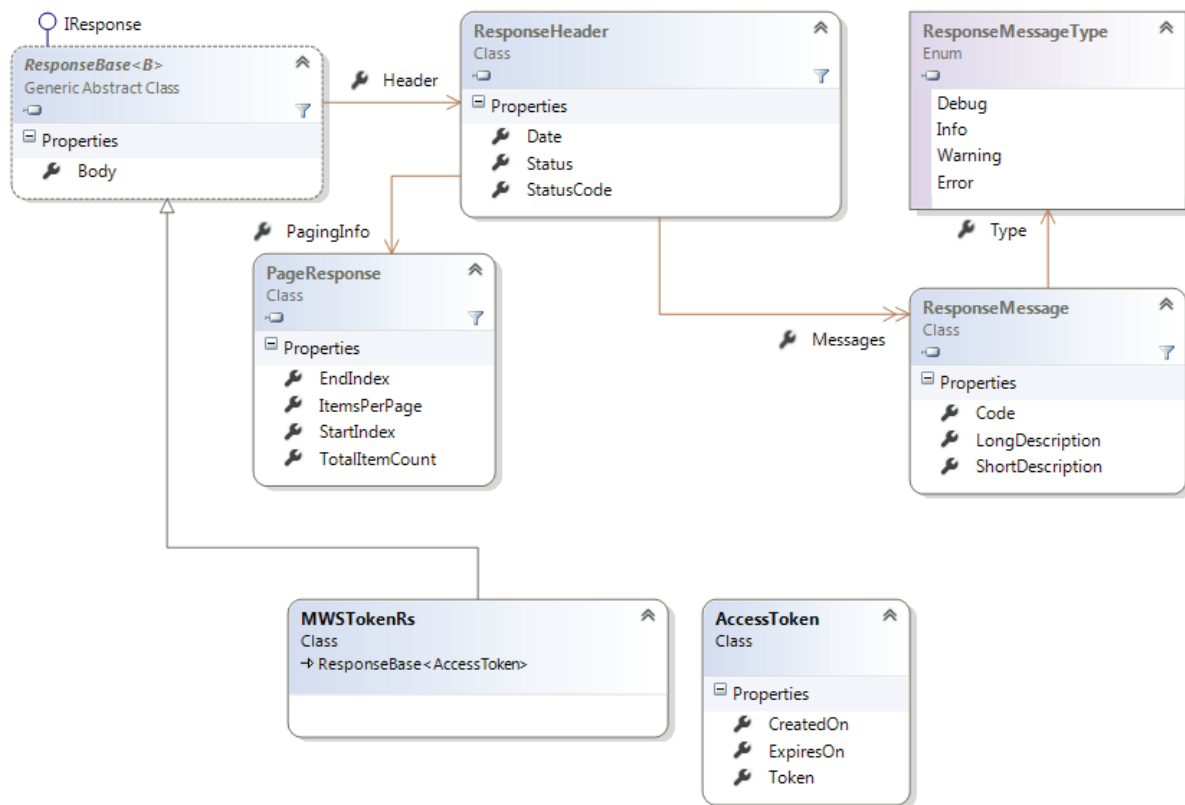
Sample Request

DELETE https://api.motor.com/v1/Token

Sequence Diagram



Object Model Diagram



Sample Response

```

<MWSTokenRs xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Header>
    <Date>Tue, 06 Oct 2015 13:25:52 GMT</Date>
    <Messages />
    <Status>OK</Status>
    <StatusCode>200</StatusCode>
  </Header>
</MWSTokenRs>
  
