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# REST API Developer Guide

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# CHAPTER 1 Introducing Lightning Platform REST API

## In this chapter ...

- [Lightning Platform REST Resources](#)
- [Using Compression](#)
- [Using Conditional Requests](#)
- [Using cURL in the REST Examples](#)
- [Understanding Authentication](#)
- [Use CORS to Access Salesforce Resources from Web Browsers](#)

REST API provides a powerful, convenient, and simple Web services API for interacting with Lightning Platform. Its advantages include ease of integration and development, and it's an excellent choice of technology for use with mobile applications and Web 2.0 projects. If you have many records to process, consider using Bulk API, which is based on REST principles and optimized for large sets of data.

REST API uses the same underlying data model and standard objects as those in SOAP API. See the [SOAP API Developer Guide](#) for details. REST API also follows the same limits as SOAP API. See the [Limits](#) section in the SOAP API Developer Guide.

To use the API requires basic familiarity with software development, web services, and the Salesforce user interface.

Use this introduction to understand:

- The key characteristics and architecture of REST API. This will help you understand how your applications can best use the Lightning Platform REST resources.
- How to set up your development environment so you can begin working with REST API immediately.
- How to use REST API by following a quick start that leads you step by step through a typical use case.

# Lightning Platform REST Resources

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A REST resource is an abstraction of a piece of information or an action, such as a single data record, a collection of records, or a query. Each resource in REST API is identified by a named Uniform Resource Identifier (URI) and is accessed using standard HTTP methods (HEAD, GET, POST, PATCH, DELETE). REST API is based on the usage of resources, their URIs, and the links between them.

You use a resource to interact with your Salesforce org. For example, you can:

- Retrieve summary information about the API versions available to you.
- Obtain detailed information about a Salesforce object, such as Account, User, or a custom object.
- Perform a query or search.
- Update or delete records.

Suppose you want to retrieve information about the Salesforce version. Submit a request for the [Versions](#) resource.

```
curl https://yourInstance.salesforce.com/services/data/
```

The output from this request is as follows.

```
[
  {
    "version": "20.0",
    "url": "/services/data/v20.0",
    "label": "Winter '11"
  }
  ...
]
```



**Note:** Salesforce runs on multiple server instances. The examples in this guide use *yourInstance* in place of a specific instance. Replace that text with the instance for your org.

Important characteristics of the Lightning Platform REST API resources and architecture:

## Stateless

Each request from client to server must contain all the information necessary to understand the request, and not use any stored context on the server. However, the representations of the resources are interconnected using URLs, which allow the client to progress between states.

## Caching behavior

Responses are labeled as cacheable or non-cacheable.

## Uniform interface

All resources are accessed with a generic interface over HTTP.

## Named resources

All resources are named using a base URI that follows your Lightning Platform URI.

## Layered components

The Lightning Platform REST API architecture allows for the existence of such intermediaries as proxy servers and gateways to exist between the client and the resources.

## Authentication

The Lightning Platform REST API supports OAuth 2.0 (an open protocol to allow secure API authorization). See [Understanding Authentication](#) for more details.



### Support for JSON and XML

JSON is the default. You can use the `HTTP ACCEPT` header to select either JSON or XML, or append `.json` or `.xml` to the URI (for example, `/Account/001D000000INjVe.json`).

The JavaScript Object Notation (JSON) format is supported with UTF-8. Date-time information is in [ISO8601](#) format.

XML serialization is similar to SOAP API. XML requests are supported in UTF-8 and UTF-16, and XML responses are provided in UTF-8.

### Friendly URLs

Why make two API calls when you can make just one? A friendly URL provides an intuitive way to construct REST API requests and minimizes the number of round-trips between your app and Salesforce org. Friendly URLs are available in API version 36.0 and later.

Accessing a contact's parent account without a friendly URL involves requesting the contact record using the `SObject Rows` resource. Then you examine the account relationship field to obtain the account ID and request the account record with another call to `SObject Rows`. Using a friendly URL, you can access the account in a single call directly from the contact's path:

`/services/data/v36.0/objects/contact/id/account`.

This functionality is exposed via the [SObject Relationships](#) on page 125 resource. For more examples of using friendly URLs to access relationship fields, see [Traverse Relationships with Friendly URLs](#) on page 51.

## Using Compression

---

The REST API allows the use of compression on the request and the response, using the standards defined by the HTTP 1.1 specification. Compression is automatically supported by some clients, and can be manually added to others. Visit [Salesforce Developers](#) for more information on particular clients.



**Tip:** For better performance, we suggest that clients accept and support compression as defined by the HTTP 1.1 specification.

To use compression, include the HTTP header `Accept-Encoding: gzip` or `Accept-Encoding: deflate` in a request. The REST API compresses the response if the client properly specifies this header. The response includes the header `Content-Encoding: gzip` or `Accept-Encoding: deflate`. You can also compress any request by including a `Content-Encoding: gzip` or `Content-Encoding: deflate` header.

## Response Compression

The REST API can optionally compress responses. Responses are compressed only if the client sends an `Accept-Encoding` header. The REST API is not required to compress the response even if you have specified `Accept-Encoding`, but it normally does. If the REST API compresses the response, it also specifies a `Content-Encoding` header.

## Request Compression

Clients can also compress requests. The REST API decompresses any requests before processing. The client must send a `Content-Encoding` HTTP header in the request with the name of the appropriate compression algorithm. For more information, see:

- Content-Encoding at: [www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.11](http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.11)
- Accept-Encoding at: [www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.3](http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.3)
- Content Codings at: [www.w3.org/Protocols/rfc2616/rfc2616-sec3.html#sec3.5](http://www.w3.org/Protocols/rfc2616/rfc2616-sec3.html#sec3.5)

## Using Conditional Requests

---

To support response caching, REST API allows conditional request headers that follow the standards defined by the HTTP 1.1 specification. For strong validation, include either the `If-Match` or `If-None-Match` header in a request, and reference the entity tags (ETag) of the records you want to match against. For weak validation, include either the `If-Modified-Since` or `If-Unmodified-Since` header in a request along with the date and time you want to check against. The REST API conditional headers follow the HTTP 1.1 specification with the following exceptions.

- When you include an invalid header value for `If-Match`, `If-None-Match`, or `If-Unmodified-Since` on a PATCH or POST request, a `400 Bad Request` status code is returned.
- The `If-Range` header isn't supported.
- DELETE requests are not supported with these headers.

### ETag

HTTP 1.1 specification: [www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.19](http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.19)

The `ETag` header is a response header that's returned when you access the SObject Rows resource. It's a hash of the content that's used by the `If-Match` and `If-None-Match` request headers in subsequent requests to determine if the content has changed.

Supported resources: SObject Rows (account records only)

Example: `ETag: "U5iWijwWbQD18jeiXwsqxeGpZQk=-gzip"`

### If-Match

HTTP 1.1 specification: [www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.24](http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.24)

The `If-Match` header is a request header for SObject Rows that includes a list of ETags. If the ETag of the record you're requesting matches an ETag specified in the header, the request is processed. Otherwise, a `412 Precondition Failed` status code is returned, and the request isn't processed.

Supported resources: SObject Rows (account records only)

Example: `If-Match: "Jbjuzw7dbhaEG3fd90kJbx6A0ow=-gzip",  
"U5iWijwWbQD18jeiXwsqxeGpZQk=-gzip"`

### If-None-Match

HTTP 1.1 specification: [www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.26](http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.26)

The `If-None-Match` header is a request header for SObject Rows that's the inverse of `If-Match`. If the ETag of the record you're requesting matches an ETag specified in the header, the request isn't processed. A `304 Not Modified` status code is returned for GET or HEAD requests, and a `412 Precondition Failed` status code is returned for PATCH requests.

Supported resources: SObject Rows (account records only)

Example: `If-None-Match: "Jbjuzw7dbhaEG3fd90kJbx6A0ow=-gzip",  
"U5iWijwWbQD18jeiXwsqxeGpZQk=-gzip"`

### If-Modified-Since

HTTP 1.1 specification: [www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.25](http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.25)

The `If-Modified-Since` header is a time-based request header. The request is processed only if the data has changed since the date and time specified in the header. Otherwise, a `304 Not Modified` status code is returned, and the request isn't processed.

Supported resources: SObject Rows, SObject Describe, Describe Global, and Invocable Actions

Example: `If-Modified-Since: Tue, 10 Aug 2015 00:00:00 GMT`

**If-Unmodified-Since**

HTTP 1.1 specification: [www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.28](http://www.w3.org/Protocols/rfc2616/rfc2616-sec14.html#sec14.28)

The `If-Unmodified-Since` header is a request header that's the inverse of `If-Modified-Since`. If you make a request and include the `If-Unmodified-Since` header, the request is processed only if the data hasn't changed since the specified date. Otherwise, a 412 `Precondition Failed` status code is returned, and the request isn't processed.

Supported resources: SObject Rows, SObject Describe, Describe Global, and Invocable Actions

Example: `If-Unmodified-Since: Tue, 10 Aug 2015 00:00:00 GMT`

## Using cURL in the REST Examples

---

The examples in this guide use the cURL tool to send HTTP requests to access, create, and manipulate REST resources on the Lightning Platform. cURL is pre-installed on many Linux and Mac systems. Windows users can download a version at [curl.haxx.se/](http://curl.haxx.se/). When using HTTPS on Windows, ensure that your system meets the cURL requirements for SSL.



**Note:** cURL is an open source tool and is not supported by Salesforce.

**Escaping the Session ID or Using Single Quotes on Mac and Linux Systems**

When running the cURL examples for the REST resources, you may get an error on Mac and Linux systems due to the presence of the exclamation mark special character in the session ID argument. To avoid getting this error, do one of the following:

- Escape the exclamation mark (!) special character in the session ID by inserting a backslash before it (\!) when the session ID is enclosed within double quotes. For example, the session ID string in this cURL command has the exclamation mark (!) escaped:

```
curl https://instance_name.salesforce.com/services/data/v44.0/
-H "Authorization: Bearer
00D50000000IehZ\!AQcAQH0dMHZfz972Szmpkb58urFRkgeBGsxL_QJWwYMfAbUeeG7c1E6
LYUfiDUkWe6H34r1AAwOR8B8fLEz6n04NPGRrq0FM"
```

- Enclose the session ID within single quotes. For example:

```
curl https://instance_name.salesforce.com/services/data/v44.0/
-H 'Authorization: Bearer sessionID'
```

## Understanding Authentication

---

Salesforce uses the OAuth protocol to allow users of applications to securely access data without having to reveal username and password credentials.

Before making REST API calls, you must authenticate the application user using [OAuth 2.0](#). To do so, you'll need to:

- [Set up your application as a connected app](#) in the Salesforce organization.
- Determine the correct Salesforce [OAuth endpoint](#) for your connected app to use.
- Authenticate the connected app user via one of several different OAuth 2.0 authentication flows. An OAuth authentication flow defines a series of steps used to coordinate the authentication process between your application and Salesforce. Supported OAuth flows include:
  - [Web server flow](#), where the server can securely protect the consumer secret.
  - [User-agent flow](#), used by applications that cannot securely store the consumer secret.
  - [Username-password flow](#), where the application has direct access to user credentials.

After successfully authenticating the connected app user with Salesforce, you'll receive an access token which can be used to make authenticated REST API calls.

## Defining Connected Apps

To authenticate using OAuth, you must create a connected app that defines your application's OAuth settings for the Salesforce organization.

When you develop an external application that needs to authenticate with Salesforce, you need to define it as a new connected app within the Salesforce organization that informs Salesforce of this new authentication entry point.

Use the following steps to create a new connected app.

1. Use Salesforce to create a new connected app.
  - In Lightning Experience, use the App Manager to create connected apps. From Setup, enter `App` in the Quick Find box, then select **App Manager**. Click **New Connected App**.
  - In Salesforce Classic, from Setup, enter `Apps` in the Quick Find box, then select **Apps** (under **Build > Create**). Under Connected Apps, click **New**.
2. Enter the name of your application.
3. Enter the contact email information, as well as any other information appropriate for your application.
4. Select **Enable OAuth Settings**.
5. Enter a `Callback URL`. Depending on which OAuth flow you use, this is typically the URL that a user's browser is redirected to after successful authentication. As this URL is used for some OAuth flows to pass an access token, the URL must use secure HTTP (HTTPS) or a custom URI scheme. Separate multiple callback URLs with line breaks.
 

The callback URL field has a limit of 2000 characters, cumulatively. If you enter several URLs and they exceed this limit, configure another connected app to manage more callback URLs.
6. Add all supported OAuth scopes to **Selected OAuth Scopes**. These scopes refer to permissions given by the user running the connected app.
7. Enter a URL for `Info URL`. This is where the user can go for more information about your application.
8. Click **Save**. The `Consumer Key` is created and displayed, and the `Consumer Secret` is created (click the link to reveal it).

Once you define a connected app, you use the consumer key and consumer secret to authenticate your application. See [Creating a Connected App](#) in the Salesforce online help for specific steps to create a connected app for the type of authentication you need.

## Understanding OAuth Endpoints

OAuth endpoints are the URLs you use to make OAuth authentication requests to Salesforce.

You need to use the correct Salesforce OAuth endpoint when issuing authentication requests in your application. The primary OAuth endpoints are:

- For authorization: `https://login.salesforce.com/services/oauth2/authorize`
- For token requests: `https://login.salesforce.com/services/oauth2/token`
- For revoking OAuth tokens: `https://login.salesforce.com/services/oauth2/revoke`

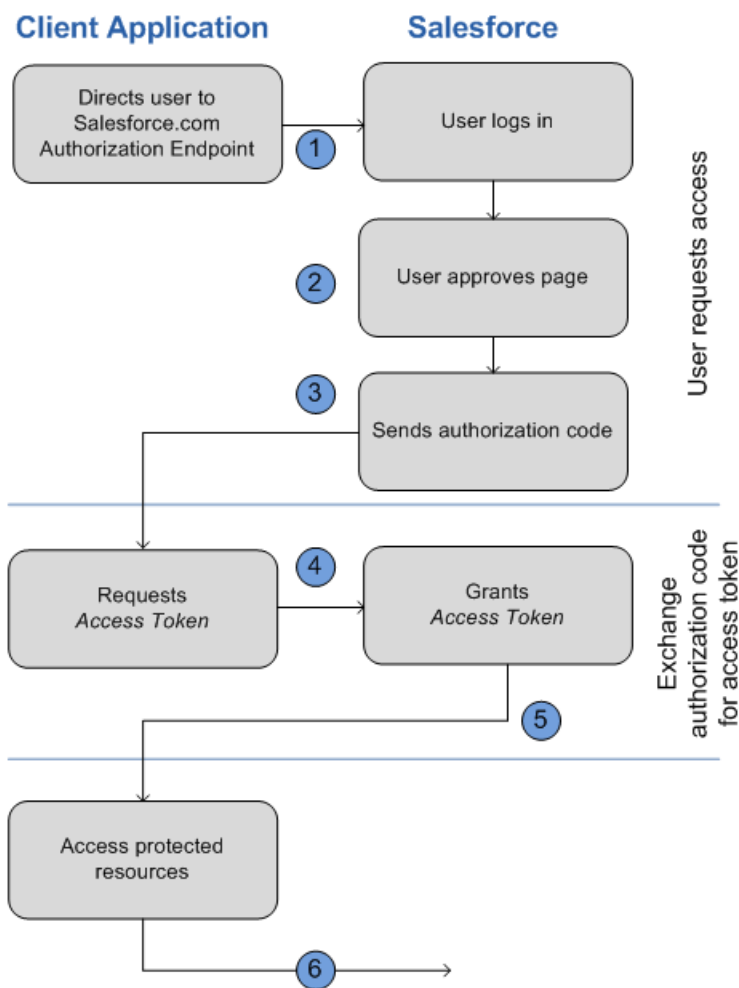
All endpoints require secure HTTP (HTTPS). Each OAuth flow defines which endpoints you need to use and what request data you need to provide.

If you're verifying authentication on a sandbox organization, use "test.salesforce.com" instead of "login.salesforce.com" in all the OAuth endpoints listed above.

## How Are Apps Authenticated with the Web Server OAuth Authentication Flow?

Apps that are hosted on a secure server use the web server authentication flow. A critical aspect of the web server flow is that the server must be able to protect the consumer secret. You can use code challenges and verifier values in the flow to prevent authorization code interception.

In this flow, the client application requests the authorization server to redirect the user to another web server or resource. The web server or resource authorizes the user, and sends the application an authorization code. The application uses the authorization code to request an access token. The following shows the steps for this flow.




1. The application redirects the user to the appropriate Salesforce authorization endpoint, such as <https://login.salesforce.com/services/oauth2/authorize>. The following parameters are required:

Parameter	Description
<code>response_type</code>	Must be <code>code</code> for this authentication flow.

Parameter	Description
<code>client_id</code>	The <code>Consumer Key</code> from the connected app definition.
<code>redirect_uri</code>	The <code>Callback URL</code> from the connected app definition.

The following parameters are optional:

Parameter	Description
<code>code_challenge</code>	<p>Specifies the SHA256 hash value of the <code>code_verifier</code> value in the token request to help prevent authorization code interception attacks. The hash value must be base64url encoded as defined here:  <a href="https://tools.ietf.org/html/rfc4648#section-5">https://tools.ietf.org/html/rfc4648#section-5</a>.</p> <ul style="list-style-type: none"> <li>If the <code>code_challenge</code> value is provided in the authorization request and a <code>code_verifier</code> value is provided in the token request, Salesforce compares the <code>code_challenge</code> to the <code>code_verifier</code>. If the <code>code_challenge</code> is invalid or doesn't match, the login fails with the <code>invalid_request</code> error code.</li> <li>If the <code>code_challenge</code> value is provided in the authorization request, but a <code>code_verifier</code> value is not provided in the token request, the login fails with the <code>invalid_grant</code> error code.</li> </ul> <p> <b>Note:</b> Encode this value with a base64url only once.</p>
<code>display</code>	<p>Changes the login page's display type. Valid values are:</p> <ul style="list-style-type: none"> <li><code>page</code>—Full-page authorization screen. This value is the default if none is specified.</li> <li><code>popup</code>—Compact dialog optimized for modern web browser popup windows.</li> <li><code>touch</code>—Mobile-optimized dialog designed for modern mobile devices such as Android and iPhone.</li> <li><code>mobile</code>—Mobile optimized dialog designed for mobile devices such as BlackBerry OS 5 that don't support touch screens.</li> </ul>
<code>immediate</code>	<p>Determines whether the user is prompted for login and approval. Values are either <code>true</code> or <code>false</code>. Default is <code>false</code>.</p> <ul style="list-style-type: none"> <li>If set to <code>true</code>, and if the user is currently logged in and has previously approved the application, the approval step is skipped.</li> <li>If set to <code>true</code> and the user is not logged in or has not previously approved the application, the session is</li> </ul>

Parameter	Description
	immediately terminated with the <code>immediate_unsuccessful</code> error code.
<code>login_hint</code>	Provides a valid username value to pre-populate the login page with the username. For example: <code>login_hint=username@company.com</code> . If a user already has an active session in the browser, then the <code>login_hint</code> parameter does nothing; the active user session continues.
<code>nonce</code>	Specifies a value to be returned in the response; this parameter is useful for detecting "replay" attacks. Optional with the <code>openid</code> scope for getting a user ID token.
<code>prompt</code>	<p>Specifies how the authorization server prompts the user for reauthentication and reapproval. This parameter is optional. The only values Salesforce supports are:</p> <ul style="list-style-type: none"> <li><code>login</code>—The authorization server <i>must</i> prompt the user for reauthentication, forcing the user to log in again.</li> <li><code>consent</code>—The authorization server <i>must</i> prompt the user for reapproval before returning information to the client.</li> </ul> <p>It is valid to pass both values, separated by a space, to require the user to both log in and reauthorize. For example:</p> <pre>?prompt=login%20consent</pre>
<code>scope</code>	Specifies what data your application can access. See “Scope Parameter Values” in Salesforce Help for more information.
<code>state</code>	Specifies any additional URL-encoded state data to be returned in the callback URL after approval.

This example shows an authorization URL:

```
https://login.salesforce.com/services/oauth2/authorize?response_type=code
&client_id=3MVG9lKcPoNINVBIPJjdwlJ9LLM82HnFVXX19KY1uA5mu0QqEWhqKpoW3svG3X
HrXDiCQjKlmdgAvhCscA9GE&redirect_uri=https%3A%2F%2Fwww.mysite.com%2F
code_callback.jsp&state=mystate
```

- The user logs into Salesforce with their credentials. The user is interacting with the authorization endpoint directly, so the application never sees the user's credentials. After successfully logging in, the user is asked to authorize the application. If the user has already authorized the application, this step is skipped.
- After Salesforce confirms that the client application is authorized, the end user's web browser is redirected to the callback URL specified by the `redirect_uri` parameter. Salesforce appends authorization information to the redirect URL with the following values:

Parameters	Description
code	Authorization code the consumer must use to obtain the access and refresh tokens. The authorization code expires after 15 minutes.
state	The state value that was passed in as part of the initial request, if applicable.

This example shows a callback URL with authorization information:

```
https://www.mysite.com/authcode_callback?code=aWekysIEeqM9PiT
hEfm0Cnr6MoLIfwWyRJcqOqHdF8f9INokharAS09ia7UNP6RiVScerfhc4w%3D%3D
```


- The application extracts the authorization code and passes it in a request to Salesforce for an access token. This request is a POST request sent to the appropriate Salesforce token request endpoint, such as `https://login.salesforce.com/services/oauth2/token`. The following parameters are required:

Parameter	Description
grant_type	Value must be <code>authorization_code</code> for this flow.
client_secret	The Consumer Secret from the connected app definition. Required unless the Require Secret for Web Server Flow setting is not enabled in the connected app definition. If a <code>client_secret</code> isn't required, and the connected app sends it in the authorization request, Salesforce attempts to validate it, anyway.
client_id	The Consumer Key from the connected app definition.
redirect_uri	The Callback URL from the connected app definition.
code	Authorization code the consumer must use to obtain the access and refresh tokens. The authorization code expires after 15 minutes.

The following parameters are optional:

Parameter	Description
client_assertion	Instead of passing in <code>client_secret</code> you can choose to provide a <code>client_assertion</code> and <code>client_assertion_type</code> . If a <code>client_secret</code> parameter is not provided, Salesforce checks for the <code>client_assertion</code> and <code>client_assertion_type</code> automatically. The value of <code>client_assertion</code> must be a typical JWT bearer token, signed with the private key associated with the OAuth consumer's uploaded certificate. Only the RS256 algorithm is supported. For more information on using



Parameter	Description
	<code>client_assertion</code> , see the OpenID Connect specifications for the <code>private_key_jwt</code> client authentication method.
<code>client_assertion_type</code>	Provide this value when using the <code>client_assertion</code> parameter. The value of <code>client_assertion_type</code> must be <code>urn:ietf:params:oauth:client-assertion-type:jwt-bearer</code> .
<code>code_verifier</code>	<p>Specifies 128 bytes of random data with high enough entropy to make it difficult to guess the value to help prevent authorization code interception attacks. The value also must be base64url encoded as defined here: <a href="https://tools.ietf.org/html/rfc4648#section-5">https://tools.ietf.org/html/rfc4648#section-5</a>.</p> <ul style="list-style-type: none"> <li>If the <code>code_verifier</code> value is provided in the token request and a <code>code_challenge</code> value is in the authorization request, Salesforce compares the <code>code_verifier</code> to the <code>code_challenge</code>. If the <code>code_verifier</code> is invalid or doesn't match, the login fails with the <code>invalid_grant</code> error code.</li> <li>If the <code>code_verifier</code> value is provided in the token request, but a <code>code_challenge</code> value was not provided in the authorization request, the login fails with the <code>invalid_grant</code> error code.</li> </ul> <p> <b>Note:</b> Encode the value with a base64url only once.</p>
<code>format</code>	<p>Expected return format. The default is <code>json</code>. Values are:</p> <ul style="list-style-type: none"> <li><code>urlencoded</code></li> <li><code>json</code></li> <li><code>xml</code></li> </ul> <p>The return format can also be specified in the header of the request using one of the following:</p> <ul style="list-style-type: none"> <li><code>Accept: application/x-www-form-urlencoded</code></li> <li><code>Accept: application/json</code></li> <li><code>Accept: application/xml</code></li> </ul>

This example shows an access token POST request that sends the `client_id` and `client_secret` in the body.

```
POST /services/oauth2/token HTTP/1.1
Host: login.salesforce.com
grant_type=authorization_code&code=aPrxsmIEeqM9PiQroGEWx1UiMQd95_5JUZ
VEhsOFhS8EVvbfYBBJli2W5fn3zbo.8hojaNW_1g%3D%3D&client_id=3MVG9lKcPoNI
NVBIPJjdwlJ9LLM82HnFVVX19KY1uA5mu0QqEWhqKpoW3svG3XHrXDICQjKlmdgAvhCs
cA9GE&client_secret=1955279925675241571&
redirect_uri=https%3A%2F%2Fwww.mysite.com%2Fcode_callback.jsp
```

Instead of sending client credentials as parameters in the body of the POST request, Salesforce supports the HTTP Basic authentication scheme. The scheme requires the `client_id` and `client_secret` in the authentication header of the request as follows:

```
Authorization: Basic64Encode(client_id:secret)
```

The `client_id` and `client_secret` are separated with a colon (:). For more information, see [The OAuth 2.0 Authorization Framework](#).


