Overview

Force.com REST API provides you with a powerful Web services API that you can use to interact with Force.com. Each resource in REST API is a named URI that's used with an HTTP method: HEAD, GET, POST, PATCH, or DELETE. All resources are accessed using a generic interface over HTTP with a base URI that follows your Force.com or Database.com URI. REST API supports authentication using OAuth 2.0 and supports both JSON and XML (JSON is the default).

### Common Requests for Working with SObjects

<table>
<thead>
<tr>
<th>Action</th>
<th>URL</th>
<th>HTTP Method</th>
<th>Request Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a Record</td>
<td><a href="https://instance.salesforce.com/services/data/vNN.N/sobjects/">https://instance.salesforce.com/services/data/vNN.N/sobjects/</a></td>
<td>POST</td>
<td>field-value pairs</td>
</tr>
<tr>
<td>Delete a Record</td>
<td><a href="https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/Id">https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/Id</a></td>
<td>DELETE</td>
<td>N/A</td>
</tr>
<tr>
<td>Update a Record</td>
<td><a href="https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/Id">https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/Id</a></td>
<td>PATCH</td>
<td>field-value pairs</td>
</tr>
<tr>
<td>Upsert a Record</td>
<td><a href="https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/externalIdField/value">https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/externalIdField/value</a></td>
<td>PATCH</td>
<td>field-value pairs</td>
</tr>
<tr>
<td>Describe Global</td>
<td><a href="https://instance.salesforce.com/services/data/vNN.N/sobjects/">https://instance.salesforce.com/services/data/vNN.N/sobjects/</a></td>
<td>GET</td>
<td>N/A</td>
</tr>
<tr>
<td>Describe SObject</td>
<td><a href="https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/describe">https://instance.salesforce.com/services/data/vNN.N/sobjects/sObject/describe</a></td>
<td>GET</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- HTTP requests to a REST API resource should contain the following information:
  - An HTTP method (HEAD, GET, POST, PATCH, or DELETE).
  - A session ID or an OAuth 2.0 access token used to authenticate the request.
  - An HTTP ACCEPT header that indicates the resource format (JSON or XML), or a .json or .xml extension to the URI. The default is JSON.
  - The Force.com or Database.com REST resource.
  - Any JSON or XML data containing information needed for the request, such as the data required when updating a record.

### Other Common Resources

<table>
<thead>
<tr>
<th>Resource Name</th>
<th>URL</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Versions</td>
<td>/</td>
<td>Lists summary information about each Salesforce version currently available, including the version, label, and a link to each version's root.</td>
</tr>
<tr>
<td>Resources by Version</td>
<td>/vNN.N/</td>
<td>Lists available resources for the specified API version, including resource name and URI.</td>
</tr>
<tr>
<td>Limits</td>
<td>/vNN.N/limits/</td>
<td>Lists information about limits in your organization.</td>
</tr>
<tr>
<td>SOObject Basic Information</td>
<td>/vNN.N/sobjects/sObject/</td>
<td>Describes the individual metadata for the specified object.</td>
</tr>
<tr>
<td>SOObject Rows By External ID</td>
<td>/vNN.N/sobjects/sObjectName/fieldName/fieldValue</td>
<td>Creates new records or updates existing records (upserts records) based on the value of a specified external ID field.</td>
</tr>
<tr>
<td>SOObject Blob Retrieve</td>
<td>/vNN.N/sobjects/sObject/Id/blobField</td>
<td>Retrieves the specified blob field from an individual record.</td>
</tr>
<tr>
<td>Query</td>
<td>/vNN.N/query/?q=soqlQuery</td>
<td>Executes the specified SOQL query. The query string must be URL-encoded.</td>
</tr>
<tr>
<td>QueryAll</td>
<td>/vNN.N/queryAll/?q=soqlQuery</td>
<td>Executes the specified SOQL query. The query string must be URL-encoded.</td>
</tr>
<tr>
<td>Search</td>
<td>/vNN.N/search/?s=soslQuery</td>
<td>Executes the specified SOSL search. The search string must be URL-encoded.</td>
</tr>
<tr>
<td>Batch</td>
<td>/vNN.N/composite/batch</td>
<td>Executes up to 25 subrequests in a single request to improve your application's performance.</td>
</tr>
<tr>
<td>SOObject Tree</td>
<td>/vNN.N/composite/tree/SObject</td>
<td>Creates one or more sObject trees with root records of the specified type. A sObject tree is a collection of nested, parent-child records with a single root record. Can also be used to create up to 200 unrelated records of the same type.</td>
</tr>
</tbody>
</table>
**REST API Header**