```

Error Codes

Data as a Service Error Codes

Code	Short Description	Reason
200.000201	Service Resource Deprecated	This service resource has been deprecated.
200.000202	MWS Auth Scheme Deprecated	The authentication scheme 'MWS' is deprecated. Please switch to the 'Shared' auth scheme and corresponding HMAC-SHA256 Signature method.
400.000054	Password Required	Please specify a Password
400.000055	Invalid Password	Password must be between 1 and 32 characters
400.000056	User Name Required	Please specify a User Name.
400.000057	Invalid User Name	User Name must be between 7 and 100 characters.
400.000058	Invalid Public Key	Public Key must be 10 characters.
400.000059	Public Key Required	Please specify a Public Key.
400.000151	Invalid XML Request	The following issue was encountered on the incoming XML request: {0}
400.000152	Invalid JSON Request	The following issue was encountered on the incoming JSON request: {0}
400.000153	Invalid BSON Request	The following issue was encountered on the incoming BSON request: {0}
400.000154	Too Many Multipart Content Items	Too many Multipart Content Items have been provided. Your request cannot exceed {0} items.
400.000155	Invalid Request	The request was null.
400.000156	Invalid Property Format	{0}
400.010001	Invalid Page Index	The Page Index cannot be less than 0.
400.010002	Invalid Items Per Page	The ItemsPerPage used in the paging request must be between 0 and 30. A default of 30 will be used if unspecified or zero(0) is specified.
400.100001	Invalid Application ID	The Application ID cannot be negative.
400.100005	Invalid Content Types	Please ensure all Content Types are valid.
400.100006	Invalid Query Filter Type	The Query Filter Type must be one of the following: 'RelatedTo', 'Matching'.
400.100007	Invalid Relation Types	Please specify a valid Relation Type or multiple types. Use an comma (,) to separate multiple types.
400.100008	Content Type Required	Please provide a valid content type
400.100009	Application ID Required	The Application ID is required
400.100012	Invalid Search Term	The Search Term can not exceed 255 characters in length.
400.100013	Invalid Content Data Type	Content Type must be one of the following: {0}.
400.100014	Invalid Part Terminology ID	Please specify a valid PartTerminologyID

400.100501	Invalid Severity	Severity must be one of the following: 'All', 'Severe', 'Normal'.
400.110001	Invalid Vehicle Year	Please specify a valid four digit year.
400.110002	Invalid Make ID	Please specify a valid Make ID.
400.110003	Invalid Model ID	Please specify a valid Model ID.
400.110004	Invalid VIN	Please specify a valid VIN consisting of at least 3 and not more than 17 alphanumeric characters.
400.110005	Invalid Vehicle ID	Please specify a valid Vehicle ID
400.110051	Invalid Attribute ID	Attribute ID is required and must be greater than zero.
400.110052	Invalid Attribute Type	Attribute Type must be one of the following: {0}.
400.110053	Invalid Attribute Standard	Attribute Standard must be one of the following: {0}.
400.110054	Invalid Wheel Base ID	The Wheel Base ID cannot be negative.
400.110055	Invalid Transmission ID	The Transmission ID cannot be negative.
400.110056	Invalid Sub Model ID	The Sub Model ID cannot be negative.
400.110057	Invalid Steering ID	The Steering ID cannot be negative.
400.110058	Invalid Spring ID	The Spring ID cannot be negative.
400.110059	Invalid Manufacturer Body Code ID	The Manufacturer Body Code ID cannot be negative.
400.110061	Invalid Engine ID	The Engine ID cannot be negative.
400.110062	Invalid Drive Type ID	The Drive Type ID cannot be negative.
400.110063	Invalid Country ID	The Country ID cannot be negative.
400.110064	Invalid Cab Type ID	The Cab Type ID cannot be negative.
400.110065	Invalid Brake ID	The Brake ID cannot be negative.
400.110066	Invalid Body Style ID	The Body Style ID cannot be negative.
400.110067	Invalid Bed Type ID	The Bed Type ID cannot be negative.
400.110068	Invalid Axle Type ID	The Axle Type ID cannot be negative.
400.110069	Invalid Min Year Value	The Min Value cannot be less than 0 and must be less than or equal to the Max Value.
400.110071	Invalid Max Year Value	The Max value cannot be less than 0 and must be greater than or equal to the Min Value (0 = No Max Specified).
400.110072	Invalid Vehicle Attribute Lookup Type	The vehicle attribute type is invalid.
400.110073	Submodel ID is Required	Submodel ID is required when specifying a base vehicle ID.
400.110074	Country ID is Required	Country ID is required when specifying a base vehicle ID.
400.110075	Invalid Vehicle Attribute	The vehicle attribute {0} ({1}) is required and must be greater than 0.
400.110076	Invalid Attribute Standard From	The supplied attribute standard to convert from is invalid. Valid values are 'MOTOR'.
400.110077	Invalid Attribute Standard From	The supplied attribute standard to convert to is invalid. Valid values are 'VCDB'.