This example shows an access token POST request that uses HTTP Basic authentication scheme (rather than sending client credentials in the POST request's body).

```
POST /services/oath2/token HTTP/1.1
Host: login.salesforce.com
Authorization: Basic client_id=3MVG9lKcPoNINVBIPJjdwlJ9LLM82HnFVXX19KY1uA5mu0
QqEWhqKpoW3svG3XHrXDiCQjKlmdgAvhCscA9GE&client_secret=1955279925675241571

grant_type=authorization_code&code=aPrxsmIEeqM9PiQroGEWx1UiMQd95_5JUZ
VEhsOFhS8EVvbfYBBJli2W5fn3zbo.8hojaNW_1g%3D%3D&
redirect_uri=https%3A%2F%2Fwww.mysite.com%2Fcode_callback.jsp
```

 **Note:** If the `client_id` and `client_secret` are sent in the POST's body, the authentication header is ignored.

- If this request is successful, the server returns a response body that contains the following:

Parameters	Description
<code>access_token</code>	Access token that acts as a session ID that the application uses for making requests. This token should be protected as though it were user credentials.
<code>token_type</code>	Value is <code>Bearer</code> for all responses that include an access token.
<code>refresh_token</code>	Token that can be used in the future to obtain new access tokens.  <b>Warning:</b> This value is a secret. Treat it like the user's password and use appropriate measures to protect it.
<code>instance_url</code>	Identifies the Salesforce instance to which API calls are sent.
<code>id</code>	Identity URL that can be used to both identify the user and query for more information about the user. Can be used in an HTTP request to get more information about the end user.
<code>issued_at</code>	When the signature was created, represented as the number of seconds since the Unix epoch (00:00:00 UTC on 1 January 1970).
<code>signature</code>	Base64-encoded HMAC-SHA256 signature signed with the <code>client_secret</code> (private key) containing the concatenated <code>id</code> and <code>issued_at</code> value. Use the <code>signature</code> to verify that the identity URL wasn't modified when the server sent it.

This example shows a JSON response body:

```
{ "id": "https://login.salesforce.com/id/00Dx0000000BV7z/005x00000012Q9P",
  "issued_at": "1278448101416",
```

```

"refresh_token":"5Aep8614iLM.Dq661ePDmPEgaAW9Oh_L3JKkDpB4xReb54_
pZebnUG0h6Sb4KUVDPnTWEofWM39yg==",
"instance_url":"https://yourInstance.salesforce.com/",
"signature":"CMJ41+CCaPQiKjoOEwEig9H4wqhpuLsk4J2urAe+fVg=",
"access_token":"00Dx0000000BV7z!AR8AQP0jITN80ESESj5EbaZTFG0R
NBaT1cyWk7TrqoDjoNIWQ2ME_sTZzBjfmOE6zMhQ6y8PIW4eWze9JksNEkWU1.Cju7m4"}

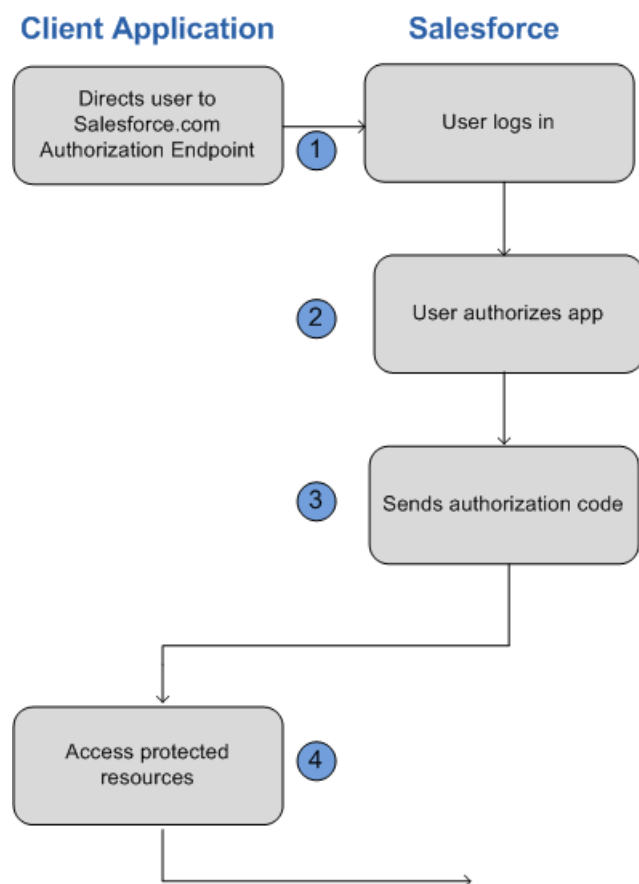
```

- The application uses the provided access token and refresh token to access protected user data.

## Understanding the User-Agent OAuth Authentication Flow

The user-agent authentication flow is used by client apps (consumers) that reside on the user's device or computer. It's also used by client apps running in a browser using a scripting language such as JavaScript. These apps can protect per-user secrets. But, because the apps are widely distributed, the client secret can't be confidential.

In this flow, the client application requests the authorization server to redirect the user to another Web server or resource which is capable of extracting the access token and passing it back to the application. The following shows the steps for this flow.



- The application redirects the user to the appropriate Salesforce authorization endpoint, such as <https://login.salesforce.com/services/oauth2/authorize>. The following parameters are required:

Parameter	Description
<code>response_type</code>	Must be <code>token</code> for this authentication flow

Parameter	Description
<code>client_id</code>	The <code>Consumer Key</code> from the connected app definition.
<code>redirect_uri</code>	The <code>Callback URL</code> from the connected app definition.

The following parameters are optional:


Parameter	Description
<code>display</code>	Changes the login page's display type. Valid values are: <ul style="list-style-type: none"> <li><code>page</code>—Full-page authorization screen. This value is the default if none is specified.</li> <li><code>popup</code>—Compact dialog optimized for modern web browser popup windows.</li> <li><code>touch</code>—Mobile-optimized dialog designed for modern mobile devices such as Android and iPhone.</li> <li><code>mobile</code>—Mobile optimized dialog designed for mobile devices such as BlackBerry OS 5 that don't support touch screens.</li> </ul>
<code>scope</code>	Specifies what data your application can access. See "Scope Parameter Values" in the online help for more information.
<code>state</code>	Specifies any additional URL-encoded state data to be returned in the callback URL after approval.

An example authorization URL might look something like the following:

```
https://login.salesforce.com/services/oauth2/authorize?response_type=token&
client_id=3MVG9lKcPoNINVBIPJjdwlJ9LLJbP_pqwoJYyuisjQhr_LLurNDv7AgQvDTZwCoZuD
ZrXcPCmBv4o.8ds.5iE&redirect_uri=https%3A%2F%2Fwww.mysite.com%2Fuser_callback.jsp&
state=ystate
```

- The user logs into Salesforce with their credentials. The user interacts with the authorization endpoint directly, so the application never sees the user's credentials.
- Once authorization is granted, the authorization endpoint redirects the user to the redirect URL. This URL is defined in the remote access application created for the application. Salesforce appends access token information to the redirect URL with the following values:

Parameters	Description
<code>access_token</code>	Access token that acts as a session ID that the application uses for making requests. This token should be protected as though it were user credentials.
<code>token_type</code>	Value is <code>Bearer</code> for all responses that include an access token.

Parameters	Description
<code>refresh_token</code>	Token that can be used in the future to obtain new access tokens.   <b>Warning:</b> This value is a secret. Treat it like the user's password and use appropriate measures to protect it.  The refresh token is only returned if the redirect URI is <code>https://login.salesforce.com/services/oauth2/success</code> or used with a custom protocol that is not HTTPS.
<code>scope</code>	A space-separated list of scope values.
<code>state</code>	The state value that was passed in as part of the initial request, if applicable.
<code>instance_url</code>	Identifies the Salesforce instance to which API calls are sent.
<code>id</code>	Identity URL that can be used to both identify the user and query for more information about the user. Can be used in an HTTP request to get more information about the end user.
<code>issued_at</code>	When the signature was created, represented as the number of seconds since the Unix epoch (00:00:00 UTC on 1 January 1970).
<code>signature</code>	Base64-encoded HMAC-SHA256 signature signed with the <code>client_secret</code> (private key) containing the concatenated <code>id</code> and <code>issued_at</code> value. Use the <code>signature</code> to verify that the identity URL wasn't modified when the server sent it.

An example callback URL with access information appended after the hash sign (#) might look something like:

```
https://www.mysite.com/user_callback.jsp#access_token=00Dx000000BV7z%21AR8
AQBm8J_xr9kLqmZIRyQxZgLCm4HVi41aGtW0qW3JCzf5xdTGGGSoVim8FfJkZEqxbjaFbberKGk
8v8AnYrvChG4qJbQo8&refresh_token=5Aep8614iLM.Dq661ePDmPEgaAW9Oh_L3JKkDpB4xr
eb54_pZfVti1dPEk8aimw4Hr9ne7VXXVSIQ%3D%3D&expires_in=7200&state=mystate
```

4. The application uses the provided access token and refresh token to access protected user data.


Keep the following considerations in mind when using the user-agent OAuth flow:

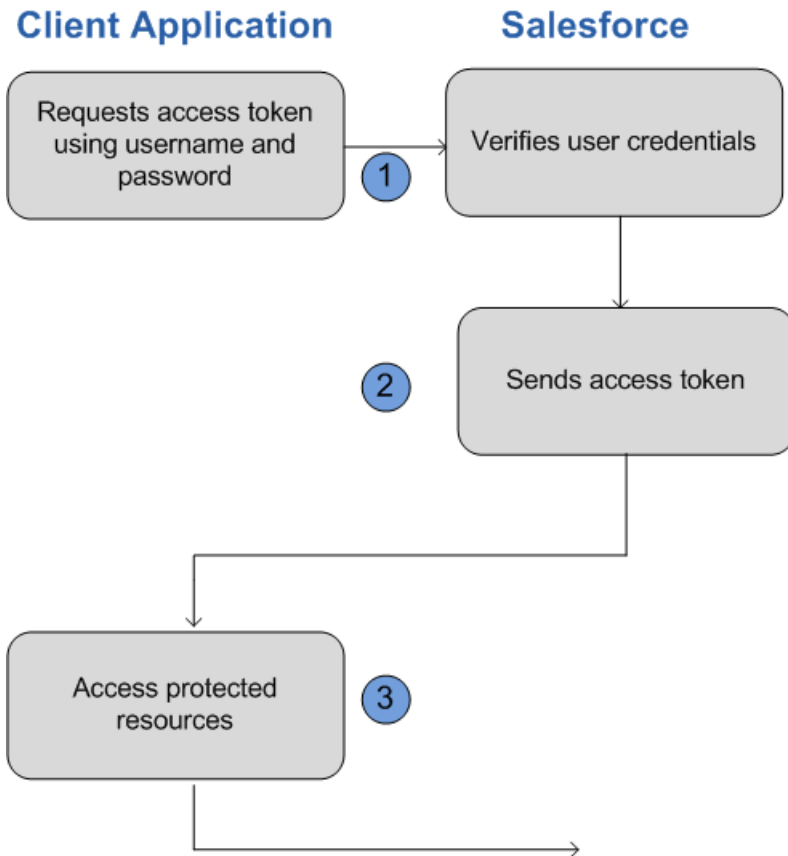
- Because the access token is encoded into the redirection URI, it might be exposed to the end-user and other applications residing on the computer or device. If you're authenticating using JavaScript, call `window.location.replace()` to remove the callback from the browser's history.

## Understanding the Username-Password OAuth Authentication Flow

Use the username-password authentication flow to authenticate when the consumer already has the user's credentials.

In this flow, the user's credentials are used by the application to request an access token as shown in the following steps.

-  **Warning:** This OAuth authentication flow passes the user's credentials back and forth. Use this authentication flow only when necessary. No refresh token is issued.



1. The application uses the user's username and password to request an access token. This is done via an out-of-band POST request to the appropriate Salesforce token request endpoint, such as `https://login.salesforce.com/services/oauth2/token`. These request fields are required:

Parameter	Description
<code>grant_type</code>	Must be <code>password</code> for this authentication flow.
<code>client_id</code>	The <code>Consumer Key</code> from the connected app definition.
<code>client_secret</code>	The <code>Consumer Secret</code> from the connected app definition. Required unless the <code>Require Secret for Web Server Flow</code> setting is not enabled in the connected app definition.
<code>username</code>	End-user's username.
<code>password</code>	End-user's password.



**Note:** You must append the user's security token to their password. A security token is an automatically-generated key from Salesforce. For example, if a user's password is `mypassword`, and their security token is `XXXXXXXXXX`, then the value provided for this parameter must be `mypasswordXXXXXXXXXX`. For more information on

Parameter	Description
	security tokens see “Reset Your Security Token” in the online help.

An example request body might look something like the following:

```
grant_type=password&client_id=3MVG9lKcPoNINVBIPJjdwlJ9LLM82Hn
FVVX19KY1uA5mu0QqEWhqKpoW3svG3XHrXDICQjKlmdgAvhCscA9GE&client_secret=
1955279925675241571&username=testuser%40salesforce.com&password=myspassword123456
```

2. Salesforce verifies the user credentials, and if successful, sends a response to the application with the access token. This response contains the following values:

Parameters	Description
<code>access_token</code>	Access token that acts as a session ID that the application uses for making requests. This token should be protected as though it were user credentials.
<code>instance_url</code>	Identifies the Salesforce instance to which API calls are sent.
<code>id</code>	Identity URL that can be used to both identify the user and query for more information about the user. Can be used in an HTTP request to get more information about the end user.
<code>issued_at</code>	When the signature was created, represented as the number of seconds since the Unix epoch (00:00:00 UTC on 1 January 1970).
<code>signature</code>	Base64-encoded HMAC-SHA256 signature signed with the <code>client_secret</code> (private key) containing the concatenated <code>id</code> and <code>issued_at</code> value. Use the <code>signature</code> to verify that the identity URL wasn't modified when the server sent it.

An example response body might look something like:

```
{ "id": "https://login.salesforce.com/id/00Dx0000000BV7z/005x00000012Q9P",
  "issued_at": "1278448832702", "instance_url": "https://yourInstance.salesforce.com/",
  "signature": "0CmxinZir53Yex7nE0TD+zMpvIWYGb/bdJh6XfOH6EQ=", "access_token":
  "00Dx0000000BV7z!AR8AQAxo9UfVkh8AlV0Gomt9Czx9LjHnSSpwBMmbRcgKFmxOtvxjTrKW1
  9ye6PE3Ds1eQz3z8jr3W7_VbWmEu4Q8TVGSTHxs" }
```

3. The application uses the provided access token to access protected user data.

Keep the following considerations in mind when using the username-password OAuth flow:

- Since the user is never redirected to login at Salesforce in this flow, the user can't directly authorize the application, so no refresh tokens can be used. If your application requires refresh tokens, you should consider using the Web server or user-agent OAuth flow.

## How Does the OAuth Refresh Token Fit Into the Authentication Flow?

Both the web server OAuth authentication flow and user-agent flow provide a refresh token that can be used to get a new access token.

Access tokens have a limited lifetime specified by the session timeout in Salesforce. If an application uses an expired access token, a “Session expired or invalid” error is returned. If the application is using the web server or user-agent OAuth authentication flow, a refresh token is provided during authorization. Use this refresh token to get a new access token.

### Refresh Token Request

The client application obtains a new access token by sending a POST request to the token request endpoint with the following request parameters:

Parameters	Description
<code>grant_type</code>	Value must be <code>refresh_token</code> .
<code>refresh_token</code>	The refresh token the client application already received.
<code>client_id</code>	The <code>Consumer Key</code> from the connected app definition.
<code>client_secret</code>	The <code>Consumer Secret</code> from the connected app definition. Required unless the <code>Require Secret for Web Server Flow</code> setting is not enabled in the connected app definition. This parameter is optional.
<code>format</code>	<p>Expected return format. The default is <code>json</code>. Values are:</p> <ul style="list-style-type: none"> <li>• <code>urlencoded</code></li> <li>• <code>json</code></li> <li>• <code>xml</code></li> </ul> <p>The return format can also be specified in the header of the request using one of the following:</p> <ul style="list-style-type: none"> <li>• <code>Accept: application/x-www-form-urlencoded</code></li> <li>• <code>Accept: application/json</code></li> <li>• <code>Accept: application/xml</code></li> </ul> <p>This parameter is optional.</p>

This example shows a refresh token POST request that sends the `client_id` and `client_secret` in the body.

```
POST /services/oauth2/token HTTP/1.1
Host: login.salesforce.com/
grant_type=refresh_token&client_id=3MVG91KcPoNINVBIPJjdwlJ9LLM82HnFVVX19KY1uA5mu0
QqEWhqKpoW3svG3XHrXDiCQjKlmdgAvhCscA9GE&client_secret=1955279925675241571
&refresh_token=your token here
```

Instead of sending client credentials as parameters in the body of the POST request, Salesforce supports the HTTP Basic authentication scheme. The scheme requires the `client_id` and `client_secret` in the authentication header of the request as follows:

`Authorization: Basic64Encode(client_id:secret)`

The `client_id` and `client_secret` are separated with a colon (:). For more information, see [The OAuth 2.0 Authorization Framework](#).



This example shows a refresh token POST request that uses HTTP Basic authentication scheme (rather than sending client credentials in the POST request's body).

```
POST /services/oath2/token HTTP/1.1
Host: login.salesforce.com
Authorization: Basic client_id=3MVG9lKcPoNINVBIPJjdwlJ9LLM82HnFVVX19KY1uA5mu0
QqEWhqKpoW3svG3XhrXDICQjKlmdgAvhCscA9GE&client_secret=1955279925675241571

grant_type=refresh_token&refresh_token=your token here
```

 **Note:** If the `client_id` and `client_secret` are sent in the POST request's body, the authentication header is ignored.

### Salesforce Response

After Salesforce verifies the refresh token request, it sends a response to the application with the following response body parameters:

Parameters	Description
<code>access_token</code>	Access token that acts as a session ID that the application uses for making requests. This token should be protected as though it were user credentials.
<code>instance_url</code>	Identifies the Salesforce instance to which API calls are sent.
<code>id</code>	Identity URL that can be used to both identify the user and query for more information about the user. Can be used in an HTTP request to get more information about the end user.
<code>issued_at</code>	When the signature was created, represented as the number of seconds since the Unix epoch (00:00:00 UTC on 1 January 1970).
<code>signature</code>	Base64-encoded HMAC-SHA256 signature signed with the <code>client_secret</code> (private key) containing the concatenated ID and <code>issued_at</code> value. Use the <code>signature</code> to verify that the identity URL wasn't modified when the server sent it.

This example shows a JSON response body:

```
{ "id": "https://login.salesforce.com/id/00Dx0000000BV7z/005x00000012Q9P",
  "issued_at": "1278448384422", "instance_url": "https://yourInstance.salesforce.com/",
  "signature": "SSSbLO/gBhmmyNUvN18ODBDFYHzakxOMgqYtu+hDPsc=",
  "access_token": "00Dx0000000BV7z!AR8AQP0jITN80ESESj5EbaZTFG0RNBaT1cyWk7T
rQoDjoNIWQ2ME_sTZzBjfmOE6zMHq6y8PIW4eWze9JksNEkWU1.Cju7m4" }
```

### Considerations

Keep in mind the following considerations when using the refresh token OAuth process:

- The session timeout for an access token can be configured in Salesforce from Setup by entering *Session Settings* in the Quick Find box, then selecting **Session Settings**.
- If the application uses the username-password OAuth authentication flow, no refresh token is issued, as the user cannot authorize the application in this flow. If the access token expires, the application using username-password OAuth flow must reauthenticate the user.

## Finding Additional Resources

The following resources provide additional information about using OAuth with Salesforce:

- [Authenticate Apps with OAuth](#)
- [Digging Deeper into OAuth 2.0 in Salesforce](#)
- [Using OAuth to Authorize External Applications](#)

The following resources are examples of third-party client libraries that implement OAuth that you might find useful:

- For Ruby on Rails: [OmniAuth](#)
- For Java: [Apache Amber](#)
- Additional OAuth client libraries: [OAuth.net](#)

## Use CORS to Access Salesforce Resources from Web Browsers

Cross-Origin Resource Sharing (CORS) enables web browsers to request resources from origins other than their own (cross-origin). For example, using CORS, JavaScript code at `https://www.example.com` could request a resource from `https://www.salesforce.com`. To access supported Salesforce APIs, Apex REST resources, and Lightning Out from JavaScript code in a web browser, add the origin serving the code to a Salesforce CORS whitelist.

These Salesforce technologies support CORS.


- Analytics REST API
- Bulk API
- Chatter REST API
- Salesforce IoT REST API
- Lightning Out
- REST API
- User Interface API
- Apex REST

In Salesforce, add the origin serving the code to a CORS whitelist. If a browser that supports CORS makes a request to an origin in the whitelist, Salesforce returns the origin in the `Access-Control-Allow-Origin` HTTP header, along with any additional CORS HTTP headers. If the origin is not included in the whitelist, Salesforce returns HTTP status code 403.

1. From Setup, enter `CORS` in the `Quick Find` box, then select **CORS**.
2. Select **New**.
3. Enter an origin URL pattern.

The origin URL pattern must include the HTTPS protocol (unless you're using your localhost) and a domain name and can include a port. The wildcard character (\*) is supported and must be in front of a second-level domain name. For example, `https://*.example.com` adds all subdomains of `example.com` to the whitelist.

The origin URL pattern can be an IP address. However, an IP address and a domain that resolve to the same address are not the same origin, and you must add them to the CORS whitelist as separate entries.

 **Important:** CORS does not support requests for unauthenticated resources, including OAuth endpoints. You must pass an OAuth token with requests that require it.

### EDITIONS

Available in: Salesforce Classic ([not available in all orgs](#)) and Lightning Experience

Available in: **Developer, Enterprise, Performance, and Unlimited**

### USER PERMISSIONS

To create, read, update, and delete:

- **Modify All Data**

## CHAPTER 2 Quick Start

### In this chapter ...

- [Prerequisites](#)
- [Step One: Obtain a Salesforce Developer Edition Organization](#)
- [Step Two: Set Up Authorization](#)
- [Step Three: Send HTTP Requests with cURL](#)
- [Step Four: Walk Through the Sample Code](#)
- [Using Workbench](#)

Create a sample REST application in your development environment to see the power and flexibility of the REST API.

## Prerequisites

---

Completing the prerequisites makes it easier to build and use the quick-start sample.

If you're unfamiliar with cURL and JavaScript Object Notation (JSON), you can also use [Workbench](#) to obtain data.

- Install your development platform according to its product documentation.
- Become familiar with cURL, the tool used to execute REST requests in this quick start. If you use another tool, you should be familiar enough with it to translate the example code.
- Become familiar with JSON which is used in this quick start, or be able to translate samples from JSON to the standard you use.
- Enable an SSL endpoint in your application server.
- Become familiar with OAuth 2.0, which requires some setup. We provide the steps, but it will help if you are familiar with the basic concepts and workflow.
- Read through all the steps before beginning this quick start. You may also wish to review the rest of this document to familiarize yourself with terms and concepts.

## Step One: Obtain a Salesforce Developer Edition Organization

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Set up a Developer Edition organization for testing your code.


If you are not already a member of the Lightning Platform developer community, go to [developer.salesforce.com/signup](https://developer.salesforce.com/signup) and follow the instructions for signing up for a Developer Edition organization. Even if you already have Enterprise Edition, Unlimited Edition, or Performance Edition, use Developer Edition for developing, staging, and testing your solutions against sample data to protect your organization's live data. This is especially true for applications that insert, update, or delete data (as opposed to simply reading data).

If you already have a Developer Edition organization, verify that you have the API Enabled permission. This permission is enabled by default, but may have been changed by an administrator. For more information, see the help in the Salesforce user interface.

## Step Two: Set Up Authorization


---

You can set up authorization using OAuth 2.0 or by passing a session ID.


 **Important:** If you're handling someone else's password, don't use session ID.

## Set Up OAuth 2.0

Setting up OAuth 2.0 requires that you take some steps within Salesforce and in other locations. If any of the steps are unfamiliar, see [Understanding Authentication](#). The following example uses the [Web server OAuth flow](#).

1. Create a connected app if you haven't already done so.
  - In Salesforce Classic, from Setup, enter `Apps` in the Quick Find box, select **Apps** (under **Build > Create**), then click the name of the connected app.
  - In Lightning Experience, from Setup, enter `Apps` in the Quick Find box, select **App Manager**, click , and then select **Edit**.

Click **Enable OAuth Settings** and specify your callback URL and OAuth scopes. The `Callback URL` you supply here is the same as your application's callback URL. Usually it is a servlet if you work with Java. It must be secure: `http://` does not work, only `https://`. For development environments, the callback URL is similar to `https://localhost:8443/RestTest/oauth/_callback`. When you click **Save**, the `Consumer Key` is created and displayed, and a `Consumer Secret` is created (click the link to reveal it).

 **Note:** The OAuth 2.0 specification uses “client” instead of “consumer.” Salesforce supports OAuth 2.0.

The values here correspond to the following values in the sample code in the rest of this procedure:

- `client_id` is the Consumer Key
- `client_secret` is the Consumer Secret
- `redirect_uri` is the Callback URL.

In your client application, redirect the user to the appropriate [Salesforce authorization endpoint](#). On successful user login, Salesforce calls your redirect URI with an authorization code. You use the authorization code in the next step to get the access token. The authorization code expires after 15 minutes.

2. From your Java or other client application, make a request to the appropriate Salesforce token request endpoint that passes in `grant_type`, `client_id`, `client_secret`, and `redirect_uri`. The `redirect_uri` is the URI that Salesforce sends a callback to.

```
initParams = {
    @WebInitParam(name = "clientId", value =
        "3MVG9lKcPoNINVBJSOqsNCD.HHDdbugPsNXwvyFbgb47Kwa_PTv"),
    @WebInitParam(name = "clientSecret", value = "5678471853609579508"),
    @WebInitParam(name = "redirectUri", value =
        "https://localhost:8443/RestTest/oauth/_callback"),
    @WebInitParam(name = "environment", value =
        "https://login.salesforce.com/services/oauth2/token") }

HttpClient httpClient = new HttpClient();
PostMethod post = new PostMethod(environment);
post.addParameter("code", code);
post.addParameter("grant_type", "authorization_code");

/** For session ID instead of OAuth 2.0, use "grant_type", "password" */
post.addParameter("client_id", clientId);
post.addParameter("client_secret", clientSecret);
post.addParameter("redirect_uri", redirectUri);
```

If the value of `client_id` (or consumer key) and `client_secret` (or consumer secret) are valid, Salesforce sends a callback to the URI specified in `redirect_uri` that contains a value for `access_token`.

3. Store the access token value as a cookie to use in all subsequent requests. For example:

```
//exception handling removed for brevity...
//this is the post from step 2
httpClient.executeMethod(post);
String responseBody = post.getResponseAsString();

String accessToken = null;
JSONObject json = null;
try {
    json = new JSONObject(responseBody);
    accessToken = json.getString("access_token");
    issuedAt = json.getString("issued_at");
    /** Use this to validate session
     * instead of expiring on browser close.
     */
}
```

```

    } catch (JSONException e) {
        e.printStackTrace();
    }

    HttpServletResponse httpResponse = (HttpServletResponse)response;
    Cookie session = new Cookie(ACCESS_TOKEN, accessToken);
    session.setMaxAge(-1); //cookie not persistent, destroyed on browser exit
    httpResponse.addCookie(session);

```

This step completes the authentication.