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content-Type</td>
<td>Specifies whether the request is formatted as JSON or XML.</td>
<td>Content-Type: application/json</td>
</tr>
<tr>
<td>Authorization</td>
<td>Used to authenticate the request.</td>
<td>Authorization: OAuth sessionId</td>
</tr>
<tr>
<td>X-Pretty-Print</td>
<td>Formats the response in a more readable format with line breaks and indentation.</td>
<td>X-PrettyPrint:1</td>
</tr>
<tr>
<td>Accept</td>
<td>Indicates the resource format which can be either JSON or XML.</td>
<td>Accept: application/xml</td>
</tr>
<tr>
<td>X-Sfdc-PackageVersion</td>
<td>Specifies the package version under which context an API call is made.</td>
<td>x-sfdc-packageversion-namespace: 2.0</td>
</tr>
<tr>
<td>Sforce-Auto-Assign</td>
<td>Specifies whether active assignment rules should be used when creating or updating Cases or Leads.</td>
<td>Sforce-Auto-Assign: TRUE</td>
</tr>
<tr>
<td>Sforce-Call-Options</td>
<td>Specifies client-specific options when accessing the following REST resources: SObject Basic Information, SObject Rows, Query, QueryAll, Search, and SObject Rows by External ID</td>
<td>Sforce-Call-Options: client=SampleCase SensitiveToken/100, defaultNamespace= battle</td>
</tr>
<tr>
<td>Sforce-Limit-Info</td>
<td>Returns limit information for the organization.</td>
<td>Sforce-Limit-Info: api-usage=14/5000</td>
</tr>
<tr>
<td>Sforce-Query-Options</td>
<td>Specifies options used in the query, such as the query results batch size.</td>
<td>Sforce-Query-Options: batchSize=1000</td>
</tr>
</tbody>
</table>

**HTTP Error Codes**

When errors occur, the response header contains an HTTP code, and the response body typically contains the error code, the message accompanying that error, and the field or object where the error occurred.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>The value used for an external ID exists in more than one record. The response body contains the list of matching records.</td>
</tr>
<tr>
<td>400</td>
<td>The request could not be understood, usually because the JSON or XML body has an error.</td>
</tr>
<tr>
<td>401</td>
<td>The session ID or OAuth token used has expired or is invalid. The response body contains the message and errorCode.</td>
</tr>
<tr>
<td>403</td>
<td>The request has been refused. Verify that the logged-in user has appropriate permissions.</td>
</tr>
<tr>
<td>404</td>
<td>The requested resource could not be found. Check the URI for errors, and verify that there are no sharing issues.</td>
</tr>
</tbody>
</table>

**HTTP Success Codes**

When a request is successful, the response header contains an HTTP code, and the response body contains a Boolean success value.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>The request has been successfully processed.</td>
</tr>
<tr>
<td>201</td>
<td>The request has been successfully processed and the resource has been created.</td>
</tr>
<tr>
<td>204</td>
<td>The request has been successfully processed, but no content is returned in the response body. This code is returned after a resource is successfully deleted.</td>
</tr>
</tbody>
</table>

**HTTP Methods**

REST API supports the following HTTP methods:

- **GET** Retrieves information, such as basic resource summary information.
- **HEAD** Retrieves resource metadata.
- **PATCH** Updates a record.
- **POST** Creates a new object.
- **DELETE** Deletes a record.