400.120001	Invalid Result Type	The Result Type must be one of the following: 'DrillDown', 'List'.
400.120002	System ID Required	When specifying a Group ID you must also specify the System ID.
400.120003	Group ID Required	When specifying a Sub Group ID you must also specify the Group ID.
400.120004	Invalid System ID	The System ID cannot be negative.
400.120005	Invalid Group ID	The Group ID cannot be negative.
400.120006	Invalid Sub Group ID	The Sub Group ID cannot be negative.
400.120007	SAE Subject ID Required	When specifying a SAE System ID you must also specify the SAE Subject ID.
400.120008	Invalid SAE Subject ID	The SAE Subject ID specified is invalid.
400.120009	Invalid SAE System ID	The SAE System ID specified is invalid.
400.120011	Invalid Auto System ID	The Auto System ID cannot be negative.
400.120012	SubSystem ID Required	When specifying a SubSystem ID you must also specify the SystemID.
400.120013	Invalid Subject ID	The SubSystem ID specified is invalid.
400.120014	Invalid System ID	The System ID specified is invalid.
400.120015	Invalid Taxonomy ID	The Taxonomy ID specified is invalid.
400.120051	Invalid Include Flags	One or more of the Include Flags is invalid.
400.130001	Invalid Document ID	Document ID is invalid.
400.400001	Invalid Cache Type	Please specify a valid Cache Type.
401.000051	Invalid Authentication	Invalid authentication.
401.000052	Invalid Authentication	Invalid authentication.
401.000053	Invalid Authentication	Invalid authentication.
401.000054	Invalid Authentication	Invalid authentication.
401.000055	Invalid Authentication	Query string signature placement is not supported for this authentication scheme.
401.000056	Invalid Authentication	Invalid authentication.
403.000101	Invalid Authorization	Unauthorized access.
403.000102	Invalid Authorization	Invalid authorization.
403.000103	Invalid Authorization	Resource not allowed.
403.000104	Invalid Authorization	Package not allowed.
403.000105	Invalid Authorization	Access Expired.
403.000106	Invalid Authorization	Resource Access Expired.
403.000107	Invalid Authorization	SSL Required.
403.000108	Inactive Account	The account is currently inactive.
403.000109	Inactive Organization	The shop or company associated with this account is currently inactive.

403.000111	Invalid Authorization	Invalid Authorization
403.000112	Invalid Authorization	SSL Required for Api Key.
403.000162	Invalid Authorization	Request time too skewed.
403.000163	Invalid Authorization	Request time too skewed.
403.100001	Invalid Account	Account Expired
403.100002	Invalid Account	Organizations Expired
403.100003	Invalid Account	Invalid Package Setup
403.100004	Invalid Account	Packages Expired
405.000001	Method Not Allowed	The HTTP Method provided is not supported on the matching service endpoint.
411.000001	Length Required	A Content-Length header is required when sending a request entity to the server.
413.000001	Request Entity Too Large	The request entity sent to the server exceeded the maximum size limit.
414.000001	Request-URI Too Long	The request URI exceeded the maximum size limit.
415.000156	Multipart Content Required	A Multipart content type is required by this resource.
415.000158	Content Type Not Supported	Your request did not contain a supported media type.
416.000001	Requested Range Not Satisfiable	The page item specified exceeds the number of pages available for the result range.
429.000001	Too Many Requests	The rate limit has been exceeded.
500.000001	Unhandled Exception	An unhandled exception has occurred.
501.000001	Resource Not Implemented	The resource you are trying to reach has not been implemented.
502.000001	Bad Gateway	The server received an invalid response from an upstream server while trying to fulfill the request.
503.200255	Reporting Service Unavailable	The reporting service is currently unavailable.
504.000001	Gateway Timeout	A request to an upstream server timed out while attempting to fulfill the request.

Document History

Date	Version	Change Reference
8/27/25	2	Update Document Format