4. Once authenticated, every request must pass in the `access_token` value in the header. It cannot be passed as a request parameter.

```

HttpClient httpclient = new HttpClient();
GetMethod gm = new GetMethod(serviceUrl);

//set the token in the header
gm.setRequestHeader("Authorization", "Bearer "+accessToken);
//set the SOQL as a query param
NameValuePair[] params = new NameValuePair[1];

/**
 * other option instead of query string, pass just the fields you want back:
 * https://instance_name.salesforce.com/services/data/v20.0/objects/Account/
 * 001D000000INjVe?fields=AccountNumber,BillingPostalCode
 */
params[0] = new NameValuePair("q","SELECT name, title FROM Contact LIMIT 100");
gm.setQueryString(params);

httpclient.executeMethod(gm);
String responseBody = gm.getResponseBodyAsString();
//exception handling removed for brevity
JSONObject json = new JSONObject(responseBody);

JSONArray results = json.getJSONArray("records");

for(int i = 0; i < results.length(); i++)
    response.getWriter().write(results.getJSONObject(i).getString("Name")+      ",
    "+results.getJSONObject(i).getString("Title")+"\n");

```

The syntax to provide the access token in your REST requests:

```
Authorization: Bearer access_token
```

For example:

```
curl https://instance_name.salesforce.com/services/data/v20.0/ -H 'Authorization: Bearer
access_token'
```

## Session ID Authorization

You can use a session ID instead of an OAuth 2.0 access token if you aren't handling someone else's password:

1. Obtain a session ID, for example, a SOAP API `login()` call returns the session ID. You can also have the session ID, for example as part of the Apex current context. If you need a session ID just for testing purposes during development, use the username-password OAuth flow in a cURL command similar to the following:

```
curl https://login.salesforce.com/services/oauth2/token -d "grant_type=password" -d
"client_id=myclientid" -d "client_secret=myclientsecret"
-d "username=mylogin@salesforce.com" -d "password=mypassword123456"
```

You must provide your client id, client secret, username, and password with user security token appended.

2. Use the session ID when you send a request to the resource. Substitute the ID for the `token` value. The syntax is the same:

```
Authorization: Bearer access_token
```

For example:

```
curl https://instance_name.salesforce.com/services/data/v20.0/ -H 'Authorization: Bearer
access_token'
```

## Step Three: Send HTTP Requests with cURL

To interact with the Lightning Platform REST API, you need to set up your client application (we use cURL) to construct HTTP requests.

### Setting Up Your Client Application

The REST API uses HTTP GET and HTTP POST methods to send and receive JSON and XML content, so it is very simple to build client applications using the tool or the language of your choice. We use a command-line tool called cURL to simplify sending and receiving HTTP requests and responses.

cURL is pre-installed on many Linux and Mac systems. Windows users can download a version at [curl.haxx.se/](https://curl.haxx.se/). When using HTTPS on Windows, ensure that your system meets the cURL requirements for SSL.

### Sending HTTP Requests Using REST API Resources

Your HTTP requests to a REST API resource should contain the following information:

- An HTTP method (HEAD, GET, POST, PATCH, or DELETE).
- An OAuth 2.0 access token used to authenticate the request. For information on how to retrieve the token, see [Quick Start](#) on page 21.
- An HTTP ACCEPT header used to indicate the resource format (XML or JSON), or a `.json` or `.xml` extension to the URI. The default is JSON.
- The Lightning Platform REST resource.
- Any JSON or XML files containing information needed for requests, such as updating a record with new information.

The HTTP methods are used to indicate the desired action, such as retrieving information, as well as creating, updating, and deleting records.

- HEAD is used to retrieve resource metadata.
- GET is used to retrieve information, such as basic resource summary information.
- POST is used to create a new object.
- PATCH is used to update a record.

- DELETE is used to delete a record.

To access a resource, submit an HTTP request containing a header, method, and resource name.

For example, assume you want to create an Account record using a JSON-formatted file called `newaccount.json`. It contains the information to be stored in the new account:

```
{
  "Name" : "test"
}
```

Using cURL on your instance, the request would appear as follows:

```
curl https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d "@newaccount.json"
```

The request HTTP header:

```
POST /services/data/v20.0/subjects/Account HTTP/1.1
User-Agent: curl/7.19.7 (universal-apple-darwin10.0) libcurl/7.19.7 OpenSSL/0.9.8l zlib/1.2.3
Host: yourInstance.salesforce.com
Accept: */*
Content-Length: 1411
Content-Type: application/json
Authorization: Bearer XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X-PrettyPrint:1
```

The response:

```
Date: Thu, 21 Oct 2010 22:16:22 GMT
Content-Length: 71
Location: /services/data/v20.0/subjects/Account/001T000000NU96UIAT
Content-Type: application/json; charset=UTF-8 Server:
{ "id" : "001T000000NU96UIAT",
  "errors" : [ ],
  "success" : true }
```

For a list of the resources and their corresponding URIs, see [Reference](#) on page 101.

SEE ALSO:

[Using cURL in the REST Examples](#)

## Step Four: Walk Through the Sample Code

In this section you will create a series of REST requests. cURL will be used to construct the requests, and JSON will be used as the format for all requests and responses.

In each request, a base URI will be used in conjunction with the REST resource. The base URI for these examples is `https://yourInstance.salesforce.com/services/data`. For more information, see [Lightning Platform REST Resources](#) on page 2.

In this example, a series of REST requests will be used in the following scenario:

1. [Get the Salesforce version.](#)
2. [Use the Salesforce version to get a list of the resources available.](#)



3. Use one of the resources to get a list of the available objects.
4. Select one of the objects and get a description of its metadata.
5. Get a list of fields on that same object.
6. Execute a SOQL query to retrieve values from all `name` fields on Account records.
7. Update the Billing City for one of the Account objects.

## Get the Salesforce Version

Begin by retrieving information about each available Salesforce version. To do this, submit a request for the [Versions](#) resource. In this case the request does not require authentication:

```
curl https://yourInstance.salesforce.com/services/data/
```

The output from this request, including the response header:

```
Content-Length: 88
Content-Type: application/json;
charset=UTF-8 Server:
[
  {
    "version": "20.0",
    "url": "/services/data/v20.0",
    "label": "Winter '11"
  }
  ...
]
```

The output specifies the resources available for all valid versions (your result may include more than one value). Next, use one of these versions to discover the resources it contains.

## Get a List of Resources

The next step is to retrieve a list of the resources available for Salesforce, in this example for version 20.0. To do this, submit a request for the [Resources by Version](#):

```
curl https://yourInstance.salesforce.com/services/data/v20.0/ -H "Authorization: Bearer access_token" -H "X-PrettyPrint:1"
```

The output from this request is as follows:

```
{
  "subjects" : "/services/data/v20.0/subjects",
  "search" : "/services/data/v20.0/search",
  "query" : "/services/data/v20.0/query",
  "recent" : "/services/data/v20.0/recent"
}
```

From this output you can see that `subjects` is one of the available resources in Salesforce version 20.0. You will be able to use this resource in the next request to retrieve the available objects.

## Get a List of Available Objects

Now that you have the list of available resources, you can request a list of the available objects. To do this, submit a request for the [Describe Global](#):

```
curl https://yourInstance.salesforce.com/services/data/v20.0/subjects/ -H "Authorization: Bearer access_token" -H "X-PrettyPrint:1"
```

The output from this request is as follows:

```
Transfer-Encoding: chunked
Content-Type: application/json;
charset=UTF-8 Server:
{
  "encoding" : "UTF-8",
  "maxBatchSize" : 200,
  "subjects" : [ {
    "name" : "Account",
    "label" : "Account",
    "custom" : false,
    "keyPrefix" : "001",
    "updateable" : true,
    "searchable" : true,
    "labelPlural" : "Accounts",
    "layoutable" : true,
    "activateable" : false,
    "urls" : { "subject" : "/services/data/v20.0/subjects/Account",
    "describe" : "/services/data/v20.0/subjects/Account/describe",
    "rowTemplate" : "/services/data/v20.0/subjects/Account/{ID}" },
    "createable" : true,
    "customSetting" : false,
    "deletable" : true,
    "deprecatedAndHidden" : false,
    "feedEnabled" : false,
    "mergeable" : true,
    "queryable" : true,
    "replicateable" : true,
    "retrieveable" : true,
    "undeletable" : true,
    "triggerable" : true },
  },
  ...
}
```

From this output you can see that the Account object is available. You will be able to get more information about the Account object in the next steps.

## Get Basic Object Information

Now that you have identified the Account object as an available resource, you can retrieve some basic information about its metadata. To do this, submit a request for the [SObject Basic Information](#):

```
curl https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/ -H "Authorization: Bearer access_token" -H "X-PrettyPrint:1"
```

The output from this request is as follows:

```
{
  "objectDescribe" :
  {
    "name" : "Account",
    "updateable" : true,
    "label" : "Account",
    "keyPrefix" : "001",

    ...

    "replicateable" : true,
    "retrieveable" : true,
    "undeletable" : true,
    "triggerable" : true
  },
  "recentItems" :
  [
    {
      "attributes" :
      {
        "type" : "Account",
        "url" : "/services/data/v20.0/subjects/Account/001D000000INjVeIAL"
      },
      "Id" : "001D000000INjVeIAL",
      "Name" : "asdasdasd"
    },
    ...
  ]
}
```

From this output you can see some basic attributes of the Account object, such as its name and label, as well as a list of the most recently used Accounts. Since you may need more information about its fields, such as length and default values, in the next step you will retrieve more detailed information about the Account object.

## Get a List of Fields

Now that you have some basic information about the Account object's metadata, you may be interested in retrieving more detailed information. To do this, submit a request for the [SObject Describe](#):

```
curl https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/describe/
-H "Authorization: Bearer access_token" -H "X-PrettyPrint:1"
```

The output from this request is as follows:

```
{
  "name" : "Account",
  "fields" :
  [
    {
      "length" : 18,
      "name" : "Id",
```

```

        "type" : "id",
        "defaultValue" : { "value" : null },
        "updateable" : false,
        "label" : "Account ID",
        ...
    },
    ...
],
"updateable" : true,
"label" : "Account",
...
"urls" :
{
    "uiEditTemplate" : "https://yourInstance.salesforce.com/{ID}/e",
    "subject" : "/services/data/v20.0/objects/Account",
    "uiDetailTemplate" : "https://yourInstance.salesforce.com/{ID}",
    "describe" : "/services/data/v20.0/objects/Account/describe",
    "rowTemplate" : "/services/data/v20.0/objects/Account/{ID}",
    "uiNewRecord" : "https://yourInstance.salesforce.com/001/e"
},
"childRelationships" :
[
    {
        "field" : "ParentId",
        "deprecatedAndHidden" : false,
        ...
    },
    ...
],

"createable" : true,
"customSetting" : false,
...
}

```

From this output you can see much more detailed information about the Account object, such as its field attributes and child relationships. Now you have enough information to construct useful queries and updates for the Account objects in your organization, which you will do in the next steps.

## Execute a SOQL Query

Now that you know the field names on the Account object, you can execute a SOQL query, for example, to retrieve a list of all the Account name values. To do this, submit a [Query](#) request:

```

curl
https://yourInstance.salesforce.com/services/data/v20.0/query?q=SELECT+name+from+Account
-H "Authorization: Bearer access_token" -H "X-PrettyPrint:1"

```

The output from this request is as follows:

```

{
    "done" : true,
    "totalSize" : 14,
    "records" :

```

```
[
  {
    "attributes" :
    {
      "type" : "Account",
      "url" : "/services/data/v20.0/subjects/Account/001D000000IRFmaIAH"
    },
    "Name" : "Test 1"
  },
  {
    "attributes" :
    {
      "type" : "Account",
      "url" : "/services/data/v20.0/subjects/Account/001D000000IomazIAB"
    },
    "Name" : "Test 2"
  },
  ...
]
```

From this output you have a listing of the available Account names, and each name's preceding attributes include the Account IDs. In the next step you will use this information to update one of the accounts.

 **Note:** You can find more information about SOQL in the [Salesforce SOQL and SOSL Reference Guide](#).

## Update a Field on a Record

Now that you have the Account names and IDs, you can retrieve one of the accounts and update its Billing City. To do this, you will need to submit an [Object Rows](#) request. To update the object, supply the new information about the Billing City. Create a text file called `patchaccount.json` containing the following information:

```
{
  "BillingCity" : "Fremont"
}
```

Specify this JSON file in the REST request. The cURL notation requires the `-d` option when specifying data. For more information, see <http://curl.haxx.se/docs/manpage.html>.

Also, specify the `PATCH` method, which is used for updating a REST resource. The following cURL command retrieves the specified Account object using its ID field, and updates its Billing City.

```
curl
https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/001D000000IroHJ
-H "Authorization: Bearer access_token" -H "X-PrettyPrint:1" -H "Content-Type:
application/json" --data-binary @patchaccount.json -X PATCH
```

No response body is returned, just the headers:

```
HTTP/1.1 204 No Content
Server:
Content-Length: 0
```

Refresh the page on the account and you will see that the Billing Address has changed to Fremont.

## Other Resources

- Search for Ruby on [developer.salesforce.com](https://developer.salesforce.com)
- [Lightning Platform Cookbook recipe for getting started in Ruby](#)
- [Lightning Platform REST API Board](#)

## Using Workbench

---

Use the Workbench tool to obtain data about your organization.

If you don't want to use CURL, you can use the Workbench REST explorer to obtain response data.

1. Log in to your organization.
2. Open a new browser tab and navigate to `https://developer.salesforce.com/page/Workbench`.
3. Log in to Workbench and allow access to your organization. Workbench is a public site and won't retain your data.
4. Click **Utilities > REST Explorer**.
5. Ensure that **Get** is selected. The Execute text box is prepopulated with a portion of a resource path. Add the remaining information for your resource. For example, if your cURL syntax is

```
https://yourInstance.salesforce.com/services/data/v32.0/subjects/EventLogFile/describe  
-H "Authorization: Bearer token"
```

type

```
/services/data/v32.0/subjects/EventLogFile/describe.
```

6. Click **Execute**.
7. Click **Expand All** or **Show Raw Response** to view your data.

 **Tip:** If you receive a "Service not found" message, verify your resource path.

## CHAPTER 3 Examples

### In this chapter ...

- [Getting Information About My Organization](#)
- [Working with Object Metadata](#)
- [Working with Records](#)
- [Working with Searches and Queries](#)
- [Insert or Update Blob Data](#)
- [Working with Recently Viewed Information](#)
- [Managing User Passwords](#)
- [Working with Approval Processes and Process Rules](#)
- [Using Event Monitoring](#)
- [Using Composite Resources](#)

This section provides examples of using REST API resources to do a variety of different tasks, including working with objects, organization information, and queries.

For complete reference information on REST API resources, see [Reference](#) on page 101.

## Getting Information About My Organization

---

The examples in this section use REST API resources to retrieve organization-level information, such as a list of all objects available in your organization.

### IN THIS SECTION:

#### [List Available REST API Versions](#)

Use the [Versions](#) resource to list summary information about each REST API version currently available, including the version, label, and a link to each version's root. You do not need authentication to retrieve the list of versions.

#### [List Organization Limits](#)

Use the [Limits](#) resource to list limits information for your org.

#### [List Available REST Resources](#)

Use the [Resources by Version](#) resource to list the resources available for the specified API version. This provides the name and URI of each additional resource.

#### [Get a List of Objects](#)

Use the [Describe Global](#) resource to list the objects available in your org and available to the logged-in user. This resource also returns the org encoding, as well as maximum batch size permitted in queries.

#### [Get an Image from a Rich Text Area Field](#)

Use the [SObject Rich Text Image Retrieve](#) to retrieve an image that has been uploaded to a rich text area field.

#### [Get a List of Objects If Metadata Has Changed](#)

Use the [Describe Global](#) resource and the `If-Modified-Since` HTTP header to determine if an object's metadata has changed.

## List Available REST API Versions

Use the [Versions](#) resource to list summary information about each REST API version currently available, including the version, label, and a link to each version's root. You do not need authentication to retrieve the list of versions.

### Example usage

```
curl https://yourInstance.salesforce.com/services/data/
```

### Example request body

none required

### Example JSON response body

```
[
  {
    "version" : "20.0",
    "label" : "Winter '11",
    "url" : "/services/data/v20.0"
  },
  {
    "version" : "21.0",
    "label" : "Spring '11",
    "url" : "/services/data/v21.0"
  },
  ...
]
```



```

    "version" : "26.0",
    "label" : "Winter '13",
    "url" : "/services/data/v26.0"
  }
]

```

### Example XML response body

```

<?xml version="1.0" encoding="UTF-8"?>
<Versions>
  <Version>
    <label>Winter &apos;11</label>
    <url>/services/data/v20.0</url>
    <version>20.0</version>
  </Version>
  <Version>
    <label>Spring &apos;11</label>
    <url>/services/data/v21.0</url>
    <version>21.0</version>
  </Version>
  ...
  <Version>
    <label>Winter &apos;13</label>
    <url>/services/data/v26.0</url>
    <version>26.0</version>
  </Version>
</Versions>

```

## List Organization Limits

Use the [Limits](#) resource to list limits information for your org.

- Max is the limit total for the org.
- Remaining is the total number of calls or events left for the org.

### Example usage

```

curl https://instance.salesforce.com/services/data/v44.0/limits/ -H "Authorization:
Bearer token "X-PrettyPrint:1"

```

### Example request body

none required

### Example response body

```

{
  "ConcurrentAsyncGetReportInstances" : {
    "Max" : 200,
    "Remaining" : 200
  },
  "ConcurrentSyncReportRuns" : {
    "Max" : 20,
    "Remaining" : 20
  },
  "DailyApiRequests" : {

```

```

    "Max" : 15000,
    "Remaining" : 14998
  },
  "DailyAsyncApexExecutions" : {
    "Max" : 250000,
    "Remaining" : 250000
  },
  "DailyBulkApiRequests" : {
    "Max" : 5000,
    "Remaining" : 5000
  },
  "DailyDurableGenericStreamingApiEvents" : {
    "Max" : 10000,
    "Remaining" : 10000
  },
  "DailyDurableStreamingApiEvents" : {
    "Max" : 10000,
    "Remaining" : 10000
  },
  "DailyWorkflowEmails" : {
    "Max" : 390,
    "Remaining" : 390
  },
  "DataStorageMB" : {
    "Max" : 5,
    "Remaining" : 5
  },
  "DurableStreamingApiConcurrentClients" : {
    "Max" : 20,
    "Remaining" : 20
  },
  "FileStorageMB" : {
    "Max" : 20,
    "Remaining" : 20
  },
  "HourlyAsyncReportRuns" : {
    "Max" : 1200,
    "Remaining" : 1200
  },
  "HourlyDashboardRefreshes" : {
    "Max" : 200,
    "Remaining" : 200
  },
  "HourlyDashboardResults" : {
    "Max" : 5000,
    "Remaining" : 5000
  },
  "HourlyDashboardStatuses" : {
    "Max" : 99999999,
    "Remaining" : 99999999
  },
  "HourlyODataCallout" : {
    "Remaining" : 9999,
    "Max" : 10000
  }

```

```

    },
    "HourlySyncReportRuns" : {
      "Max" : 500,
      "Remaining" : 500
    },
    "HourlyTimeBasedWorkflow" : {
      "Max" : 50,
      "Remaining" : 50
    },
    "MassEmail" : {
      "Max" : 10,
      "Remaining" : 10
    },
    "MonthlyPlatformEvents" : {
      "Max" : 300000,
      "Remaining" : 300000
    },
    "SingleEmail" : {
      "Max" : 15,
      "Remaining" : 15
    }
  }
}

```

## List Available REST Resources

Use the [Resources by Version](#) resource to list the resources available for the specified API version. This provides the name and URI of each additional resource.

### Example

```
curl https://yourInstance.salesforce.com/services/data/v26.0/ -H "Authorization: Bearer token"
```

### Example request body

none required

### Example JSON response body

```

{
  "subjects" : "/services/data/v26.0/subjects",
  "licensing" : "/services/data/v26.0/licensing",
  "connect" : "/services/data/v26.0/connect",
  "search" : "/services/data/v26.0/search",
  "query" : "/services/data/v26.0/query",
  "tooling" : "/services/data/v26.0/tooling",
  "chatter" : "/services/data/v26.0/chatter",
  "recent" : "/services/data/v26.0/recent"
}

```

### Example XML response body

```

<?xml version="1.0" encoding="UTF-8"?>
<urls>
  <subjects>/services/data/v26.0/subjects</subjects>
  <licensing>/services/data/v26.0/licensing</licensing>
  <connect>/services/data/v26.0/connect</connect>

```

```
<search>/services/data/v26.0/search</search>
<query>/services/data/v26.0/query</query>
<tooling>/services/data/v26.0/tooling</tooling>
<chatter>/services/data/v26.0/chatter</chatter>
<recent>/services/data/v26.0/recent</recent>
</urls>
```

## Get a List of Objects

Use the [Describe Global](#) resource to list the objects available in your org and available to the logged-in user. This resource also returns the org encoding, as well as maximum batch size permitted in queries.

### Example usage

```
curl https://yourInstance.salesforce.com/services/data/v37.0/subjects/ -H "Authorization:
Bearer token"
```

### Example request body

none required

### Example response body

```
{
  "encoding" : "UTF-8",
  "maxBatchSize" : 200,
  "subjects" : [ {
    "activateable" : false,
    "custom" : false,
    "customSetting" : false,
    "createable" : true,
    "deletable" : true,
    "deprecatedAndHidden" : false,
    "feedEnabled" : true,
    "keyPrefix" : "001",
    "label" : "Account",
    "labelPlural" : "Accounts",
    "layoutable" : true,
    "mergeable" : true,
    "mruEnabled" : true,
    "name" : "Account",
    "queryable" : true,
    "replicateable" : true,
    "retrieveable" : true,
    "searchable" : true,
    "triggerable" : true,
    "undeletable" : true,
    "updateable" : true,
    "urls" : {
      "subject" : "/services/data/v37.0/subjects/Account",
      "describe" : "/services/data/v37.0/subjects/Account/describe",
      "rowTemplate" : "/services/data/v37.0/subjects/Account/{ID}"
    },
  },
  ...
]
```

```
}
```

## Get an Image from a Rich Text Area Field

Use the [SObject Rich Text Image Retrieve](#) to retrieve an image that has been uploaded to a rich text area field.

The following example retrieves an image that has been uploaded to a rich text area field for a Lead record.

### Example for retrieving an image from a rich text field for a Lead record

```
curl
https://yourInstance.salesforce.com/services/data/v43.0/objects/Lead/00Q112222233333/richTextImageFields/customRIA__c/0EMR00000000A8V/body
-H "Authorization: Bearer token"
```

#### Example request body

None required.

#### Example response body

Attachment body content is returned in binary form. The response content type is not JSON or XML since the returned data is binary.

## Get a List of Objects If Metadata Has Changed

Use the Describe Global resource and the `If-Modified-Since` HTTP header to determine if an object's metadata has changed.

You can include the `If-Modified-Since` header with a date in `EEE, dd MMM yyyy HH:mm:ss z` format when you use the [Describe Global](#) resource. If you do, response metadata is returned only if an available object's metadata has changed since the provided date. If no metadata has been modified since the provided date, a `304 Not Modified` status code is returned with no response body.

The following example assumes that no changes have been made to objects after March 23, 2015.

#### Example Describe Global request

```
/services/data/v34.0/objects
```

#### Example If-Modified-Since header used with request

```
If-Modified-Since: Tue, 23 Mar 2015 00:00:00 GMT
```

#### Example response body

No response body returned

#### Example response status code

```
HTTP/1.1 304 Not Modified
Date: Wed, 25 Jul 2015 00:05:46 GMT
```

If changes to an object were made after March 23, 2015, the response body contains metadata for all available objects. For an example, see [Get a List of Objects](#).

## Working with Object Metadata

The examples in this section use REST API resources to retrieve object metadata information. For modifying or creating object metadata information, see the [Metadata API Developer Guide](#).

## IN THIS SECTION:

[Retrieve Metadata for an Object](#)

Use the [SObject Basic Information](#) resource to retrieve metadata for an object.

[Get Field and Other Metadata for an Object](#)

Use the [SObject Describe](#) resource to retrieve all the metadata for an object, including information about each field, URLs, and child relationships.

[Get Object Metadata Changes](#)

Use the SObject Describe resource and the `If-Modified-Since` HTTP header to determine if object metadata has changed.

## Retrieve Metadata for an Object

Use the [SObject Basic Information](#) resource to retrieve metadata for an object.

### Example for retrieving Account metadata

```
curl https://yourInstance.salesforce.com/services/data/v20.0/objects/Account/ -H
"Authorization: Bearer token"
```

### Example request body for retrieving Account metadata

none required

### Example response body for retrieving Account metadata

```
{
  "objectDescribe" :
  {
    "name" : "Account",
    "updateable" : true,
    "label" : "Account",
    "keyPrefix" : "001",

    ...

    "replicateable" : true,
    "retrieveable" : true,
    "undeletable" : true,
    "triggerable" : true
  },
  "recentItems" :
  [
    {
      "attributes" :
      {
        "type" : "Account",
        "url" : "/services/data/v20.0/objects/Account/001D000000INjVeIAL"
      },
      "Id" : "001D000000INjVeIAL",
      "Name" : "asdasdasd"
    },

    ...
  ]
}
```

```
]
}
```

To get a complete description of an object, including field names and their metadata, see [Get a List of Objects](#).

## Get Field and Other Metadata for an Object

Use the [SObject Describe](#) resource to retrieve all the metadata for an object, including information about each field, URLs, and child relationships.