**Examples**

Following are some examples of calling REST API using cURL. Replace **token** with your session ID. Depending on your platform, if the token contains an exclamation mark (!), it should be escaped with a backslash (\!) when used in cURL commands. Depending on your platform, request headers may require single quotes (‘) or double quotes (").

<table>
<thead>
<tr>
<th>Method</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>curl -X GET <a href="http://api.salesforce.com/StreamingApi">http://api.salesforce.com/StreamingApi</a> -d {}</td>
</tr>
<tr>
<td>HEAD</td>
<td>curl -X HEAD <a href="http://api.salesforce.com/StreamingApi">http://api.salesforce.com/StreamingApi</a></td>
</tr>
<tr>
<td>PATCH</td>
<td>curl -X PATCH <a href="http://api.salesforce.com/StreamingApi">http://api.salesforce.com/StreamingApi</a> -d {}</td>
</tr>
<tr>
<td>POST</td>
<td>curl -X POST <a href="http://api.salesforce.com/StreamingApi">http://api.salesforce.com/StreamingApi</a> -d {}</td>
</tr>
<tr>
<td>DELETE</td>
<td>curl -X DELETE <a href="http://api.salesforce.com/StreamingApi">http://api.salesforce.com/StreamingApi</a> -d {}</td>
</tr>
</tbody>
</table>
HTTP Methods

REST API supports the following HTTP methods:

- GET Retrieves information, such as basic resource summary information.
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- DELETE Deletes a record.

Create an Invoice Statement

cURL Command


Response (JSON)
{
    "id" : "a00D0000008oLd7IAE",
    "errors" : [ ],
    "success" : true
}

Execute a Query

cURL Command

curl https://instance.salesforce.com/services/data/v24.0/query?q=SELECT+Id,+Name,+Status__c+FROM+Invoice_Statement__c -H "Authorization: OAuth token" -H "X-PrettyPrint:1"

Response (JSON)
{
    "done" : true,
    "totalSize" : 3,
    "records" : [ {
        "attributes" : {
            "type" : "Invoice_Statement__c",
            "url" : "services/data/v24.0/sobjects/Invoice_Statement__c/a00D0000008o6y3IAA"
        },
        "Id" : "a00D0000008o6y3IAA",
        "Name" : "INV-0000",
        "Status__c" : "Open"
    }, {
        "attributes" : {
            "type" : "Invoice_Statement__c",
            "url" : "services/data/v24.0/sobjects/Invoice_Statement__c/a00D0000008o6yDIAQ"
        },
        "Id" : "a00D0000008o6yDIAQ",
        "Name" : "INV-0002",
        "Status__c" : "Closed"
    } ]
}

OAuth Username/Password Authentication

cURL Command

curl https://login.salesforce.com/services/oauth2/token -d 'grant_type=password&client_id=REMOTE_ACCESS_CLIENT_ID&client_secret=REMOTE_ACCESS_CLIENT_SECRET&username=user@example.com&password=********' -H "X-PrettyPrint: 1"

Response (JSON)
{
    "id" : "https://login.salesforce.com/id/00D50000000IZ3ZEAW/00550000001fg5OAAQ",
    "issued_at" : "1322006414073",
    "instance_url" : "https://instance.salesforce.com",
    "signature" : "3/FtJxcTxvpxJx8T1oc/4oNVz1hhzIuppTCOQdrJSja=",
    "access_token" : "00D500000001232IAOQAQQNa4tr. S15foLoborG12Hs6eEzIzLafInLZ1f6RbFwV2Pjg6 QHB4J64a6vS5705y_s1VE_lq_xmLIXBxg0KEo"
}