### Example

```
https://yourInstance.salesforce.com/services/data/v20.0/objects/Account/describe/ -H
"Authorization: Bearer token"
```

### Example request body

none required

### Example response body

```
{
  "name" : "Account",
  "fields" :
  [
    {
      "length" : 18,
      "name" : "Id",
      "type" : "id",
      "defaultValue" : { "value" : null },
      "updateable" : false,
      "label" : "Account ID",
      ...
    },
    ...
  ],

  "updateable" : true,
  "label" : "Account",
  "keyPrefix" : "001",
  "custom" : false,
  ...
  "urls" :
  {
    "uiEditTemplate" : "https://yourInstance.salesforce.com/{ID}/e",
    "subject" : "/services/data/v20.0/objects/Account",
    "uiDetailTemplate" : "https://yourInstance.salesforce.com/{ID}",
    ...
  },
  "childRelationships" :
```

```
[
  {
    "field" : "ParentId",
    "deprecatedAndHidden" : false,
    ...
  },
  ....
],
"createable" : true,
"customSetting" : false,
...
}
```

## Get Object Metadata Changes

Use the `SObject Describe` resource and the `If-Modified-Since` HTTP header to determine if object metadata has changed.

You can include the `If-Modified-Since` header with a date in `EEE, dd MMM yyyy HH:mm:ss z` format when you use the [SObject Describe](#) resource. If you do, response metadata will only be returned if the object metadata has changed since the provided date. If the metadata has not been modified since the provided date, a `304 Not Modified` status code is returned, with no response body.

The following example assumes that no changes, such as new custom fields, have been made to the `Merchandise__c` object after July 3rd, 2013.

### Example SObject Describe request

```
/services/data/v29.0/objects/Merchandise__c/describe
```

### Example If-Modified-Since header used with request

```
If-Modified-Since: Wed, 3 Jul 2013 19:43:31 GMT
```

### Example response body

No response body returned

### Example response status code

```
HTTP/1.1 304 Not Modified
Date: Fri, 12 Jul 2013 05:03:24 GMT
```

If there were changes to `Merchandise__c` made after July 3rd, 2013, the response body would contain the metadata for `Merchandise__c`. See [Get Field and Other Metadata for an Object](#) for an example.

## Working with Records

The examples in this section use REST API resources to create, retrieve, update, and delete records, along with other record-related operations.



## IN THIS SECTION:

[Create a Record](#)

Use the [SObject Basic Information](#) resource to create new records. You supply the required field values in the request data, and then use the POST method of the resource. The response body will contain the ID of the created record if the call is successful.

[Update a Record](#)

You use the [SObject Rows](#) resource to update records. Provide the updated record information in your request data and use the PATCH method of the resource with a specific record ID to update that record. Records in a single file must be of the same object type.

[Delete a Record](#)

Use the [SObject Rows](#) resource to delete records. Specify the record ID and use the DELETE method of the resource to delete a record.

[Get Field Values from a Standard Object Record](#)

You use the [SObject Rows](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the `fields` parameter and use the GET method of the resource.

[Get Field Values from an External Object Record by Using the Salesforce ID](#)

You use the [SObject Rows](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the `fields` parameter and use the GET method of the resource.

[Get Field Values from an External Object Record by Using the External ID Standard Field](#)

You use the [SObject Rows](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the `fields` parameter and use the GET method of the resource.

[Retrieve a Record Using an External ID](#)

You can use the GET method of the [SObject Rows by External ID](#) resource to retrieve records with a specific external ID.

[Insert or Update \(Upsert\) a Record Using an External ID](#)

You can use the [SObject Rows by External ID](#) resource to create records or update existing records (upsert) based on the value of a specified external ID field.

[Traverse Relationships with Friendly URLs](#)

You can traverse relationship fields in objects by constructing friendly URLs via the SObject Relationship resource. This approach allows you to directly access records associated with relationships. Using friendly URLs is easier than accessing records by obtaining object IDs from relationship fields and then inspecting the associated object ID record.

[Get Attachment Content from a Record](#)

Use the [SObject Blob Retrieve](#) resource to retrieve blob data for a given record.

[Get a List of Deleted Records Within a Given Timeframe](#)

Use the [SObject Get Deleted](#) resource to get a list of deleted records for the specified object. Specify the date and time range within which the records for the given object were deleted. Deleted records are written to a delete log (that is periodically purged), and will be filtered out of most operations, such as SObject Rows or Query (although QueryAll will include deleted records in results).

[Get a List of Updated Records Within a Given Timeframe](#)

Use the [SObject Get Updated](#) resource to get a list of updated (modified or added) records for the specified object. Specify the date and time range within which the records for the given object were updated.

## Create a Record

Use the [SObject Basic Information](#) resource to create new records. You supply the required field values in the request data, and then use the POST method of the resource. The response body will contain the ID of the created record if the call is successful.

The following example creates a new Account record, with the field values provided in `newaccount.json`.

**Example for creating a new Account**

```
curl https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d "@newaccount.json"
```

**Example request body newaccount.json file for creating a new Account**

```
{
  "Name" : "Express Logistics and Transport"
}
```

**Example response body after successfully creating a new Account**

```
{
  "id" : "001D000000IqhSLIAZ",
  "errors" : [ ],
  "success" : true
}
```

## Update a Record

You use the [SObject Rows](#) resource to update records. Provide the updated record information in your request data and use the PATCH method of the resource with a specific record ID to update that record. Records in a single file must be of the same object type.

In the following example, the Billing City within an Account is updated. The updated record information is provided in patchaccount.json.

**Example for updating an Account object**

```
curl
https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/001D000000INjVe
-H "Authorization: Bearer token" -H "Content-Type: application/json" -d
@patchaccount.json -X PATCH
```

**Example request body patchaccount.json file for updating fields in an Account object**

```
{
  "BillingCity" : "San Francisco"
}
```

**Example response body for updating fields in an Account object**

none returned

**Error response**

See [Status Codes and Error Responses](#) on page 258.

The following example uses Java and HttpClient to update a record using REST API. Note that there is no PatchMethod in HttpClient, so PostMethod is overridden to return "PATCH" as its method name. This example assumes the resource URL has been passed in and contains the object name and record ID.

```
public static void patch(String url, String sid) throws IOException {
    PostMethod m = new PostMethod(url) {
        @Override public String getName() { return "PATCH"; }
    };

    m.setRequestHeader("Authorization", "OAuth " + sid);
```

```

Map<String, Object> accUpdate = new HashMap<String, Object>();
accUpdate.put("Name", "Patch test");
ObjectMapper mapper = new ObjectMapper();
m.setRequestEntity(new StringRequestEntity(mapper.writeValueAsString(accUpdate),
"application/json", "UTF-8"));

HttpClient c = new HttpClient();
int sc = c.executeMethod(m);
System.out.println("PATCH call returned a status code of " + sc);
if (sc > 299) {
    // deserialize the returned error message
    List<ApiError> errors = mapper.readValue(m.getResponseBodyAsStream(), new
TypeReference<List<ApiError>>() {} );
    for (ApiError e : errors)
        System.out.println(e.errorCode + " " + e.message);
}
}

private static class ApiError {
    public String errorCode;
    public String message;
    public String [] fields;
}

```

If you use an HTTP library that doesn't allow overriding or setting an arbitrary HTTP method name, you can send a POST request and provide an override to the HTTP method via the query string parameter `_HttpMethod`. In the PATCH example, you can replace the `PostMethod` line with one that doesn't use override:

```
PostMethod m = new PostMethod(url + "?_HttpMethod=PATCH");
```

## Delete a Record

Use the [SObject Rows](#) resource to delete records. Specify the record ID and use the DELETE method of the resource to delete a record.

### Example for deleting an Account record

```

curl
https://yourInstance.salesforce.com/services/data/v20.0/objects/Account/001D000000INjVe
-H "Authorization: Bearer token" -X DELETE

```

#### Example request body

None needed

#### Example response body

None returned

## Get Field Values from a Standard Object Record

You use the [SObject Rows](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the `fields` parameter and use the GET method of the resource.

In the following example, the Account Number and Billing Postal Code are retrieved from an Account.

**Example for retrieving values from fields on an Account object**

```
/services/data/v20.0/objects/Account/001D000000INjVe
?fields=AccountNumber,BillingPostalCode
```

**Example request body**

None required

**Example response body**

```
{
  "AccountNumber" : "CD656092",
  "BillingPostalCode" : "27215",
}
```

## Get Field Values from an External Object Record by Using the Salesforce ID

You use the [SObject Rows](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the `fields` parameter and use the GET method of the resource.

In the following example, the `Country__c` custom field is retrieved from an external object that's associated with a non-high-data-volume external data source.

**Example for retrieving values from fields on the Customer external object**

```
/services/data/v32.0/objects/Customer__x/x01D0000000002RIAQ?fields=Country__c
```

**Example request body**

None required

**Example response body**

```
{
  "attributes" : {
    "type" : "Customer__x",
    "url" : "/services/data/v32.0/objects/Customer__x/x01D0000000002RIAQ"
  },
  "Country__c" : "Argentina",
  "Id" : "x01D0000000002RIAQ"
}
```

## Get Field Values from an External Object Record by Using the External ID Standard Field

You use the [SObject Rows](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the `fields` parameter and use the GET method of the resource.

In the following example, the `Country__c` custom field is retrieved from an external object. Notice that the `id` (CACTU) isn't a Salesforce ID. Instead, it's the External ID standard field of the external object.

**Example for retrieving values from fields on the Customer external object**

```
/services/data/v32.0/objects/Customer__x/CACTU?fields=Country__c
```

**Example request body**

None required

**Example response body**

```
{
  "attributes" : {
    "type" : "Customer__x",
    "url" : "/services/data/v32.0/subjects/Customer__x/CACTU"
  },
  "Country__c" : "Argentina",
  "ExternalId" : "CACTU"
}
```

## Retrieve a Record Using an External ID

You can use the GET method of the [SObject Rows by External ID](#) resource to retrieve records with a specific external ID.

The following example assumes there is a Merchandise\_\_c custom object with a MerchandiseExtID\_\_c external ID field.

**Example usage for retrieving a Merchandise\_\_c record using an external ID**

```
curl
https://yourInstance.salesforce.com/services/data/v20.0/subjects/Merchandise__c/MerchandiseExtID__c/123
-H "Authorization: Bearer token"
```

**Example request body**

none required

**Example response body**

```
{
  "attributes" : {
    "type" : "Merchandise__c",
    "url" : "/services/data/v20.0/subjects/Merchandise__c/a00D00000008oWP8IAM"
  },
  "Id" : "a00D00000008oWP8IAM",
  "OwnerId" : "005D00000001KyEIIA0",
  "IsDeleted" : false,
  "Name" : "Example Merchandise",
  "CreatedDate" : "2012-07-12T17:49:01.000+0000",
  "CreatedById" : "005D00000001KyEIIA0",
  "LastModifiedDate" : "2012-07-12T17:49:01.000+0000",
  "LastModifiedById" : "005D00000001KyEIIA0",
  "SystemModstamp" : "2012-07-12T17:49:01.000+0000",
  "Description__c" : "Merch with external ID",
  "Price__c" : 10.0,
  "Total_Inventory__c" : 100.0,
  "Distributor__c" : null,
  "MerchandiseExtID__c" : 123.0
}
```

## Insert or Update (Upsert) a Record Using an External ID

You can use the [SObject Rows by External ID](#) resource to create records or update existing records (upsert) based on the value of a specified external ID field.

- If the specified value doesn't exist, a new record is created.
- If a record does exist with that value, the field values specified in the request body are updated.
- If the value is not unique, REST API returns a 300 response with the list of matching records.

The following sections show you how to work with the external ID resource to retrieve records by external ID and upsert records.

### Upserting New Records

This example uses the PATCH method to insert a new record. It assumes that an external ID field, "customExtIdField\_\_c," has been added to Account. It also assumes that an Account record with a customExtIdField value of 11999 does not already exist.

#### Example for upserting a record that does not yet exist

```
curl
https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/customExtIdField__c/11999
-H "Authorization: Bearer token" -H "Content-Type: application/json" -d @newrecord.json
-X PATCH
```

#### Example JSON request body `newrecord.json` file

```
{

  "Name" : "California Wheat Corporation",
  "Type" : "New Customer"

}
```

#### Response

Successful response:

```
{
  "id" : "001900000001pPvHAAU",
  "errors" : [ ],
  "success" : true
}
```

HTTP status code 201 is returned if a new record is created.

#### Error responses

Incorrect external ID field:

```
{
  "message" : "The requested resource does not exist",
  "errorCode" : "NOT_FOUND"
}
```

For more information, see [Status Codes and Error Responses](#) on page 258.

## Inserting New Records Using `Id` as the External ID

This example uses the POST method as a special case to insert a record where the `Id` field is treated as the external ID. Because the value of `Id` is `null`, it's omitted from the request. This pattern is useful when you're writing code to upsert multiple records by different external IDs and you don't want to request a separate resource. POST using `Id` is available in API version 37.0 and later.

### Example of inserting a record that does not yet exist

```
curl https://yourInstance.salesforce.com/services/data/v37.0/subjects/Account/Id -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d @newrecord.json
-X POST
```

### Example JSON request body `newrecord.json` file

```
{
  "Name" : "California Wheat Corporation",
  "Type" : "New Customer"
}
```

### Response

Successful response:

```
{
  "id" : "001D000000Kv3g5IAB",
  "success" : true,
  "errors" : [ ]
}
```

HTTP status code 201 is returned if a record is created.

## Upserting Existing Records

This example uses the PATCH method to update an existing record. It assumes that an external ID field, "`customExtIdField__c`," has been added to Account and an Account record with a `customExtIdField` value of 11999 exists. The request uses `updates.json` to specify the updated field values.

### Example of upserting an existing record

```
curl
https://yourInstance.salesforce.com/services/data/v20.0/subjects/Account/customExtIdField__c/11999
-H "Authorization: Bearer token" -H "Content-Type: application/json" -d @updates.json
-X PATCH
```

### Example JSON request body `updates.json` file

```
{
  "BillingCity" : "San Francisco"
}
```

### JSON example response

HTTP status code 204 is returned if an existing record is updated.

**Error responses**

If the external ID value isn't unique, an HTTP status code 300 is returned, plus a list of the records that matched the query. For more information about errors, see [Status Codes and Error Responses](#) on page 258.

If the external ID field doesn't exist, an error message and code is returned:

```
{
  "message" : "The requested resource does not exist",
  "errorCode" : "NOT_FOUND"
}
```

**Upserting Records and Associating with an External ID**

If you have an object that references another object using a relationship, you can use REST API to both insert or update a record and also reference another object using an external ID.

The following example creates a record and associates it with a parent record via external ID. It assumes the following:

- A Merchandise\_\_c custom object that has an external ID field named MerchandiseExtID\_\_c.
- A Line\_Item\_\_c custom object that has an external ID field named LineItemExtID\_\_c, and a relationship to Merchandise\_\_c.
- A Merchandise\_\_c record exists that has a MerchandiseExtID\_\_c value of 123.
- A Line\_Item\_\_c record with a LineItemExtID\_\_c value of 456 does **not** exist. This is the record that gets created and associated to the Merchandise\_\_c record.

**Example of upserting a record and referencing a related object**

```
curl
https://yourInstance.salesforce.com/services/data/v25.0/objects/Line_Item__c/LineItemExtID__c/456
-H "Authorization: Bearer token" -H "Content-Type: application/json" -d @new.json -X
PATCH
```

**Example JSON request body new.json file**

Notice that the related Merchandise\_\_c record is referenced using the Merchandise\_\_c's external ID field.

```
{
  "Name" : "LineItemCreatedViaExtID",
  "Merchandise__r" :
  {
    "MerchandiseExtID__c" : 123
  }
}
```

**JSON example response**

HTTP status code 201 is returned on successful create.

```
{
  "id" : "a02D00000006YUhrIAO",
  "errors" : [ ],
  "success" : true
}
```

**Error responses**

If the external ID value isn't unique, an HTTP status code 300 is returned, plus a list of the records that matched the query. For more information about errors, see [Status Codes and Error Responses](#) on page 258.



If the external ID field doesn't exist, an error message and code is returned:

```
{
  "message" : "The requested resource does not exist",
  "errorCode" : "NOT_FOUND"
}
```

You can also use this approach to update existing records. For example, if you created the `Line_Item__c` shown in the example above, you can try to update the related `Merchandise__c` using another request.

#### Example for updating a record

```
curl
https://yourInstance.salesforce.com/services/data/v25.0/subjects/Line_Item__c/LineItemExtID__c/456
-H "Authorization: Bearer token" -H "Content-Type: application/json" -d @updates.json
-X PATCH
```

#### Example JSON request body `updates.json` file

This assumes another `Merchandise__c` record exists with a `MerchandiseExtID__c` value of 333.

```
{
  "Merchandise__r" :
  {
    "MerchandiseExtID__c" : 333
  }
}
```

#### JSON example response

HTTP status code 204 is returned if an existing record is updated.

If the relationship type is master-detail and the relationship is set to not allow reparenting, and you try to update the parent external ID, you get an HTTP status code 400 error with an error code of `INVALID_FIELD_FOR_INSERT_UPDATE`.

## Traverse Relationships with Friendly URLs

You can traverse relationship fields in objects by constructing friendly URLs via the `SObject Relationship` resource. This approach allows you to directly access records associated with relationships. Using friendly URLs is easier than accessing records by obtaining object IDs from relationship fields and then inspecting the associated object ID record.

Relationship names follow certain conventions that depend on the direction (parent to child, or child to parent) of the relationship and the name of the related object. The conventions are described in [Understanding Relationship Names](#) in the *SOQL and SOSL Reference*.

There are limits to the number of relationship traversals you can make in a single REST API call. These limits are the same as the limits for SOQL, as described in [Understanding Relationship Query Limitations](#) in the *SOQL and SOSL Reference*. Keep the following limitations in mind when traversing relationships.

- When specifying child-to-parent relationships, no more than five levels can be traversed. The following traverses two child-to-parent relationships.

```
https://instance name.salesforce.com/services/data/v44.0/subjects/ChildOfChild__c/record id/Child__r/ParentOfChild__r
```

- When specifying parent-to-child relationships, no more than one level can be traversed. The following traverses one parent-to-child relationship.

```
https://instance name.salesforce.com/services/data/v44.0/subjects/ParentOfChild__c/record id/Child__r
```

**Example of traversing a simple relationship**

This custom object named `Merchandise__c` contains a lookup relationship field to a child `Distributor__c` custom object. The following example retrieves the `Distributor__c` record related to a `Merchandise__c` record.

```
curl
https://yourInstance.salesforce.com/services/data/v36.0/subjects/Merchandise__c/a01D000000INjVe/Distributor__r
-H "Authorization: Bearer token"
```

**Example request body for traversing a simple relationship**

none required

**Example response body for traversing a simple relationship**

```
{
  "attributes" :
  {
    "type" : "Distributor__c",
    "url" : "/services/data/v36.0/subjects/Distributor__c/a03D00000003DUhcIAG"
  },
  "Id" : "a03D00000003DUhcIAG",
  "OwnerId" : "005D00000001KyEIIA0",
  "IsDeleted" : false,
  "Name" : "Distributor1",
  "CreatedDate" : "2011-12-16T17:43:01.000+0000",
  "CreatedById" : "005D00000001KyEIIA0",
  "LastModifiedDate" : "2011-12-16T17:43:01.000+0000",
  "LastModifiedById" : "005D00000001KyEIIA0",
  "SystemModstamp" : "2011-12-16T17:43:01.000+0000",
  "Location__c" : "San Francisco"
}
```

If no related record is associated with the relationship name, the REST API call fails, because the relationship can't be traversed. Using the previous example, if the `Distributor__c` field in the `Merchandise__c` record was set to `null`, the GET call would return a 404 error response.

You can traverse multiple relationships within the same relationship hierarchy in a single REST API call as long as you don't exceed the relationship query limits. If a `Line_Item__c` custom object is the child in a relationship to a `Merchandise__c` custom object, and `Merchandise__c` also has a child `Distributor__c` custom object, you can access the `Distributor__c` record starting from the `Line_Item__c` record using something like the following.

```
curl
https://yourInstance.salesforce.com/services/data/v36.0/subjects/Line_Item__c/a02D00000006YL7XTAW/Merchandise__r/Distributor__r
-H "Authorization: Bearer token"
```

Relationship traversal also supports PATCH and DELETE methods for relationships that resolve to a single record. Using the PATCH method, you can update the related record.

**Example of using PATCH to update a relationship record**

```
curl
https://yourInstance.salesforce.com/services/data/v36.0/subjects/Merchandise__c/a01D000000INjVe/Distributor__r
-H "Authorization: Bearer token" -d @update_info.json -X PATCH
```

**Example JSON request body for updating a relationship record contained in `update_info.json`**

```
{
  "Location__c" : "New York"
}
```

**Example response body for updating relationship record**

none returned

Finally, using the DELETE method, you can delete the related record.

**Example using DELETE to delete a relationship record**

```
curl
https://yourInstance.salesforce.com/services/data/v36.0/subjects/Merchandise__c/a01D000000INjVe/Distributor__r
-H "Authorization: Bearer token" -X DELETE
```

**Example request body for deleting a relationship record**

none required

**Example response body for update relationship record**

none returned

## Traversing Relationships with Multiple Records

You can traverse relationships with multiple records, and get a response that contains the set of records. For relationships that resolve to multiple records, only GET methods are supported.

**Example traversing a relationship with multiple records**

If we have a custom object named `Merchandise__c` that contains a master—detail relationship field to a `Line_Item__c` custom object, the following example retrieves the set of `Line_Item__c` records related to a `Merchandise__c` record.

```
curl
https://yourInstance.salesforce.com/services/data/v36.0/subjects/Merchandise__c/a01D000000INjVe/Line_Items__r
-H "Authorization: Bearer token"
```

**Example request body for traversing a relationship with multiple records**

none required

**Example response body for traversing a relationship with multiple records**

For this example, two `Line_Item__c` records were retrieved.

```
{
  "done" : true,
  "totalSize" : 2,
  "records" :
  [
    {
      "attributes" :
      {
        "type" : "Line_Item__c",
        "url" : "/services/data/v36.0/subjects/Line_Item__c/a02D0000006YL7XIAW"
      },
      "Id" : "a02D0000006YL7XIAW",
      "IsDeleted" : false,
      "Name" : "LineItem1",
    }
  ]
}
```

```

    "CreatedDate" : "2011-12-16T17:44:07.000+0000",
    "CreatedById" : "005D0000001KyEIIA0",
    "LastModifiedDate" : "2011-12-16T17:44:07.000+0000",
    "LastModifiedById" : "005D0000001KyEIIA0",
    "SystemModstamp" : "2011-12-16T17:44:07.000+0000",
    "Unit_Price__c" : 9.75,
    "Units_Sold__c" : 10.0,
    "Merchandise__c" : "a00D00000008oLnXIAU",
    "Invoice_Statement__c" : "a01D000000D85hkIAB"
  },
  {
    "attributes" :
    {
      "type" : "Line_Item__c",
      "url" : "/services/data/v36.0/subjects/Line_Item__c/a02D00000006YL7YIAW"
    },
    "Id" : "a02D00000006YL7YIAW",
    "IsDeleted" : false,
    "Name" : "LineItem2",
    "CreatedDate" : "2011-12-16T18:53:59.000+0000",
    "CreatedById" : "005D0000001KyEIIA0",
    "LastModifiedDate" : "2011-12-16T18:53:59.000+0000",
    "LastModifiedById" : "005D0000001KyEIIA0",
    "SystemModstamp" : "2011-12-16T18:54:00.000+0000",
    "Unit_Price__c" : 8.5,
    "Units_Sold__c" : 8.0,
    "Merchandise__c" : "a00D00000008oLnXIAU",
    "Invoice_Statement__c" : "a01D000000D85hkIAB"
  }
]
}

```

The serialized structure for the result data is the same format as result data from executing a SOQL query via REST API. See [Query](#) on page 195 for more details on executing SOQL queries via REST API

If no related records are associated with the relationship name, the REST API call returns a 200 response with no record data in the response body. This result is in contrast to the results when traversing an empty relationship to a single record, which returns a 404 error response. This behavior is because the single record case resolves to a REST resource that can be used with PATCH or DELETE methods. In contrast, the multiple record case can only be queried.

If an initial GET request for a relationship with multiple records returns only part of the results, the end of the response contains the field `nextRecordsUrl`. For example, you could get a field like the following at the end of your response.

```
"nextRecordsUrl" : "/services/data/v44.0/query/01gD0000002HU6KIAW-2000"
```

You can request the next batch of records using the provided URL with your instance and session information, and repeat until all records have been retrieved. These requests use `nextRecordsUrl` and don't include any parameters. The final batch of records doesn't have a `nextRecordsUrl` field.

### Example usage for retrieving the remaining results

```

curl
https://yourInstance.salesforce.com/services/data/v36.0/query/01gD0000002HU6KIAW-2000
-H "Authorization: Bearer token"

```

**Example request body for retrieving the remaining results**

none required

**Example response body for retrieving the remaining results**

```
{
  "done" : true,
  "totalSize" : 3200,
  "records" : [...]
}
```

## Filtering Result Fields

When retrieving records via relationship traversals, you can optionally specify only a subset of the record fields be returned by using the `fields` parameter. Multiple fields are separated by commas. The following example retrieves just the `Location__c` field from the `Distributor__c` record associated with a `Merchandise__c` record:

```
curl
https://yourInstance.salesforce.com/services/data/v36.0/subjects/Merchandise__c/a01D000000INjVe/Distributor__r?fields=Location__c
-H "Authorization: Bearer token"
```

The JSON response data would look like the following:

```
{
  "attributes" :
  {
    "type" : "Distributor__c",
    "url" : "/services/data/v36.0/subjects/Distributor__c/a03D0000003DUhhIAG"
  },
  "Location__c" : "Chicago",
}
```

Similarly, for requests that result in multiple records, you can use a list of fields to specify the fields returned in the record set. For example, assume you have a relationship that was associated with two `Line_Item__c` records. You want just the `Name` and `Units_Sold__c` fields from those records. You could use the following call.

```
curl
https://yourInstance.salesforce.com/services/data/v36.0/subjects/Merchandise__c/a01D000000INjVe/Distributor__r?fields=Name,Units_Sold__c
-H "Authorization: Bearer token"
```

The response data would look like the following.

```
{
  "done" : true,
  "totalSize" : 2,
  "records" :
  [
    {
      "attributes" :
      {
        "type" : "Line_Item__c",
        "url" : "/services/data/v36.0/subjects/Line_Item__c/a02D0000006YL7XIAW"
      },
      "Name" : "LineItem1",
      "Units_Sold__c" : 10.0
    }
  ]
}
```

```

    },
    {
      "attributes" :
      {
        "type" : "Line_Item__c",
        "url" : "/services/data/v36.0/subjects/Line_Item__c/a02D0000006YL7YIAW"
      },
      "Name" : "LineItem2",
      "Units_Sold__c" : 8.0
    }
  ]
}

```

If any field listed in the fields parameter set isn't visible to the active user, the REST API call fails. In the previous example, if the Units\_Sold\_\_c field was hidden from the active user by field-level security, the call would return a 400 error response.

## Get Attachment Content from a Record

Use the [SObject Blob Retrieve](#) resource to retrieve blob data for a given record.

The following example retrieves the blob data for an Attachment record. The Attachment can be associated with a Case, Campaign, or other object that allows attachments.

### Example for retrieving blob body for an Attachment record

```

curl
https://yourInstance.salesforce.com/services/data/v20.0/subjects/Attachment/001D000000INjVe/body
-H "Authorization: Bearer token"

```

#### Example request body

none required

#### Example response body

Attachment body content is returned in binary form. Note that the response content type will not be JSON or XML since the returned data is binary.

The following example retrieves the blob data for a Document record.

### Example for retrieving blob body for a Document record

```

curl
https://yourInstance.salesforce.com/services/data/v20.0/subjects/Document/015D0000000NdJOIA0/body
-H "Authorization: Bearer token"

```

#### Example request body

none required

#### Example response body

Document body content is returned in binary form. Note that the response content type will not be JSON or XML since the returned data is binary.

## Get a List of Deleted Records Within a Given Timeframe

Use the [SObject Get Deleted](#) resource to get a list of deleted records for the specified object. Specify the date and time range within which the records for the given object were deleted. Deleted records are written to a delete log (that is periodically purged), and will be filtered out of most operations, such as SObject Rows or Query (although QueryAll will include deleted records in results).

**Example usage for getting a list of Merchandise\_\_c records that were deleted between May 5th, 2013 and May 10th, 2013**

```
/services/data/v29.0/objects/Merchandise__c/deleted/
?start=2013-05-05T00%3A00%3A00%2B00%3A00&end=2013-05-10T00%3A00%3A00%2B00%3A00
```

**Example request body**

None required

**JSON example response body**

```
{
  "deletedRecords" :
  [
    {
      "id" : "a00D0000008pQRAIA2",
      "deletedDate" : "2013-05-07T22:07:19.000+0000"
    }
  ],
  "earliestDateAvailable" : "2013-05-03T15:57:00.000+0000",
  "latestDateCovered" : "2013-05-08T21:20:00.000+0000"
}
```

**XML example response body**

```
<?xml version="1.0" encoding="UTF-8"?>
<Merchandise__c>
  <deletedRecords>
    <deletedDate>2013-05-07T22:07:19.000Z</deletedDate>
    <id>a00D0000008pQRAIA2</id>
  </deletedRecords>
  <earliestDateAvailable>2013-05-03T15:57:00.000Z</earliestDateAvailable>
  <latestDateCovered>2013-05-08T21:20:00.000Z</latestDateCovered>
</Merchandise__c>
```

## Get a List of Updated Records Within a Given Timeframe

Use the [SObject Get Updated](#) resource to get a list of updated (modified or added) records for the specified object. Specify the date and time range within which the records for the given object were updated.

**Example usage for getting a list of Merchandise\_\_c records that were updated between May 6th, 2013 and May 10th, 2013**

```
/services/data/v29.0/objects/Merchandise__c/updated/
?start=2013-05-06T00%3A00%3A00%2B00%3A00&end=2013-05-10T00%3A00%3A00%2B00%3A00
```

**Example request body**

None required

**JSON example response body**

```
{
  "ids" :
  [
    "a00D0000008pQR5IAM",
    "a00D0000008pQRGIA2",
    "a00D0000008pQRFIA2"
  ],
}
```

```

    "latestDateCovered" : "2013-05-08T21:20:00.000+0000"
  }

```

### XML example response body

```

<?xml version="1.0" encoding="UTF-8"?>
<Merchandise__c>
  <ids>a00D00000008pQR5IAM</ids>
  <ids>a00D00000008pQRGIA2</ids>
  <ids>a00D00000008pQRFIA2</ids>
  <latestDateCovered>2013-05-08T21:20:00.000Z</latestDateCovered>
</Merchandise__c>

```

## Working with Searches and Queries

The examples in this section use REST API resources to search and query records using Salesforce Object Search Language (SOSL) and Salesforce Object Query Language (SOQL), and other search APIs. For more information on SOSL and SOQL see the [SOQL and SOSL Reference](#).

### IN THIS SECTION:

#### [Execute a SOQL Query](#)

Use the [Query](#) resource to execute a SOQL query that returns all the results in a single response, or if needed, returns part of the results and an identifier used to retrieve the remaining results.

#### [Execute a SOQL Query that Includes Deleted Items](#)

Use the [QueryAll](#) resource to execute a SOQL query that includes information about records that have been deleted because of a merge or delete. Use QueryAll rather than Query, because the Query resource will automatically filter out items that have been deleted.

#### [Get Feedback on Query Performance](#)

Use the [Query](#) resource along with the `explain` parameter to get feedback on how Salesforce executes your query, report, or list view. Salesforce analyzes each query to find the optimal approach to obtain the query results. Depending on the query and query filters, Salesforce uses an index or internal optimization. Use the `explain` parameter to return details on how Salesforce optimizes your query, without actually running the query. Based on the response, you can decide whether to fine-tune the performance of your query by making changes like adding filters to make the query more selective.

#### [Search for a String](#)

Use the [Search](#) resource to execute a SOSL search or use the [Parameterized Search](#) resource to execute a simple RESTful search without SOSL.

#### [Get the Default Search Scope and Order](#)

Use the [Search Scope and Order](#) resource to retrieve the default global search scope and order for the logged-in user, including any pinned objects in the user's search results page.

#### [Get Search Result Layouts for Objects](#)

Use the [Search Result Layouts](#) resource to retrieve the search result layout configuration for each object specified in the query string.

#### [View Relevant Items](#)

Use the [Relevant Items](#) resource to get a list of relevant records.



## Execute a SOQL Query

Use the [Query](#) resource to execute a SOQL query that returns all the results in a single response, or if needed, returns part of the results and an identifier used to retrieve the remaining results.

The following query requests the value from `name` fields from all Account records.

### Example usage for executing a query

```
curl
https://yourInstance.salesforce.com/services/data/v20.0/query/?q=SELECT+name+from+Account
-H "Authorization: Bearer token"
```

### Example request body for executing a query

none required

### Example response body for executing a query

```
{
  "done" : true,
  "totalSize" : 14,
  "records" :
  [
    {
      "attributes" :
      {
        "type" : "Account",
        "url" : "/services/data/v20.0/subjects/Account/001D000000IRFmaIAH"
      },
      "Name" : "Test 1"
    },
    {
      "attributes" :
      {
        "type" : "Account",
        "url" : "/services/data/v20.0/subjects/Account/001D000000IomazIAB"
      },
      "Name" : "Test 2"
    },
    ...
  ]
}
```

## Retrieving the Remaining SOQL Query Results

If the initial query returns only part of the results, the end of the response will contain a field called `nextRecordsUrl`. For example, you might find this attribute at the end of your query:

```
"nextRecordsUrl" : "/services/data/v20.0/query/01gD0000002HU6KIAW-2000"
```

In such cases, request the next batch of records and repeat until all records have been retrieved. These requests use `nextRecordsUrl`, and do not include any parameters.

**Example usage for retrieving the remaining query results**

```
curl
https://yourInstance.salesforce.com/services/data/v20.0/query/01gD0000002HU6KIAW-2000
-H "Authorization: Bearer token"
```

**Example request body for retrieving the remaining query results**

none required

**Example response body for retrieving the remaining query results**

```
{
  "done" : true,
  "totalSize" : 3214,
  "records" : [...]
}
```

## Execute a SOQL Query that Includes Deleted Items

Use the [QueryAll](#) resource to execute a SOQL query that includes information about records that have been deleted because of a merge or delete. Use QueryAll rather than Query, because the Query resource will automatically filter out items that have been deleted.

The following query requests the value from the `Name` field from all deleted `Merchandise__c` records, in an organization that has one deleted `Merchandise__c` record. The same query using Query instead of QueryAll would return no records, because Query automatically filters out any deleted record from the result set.

**Example usage for executing a query for deleted Merchandise\_\_c records**

```
/services/data/v29.0/queryAll/?q=SELECT+Name+from+Merchandise__c+WHERE+isDeleted+=+TRUE
```

**Example request body for executing a query**

none required

**Example response body for executing a query**

```
{
  "done" : true,
  "totalSize" : 1,
  "records" :
  [
    {
      "attributes" :
      {
        "type" : "Merchandise__c",
        "url" : "/services/data/v29.0/subjects/Merchandise__c/a00D00000008pQRAIX2"
      },
      "Name" : "Merchandise 1"
    },
  ]
}
```

## Retrieving the Remaining SOQL Query Results

If the initial query returns only part of the results, the end of the response will contain a field called `nextRecordsUrl`. For example, you might find this attribute at the end of your query:

```
"nextRecordsUrl" : "/services/data/v29.0/query/01gD0000002HU6KIAW-2000"
```

In such cases, request the next batch of records and repeat until all records have been retrieved. These requests use `nextRecordsUrl`, and do not include any parameters.

Note that even though `nextRecordsUrl` has `query` in the URL, it will still provide remaining results from the initial QueryAll request. The remaining results will include deleted records that matched the initial query.

### Example usage for retrieving the remaining results

```
/services/data/v29.0/query/01gD0000002HU6KIAW-2000
```

### Example request body for retrieving the remaining results

none required

### Example response body for retrieving the remaining results

```
{
  "done" : true,
  "totalSize" : 3214,
  "records" : [...]
}
```

## Get Feedback on Query Performance

Use the [Query](#) resource along with the `explain` parameter to get feedback on how Salesforce executes your query, report, or list view. Salesforce analyzes each query to find the optimal approach to obtain the query results. Depending on the query and query filters, Salesforce uses an index or internal optimization. Use the `explain` parameter to return details on how Salesforce optimizes your query, without actually running the query. Based on the response, you can decide whether to fine-tune the performance of your query by making changes like adding filters to make the query more selective.



**Note:** Using `explain` with the REST API query resource is a beta feature. There is no support associated with this beta feature. For more information, contact Salesforce.

The response contains one or more query execution plans that, sorted from most optimal to least optimal. The most optimal plan is the plan that's used when the query, report, or list view is executed.

See the `explain` parameter in [Query](#) for more details on the fields returned when using `explain`. See [Working with Very Large SOQL Queries](#) in the *Apex Developer Guide* for more information on making your queries more selective.



### Example:

#### Example usage for getting performance feedback on a query that uses `Merchandise__c`

```
/services/data/v44.0/query/?explain=
SELECT+Name+FROM+Merchandise__c+WHERE+CreatedDate+=+TODAY+AND+Price__c+>+10.0
```

#### Example response body for executing a performance feedback query

```
{
  "plans" : [ {
    "cardinality" : 1,
    "fields" : [ "CreatedDate" ],
```

```

    "leadingOperationType" : "Index",
    "notes" : [ {
      "description" : "Not considering filter for optimization because unindexed",
      "fields" : [ "IsDeleted" ],
      "tableEnumOrId" : "Merchandise__c"
    } ],
    "relativeCost" : 0.0,
    "subjectCardinality" : 3,
    "subjectType" : "Merchandise__c"
  }, {
    "cardinality" : 1,
    "fields" : [ ],
    "leadingOperationType" : "TableScan",
    "notes" : [ {
      "description" : "Not considering filter for optimization because unindexed",
      "fields" : [ "IsDeleted" ],
      "tableEnumOrId" : "Merchandise__c"
    } ],
    "relativeCost" : 0.65,
    "subjectCardinality" : 3,
    "subjectType" : "Merchandise__c"
  } ]
}

```

This response indicates that Salesforce found two possible execution plans for this query. The first plan uses the CreatedDate index field to improve the performance of this query. The second plan scans all records without using an index. The first plan is used if the query is executed. Both plans note that a secondary optimization used when filtering out records marked as deleted was not used because the IsDeleted field is not indexed.



### Example:

#### Example usage for getting performance feedback on a report

```
/services/data/v44.0/query/?explain=000D00000001hCzMMCu
```

#### Example response body for getting performance feedback on a report

```

{
  "plans" : [ {
    "cardinality" : 1,
    "fields" : [ ],
    "leadingOperationType" : "TableScan",
    "notes" : [ {
      "description" : "Not considering filter for optimization because unindexed",
      "fields" : [ "IsDeleted" ],
      "tableEnumOrId" : "Merchandise__c"
    } ],
    "relativeCost" : 0.65,
    "subjectCardinality" : 3,
    "subjectType" : "Merchandise__c"
  } ]
}

```

This response indicates that Salesforce found one possible execution plan for the query behind this report. The plan scans all records without using an index. It can't apply a secondary optimization when filtering out records marked as deleted, because the `IsDeleted` field is not indexed.

## Search for a String

Use the [Search](#) resource to execute a SOSL search or use the [Parameterized Search](#) resource to execute a simple RESTful search without SOSL.

### Example SOSL Search Using the GET Method

The following example executes a SOSL search for `Acme`. The search string in this example must be URL-encoded.

#### Example usage

```
curl https://yourInstance.salesforce.com/services/data/v37.0/search/?q=FIND+%7BAcme%7D
-H "Authorization: Bearer token"
```

#### Example request body

None required

#### Example response body

```
{
  "searchRecords" : [ {
    "attributes" : {
      "type" : "Account",
      "url" : "/services/data/v35.0/objects/Account/001D000000IqhSLIAZ"
    },
    "Id" : "001D000000IqhSLIAZ",
  }, {
    "attributes" : {
      "type" : "Account",
      "url" : "/services/data/v35.0/objects/Account/001D000000IomazIAB"
    },
    "Id" : "001D000000IomazIAB",
  } ]
}
```

### Example Parameterized Search Using the GET Method

The following example executes a parameterized search for `Acme`. The search string in this example must be URL-encoded.

#### Example usages

##### Global search for all results containing *Acme*

```
curl https://yourInstance.salesforce.com/services/data/v37.0/parameterizedSearch/?q=Acme
```

##### Account search for results containing *Acme*, returning the id and name fields

```
curl
https://yourInstance.salesforce.com/services/data/v37.0/parameterizedSearch/?q=Acme&object=Account&Account.fields=id,name&Account.limit=10
```

**Example request body**

None required

**Example response body**

```
{
  "searchRecords" : [ {
    "attributes" : {
      "type" : "Account",
      "url" : "/services/data/v35.0/subjects/Account/001D000000IqhSLIAZ"
    },
    "Id" : "001D000000IqhSLIAZ"
  }, {
    "attributes" : {
      "type" : "Account",
      "url" : "/services/data/v35.0/subjects/Account/001D000000IomazIAB"
    },
    "Id" : "001D000000IomazIAB"
  } ]
}
```

**Example response body with `metadata` parameter**

**Note:** The metadata parameter is only returned if the request specified `metadata=LABELS`.

```
{
  "searchRecords" : [ {
    "attributes" : {
      "type" : "Account",
      "url" : "/services/data/v35.0/subjects/Account/001D000000IqhSLIAZ"
    },
    "Id" : "001D000000IqhSLIAZ",
  }, {
    "attributes" : {
      "type" : "Account",
      "url" : "/services/data/v35.0/subjects/Account/001D000000IomazIAB"
    },
    "Id" : "001D000000IomazIAB",
  } ],
  "metadata" : {
    "entityMetadata" : [ {
      "entityName" : "Account",
      "fieldMetadata" : [ {
        "name" : "Name",
        "label" : "Account Name"
      } ]
    } ]
  }
}
```

**Example Parameterized Search Using the POST Method**

Execute a parameterized search using the POST method to access all search features available.

**Example usage**

```
curl https://yourInstance.salesforce.com/services/data/v36.0/parameterizedSearch
"Authorization: Bearer token" -H "Content-Type: application/json" -d "@search.json"
```

**Example request body**

None required

**Example JSON file**

```
{
  "q": "Smith",
  "fields": ["id", "firstName", "lastName"],
  "objects": [{"fields": ["id", "NumberOfEmployees"],
    "name": "Account",
    "limit": 20},
    {"name": "Contact"}],
  "in": "ALL",
  "overallLimit": 100,
  "defaultLimit": 10
}
```

**Example response body**

```
{
  "searchRecords": [ {
    "attributes": {
      "type": "Contact",
      "url": "/services/data/v36.0/subjects/Contact/003xx000004TraiAAC"
    },
    "Id": "003xx000004TraiAAC",
    "FirstName": "Smith",
    "LastName": "Johnson"
  }, {
    "attributes": {
      "type": "Account",
      "url": "/services/data/v36.0/subjects/Account/001xx000003DhXnAAO"
    },
    "Id": "001xx000003DhXnAAO",
    "NumberOfEmployees": 100
  } ]
}
```

## Get the Default Search Scope and Order

Use the [Search Scope and Order](#) resource to retrieve the default global search scope and order for the logged-in user, including any pinned objects in the user's search results page.

In the following example, the default global search scope of the logged-in user consists of the site, idea, case, opportunity, account, and user objects, in the order in which they are returned in the response body.

**Example usage**

```
curl https://yourInstance.salesforce.com/services/data/v26.0/search/scopeOrder -H
"Authorization: Bearer token"
```

**Example request body**

none required

**Example response body**

```
[
  {
    "type": "Site",
    "url": "/services/data/v26.0/subjects/Site/describe"
  },
  {
    "type": "Idea",
    "url": "/services/data/v26.0/subjects/Idea/describe"
  },
  {
    "type": "Case",
    "url": "/services/data/v26.0/subjects/Case/describe"
  },
  {
    "type": "Opportunity",
    "url": "/services/data/v26.0/subjects/Opportunity/describe"
  },
  {
    "type": "Account",
    "url": "/services/data/v26.0/subjects/Account/describe"
  },
  {
    "type": "User",
    "url": "/services/data/v26.0/subjects/User/describe"
  }
]
```

## Get Search Result Layouts for Objects

Use the [Search Result Layouts](#) resource to retrieve the search result layout configuration for each object specified in the query string.

**Example usage**

```
curl
https://yourInstance.salesforce.com/services/data/v28.0/search/layout/?q=Account,Contact,Lead,Asset
"Authorization: Bearer token"
```

**Example request body**

None required

**Example response body**

```
[ { "label" : "Search Results",
  "limitRows" : 25,
  "searchColumns" : [ { "field" : "Account.Name",
    "format" : null,
    "label" : "Account Name",
    "name" : "Name"
  },
  { "field" : "Account.Site",
```



```

        "format" : null,
        "label" : "Account Site",
        "name" : "Site"
    },
    { "field" : "Account.Phone",
      "format" : null,
      "label" : "Phone",
      "name" : "Phone"
    },
    { "field" : "User.Alias",
      "format" : null,
      "label" : "Account Owner Alias",
      "name" : "Owner.Alias"
    }
  ]
},
{ "label" : "Search Results",
  "limitRows" : 25,
  "searchColumns" : [ { "field" : "Contact.Name",
    "format" : null,
    "label" : "Name",
    "name" : "Name"
  },
    { "field" : "Account.Name",
      "format" : null,
      "label" : "Account Name",
      "name" : "Account.Name"
    },
    { "field" : "Account.Site",
      "format" : null,
      "label" : "Account Site",
      "name" : "Account.Site"
    },
    { "field" : "Contact.Phone",
      "format" : null,
      "label" : "Phone",
      "name" : "Phone"
    },
    { "field" : "Contact.Email",
      "format" : null,
      "label" : "Email",
      "name" : "Email"
    },
    { "field" : "User.Alias",
      "format" : null,
      "label" : "Contact Owner Alias",
      "name" : "Owner.Alias"
    }
  ]
},
{ "label" : "Search Results",
  "limitRows" : 25,
  "searchColumns" : [ { "field" : "Lead.Name",
    "format" : null,

```

```

        "label" : "Name",
        "name" : "Name"
    },
    { "field" : "Lead.Title",
      "format" : null,
      "label" : "Title",
      "name" : "Title"
    },
    { "field" : "Lead.Phone",
      "format" : null,
      "label" : "Phone",
      "name" : "Phone"
    },
    { "field" : "Lead.Company",
      "format" : null,
      "label" : "Company",
      "name" : "Company"
    },
    { "field" : "Lead.Email",
      "format" : null,
      "label" : "Email",
      "name" : "Email"
    },
    { "field" : "Lead.Status",
      "format" : null,
      "label" : "Lead Status",
      "name" : "toLabel (Status) "
    },
    { "field" : "Name.Alias",
      "format" : null,
      "label" : "Owner Alias",
      "name" : "Owner.Alias"
    }
  ]
},
]
```

## View Relevant Items

Use the [Relevant Items](#) resource to get a list of relevant records.

### Example usage for getting a list of the current user's most relevant records

/vXX.X/subjects/relevantItems

### Example request body

None required

### Example response body

```
[ {
  "apiName" : "Contact",
  "key" : "003",
  "label" : "Contacts",
  "lastUpdatedId" : "135866748",
  "recordIds" : [ "003xx000004TxBA" ]
}
```

```
{
  "apiName" : "Account",
  "key" : "001",
  "label" : "Accounts",
  "lastUpdatedId" : "193640553",
  "recordIds" : [ "001xx000003DWsT" ]
}, {
  "apiName" : "User",
  "key" : "005",
  "label" : "Users",
  "lastUpdatedId" : "-199920321",
  "recordIds" : [ "005xx000001Svqw", "005xx000001SvwK", "005xx000001SvwA" ]
}, {
  "apiName" : "Case",
  "key" : "069",
  "label" : "Cases",
  "lastUpdatedId" : "1033471693",
  "recordIds" : [ "069xx0000000006", "069xx0000000001", "069xx0000000002" ]
} ]
```

**Example usage for filtering the response to certain objects**

/v37.0/subjects/relevantItems?subjects=Account,User

**Example request body**

None required

**Example response body**

```
[ {
  "apiName" : "Account",
  "key" : "001",
  "label" : "Accounts",
  "lastUpdatedId" : "193640553",
  "recordIds" : [ "001xx000003DWsT" ]
}, {
  "apiName" : "User",
  "key" : "005",
  "label" : "Users",
  "lastUpdatedId" : "102959935",
  "recordIds" : [ "005xx000001Svqw", "005xx000001SvwK", "005xx000001SvwA" ]
} ]
```

**Example usage for comparing the user's current list of relevant records to a previous version**

/v37.0/subjects/relevantItems?lastUpdatedId=102959935

**Example request body**

None required

**Example response header**

```
lastUpdatedId: 102959935
newResultSetSinceLastQuery: true
```

**Example response body**

```
[ {
  "apiName" : "User",
  "key" : "003",
  "label" : "Users",
```

```

    "lastUpdatedId" : "102959935",
    "recordIds" : [ "003xx000004TxBA" ]
  }, {
    "apiName" : "Account",
    "key" : "001",
    "label" : "Accounts",
    "lastUpdatedId" : "193640553",
    "recordIds" : [ "001xx000003DWsT" ]
  }, {
    "apiName" : "Case",
    "key" : "005",
    "label" : "Cases",
    "lastUpdatedId" : "1740766611",
    "recordIds" : [ "005xx000001Svqw", "005xx000001SvwA" ]
  } ]

```

#### Example usage for comparing the user's current list of relevant records to a previous version for a particular object

/v37.0/subjects/relevantItems?mode=MRU&subjects=Account,Contact&Account.lastUpdatedId=102959935

#### Example request body

None required

#### Example response body

```

[ {
  "apiName" : "Account",
  "key" : "001",
  "label" : "Accounts",
  "lastUpdatedId" : "193640553",
  "recordIds" : [ "001xx000003DWsT" ]
} ]

```

## Insert or Update Blob Data

You can use [SObject Basic Information](#), [SObject Rows](#), or [SObject Collections](#) REST resources to insert or update blob data in Salesforce standard objects. You can upload files of any type, and you must use a multipart message that conforms to the MIME multipart content-type standard. For more information, see the [WC3 Standards](#). You can insert or update files on any standard object that contains a blob field.

Using the SObject Basic Information or SObject Rows APIs, the maximum file size for uploads is 2 GB for ContentVersion objects and 500 MB for all other eligible standard objects. Using the SObject Collections API, the maximum total size of all files in a single request is 500 MB.



**Note:** You can insert or update blob data using a non-multipart message, but you are limited to 50 MB of text data or 37.5 MB of base64-encoded data.

The first part of the request message body contains non-binary field data, such as the Description or Name. The second part of the message contains the binary data of the file that you're uploading.

The following sections provide JSON examples of how to insert or update blob data using a multipart content-type.

- [Inserting a New Document](#)
- [Updating a Document](#)
- [Inserting a ContentVersion](#)
- [Using SObject Collections to Insert a Collection of Blob Records](#)

- [Multipart Message Considerations](#)

## Inserting a New Document

This syntax and code creates a new Document. In addition to the binary data of the file itself, this code also specifies other field data such as the Description, Keywords, and Name.



**Tip:** After you add a new Document, you can view the results of your changes on the Documents tab.

### Example for creating a new Document

```
curl https://yourInstance.salesforce.com/services/data/v23.0/subjects/Document/ -H
"Authorization: Bearer token" -H "Content-Type: multipart/form-data;
boundary=\"boundary_string\"" --data-binary @newdocument.json
```

### Example request body for creating a new Document

This code is the contents of `newdocument.json`. The binary data for the PDF content has been omitted for brevity and replaced with "Binary data goes here." An actual request contains the full binary content.

```
--boundary_string
Content-Disposition: form-data; name="entity_document";
Content-Type: application/json

{
  "Description" : "Marketing brochure for Q1 2011",
  "Keywords" : "marketing,sales,update",
  "FolderId" : "005D0000001GiU7",
  "Name" : "Marketing Brochure Q1",
  "Type" : "pdf"
}

--boundary_string
Content-Type: application/pdf
Content-Disposition: form-data; name="Body"; filename="2011Q1MktgBrochure.pdf"

Binary data goes here.

--boundary_string--
```

### Example response body for creating a new Document

On success, the ID of the new Document is returned.

```
{
  "id" : "015D0000000N3ZZIA0",
  "errors" : [ ],
  "success" : true
}
```

### Example error response

```
{
  "fields" : [ "FolderId" ],
  "message" : "Folder ID: id value of incorrect type: 005D0000001GiU7",
  "errorCode" : "MALFORMED_ID"
}
```

## Updating a Document

This syntax and code updates an existing Document. In addition to the binary data of the file itself, this code also updates other field data, such as the Name and Keywords.