Update status__c on Invoice_Statement__c

cURL Command

curl https://instance.salesforce.com/services/data/v24.0/sobjects/Invoice_Statement__c/a00D0000008oLd7IAE -H "Authorization: OAuth token" -H "Content-Type: application/json" -d "{"\"Status\" : \"Open\"}" -X PATCH -H "X-PrettyPrint:1"

Response (JSON)
N/A

Delete an Invoice Statement

cURL Command

curl https://instance.salesforce.com/services/data/v24.0/sobjects/Invoice_Statement__c/a00D0000008oLd7IAE -H "Authorization: OAuth token" -H "X-PrettyPrint:1" -X DELETE

Response (JSON)
N/A

Search for a String

cURL Command

curl https://instance.salesforce.com/services/data/v24.0/search/?q=FIND+%7Bcountry%7D -H "Authorization: OAuth token" -H "X-PrettyPrint:1"

Response (JSON)
[
    {
        "attributes" : {
            "type" : "Invoice_Statement__c",
            "url" : "/services/data/v24.0/sobjects/Invoice_Statement__c/a00D0000008o6yDIAQ"
        },
        "Id" : "a00D0000008o6yDIAQ"
    }
]
Create Multiple Records

cURL Command:
curl https://na1.salesforce.com/services/data/v34.0/composite/tree/Account/ -H "Authorization: Bearer token" -H "Content-Type: application/json" -d @newrecords.json

Example request body newrecords.json for creating four new accounts:

```json
{
  "records" : [
    {
      "attributes" : {
        "type" : "Account",
        "referenceId" : "ref1",
        "name" : "SampleAccount1",
        "phone" : "1111111111",
        "website" : "www.salesforce1.com",
        "numberOfEmployees" : "100",
        "type" : "Analyst",
        "industry" : "Banking"
      }
    },
    {
      "attributes" : {
        "type" : "Account",
        "referenceId" : "ref2",
        "name" : "SampleAccount2",
        "phone" : "2222222222",
        "website" : "www.salesforce2.com",
        "numberOfEmployees" : "250",
        "type" : "Analyst",
        "industry" : "Banking"
      }
    },
    {
      "attributes" : {
        "type" : "Account",
        "referenceId" : "ref3",
        "name" : "SampleAccount3",
        "phone" : "3333333333",
        "website" : "www.salesforce3.com",
        "numberOfEmployees" : "52000",
        "type" : "Analyst",
        "industry" : "Banking"
      }
    },
    {
      "attributes" : {
        "type" : "Account",
        "referenceId" : "ref4",
        "name" : "SampleAccount4",
        "phone" : "4444444444",
        "website" : "www.salesforce4.com",
        "numberOfEmployees" : "2500",
        "type" : "Analyst",
        "industry" : "Banking"
      }
    }
  ]
}
```

For other cheatsheets:
http://developer.salesforce.com/cheatsheets

Update a Record and Get Its Field Values in a Single Request

cURL Command:
curl https://na1.salesforce.com/services/data/v34.0/composite/batch/ -H "Authorization: Bearer token" -H "Content-Type: application/json" -d @batch.json

Request body batch.json file:

```json
{
  "batchRequests" : [
    {
      "method" : "PATCH",
      "url" : "v34.0/sobjects/account/001D000000K0fXOIAZ",
      "richInput" : {"Name" : "NewName"}
    },
    {
      "method" : "GET",
      "url" : "v34.0/sobjects/account/001D000000K0fXOIAZ?fields=Name,BillingPostalCode"
    }
  ]
}
```

Response body after successfully executing the subrequests:

```json
{
  "hasErrors" : false,
  "results" : [
    {
      "statusCode" : 204,
      "result" : null
    },
    {
      "statusCode" : 200,
      "result" : {
        "attributes" : {
          "type" : "Account",
          "url" : "services/data/v34.0/sobjects/Account/001D000000K0fXOIAZ"
        },
        "Name" : "NewName",
        "BillingPostalCode" : "94105",
        "Id" : "001D000000K0fXOIAZ"
      }
    }
  ]
}
```