### Example usage for updating fields in a Document object

```
curl https://yourInstance.salesforce.com/services/data/v23.0/Document/015D0000000N3ZZIA0
-H "Authorization: Bearer token" -H "Content-Type: multipart/form-data;
boundary=\"boundary_string\"" --data-binary @UpdateDocument.json -X PATCH
```

### Example request body for updating fields in a Document object

This code is the contents of the file `UpdateDocument.json`. The binary data for the PDF content has been omitted for brevity and replaced with "Updated document binary goes here." An actual request contains the full binary content.

```
--boundary_string
Content-Disposition: form-data; name="entity_content";
Content-Type: application/json

{
  "Name" : "Marketing Brochure Q1 - Sales",
  "Keywords" : "sales, marketing, first quarter"
}

--boundary_string
Content-Type: application/pdf
Content-Disposition: form-data; name="Body"; filename="2011Q1MktgBrochure.pdf"

Updated document binary data goes here.

--boundary_string--
```

### Example response body for updating fields in a Document object

None returned

### Error responses

See [Status Codes and Error Responses](#) on page 258.

## Inserting a ContentVersion

This syntax and code inserts a new ContentVersion. In addition to the binary data of the file itself, this code also updates other fields, such as the ReasonForChange and PathOnClient. This message contains the ContentDocumentId because a ContentVersion is always associated with a ContentDocument.



**Tip:** The ContentVersion object doesn't support updates. Therefore, you cannot update a ContentVersion. You can only insert a new ContentVersion. You can see the results of your changes on the Content tab.

### Example usage for inserting a ContentVersion

```
curl https://yourInstance.salesforce.com/services/data/v23.0/subjects/ContentVersion
-H "Authorization: Bearer token" -H "Content-Type: multipart/form-data;
boundary=\"boundary_string\"" --data-binary @NewContentVersion.json
```

**Example request body for inserting a ContentVersion**

This code is the contents of the file `NewContentVersion.json`. The binary data for the PDF content has been omitted for brevity and replaced with "Binary data goes here." An actual request contains the full binary content.

```
--boundary_string
Content-Disposition: form-data; name="entity_content";
Content-Type: application/json

{
  "ContentDocumentId" : "069D00000000so2",
  "ReasonForChange" : "Marketing materials updated",
  "PathOnClient" : "Q1 Sales Brochure.pdf"
}

--boundary_string
Content-Type: application/octet-stream
Content-Disposition: form-data; name="VersionData"; filename="Q1 Sales Brochure.pdf"

Binary data goes here.

--boundary_string--
```

**Example response body for inserting a ContentVersion**

```
{
  "id" : "068D00000000pgOIAQ",
  "errors" : [ ],
  "success" : true
}
```

**Error responses for inserting a ContentVersion**

See [Status Codes and Error Responses](#) on page 258.

## Using sObject Collections to Insert a Collection of Blob Records

This syntax and code inserts a collection of new Documents. In addition to the binary data of the files themselves, this code also specifies other field data, such as the Description and Name for each record in the collection.



**Tip:** After you add new Documents, you can view the results of your changes on the Documents tab.

**Attributes**

If you're using sObject Collections with blob data, you must specify certain attribute values in addition to `type` in the request body's attributes map.

Parameter	Description
<code>binaryPartName</code>	Required for blob data. A unique identifier for the binary part.
<code>binaryPartNameAlias</code>	Required for blob data. The name of the field in which the binary data is inserted or updated.

**Example for creating new Documents**

```
curl https://yourInstance.salesforce.com/services/data/v42.0/composite/subjects/ -H
"Authorization: Bearer token" -H "Content-Type: multipart/form-data;
boundary=\"boundary_string\"" --data-binary @newdocuments.json
```

**Example request body for creating new Documents**

This code is the contents of `newdocuments.json`. The binary data for the PDF content has been omitted for brevity and replaced with "Binary data goes here." An actual request contains the full binary content.

```
--boundary_string
Content-Disposition: form-data; name="collection"
Content-Type: application/json

{
  "allOrNone" : false,
  "records" :
  [
    {
      "attributes" :
      {
        "type" : "Document",
        "binaryPartName": "binaryPart1",
        "binaryPartNameAlias": "Body"
      },
      "Description" : "Marketing Brochure",
      "FolderId" : "005xx000001Svs4AAC",
      "Name" : "Brochure",
      "Type" : "pdf"
    },
    {
      "attributes" :
      {
        "type" : "Document",
        "binaryPartName": "binaryPart2",
        "binaryPartNameAlias": "Body"
      },
      "Description" : "Pricing Overview",
      "FolderId" : "005xx000001Svs4AAC",
      "Name" : "Pricing",
      "Type" : "pdf"
    }
  ]
}

--boundary_string
Content-Disposition: form-data; name="binaryPart1"; filename="Brochure.pdf"
Content-Type: application/pdf

Binary data goes here.

--boundary_string
Content-Disposition: form-data; name="binaryPart2"; filename="Pricing.pdf"
Content-Type: application/pdf
```



```
Binary data goes here.

--boundary_string--
```

### Example response body for creating new Documents

On success, the IDs of the new Documents are returned.

```
[
  {
    "id": "015xx00000013QjAAI",
    "errors": [],
    "success": true
  },
  {
    "id": "015xx00000013QkAAI",
    "errors": [],
    "success": true
  }
]
```

For more information, see [sObject Collections](#).

## Multipart Message Considerations

Following are some considerations for the format of a multipart message when you insert or update blob data.

### Boundary String

- Separates the various parts of a multipart message.
- Required in a multipart content-type.
- Can be up to 70 characters.
- Cannot be a string value that appears anywhere in any of the message parts.
- The first boundary string must be prefixed by two hyphens (--).
- The last boundary string must be postfixed by two hyphens (--).

### Content-Disposition Header

- Required in each message part.
- Must be the value `form-data` and have a `name` attribute.
  - In the non-binary part of the message, the `name` attribute can be any value.
  - For single documents, in the binary part of the message, use the `name` attribute to contain the name of the object field that contains the binary data. In the previous example of adding a new Document, the name of the binary field that contains the file is `Body`.
  - For documents inserted or updated using `sObject Collections`, use the `name` attribute to contain a unique identifier for the part. This identifier is referenced by the non-binary part of the message.
- The binary part of the message must have a `filename` attribute that represents the name of the local file.

### Content-Type Header

- Required in each message part.

- The content types supported by the non-binary message part are `application/json` and `application/xml`.
- The `Content-Type` header for the binary part of the message can be any value.

### New Line

A new line must be between the message part header and the data of the part. As shown in the code examples, a new line must be between the `Content-Type` and `Content-Disposition` headers and the JSON or XML. In the binary part, a new line must be between the `Content-Type` and `Content-Disposition` headers and the binary data.

## Working with Recently Viewed Information

The examples in this section use REST API Query and Recently Viewed resources to programmatically retrieve and update recently viewed record information.

### IN THIS SECTION:

#### [View Recently Viewed Records](#)

Use the [Recently Viewed Items](#) resource to get a list of recently viewed records.

#### [Mark Records as Recently Viewed](#)

To mark a record as recently viewed using REST API, use the [Query](#) resource with a `FOR VIEW` or `FOR REFERENCE` clause. Use SOQL to mark records as recently viewed to ensure that information such as the date and time the record was viewed is correctly set.

## View Recently Viewed Records

Use the [Recently Viewed Items](#) resource to get a list of recently viewed records.

### Example usage for getting the last two most recently viewed records

```
/services/data/v28.0/recent/?limit=2
```

### Example request body

none required

### Example response body

```
{
  "attributes" :
  {
    "type" : "Account",
    "url" : "/services/data/v28.0/subjects/Account/a06U000000CelH0IAJ"
  },
  "Id" : "a06U000000CelH0IAJ",
  "Name" : "Acme"
},
{
  "attributes" :
  {
    "type" : "Opportunity",
    "url" : "/services/data/v28.0/subjects/Opportunity/a06U000000CelGvIAJ"
  },
  "Id" : "a06U000000CelGvIAJ",
```

```
{
  "Name" : "Acme - 600 Widgets"
}
```

## Mark Records as Recently Viewed

To mark a record as recently viewed using REST API, use the [Query](#) resource with a `FOR VIEW` or `FOR REFERENCE` clause. Use SOQL to mark records as recently viewed to ensure that information such as the date and time the record was viewed is correctly set.

Use `FOR VIEW` to notify Salesforce when a record is viewed from a custom interface, such as a mobile application or from a custom page. Use `FOR REFERENCE` when a record is referenced from a custom interface. A record is referenced every time a related record is viewed. For more information, see “FOR VIEW” and “FOR REFERENCE” in the *SOQL and SOSL Reference*.

### Example usage for executing a query that marks one Account record as recently viewed

```
/services/data/v28.0/query/?q=SELECT+Name+FROM+Account+LIMIT+1+FOR+VIEW
```

### Example request body for executing a query

none required

### Example response body for executing a query

```
{
  "done" : true,
  "totalSize" : 1,
  "records" :
  [
    {
      "attributes" :
      {
        "type" : "Account",
        "url" : "/services/data/v28.0/objects/Account/001D000000IRFmaIAH"
      },
      "Name" : "Acme"
    },
  ]
}
```

## Managing User Passwords

The examples in this section use REST API resources to manage user passwords, such as setting or resetting passwords.

### IN THIS SECTION:

#### [Manage User Passwords](#)

Use the [SObject User Password](#) resource to set, reset, or get information about a user password. Use the HTTP GET method to get password expiration status, the HTTP POST method to set the password, and the HTTP DELETE method to reset the password.

## Manage User Passwords

Use the [SObject User Password](#) resource to set, reset, or get information about a user password. Use the HTTP GET method to get password expiration status, the HTTP POST method to set the password, and the HTTP DELETE method to reset the password.

The associated session must have permission to access the given user password information. If the session does not have proper permissions, an HTTP error 403 response is returned from these methods.

These methods are available for both users and self-service users. For managing self-service user passwords, use `SelfServiceUser` instead of `User` in the REST API URL.

Here is an example of retrieving the current password expiration status for a user:

#### Example usage for getting current password expiration status

```
curl
https://yourInstance.salesforce.com/services/data/v25.0/subjects/User/005D0000001KyEIIA0/password
-H "Authorization: Bearer token"
```

#### Example request body for getting current password expiration status

None required

#### JSON example response body for getting current password expiration status

```
{
  "isExpired" : false
}
```

#### XML example response body for getting current password expiration status

```
<Password>
  <isExpired>false</isExpired>
</Password>
```

#### Example error response if session has insufficient privileges

```
{
  "message" : "You do not have permission to view this record.",
  "errorCode" : "INSUFFICIENT_ACCESS"
}
```

Here is an example of changing the password for a given user:

#### Example usage for changing a user password

```
curl
https://yourInstance.salesforce.com/services/data/v25.0/subjects/User/005D0000001KyEIIA0/password
-H "Authorization: Bearer token" -H "Content-Type: application/json" -d @newpwd.json
-X POST
```

#### Contents for file newpwd.json

```
{
  "NewPassword" : "myNewPassword1234"
}
```

#### Example response for changing a user password

No response body on successful password change, HTTP status code 204 returned.

#### Example error response if new password does not meet organization password requirements

```
{
  "message" : "Your password must have a mix of letters and numbers.",
  "errorCode" : "INVALID_NEW_PASSWORD"
}
```

And finally, here is an example of resetting a user password:

#### Example usage for resetting a user password

```
curl
https://yourInstance.salesforce.com/services/data/v25.0/subjects/User/005D0000001KyEIIA0/password
-H "Authorization: Bearer token" -X DELETE
```

#### Example request body for resetting a user password

None required

#### JSON example response body for resetting a user password

```
{
  "NewPassword" : "2sv0xHAuM"
}
```

#### XML example response body for resetting a user password

```
<Result>
  <NewPassword>2sv0xHAuM</NewPassword>
</Result>
```

## Working with Approval Processes and Process Rules

---

The examples in this section use REST API resources to work with approval processes and process rules.

#### IN THIS SECTION:

##### [Get a List of All Approval Processes](#)

Use the [Process Approvals](#) resource to get information about approvals.

##### [Submit a Record for Approval](#)

Use the [Process Approvals](#) resource to submit a record or a collection of records for approval. Each call takes an array of requests.

##### [Approve a Record](#)

Use the [Process Approvals](#) resource to approve a record or a collection of records. Each call takes an array of requests. The current user must be an assigned approver.

##### [Reject a Record](#)

Use the [Process Approvals](#) resource to reject a record or a collection of records. Each call takes an array of requests. The current user must be an assigned approver.

##### [Bulk Approvals](#)

Use the [Process Approvals](#) resource to do bulk approvals. You can specify a collection of different Process Approvals requests to have them all executed in bulk.

##### [Get a List of Process Rules](#)

Use the [Process Rules](#) resource to get information about process rules.

##### [Get a Particular Process Rule](#)

Use the [Process Rules](#) resource and specify the *sObjectName* and *workflowRuleId* of the rule you want to get the metadata for.

### Trigger Process Rules

Use the [Process Rules](#) resource to trigger process rules. All rules associated with the specified ID will be evaluated, regardless of the evaluation criteria. All IDs must be for records on the same object.

## Get a List of All Approval Processes

Use the [Process Approvals](#) resource to get information about approvals.

### Example usage

```
curl https://yourInstance.salesforce.com/services/data/v30.0/process/approvals/ -H
"Authorization: Bearer token"
```

### Example request body

none required

### Example JSON response body

```
{
  "approvals" : {
    "Account" : [ {
      "description" : null,
      "id" : "04aD00000008Py9",
      "name" : "Account Approval Process",
      "object" : "Account",
      "sortOrder" : 1
    } ]
  }
}
```

## Submit a Record for Approval

Use the [Process Approvals](#) resource to submit a record or a collection of records for approval. Each call takes an array of requests.

### Example usage

```
curl https://yourInstance.salesforce.com/services/data/v30.0/process/approvals/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d @submit.json
```

### Example request body `submit.json` file

In the following example, the record "001D000000I8mIm" is submitted for approval process "PTO\_Request\_Process" by skipping its entry criteria on behalf of submitter "005D00000015rZy."

```
{
  "requests" : [{
    "actionType": "Submit",
    "contextId": "001D000000I8mIm",
    "nextApproverIds": ["005D00000015rY9"],
    "comments": "this is a test",
    "contextActorId": "005D00000015rZy",
    "processDefinitionNameOrId" : "PTO_Request_Process",
    "skipEntryCriteria": "true"}]
}
```

**Example JSON response body**

```
[ {
  "actorIds" : [ "005D000000015rY9IAI" ],
  "entityId" : "001D0000000I8mImIAJ",
  "errors" : null,
  "instanceId" : "04gD00000000Cvm5IAC",
  "instanceStatus" : "Pending",
  "newWorkitemIds" : [ "04iD00000000Cw6SIAS" ],
  "success" : true } ]
```

## Approve a Record

Use the [Process Approvals](#) resource to approve a record or a collection of records. Each call takes an array of requests. The current user must be an assigned approver.

**Example usage**

```
curl https://yourInstance.salesforce.com/services/data/v30.0/process/approvals/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d @approve.json"
```

**Example request body `approve.json` file**

```
{
  "requests" : [{
    "actionType" : "Approve",
    "contextId" : "04iD00000000Cw6SIAS",
    "nextApproverIds" : ["005D000000015rY9"],
    "comments" : "this record is approved"}]
}
```

**Example JSON response body**

```
[ {
  "actorIds" : null,
  "entityId" : "001D0000000I8mImIAJ",
  "errors" : null,
  "instanceId" : "04gD00000000CvmAIAS",
  "instanceStatus" : "Approved",
  "newWorkitemIds" : [ ],
  "success" : true
} ]
```

## Reject a Record

Use the [Process Approvals](#) resource to reject a record or a collection of records. Each call takes an array of requests. The current user must be an assigned approver.

**Example usage**

```
curl https://yourInstance.salesforce.com/services/data/v30.0/process/approvals/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d @reject.json"
```

**Example request body `reject.json` file**

```
{
  "requests" : [{
    "actionType" : "Reject",
    "contextId" : "04iD0000000Cw6cIAC",
    "comments" : "This record is rejected."}]
}
```

**Example JSON response body**

```
[ {
  "actorIds" : null,
  "entityId" : "001D0000000I8mImIAJ",
  "errors" : null,
  "instanceId" : "04gD0000000CvmFIAS",
  "instanceStatus" : "Rejected",
  "newWorkitemIds" : [ ],
  "success" : true
} ]
```

## Bulk Approvals

Use the [Process Approvals](#) resource to do bulk approvals. You can specify a collection of different Process Approvals requests to have them all executed in bulk.

**Example usage**

```
curl https://yourInstance.salesforce.com/services/data/v30.0/process/approvals/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d @bulk.json"
```

**Example request body `bulk.json` file**

```
{
  "requests" :
  [{
    "actionType" : "Approve",
    "contextId" : "04iD0000000Cw6r",
    "comments" : "approving an account"
  }, {
    "actionType" : "Submit",
    "contextId" : "001D0000000JRWbD",
    "nextApproverIds" : ["005D000000015rY9"],
    "comments" : "submitting an account"
  }, {
    "actionType" : "Submit",
    "contextId" : "003D0000000QBZ08",
    "comments" : "submitting a contact"
  }]
}
```



**Example JSON response body**

```
[ {
  "actorIds" : null,
  "entityId" : "001D000000I8mImIAJ",
  "errors" : null,
  "instanceId" : "04gD0000000CvmZIAS",
  "instanceStatus" : "Approved",
  "newWorkitemIds" : [ ],
  "success" : true
}, {
  "actorIds" : null,
  "entityId" : "003D000000QBZ08IAH",
  "errors" : null,
  "instanceId" : "04gD0000000CvmeIAC",
  "instanceStatus" : "Approved",
  "newWorkitemIds" : [ ],
  "success" : true
}, {
  "actorIds" : [ "005D00000015rY9IAI" ],
  "entityId" : "001D000000JRWBdIAP",
  "errors" : null,
  "instanceId" : "04gD0000000CvmfIAC",
  "instanceStatus" : "Pending",
  "newWorkitemIds" : [ "04iD0000000Cw6wIAC" ],
  "success" : true
} ]
```

## Get a List of Process Rules

Use the [Process Rules](#) resource to get information about process rules.

**Example usage**

```
curl https://yourInstance.salesforce.com/services/data/v30.0/process/rules/ -H
"Authorization: Bearer token"
```

**Example request body**

none required

**Example JSON response body**

```
{
  "rules" : {
    "Account" : [ {
      "actions" : [ {
        "id" : "01VD0000000D2w7",
        "name" : "ApprovalProcessTask",
        "type" : "Task"
      } ],
      "description" : null,
      "id" : "01QD0000000APli",
      "name" : "My Rule",
    } ],
  }
}
```

```

    "namespacePrefix" : null,
    "object" : "Account"
  } ]
}
}

```

## Get a Particular Process Rule

Use the [Process Rules](#) resource and specify the *SObjectName* and *workflowRuleId* of the rule you want to get the metadata for.

### Example usage

```

curl
https://yourInstance.salesforce.com/services/data/v30.0/process/rules/Account/01QD0000000APli
-H "Authorization: Bearer token"

```

### Example request body

none required

### Example JSON response body

```

{
  "actions" : [ {
    "id" : "01VD0000000D2w7",
    "name" : "ApprovalProcessTask",
    "type" : "Task"
  } ],
  "description" : null,
  "id" : "01QD0000000APli",
  "name" : "My Rule",
  "namespacePrefix" : null,
  "object" : "Account"
}

```

## Trigger Process Rules

Use the [Process Rules](#) resource to trigger process rules. All rules associated with the specified ID will be evaluated, regardless of the evaluation criteria. All IDs must be for records on the same object.

### Example usage

```

curl https://yourInstance.salesforce.com/services/data/v30.0/process/rules/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d @rules.json"

```

### Example request body `rules.json` file

```

{
  "contextIds" : [
    "001D0000000JRWBd",
    "001D0000000I8mIm",
    "001D0000000I8aaf"
  ]
}

```

**Example JSON response body**

```
{
  "errors" : null,
  "success" : true
}
```

## Using Event Monitoring

---

These examples use REST API event monitoring data that contains information useful for assessing org usage trends and user behavior. Event monitoring is accessed through the Lightning Platform SOAP API and REST API by way of the `EventLogFile` object. Therefore, you can integrate log data with your own back-end storage and data marts to correlate data from multiple orgs and across disparate systems.



**Note:** For the supported event types that you can use with event monitoring, see [Object Reference for Salesforce and Lightning Platform: EventLogFile Object](#).

When using event monitoring, keep the following in mind.

- In the unlikely case in which no log files are generated for 24 hours, contact Salesforce Customer Support.
- Log data is read only. You can't insert, update, or delete log data.
- Use the `EventType` field to determine which files were generated for your org.
- An event generates log data in real time. However, daily log files are generated during nonpeak hours the day after an event takes place. Therefore, daily log file data is unavailable for at least one day after an event. For hourly log files, depending on event delivery and final processing time, an event is expected to take three to six hours from the time of the event to be available in the log file. However, it can take longer.
- Log files are generated only when at least one event of a type (represented by the `EventType` field) occurs for the day or hour. If no events took place, the file isn't generated.
- Log files are available based on `CreatedDate` for the last 30 days when orgs purchase Event Monitoring or one day for Developer Edition orgs.
- All event monitoring logs are exposed to the API through the `EventLogFile` object. However, there is no access through the user interface, except through the Event Monitoring Analytics app.
- Event Monitoring log files aren't a system of record for user activity. They are a source of truth, but aren't durable. During Salesforce site switches, instance refreshes, or unplanned system outages, data loss can occur. For example, if Salesforce moves your production org instance, your event log files might have a gap in data. Salesforce makes commercially reasonable efforts to preserve event log file data integrity and avoid data loss. When Salesforce performs a site switch or instance refresh, it uses an automated process to replicate event logs.
- Hourly event log files are provided for you to review events in your orgs on an accelerated basis. However, it's possible that you don't get all event log data in hourly event log files, especially during site switches, instance refreshes, or unplanned system outages. For complete data, use the daily log files.
- If event transmission failures take too long to recover from, log files are retransmitted to ensure that they are delivered at least once. As a result, latent log files can sometimes contain duplicate event data. When your application consumes latent log files, make sure that your application handles duplicate event delivery.

All queries and examples in this section require the View Event Log Files and API Enabled user permissions. Users with the View All Data permission can also view event monitoring data.

## IN THIS SECTION:

[Describe Event Monitoring Using REST](#)

Use the [SObject Describe](#) resource to retrieve all metadata for an object, including information about fields, URLs, and child relationships.

[Query Event Monitoring Data with REST](#)

Use the [Query](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the fields parameter and use the `GET` method of the resource.

[Get Event Monitoring Content from a Record](#)

Use the [SObject Blob Retrieve](#) resource to retrieve BLOB data for a given record.

[Download Large Event Log Files Using cURL with REST](#)

You might have some event log files that are larger than your tool can handle. A command line tool such as cURL is one method to download files larger than 100 MB using the SObject Blob Retrieve object

[Delete Event Monitoring Data](#)

You can delete event log files that contain a user's log data. Deleting log files helps you comply with data protection and privacy regulations and controls the information that others can access. You can't delete individual rows from event logs. Instead, you must delete the entire log file that contains the user activity.

[Query or View Hourly Event Log Files](#)

To review events in your org on an accelerated basis, get event log files in hourly increments for recent activity. Hourly event log files can give you quicker visibility into security anomalies and custom code performance issues.

## Describe Event Monitoring Using REST

Use the [SObject Describe](#) resource to retrieve all metadata for an object, including information about fields, URLs, and child relationships.

### Example

You can use [Workbench](#) to describe event log files. In the Execute text box, type  
`/services/data/v32.0/objects/EventLogFile/describe.`

### Example raw response

```
{
  "actionOverrides" : [ ],
  "activateable" : false,
  "childRelationships" : [ ],
  "compactLayoutable" : false,
  "createable" : false,
  "custom" : false,
  "customSetting" : false,
  "deletable" : false,
  "deprecatedAndHidden" : false,
  "feedEnabled" : false,
  "fields" : [ {
    "autoNumber" : false,
    "byteLength" : 18,
    "calculated" : false,
    "calculatedFormula" : null,
    "cascadeDelete" : false,
    "caseSensitive" : false,
    "controllerName" : null,
    "createable" : false,
```

```
...
}
```

## Query Event Monitoring Data with REST

Use the [Query](#) resource to retrieve field values from a record. Specify the fields you want to retrieve in the fields parameter and use the GET method of the resource.

You can use [Workbench](#) to query event monitoring data. To retrieve event monitoring records based on LogDate and EventType, in the Execute text box, type:

```
/services/data/v32.0/query?q=SELECT+Id+,+EventType+,+LogFile+
, +LogDate+, +LogFileLength+FROM+EventLogFile+WHERE+
LogDate+>+Yesterday+AND+EventType+=+'API'
```

### Example raw response

```
{
  "totalSize" : 4,
  "done" : true,
  "records" : [ {
    "attributes" : {
      "type" : "EventLogFile",
      "url" : "/services/data/v32.0/subjects/EventLogFile/0ATD000000001bROAQ"    },
      "Id" : "0ATD000000001bROAQ",
      "EventType" : "API",
      "LogFile" : "/services/data/v32.0/subjects/EventLogFile/0ATD000000001bROAQ/LogFile",

      "LogDate" : "2014-03-14T00:00:00.000+0000",
      "LogFileLength" : 2692.0
    }, {
      "attributes" : {
        "type" : "EventLogFile",
        "url" : "/services/data/v32.0/subjects/EventLogFile/0ATD000000001SdOAI"    },
        "Id" : "0ATD000000001SdOAI",
        "EventType" : "API",
        "LogFile" :
"/services/data/v32.0/subjects/EventLogFile/0ATD000000001SdOAI/LogFile",
        "LogDate" : "2014-03-13T00:00:00.000+0000",
        "LogFileLength" : 1345.0
      }, {
        "attributes" : {
          "type" : "EventLogFile",
          "url" : "/services/data/v32.0/subjects/EventLogFile/0ATD000000003p1OAA"    },
          "Id" : "0ATD000000003p1OAA",
          "EventType" : "API",
          "LogFile" :
"/services/data/v32.0/subjects/EventLogFile/0ATD000000003p1OAA/LogFile",
          "LogDate" : "2014-06-21T00:00:00.000+0000",
          "LogFileLength" : 605.0    },
        {
          "attributes" : {
            "type" : "EventLogFile",
            "url" : "/services/data/v32.0/subjects/EventLogFile/0ATD0000000055eOAA"    },
            "Id" : "0ATD0000000055eOAA",
```

```

    "EventType" : "API",
    "LogFile" :
"/services/data/v32.0/subjects/EventLogFile/0ATD0000000055eOAA/LogFile",
    "LogDate" : "2014-07-03T00:00:00.000+0000",
    "LogFileLength" : 605.0
  } ]
}

```

## Get Event Monitoring Content from a Record

Use the [SObject Blob Retrieve](#) resource to retrieve BLOB data for a given record.

### Example

You can use [Workbench](#) to retrieve BLOB data for event monitoring. In the Execute text box, use a GET request similar to this:  
 /services/data/v32.0/subjects/EventLogFile/0ATD00000000pyOAA/LogFile.

### Example response body

Event monitoring content is returned in binary form. Note that the response content type won't be JSON or XML because the returned data is binary.

```

HTTP/1.1 200 OK
Date: Tue, 06 Aug 2013 16:46:10 GMT
Sforce-Limit-Info: api-usage=135/5000
Content-Type: application/octetstream
Transfer-Encoding: chunked
"EVENT_TYPE", "ORGANIZATION_ID", "TIMESTAMP", "USER_ID", "CLIENT_IP",
"URI", "REFERRER_URI", "RUN_TIME"
"URI", "00DD0000000K5xD", "20130728185606.020", "005D00000001REDy",
"10.0.62.141", "/secur/contentDoor", "https://login-salesforce-com/",
"11"
"URI", "00DD0000000K5xD", "20130728185556.930", "005D00000001REI0",
"10.0.62.141", "/secur/logout.jsp", "https-//yourInstance-salesforce-com/000/o",
"54"
"URI", "00DD0000000K5xD", "20130728185536.725", "005D00000001REI0",
"10.0.62.141", "/00OD00000001ckx3",
"https-//yourInstance-salesforce-com/00OD00000001ckx3", "93"

```

## Download Large Event Log Files Using cURL with REST

You might have some event log files that are larger than your tool can handle. A command line tool such as cURL is one method to download files larger than 100 MB using the SObject Blob Retrieve object

### Example: Use the "X-PrettyPrint" header and the "-o" flag to output large files to .csv formats

This command downloads a file onto your machine into your downloads folder.

```

curl
https://yourInstance.salesforce.com/services/data/v32.0/subjects/EventLogFile/0AT30000000000uGAA/LogFile
-H "Authorization: Bearer token" -H "X-PrettyPrint:1" -o ~/downloads/outputLogFile.csv

```

We recommend using compression when downloading large event log files. See [Using Compression](#).

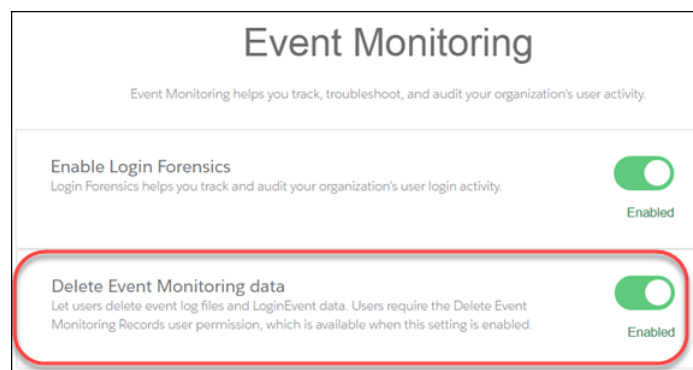
## Delete Event Monitoring Data

You can delete event log files that contain a user's log data. Deleting log files helps you comply with data protection and privacy regulations and controls the information that others can access. You can't delete individual rows from event logs. Instead, you must delete the entire log file that contains the user activity.

To delete an event log file, enable deletion in Setup, create a permission set that includes the Delete Event Monitoring Records user permission, and assign this permission set to your users. (Alternatively, you can assign the user permission to a custom profile.) Then those users can query and delete the EventLogFile record by using Query and Delete resources in REST or `delete()` in SOAP.

 **Note:** You can't delete individual rows from event logs. Because event logs are stored in blob format in the database, you must delete the entire log file that contains the user activity.

1. In Setup, in the Quick Find box, enter *Event*, and then select **Event Monitoring Settings**.
2. Enable deletion of event monitoring data. This action is recorded in Setup Audit Trail.



The Delete Event Monitoring Records user permission is now available to assign to a permission set. (Alternatively, you can assign the user permission to a custom profile.)

3. In Setup, in the Quick Find box, enter *Permission*, and then select **Permission Sets**.
4. Create a permission set that includes the Delete Event Monitoring Records user permission, and save the permission set.
5. In Setup, in the Quick Find box, enter *users*, and then select **Users**.
6. Select the user you want to grant permission to delete event monitoring data.
7. In the Permission Set Assignment section for this user, assign the permission set, and click **Save**. This action is recorded in Setup Audit Trail.  
Users assigned this permission set (or any custom profile that includes the Delete Event Monitoring Records user permission) can now delete event monitoring data. The next steps show you how to use the API to delete the data.
8. To locate the logs containing the user activity that you want to delete, query the EventLogFile object. For details, see [Query Event Monitoring Data with REST](#) on page 87.
9. Note the IDs of the returned logs.
10. Use the SObject Rows resource to delete records. Specify the record ID, and use the DELETE method. For more information, see [Delete a Record](#) on page 45. Or, you can use Workbench to delete blob format data for event monitoring. In the Execute text box, use a DELETE request similar to `/services/data/v41.0/objects/EventLogFile/0ATD00000000pyOAA`.

## Query or View Hourly Event Log Files

To review events in your org on an accelerated basis, get event log files in hourly increments for recent activity. Hourly event log files can give you quicker visibility into security anomalies and custom code performance issues.

### Examples

Suppose you're a security analyst monitoring for anomalous user behavior. By pulling more frequent updates into your security system, you can be alerted that a suspicious event has taken place within hours, rather than one or two days later.

In another example, let's say you're a developer. You've identified a series of Apex failures in your org, and you want to proactively refactor your Apex code to improve performance. You review hourly log files to pinpoint the issues and fix your code in hours, before your end users start complaining about poor performance.

### Considerations

- Hourly event log file integration with the Event Monitoring Analytics app is unavailable.
- Depending on event delivery and final processing time, an event is expected to take three to six hours from the time of the event to be available in the log file. However, it can take longer.
- When delays in processing occur and event logs for a particular hour arrive later, a new log file is created for the event/date/hour and lists only the new events. Use the creation date and an incremental sequence number to identify a new log file. Always use the most recently processed event log file for a particular date. However, if event log files have already been pulled into a third-party application, they could require deduplication in that application.

If both hourly and daily logs are enabled, daily logs always have a sequence number of 0 because there is only one file per daily interval. CreatedDate indicates when the file was generated. If CreatedDate is after the last event log file download, there are new events to be processed.

For best practices, use CreatedDate in the WHERE clause to select logs created after the last downloaded event log file. For example, if the last downloaded file was at 12PM 2/1/2018, to find the next log file, use +CreatedDate+>+"2018-02-01T12:00:00Z" in the WHERE clause.

- During Salesforce site switches, instance refreshes, or unplanned system outages, data loss can occur. For example, if Salesforce moves your production org instance, your event log files could have a gap in data. Salesforce makes commercially reasonable efforts to preserve event log file data integrity and avoid data loss. When Salesforce performs a site switch or instance refresh, it uses an automated process to replicate event logs.
- In the unlikely case in which no log files are generated for 24 hours, contact Salesforce Support.

### IN THIS SECTION:

#### [Query Hourly Event Log Files](#)

You query hourly event log files in the same way you query 24-hour log files.

#### [Differences Between Hourly and 24-Hour Event Logs](#)

You receive event log files approximately every hour in addition to 24-hour log files. Review the differences between the two logs so that you can filter your files to analyze the event data you want.

## Query Hourly Event Log Files

You query hourly event log files in the same way you query 24-hour log files.

### EDITIONS

Available in: **Enterprise**, **Performance**, **Unlimited**, and **Developer** Editions

### USER PERMISSIONS

To access the API and query log files:

- API Enabled AND View Event Log Files

To view event log files:

- View All Data



Suppose you're an administrator. Your Chief Security Officer asks you to identify who modified specific accounts and opportunities in the past two hours. You query the hourly URI event log files using the EventLogFile object to review the page requests and request status. Because EventLogFile also returns 24-hour log files, use this SOQL syntax to filter out the 24-hour log files.

1. In Workbench, select **utilities > REST Explorer**.
2. Replace the existing text with: `/services/data/v API_version .0/query?q=SELECT+Id+,+EventType+,+Interval+,+LogDate+,+LogFile+`
3. Append the following to the query to make it complete:  
`FROM+EventLogFile+WHERE+EventType+=+'URI',+Interval+=+'Hourly'`


In the query, `Interval=Hourly` makes sure that only hourly event log file data is returned. Alternatively, you can use `Sequence` to filter out 24-hour event log files (`Sequence!=0`). To get both hourly and 24-hour files, use `Sequence>=0`.

4. Click **Execute**.

If your sandbox org has URI events, you see log file records in your query results. You can also download the event log files to review the data in a CSV file. For more information, see [Trailhead: Download and Visualize Event Log Files](#).

## Differences Between Hourly and 24-Hour Event Logs

You receive event log files approximately every hour in addition to 24-hour log files. Review the differences between the two logs so that you can filter your files to analyze the event data you want.

Hourly Log Files	24-Hour Log Files
One or more files generated for every hour of activity.	One file generated for every 24 hours of activity.
Available in the API. You can manually import data into third-party visualization apps.	Available in the API and integrated with the Event Monitoring Analytics app and third-party visualization apps.
<p>Key values in the EventLogFile object are:</p> <ul style="list-style-type: none"> <li>• <code>Interval</code>—Hourly</li> <li>• <code>LogDate</code>—Date and hour in which the log file was generated. For example, for events that occurred between 11:00 AM and 12:00 PM on 3/7/2016, this field's value is 2016-03-07T11:00:00.000Z.</li> </ul> <p> <b>Tip:</b> To find out when the EventLogFile object was created, query <code>CreatedDate</code>.</p> <ul style="list-style-type: none"> <li>• <code>Sequence</code>—1+. This value increases by 1 when events are added in the same hour after the latest event log file is created. The value resets to 1 in the subsequent hour.</li> </ul> <p>See also these <a href="#">Considerations</a> regarding hourly event logs.</p>	<p>Key values in the EventLogFile object are:</p> <ul style="list-style-type: none"> <li>• <code>Interval</code>—Daily</li> <li>• <code>LogDate</code>—Date and time of the log file's creation. For example, for events that occurred on 3/7/2016, this field's value is 2016-03-07T00:00:00.000+0000.</li> <li>• <code>Sequence</code>—0</li> </ul>



**Note:** Like with 24-hour event monitoring, hourly event log data is available for the past 30 days.

## Using Composite Resources

---

The examples in this section use composite resources to improve your application's performance by minimizing the number of round-trips between the client and server.

### IN THIS SECTION:

#### [Execute Dependent Requests in a Single API Call](#)

The following example uses the Composite resource to execute several dependent requests all in a single call. First, it creates an account and retrieves its information. Next it uses the account data and the Composite resource's reference ID functionality to create a contact and populate its fields based on the account data. Then it retrieves specific information about the account's owner by using query parameters in the request string. Finally, if the metadata has been modified since a certain date, it retrieves account metadata. The `composite.json` file contains the composite request and subrequest data.

#### [Update an Account, Create a Contact, and Link Them with a Junction Object](#)

The following example uses the Composite resource to update some fields on an account, create a contact, and link the two records with a junction object called `AccountContactJunction`. All these requests are executed in a single call. The `composite.json` file contains the composite request and subrequest data.

#### [Update a Record and Get Its Field Values in a Single Request](#)

Use the Batch resource to execute multiple requests in a single API call.

#### [Create Nested Records](#)

Use the SObject Tree resource to create nested records that share a root record type. For example, in a single request, you can create an account along with its child contacts, and a second account along with its child accounts and contacts. Once the request is processed, the records are created and parents and children are automatically linked by ID. In the request data, you supply the record hierarchies, required and optional field values, each record's type, and a reference ID for each record, and then use the POST method of the resource. The response body will contain the IDs of the created records if the request is successful. Otherwise, the response contains only the reference ID of the record that caused the error and the error information.

#### [Create Multiple Records](#)

While the SObject Tree resource can be used to create nested records, you can also create multiple, unrelated records of the same type. In a single request, you can create up to two hundred records. In the request data, you supply the required and optional field values for each record, each record's type, and a reference ID for each record, and then use the POST method of the resource. The response body will contain the IDs of the created records if the request is successful. Otherwise, the response contains only the reference ID of the record that caused the error and the error information.

## Execute Dependent Requests in a Single API Call

The following example uses the Composite resource to execute several dependent requests all in a single call. First, it creates an account and retrieves its information. Next it uses the account data and the Composite resource's reference ID functionality to create a contact and populate its fields based on the account data. Then it retrieves specific information about the account's owner by using query parameters in the request string. Finally, if the metadata has been modified since a certain date, it retrieves account metadata. The `composite.json` file contains the composite request and subrequest data.

### Execute dependent requests in a single API call

```
curl https://yourInstance.salesforce.com/services/data/v38.0/composite/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d "@composite.json"
```

**Request body composite.json file**

```
{
  "allOrNone" : true,
  "compositeRequest" : [{
    "method" : "POST",
    "url" : "/services/data/v38.0/subjects/Account",
    "referenceId" : "NewAccount",
    "body" : {
      "Name" : "Salesforce",
      "BillingStreet" : "Landmark @ 1 Market Street",
      "BillingCity" : "San Francisco",
      "BillingState" : "California",
      "Industry" : "Technology"
    }
  }, {
    "method" : "GET",
    "referenceId" : "NewAccountInfo",
    "url" : "/services/data/v38.0/subjects/Account/@{NewAccount.id}"
  }, {
    "method" : "POST",
    "referenceId" : "NewContact",
    "url" : "/services/data/v38.0/subjects/Contact",
    "body" : {
      "lastname" : "John Doe",
      "Title" : "CTO of @{NewAccountInfo.Name}",
      "MailingStreet" : "@{NewAccountInfo.BillingStreet}",
      "MailingCity" : "@{NewAccountInfo.BillingAddress.city}",
      "MailingState" : "@{NewAccountInfo.BillingState}",
      "AccountId" : "@{NewAccountInfo.Id}",
      "Email" : "jdoe@salesforce.com",
      "Phone" : "1234567890"
    }
  }, {
    "method" : "GET",
    "referenceId" : "NewAccountOwner",
    "url" :
"/services/data/v38.0/subjects/User/@{NewAccountInfo.OwnerId}?fields=Name,companyName,Title,City,State"

  }, {
    "method" : "GET",
    "referenceId" : "AccountMetadata",
    "url" : "/services/data/v38.0/subjects/Account/describe",
    "httpHeaders" : {
      "If-Modified-Since" : "Tue, 31 May 2016 18:13:37 GMT"
    }
  }
]}
}
```

**Response body after successfully executing the composite request**

```
{
  "compositeResponse" : [{
    "body" : {
      "id" : "001R000000033JNuIAM",

```

```

        "success" : true,
        "errors" : [ ]
    },
    "httpHeaders" : {
        "Location" : "/services/data/v38.0/subjects/Account/001R00000033JNuIAM"
    },
    "httpStatusCode" : 201,
    "referenceId" : "NewAccount"
}, {
    "body" : {
        all the account data
    },
    "httpHeaders" : {
        "ETag" : "\"Jbjuzw7dbhaEG3fd90kJbx6A0ow=\"",
        "Last-Modified" : "Fri, 22 Jul 2016 20:19:37 GMT"
    },
    "httpStatusCode" : 200,
    "referenceId" : "NewAccountInfo"
}, {
    "body" : {
        "id" : "003R00000025REHIA2",
        "success" : true,
        "errors" : [ ]
    },
    "httpHeaders" : {
        "Location" : "/services/data/v38.0/subjects/Contact/003R00000025REHIA2"
    },
    "httpStatusCode" : 201,
    "referenceId" : "NewContact"
}, {
    "body" : {
        "attributes" : {
            "type" : "User",
            "url" : "/services/data/v38.0/subjects/User/005R00000000I90CIAS"
        },
        "Name" : "Jane Doe",
        "CompanyName" : "Salesforce",
        "Title" : "Director",
        "City" : "San Francisco",
        "State" : "CA",
        "Id" : "005R00000000I90CIAS"
    },
    "httpHeaders" : { },
    "httpStatusCode" : 200,
    "referenceId" : "NewAccountOwner"
}, {
    "body" : null,
    "httpHeaders" : {
        "ETag" : "\"f2293620\"",
        "Last-Modified" : "Fri, 22 Jul 2016 18:45:56 GMT"
    },
    "httpStatusCode" : 304,
    "referenceId" : "AccountMetadata"
}

```

```
}]
}
```

## Update an Account, Create a Contact, and Link Them with a Junction Object

The following example uses the Composite resource to update some fields on an account, create a contact, and link the two records with a junction object called `AccountContactJunction`. All these requests are executed in a single call. The `composite.json` file contains the composite request and subrequest data.

### Update an account, create a contact, and link them with a junction object

```
curl https://yourInstance.salesforce.com/services/data/v38.0/composite/ -H
"Authorization: Bearer token" -H "Content-Type: application/json" -d "@composite.json"
```

### Request body `composite.json` file

```
{
  "allOrNone" : true,
  "compositeRequest" : [{
    "method" : "PATCH",
    "url" : "/services/data/v38.0/subjects/Account/001xx000003DIpcAAG",
    "referenceId" : "UpdatedAccount",
    "body" : {
      "Name" : "Salesforce",
      "BillingStreet" : "Landmark @ 1 Market Street",
      "BillingCity" : "San Francisco",
      "BillingState" : "California",
      "Industry" : "Technology"
    }
  }, {
    "method" : "POST",
    "referenceId" : "NewContact",
    "url" : "/services/data/v38.0/subjects/Contact/",
    "body" : {
      "lastname" : "John Doe",
      "Phone" : "1234567890"
    }
  }, {
    "method" : "POST",
    "referenceId" : "JunctionRecord",
    "url" : "/services/data/v38.0/subjects/AccountContactJunction__c",
    "body" : {
      "accountId__c" : "001xx000003DIpcAAG",
      "contactId__c" : "@{NewContact.id}"
    }
  }
  ]
}
```

### Response body after successfully executing the composite request

```
{
  "compositeResponse" : [{
    "body" : null,
    "httpHeaders" : { },
    "httpStatusCode" : 204,
```

```

    "referenceId" : "UpdatedAccount"
  }, {
    "body" : {
      "id" : "003R000000025R22IAE",
      "success" : true,
      "errors" : [ ]
    },
    "httpHeaders" : {
      "Location" : "/services/data/v38.0/subjects/Contact/003R000000025R22IAE"
    },
    "httpStatusCode" : 201,
    "referenceId" : "NewContact"
  }, {
    "body" : {
      "id" : "a00R00000000iN4gIAE",
      "success" : true,
      "errors" : [ ]
    },
    "httpHeaders" : {
      "Location" :
"/services/data/v38.0/subjects/AccountContactJunction__c/a00R00000000iN4gIAE"
    },
    "httpStatusCode" : 201,
    "referenceId" : "JunctionRecord"
  }
}]
}

```

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

Use the Batch resource to execute multiple requests in a single API call.

The following example updates the name on an account and gets some of the account's field values in a single request. The `batch.json` file contains the subrequest data.

### Update a record and query its name and billing postal code in a single request

```

curl https://yourInstance.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

```

{
  "batchRequests" : [
    {
      "method" : "PATCH",
      "url" : "v34.0/subjects/account/001D000000K0fX0IAZ",
      "richInput" : { "Name" : "NewName" }
    }, {
      "method" : "GET",
      "url" : "v34.0/subjects/account/001D000000K0fX0IAZ?fields=Name,BillingPostalCode"
    }
  ]
}

```

**Response body after successfully executing the subrequests**

```
{
  "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"
    }
  ]
}
```

SEE ALSO:

[Batch](#)

## Create Nested Records

Use the SObject Tree resource to create nested records that share a root record type. For example, in a single request, you can create an account along with its child contacts, and a second account along with its child accounts and contacts. Once the request is processed, the records are created and parents and children are automatically linked by ID. In the request data, you supply the record hierarchies, required and optional field values, each record's type, and a reference ID for each record, and then use the POST method of the resource. The response body will contain the IDs of the created records if the request is successful. Otherwise, the response contains only the reference ID of the record that caused the error and the error information.

The following example creates two sets of nested records. The first set includes an account and two child contact records. The second set includes an account, one child account record, and one child contact record. The record data is provided in `newrecords.json`.

**Example for creating two new accounts and their child records**

```
curl https://yourInstance.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` file for creating two new Accounts and their child records**

```
{
  "records" : [{
    "attributes" : {"type" : "Account", "referenceId" : "ref1"},
    "name" : "SampleAccount1",
    "phone" : "1234567890",
    "website" : "www.salesforce.com",
    "numberOfEmployees" : "100",
    "industry" : "Banking",
    "Contacts" : {
      "records" : [{
```

```

        "attributes" : {"type" : "Contact", "referenceId" : "ref2"},
        "lastname" : "Smith",
        "Title" : "President",
        "email" : "sample@salesforce.com"
      },{
        "attributes" : {"type" : "Contact", "referenceId" : "ref3"},
        "lastname" : "Evans",
        "title" : "Vice President",
        "email" : "sample@salesforce.com"
      }
    ]
  },{
    "attributes" : {"type" : "Account", "referenceId" : "ref4"},
    "name" : "SampleAccount2",
    "phone" : "1234567890",
    "website" : "www.salesforce.com",
    "numberOfEmployees" : "52000",
    "industry" : "Banking",
    "childAccounts" : {
      "records" : [{
        "attributes" : {"type" : "Account", "referenceId" : "ref5"},
        "name" : "SampleChildAccount1",
        "phone" : "1234567890",
        "website" : "www.salesforce.com",
        "numberOfEmployees" : "100",
        "industry" : "Banking"
      }]
    },
    "Contacts" : {
      "records" : [{
        "attributes" : {"type" : "Contact", "referenceId" : "ref6"},
        "lastname" : "Jones",
        "title" : "President",
        "email" : "sample@salesforce.com"
      }]
    }
  }
}]
}

```

#### Example response body after successfully creating records and relationships

```

{
  "hasErrors" : false,
  "results" : [{
    "referenceId" : "ref1",
    "id" : "001D000000K0fXOIAZ"
  },{
    "referenceId" : "ref4",
    "id" : "001D000000K0fXPIAZ"
  },{
    "referenceId" : "ref2",
    "id" : "003D000000QV9n2IAD"
  },{
    "referenceId" : "ref3",
    "id" : "003D000000QV9n3IAD"
  }
]
}

```



```

    }, {
      "referenceId" : "ref5",
      "id" : "001D000000K0fXQIAZ"
    }, {
      "referenceId" : "ref6",
      "id" : "003D000000QV9n4IAD"
    }
  ]
}

```

Once the request is processed, all six records are created with the parent-child relationships specified in the request.

SEE ALSO:

[SObject Tree](#)

## Create Multiple Records

While the SObject Tree resource can be used to create nested records, you can also create multiple, unrelated records of the same type. In a single request, you can create up to two hundred records. In the request data, you supply the required and optional field values for each record, each record's type, and a reference ID for each record, and then use the POST method of the resource. The response body will contain the IDs of the created records if the request is successful. Otherwise, the response contains only the reference ID of the record that caused the error and the error information.

The following example creates four new accounts. The record data is provided in `newrecords.json`.

### Example for creating four new accounts

```

curl https://yourInstance.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` file for creating four new accounts

```

{
  "records" : [{
    "attributes" : {"type" : "Account", "referenceId" : "ref1"},
    "name" : "SampleAccount1",
    "phone" : "1111111111",
    "website" : "www.salesforce.com",
    "numberOfEmployees" : "100",
    "industry" : "Banking"
  }, {
    "attributes" : {"type" : "Account", "referenceId" : "ref2"},
    "name" : "SampleAccount2",
    "phone" : "2222222222",
    "website" : "www.salesforce2.com",
    "numberOfEmployees" : "250",
    "industry" : "Banking"
  }, {
    "attributes" : {"type" : "Account", "referenceId" : "ref3"},
    "name" : "SampleAccount3",
    "phone" : "3333333333",
    "website" : "www.salesforce3.com",
    "numberOfEmployees" : "52000",
    "industry" : "Banking"
  }, {

```

```
    "attributes" : {"type" : "Account", "referenceId" : "ref4"},
    "name" : "SampleAccount4",
    "phone" : "44444444444",
    "website" : "www.salesforce4.com",
    "numberOfEmployees" : "2500",
    "industry" : "Banking"
  }
}
```

**Example response body after successfully creating records**

```
{
  "hasErrors" : false,
  "results" : [{
    "referenceId" : "ref1",
    "id" : "001D000000K1YFjIAN"
  }, {
    "referenceId" : "ref2",
    "id" : "001D000000K1YFkIAN"
  }, {
    "referenceId" : "ref3",
    "id" : "001D000000K1YFlIAN"
  }, {
    "referenceId" : "ref4",
    "id" : "001D000000K1YFmIAN"
  }
}]
}
```

SEE ALSO:

[SObject Tree](#)

## CHAPTER 4 Reference

The following table lists supported REST resources in the API and provides a brief description for each. In each case, the URI for the resource follows the base URI, which you retrieve from the authentication service: `http://domain/services/data`. *domain* might be the Salesforce instance you are using, or a [custom domain](#). For example, to retrieve basic information about an Account object in version 20.0: `https://yourInstance.salesforce.com/services/data/v20.0/objects/Account/`.

Click a call name to see syntax, usage, and more information for that call.

Resource Name	URI and Description
<a href="#">Versions</a>	<code>/</code>  Lists summary information about each Salesforce version currently available, including the version, label, and a link to each version's root.
<a href="#">Resources by Version</a>	<code>/vXX.X/</code>  Lists available resources for the specified API version, including resource name and URI.
<a href="#">Limits</a>	<code>/vXX.X/limits/</code>  Lists information about limits in your org.
<a href="#">Describe Global</a>	<code>/vXX.X/objects/</code>  Lists the available objects and their metadata for your organization's data.
<a href="#">SObject Basic Information</a>	<code>/vXX.X/objects/<b>SObject</b>/</code>  Describes the individual metadata for the specified object. Can also be used to create a new record for a given object.
<a href="#">SObject Describe</a>	<code>/vXX.X/objects/<b>SObject</b>/describe/</code>  Completely describes the individual metadata at all levels for the specified object.
<a href="#">SObject Get Deleted</a>	<code>/vXX.X/objects/<b>SObject</b>/deleted/</code> <code>?start=<b>startDateAndTime</b>&amp;end=<b>endDateAndTime</b></code>  Retrieves the list of individual records that have been deleted within the given timespan for the specified object.
<a href="#">SObject Get Updated</a>	<code>/vXX.X/objects/<b>SObject</b>/updated/</code> <code>?start=<b>startDateAndTime</b>&amp;end=<b>endDateAndTime</b></code>  Retrieves the list of individual records that have been updated (added or changed) within the given timespan for the specified object.
<a href="#">SObject Named Layouts</a>	<code>/vXX.X/objects/<b>SObject</b>/describe/namedLayouts/<b>layoutName</b></code>  Retrieves information about alternate named layouts for a given object.

Resource Name	URI and Description
<a href="#">SObject Rich Text Image Retrieve</a>	/vXX.X/objects/ <b>SObject</b> / <b>id</b> /richTextImageFields/ <b>fieldName</b> / <b>contentReferenceId</b> Retrieves the specified image data from a specific rich text area field in a given record.
<a href="#">SObject Rows</a>	/vXX.X/objects/ <b>SObject</b> / <b>id</b> / Accesses records based on the specified object ID. Retrieves, updates, or deletes records. This resource can also be used to retrieve field values.
<a href="#">SObject Rows by External ID</a>	/vXX.X/objects/ <b>SObject</b> / <b>fieldName</b> / <b>fieldValue</b> Creates new records or updates existing records (upserts records) based on the value of a specified external ID field.
<a href="#">SObject ApprovalLayouts</a>	/vXX.X/objects/ <b>SObjectName</b> /describe/approvalLayouts/ Returns a list of approval layouts for a specified object.
<a href="#">SObject CompactLayouts</a>	/vXX.X/objects/ <b>Object</b> /describe/compactLayouts/ Returns a list of compact layouts for a specific object.
<a href="#">Describe Layouts</a>	/vXX.X/objects/global/describe/layouts/ /vXX.X/objects/ <b>object</b> /describe/layouts/ Returns a list of layouts and descriptions.
<a href="#">SObject PlatformAction</a>	/services/data/vXX.X/objects/PlatformAction PlatformAction is a virtual read-only object. It enables you to query for actions displayed in the UI, given a user, a context, device format, and a record ID. Examples include standard and custom buttons, quick actions, and productivity actions.
<a href="#">Lightning Toggle Metrics</a>	/services/data/vXX.X/objects/LightningToggleMetrics Return details about users who switched between Salesforce Classic and Lightning Experience.
<a href="#">Lightning Usage by App Type</a>	/services/data/vXX.0/objects/LightningUsageByAppTypeMetrics Return the total number of Lightning Experience and Salesforce Mobile users.
<a href="#">Lightning Usage by Browser</a>	/services/data/vXX.0/objects/LightningUsageByBrowserMetrics Return Lightning Experience usage results grouped by browser instance.
<a href="#">Lightning Usage by Page</a>	/services/data/vXX.0/objects/LightningUsageByPageMetrics Represents standard pages users viewed most frequently in Lightning Experience.
<a href="#">Lightning Usage by FlexiPage</a>	/services/data/vXX.0/objects/LightningUsageByFlexiPageMetrics Return details about the custom pages viewed most frequently in Lightning Experience.
<a href="#">Lightning Exit by Page Metrics</a>	/services/data/vXX.0/objects/LightningUsageByFlexiPageMetrics

Resource Name	URI and Description
	Return frequency metrics about the standard pages within which users switched from Lightning Experience to Salesforce Classic.
<a href="#">SObject Relationships</a>	<p><code>/vXX.X/subjects/<b>SObject</b>/id/<b>relationship name</b></code></p> <p>Accesses records by traversing object relationships via friendly URLs. You can retrieve, update, or delete the record associated with the traversed relationship field. If there are multiple related records, you can retrieve the complete set of associated records.</p>
<a href="#">SObject Blob Retrieve</a>	<p><code>/vXX.X/subjects/<b>SObject</b>/id/<b>blobField</b></code></p> <p>Retrieves the specified blob field from an individual record.</p>
<a href="#">SObject Quick Actions</a>	<p><code>/vXX.X/subjects/<b>object</b>/quickActions/</code></p> <p><code>/vXX.X/subjects/<b>object</b>/quickActions/{<b>action name</b>}</code></p> <p><code>/vXX.X/subjects/<b>object</b>/quickActions/{<b>action name</b>}/describe/</code></p> <p><code>services/data/vXX.X/subjects/<b>object</b>/quickActions/{<b>action name</b>}/defaultValues/</code></p> <p><code>vXX.X/subjects/<b>object</b>/quickActions/{<b>action name</b>}/defaultValues/{<b>parent id</b>}</code></p> <p>Returns a list of actions and their details.</p>
<a href="#">SObject Suggested Articles</a>	<p><code>vXX.X/subjects/<b>SObject</b>/suggestedArticles?language=<b>article language</b>&amp;subject=<b>subject</b>&amp;description=<b>description</b></code></p> <p><code>vXX.X/subjects/<b>SObject</b>/<b>ID</b>/suggestedArticles?language=<b>article language</b></code></p> <p>Returns a list of suggested Salesforce Knowledge articles for a case, work order, or work order line item.</p>
<a href="#">SObject User Password</a>	<p><code>/vXX.X/subjects/User/<b>user id</b>/password</code></p> <p><code>/vXX.X/subjects/SelfServiceUser/<b>self service user id</b>/password</code></p> <p>Set, reset, or get information about a user password.</p>
<a href="#">Platform Event Schema by Event Name</a>	<p><code>/vXX.X/subjects/<b>Event_Name</b>/eventSchema</code></p> <p>Gets the definition of a platform event in JSON format for an event name.</p>
<a href="#">Platform Event Schema by Schema ID</a>	<p><code>/vXX.X/event/eventSchema/<b>Schema_ID</b></code></p> <p>Gets the definition of a platform event in JSON format for a schema ID.</p>
<a href="#">AppMenu</a>	<p><code>/vXX.X/appMenu/AppSwitcher/</code></p> <p><code>/vXX.X/appMenu/Salesforce1/</code></p> <p>Returns a list of items in either the Salesforce app drop-down menu or the Salesforce for Android, iOS, and mobile web navigation menu.</p>

Resource Name	URI and Description
<a href="#">Compact Layouts</a>	<p><code>/vXX.X/compactLayouts?q=<b>object list</b></code></p> <p>Returns a list of compact layouts for multiple objects.</p>
<a href="#">Invocable Actions</a>	<p><code>/vXX.X/actions/standard</code></p> <p><code>/vXX.X/actions/custom</code></p> <p>Use actions to add more functionality to your applications. Choose from standard actions, such as posting to Chatter or sending email, or create actions based on your company's needs.</p>
<a href="#">Parameterized Search</a>	<p><code>/vXX.X/parameterizedSearch/?q=<b>search string</b></code></p> <p>Executes a simple RESTful search using parameters instead of a SOSL clause. Indicate parameters in a URL in the GET method. Or, use POST for more complex JSON searches.</p>
<a href="#">Process Approvals</a>	<p><code>/vXX.X/process/approvals/</code></p> <p>Returns a list of all approval processes. Can also be used to submit a particular record if that entity supports an approval process and one has already been defined. Records can be approved and rejected if the current user is an assigned approver.</p>
<a href="#">Process Rules</a>	<p><code>/vXX.X/process/rules/</code></p> <p>Returns a list of all active workflow rules. If a rule has actions, the actions will be listed under the rule. Can also be used to trigger all workflow rules that are associated with a specified record. The actions for a rule are only fired if the rule's criteria is met.</p>
<a href="#">Query</a>	<p><code>/vXX.X/query/?q=<b>soql</b></code></p> <p>Executes the specified SOQL query.</p>
<a href="#">QueryAll</a>	<p><code>/vXX.X/queryAll/?q=<b>soql</b></code></p> <p>Executes the specified SOQL query. Results can include deleted, merged and archived records.</p>
<a href="#">Quick Actions</a>	<p><code>/vXX.X/quickActions/</code></p> <p>Return a list of global quick actions and their types, as well as custom fields and objects that appear in the Chatter feed.</p>
<a href="#">Recently Viewed Items</a>	<p><code>/vXX.X/recent</code></p> <p>Gets the most recently accessed items that were viewed or referenced by the current user.</p>
<a href="#">Record Count</a>	<p><code>/vXX.X/limit/recordCount</code></p> <p>Lists information about object record counts in your organization.</p>
<a href="#">Relevant Items</a>	<p><code>/vXX.X/subjects/relevantItems</code></p> <p>Gets the current user's most relevant items. Relevant items include records for objects in the user's global search scope and also most recently used (MRU) objects.</p>
<a href="#">Search</a>	<p><code>/vXX.X/search/?q=<b>sosl</b></code></p>

Resource Name	URI and Description
	Executes the specified SOSL search. The search string must be URL-encoded.
<a href="#">Search Scope and Order</a>	<p><code>/vXX.X/search/scopeOrder</code></p> <p>Returns an ordered list of objects in the default global search scope of a logged-in user. Global search keeps track of which objects the user interacts with and how often and arranges the search results accordingly. Objects used most frequently appear at the top of the list.</p>
<a href="#">Search Result Layouts</a>	<p><code>/vXX.X/searchlayout/?q=<b>Comma delimited object list</b></code></p> <p>Returns search result layout information for the objects in the query string. For each object, this call returns the list of fields displayed on the search results page as columns, the number of rows displayed on the first page, and the label used on the search results page.</p>
<a href="#">Search Suggested Article Title Matches</a>	<p><code>/vXX.X/search/suggestTitleMatches?q=<b>search string</b>&amp;language=<b>article language</b>&amp;publishStatus=<b>article publication status</b></code></p> <p>Returns a list of Salesforce Knowledge article titles that match the user's search query string. Provides a shortcut to navigate directly to likely relevant articles before the user performs a search.</p>
<a href="#">Search Suggested Queries</a>	<p><code>vXX.X/search/suggestSearchQueries?q=<b>search string</b>&amp;language=<b>language of query</b></code></p> <p>Returns a list of suggested searches based on the user's query string text matching searches that other users have performed in Salesforce Knowledge. Provides a way to improve search effectiveness, before the user performs a search.</p>
<a href="#">Tabs</a>	<p><code>/vXX.X/tabs</code></p> <p>Returns a list of all tabs—including Lightning page tabs—available to the current user, regardless of whether the user has chosen to hide tabs via the All Tabs (+) tab customization feature.</p>
<a href="#">Themes</a>	<p><code>/vXX.X/theme</code></p> <p>Gets the list of icons and colors used by themes in the Salesforce application.</p>

## Composite Resources

Resource Name	URI	Description
<a href="#">Batch</a>	<code>/vXX.X/composite/batch</code>	Executes up to 25 subrequests in a single request.
<a href="#">SObject Tree</a>	<code>/vXX.X/composite/tree</code>	Creates one or more sObject trees with root records of the specified type. An sObject tree is a collection of nested, parent-child records with a single root record.

## Versions

---

Lists summary information about each Salesforce version currently available, including the version, label, and a link to each version's root.

**URI**

/

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

none

**Parameters**

none

**Example**

See [List Available REST API Versions](#) on page 34.

## Resources by Version

---

Lists available resources for the specified API version, including resource name and URI.

**URI**

/v`XX.X`/

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer ***token***

**Parameters**

none

**Example**

See [List Available REST Resources](#) on page 37

## Limits

---

Lists information about limits in your org. This resource is available in REST API version 29.0 and later for API users with the View Setup and Configuration permission. The resource returns these limits:

- Daily API calls
- Daily asynchronous Apex method executions (batch Apex, future methods, queueable Apex, and scheduled Apex)
- Daily Bulk API calls
- Daily Streaming API events (API version 36.0 and earlier)



- Daily durable Streaming API events (API version 37.0 and later)
- Streaming API concurrent clients (API version 36.0 and earlier)
- Durable Streaming API concurrent clients (API version 37.0 and later)
- Daily generic streaming events (API version 36.0 and earlier)
- Daily durable generic streaming events (API version 37.0 and later)
- Monthly entitlement and usage of high-volume platform event delivery to CometD clients (API version 44.0 and later)
- Daily number of mass emails that are sent to external email addresses by using Apex or APIs
- Daily number of single emails that are sent to external email addresses by using Apex or APIs
- Concurrent REST API requests for results of asynchronous report runs
- Concurrent synchronous report runs via REST API
- Hourly asynchronous report runs via REST API
- Hourly synchronous report runs via REST API
- Hourly dashboard refreshes via REST API
- Hourly REST API requests for dashboard results
- Hourly dashboard status requests via REST API
- Daily workflow emails
- Hourly workflow time triggers
- Hourly OData callouts
- Daily and active scratch org counts

The resource also returns these limits if the API user has the Manage Users permission.

- Data storage (MB)
- File storage (MB)

#### URI

/vXX.X/limits/

#### Formats

JSON, XML

#### HTTP Method

GET

#### Authentication

Authorization: Bearer *token*

#### Example

See [List Organization Limits](#).

## Describe Global

---

Lists the available objects and their metadata for your organization's data. In addition, it provides the organization encoding, as well as the maximum batch size permitted in queries. For more information on encoding, see [Internationalization and Character Sets](#).

You can use the `If-Modified-Since` header with this resource, with the date format `EEE, dd MMM yyyy HH:mm:ss z`. When using this header, if no available object's metadata has changed since the provided date, a `304 Not Modified` status code is returned with no response body.

**URI**

/vXX.X/subjects/

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer *token*

**Parameters**

none required

**Example**

See [Get a List of Objects](#) on page 38.

**Error responses**

See [Status Codes and Error Responses](#) on page 258.

## SObject Basic Information

---

Describes the individual metadata for the specified object. Can also be used to create a new record for a given object. For example, this can be used to retrieve the metadata for the Account object using the GET method, or create a new Account object using the POST method.

**URI**

/vXX.X/subjects/*SObjectName*/

**Formats**

JSON, XML

**HTTP Method**

GET, POST

**Authentication**

Authorization: Bearer *token*

**Parameters**

none required

**Examples**

- For an example of retrieving metadata for an object, see [Retrieve Metadata for an Object](#) on page 40.
- For an example of creating a new record using POST, see [Create a Record](#) on page 43.
- For an example of create a new record along with providing blob data for the record, see [Insert or Update Blob Data](#) on page 70.

## SObject Describe

---

Completely describes the individual metadata at all levels for the specified object. For example, this can be used to retrieve the fields, URLs, and child relationships for the Account object.

The `If-Modified-Since` header can be used with this resource, with a date format of `EEE, dd MMM yyyy HH:mm:ss z`. When this header is used, if the object metadata has not changed since the provided date, a `304 Not Modified` status code is returned, with no response body.

**URI**

`/vXX.X/objects/SObjectName/describe/`

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer *token*

**Parameters**

none required

**Example**

See [Get Field and Other Metadata for an Object](#) on page 41. For an example that uses the `If-Modified-Since` HTTP header, see [Get Object Metadata Changes](#) on page 42.

## SObject Get Deleted

---

Retrieves the list of individual records that have been deleted within the given timespan for the specified object. SObject Get Deleted is available in API version 29.0 and later.

This resource is commonly used in data replication applications. Note the following considerations:

- Deleted records are written to a delete log which this resource accesses. A background process that runs every two hours purges records that have been in an organization's delete log for more than two hours if the number of records is above a certain limit. Starting with the oldest records, the process purges delete log entries until the delete log is back below the limit. This is done to protect Salesforce from performance issues related to massive delete logs
- Information on deleted records are returned only if the current session user has access to them.
- Results are returned for no more than 15 days previous to the day the call is executed (or earlier if an administrator has purged the Recycle Bin).

See "Data Replication" in the [SOAP API Developer Guide](#) for additional details on data replication and data replication limits.

**URI**

`/vXX.X/objects/SObjectName/deleted/?start=startDateAndTime&end=endDateAndTime`

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer *token*

## Parameters

Parameter	Description
<code>start</code>	Starting date/time (Coordinated Universal Time (UTC)—not local— timezone) of the timespan for which to retrieve the data. The API ignores the seconds portion of the specified dateTime value (for example, 12:30:15 is interpreted as 12:30:00 UTC). The date and time should be provided in ISO 8601 format: <i>YYYY-MM-DDThh:mm:ss+hh:mm</i> . The date/time value for <code>start</code> must chronologically precede <code>end</code> . This parameter should be URL-encoded.
<code>end</code>	Ending date/time (Coordinated Universal Time (UTC)—not local— timezone) of the timespan for which to retrieve the data. The API ignores the seconds portion of the specified dateTime value (for example, 12:35:15 is interpreted as 12:35:00 UTC). The date and time should be provided in ISO 8601 format: <i>YYYY-MM-DDThh:mm:ss+hh:mm</i> . This parameter should be URL-encoded

## Response format

Property	Type	Description
<code>deletedRecords</code>	array	Array of deleted records that satisfy the start and end dates specified in the request. Each entry contains the record ID and the date and time the record was deleted in ISO 8601 format, using Coordinated Universal Time (UTC) timezone.
<code>earliestDateAvailable</code>	String	ISO 8601 format timestamp (Coordinated Universal Time (UTC)—not local— timezone) of the last physically deleted object.
<code>latestDateCovered</code>	String	ISO 8601 format timestamp (Coordinated Universal Time (UTC)—not local— time zone) of the last date covered in the request.

## Example

For an example of getting a list of deleted items, see [Get a List of Deleted Records Within a Given Timeframe](#) on page 56.

# SObject Get Updated

Retrieves the list of individual records that have been updated (added or changed) within the given timespan for the specified object. SObject Get Updated is available in API version 29.0 and later.

This resource is commonly used in data replication applications. Note the following considerations:

- Results are returned for no more than 30 days previous to the day the call is executed.
- Your client application can replicate any objects to which it has sufficient permissions. For example, to replicate all data for your organization, your client application must be logged in with “View All Data” access rights to the specified object. Similarly, the objects must be within your sharing rules.
- There is a limit of 600,000 IDs returned from this resource. If more than 600,000 IDs would be returned, `EXCEEDED_ID_LIMIT` is returned. You can correct the error by choosing start and end dates that are closer together.

See “Data Replication” in the [SOAP API Developer Guide](#) for additional details on data replication and data replication limits.

**URI**

/vXX.X/subjects/*SObjectName*/updated/?start=*startDateAndTime*&end=*endDateAndTime*

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer *token*

**Parameters**

Parameter	Description
start	Starting date/time (Coordinated Universal Time (UTC) time zone—not local— timezone) of the timespan for which to retrieve the data. The API ignores the seconds portion of the specified dateTime value (for example, 12:30:15 is interpreted as 12:30:00 UTC). The date and time should be provided in ISO 8601 format: <i>YYYY-MM-DDThh:mm:ss+hh:mm</i> . The date/time value for <i>start</i> must chronologically precede <i>end</i> . This parameter should be URL-encoded
end	Ending date/time (Coordinated Universal Time (UTC) time zone—not local— timezone) of the timespan for which to retrieve the data. The API ignores the seconds portion of the specified dateTime value (for example, 12:35:15 is interpreted as 12:35:00 UTC). The date and time should be provided in ISO 8601 format: <i>YYYY-MM-DDThh:mm:ss+hh:mm</i> . This parameter should be URL-encoded

**Response format**

Property	Type	Description
ids	array	Array of updated records that satisfy the start and end dates specified in the request. Each entry contains the record ID.
latestDateCovered	String	ISO 8601 format timestamp (Coordinated Universal Time (UTC)—not local— time zone) of the last date covered in the request.

**Example**

For an example of getting a list of updated deleted items, see [Get a List of Updated Records Within a Given Timeframe](#) on page 57.

## SObject Named Layouts

---

Retrieves information about alternate named layouts for a given object.

### Syntax

**URI**

/vXX.X/subjects/*Object*/describe/namedLayouts/*layoutName*

**Available since release**

31.0

**Formats**

JSON, XML

**HTTP methods**

GET

**Authentication**Authorization: Bearer *token***Request body**

None

## Example

```
/services/data/v31.0/subjects/User/describe/namedLayouts/UserAlt
```

This example retrieves information on the "UserAlt" named layout for User.

## Usage

Use this resource to get information on a named layout for a given object. You must provide a valid named layout name as part of the resource URI.

To get a list of named layouts for a given object, use the [SObject Describe](#) resource and look for the "namedLayoutInfos" field in the response body.

## SObject Rows

---

Accesses records based on the specified object ID. Retrieves, updates, or deletes records. This resource can also be used to retrieve field values. Use the GET method to retrieve records or fields, the DELETE method to delete records, and the PATCH method to update records.

To create new records, use the [SObject Basic Information](#) resource.

**URI**

```
/vXX.X/subjects/SObjectName/id/
```

**Formats**

JSON, XML

**HTTP Method**

GET, PATCH, DELETE

**Authentication**Authorization: Bearer *token***Parameters**

Parameter	Description
fields	Optional list of fields used to return values for.

**Usage**

This resource can be used with external objects in API version 32.0 and later.

- External objects that are associated with non-high-data-volume external data sources use the 18-character Salesforce ID for the *id*. Otherwise, external objects use the External ID standard field of the external object for the *id*.

**Examples**

- For examples of retrieving field values using GET, see:
  - [Get Field Values from a Standard Object Record](#) on page 45
  - [Get Field Values from an External Object Record by Using the External ID Standard Field](#) on page 46
  - [Get Field Values from an External Object Record by Using the Salesforce ID](#) on page 46
- For an example of updating a record using PATCH, see [Update a Record](#) on page 44.
- For an example of deleting a record using DELETE, see [Delete a Record](#) on page 45.
- For an example of updating the blob data for an object, see [Insert or Update Blob Data](#) on page 70.

## SObject Rows by External ID

---

Creates new records or updates existing records (upserts records) based on the value of a specified external ID field.

- If the specified value doesn't exist, a new record is created.
- If a record does exist with that value, the field values specified in the request body are updated.
- If the value is not unique, the REST API returns a 300 response with the list of matching records.



**Note:** Do not specify *Id* or an external ID field in the request body or an error is generated.

**URI**

`/vXX.X/objects/SObjectName/fieldName/fieldValue`

**Formats**

JSON, XML

**HTTP Method**

HEAD, GET, PATCH, DELETE, POST (see Usage section)

**Authentication**

Authorization: Bearer *token*

**Parameters**

None

**Usage**

As a special case, in API version 37.0 and later, you can use this resource to create a record by POSTing to `/vXX.X/objects/SObjectName/Id`. This pattern represents the use of *Id* as the specified external ID field and `null` as the value. It's useful when you're writing code to upsert multiple records by different external IDs and you don't want to request a separate resource.

**Examples**

- For an example of retrieving a record based on an external ID, see [Retrieve a Record Using an External ID](#) on page 47.
- For examples of creating and updating records based on external IDs, see [Insert or Update \(Upsert\) a Record Using an External ID](#) on page 48.

## SObject Blob Retrieve

---

Retrieves the specified blob field from an individual record.

### URI

`/vXX.X/subjects/SObjectName/id/blobField`

### Formats

Because blob fields contain binary data, you can't use JSON or XML to retrieve this data.

### HTTP Method

GET

### Authentication

Authorization: Bearer *token*

### Parameters

none required

### Example

For an example of retrieving the blob data from an Attachment or Document, see [Get Attachment Content from a Record](#) on page 56.

### Error responses

See [Status Codes and Error Responses](#) on page 258.

## SObject ApprovalLayouts

---

Returns a list of approval layouts for a specified object. Specify a particular approval process name to limit the return value to one specific approval layout. This resource is available in REST API version 30.0 and later.

## Syntax

### URI

To get an approval layout description for a specified object, use

`/vXX.X/subjects/SObjectName/describe/approvalLayouts/`

To get an approval layout description for a particular approval process, use

`/vXX.X/subjects/SObjectName/describe/approvalLayouts/approvalProcessName`

### Formats

JSON, XML

### HTTP methods

HEAD, GET

### Authentication

Authorization: Bearer *token*

### Request parameters

None required



## Example

### Getting all approval layouts for an sObject

```
curl
https://yourInstance.salesforce.com/services/data/v30.0/objects/Account/describe/approvalLayouts/
-H "Authorization: Bearer token"
```

### Example JSON Response body

```
{
  "approvalLayouts" : [ {
    "id" : "04aD00000008Py9IAE",
    "label" : "MyApprovalProcessName",
    "layoutItems" : [...],
    "name" : "MyApprovalProcessName"
  }, {
    "id" : "04aD00000008Q0KIAU",
    "label" : "Process1",
    "layoutItems" : [...],
    "name" : "Process1"
  } ]
}
```

If you haven't defined any approval layouts for an object, the response is {"approvalLayouts" : [ ]}.

### Getting the approval layout for a particular approval process

```
curl
https://yourInstance.salesforce.com/services/data/v30.0/objects/Account/describe/approvalLayouts/MyApprovalProcessName
-H "Authorization: Bearer token"
```

### Example JSON Response body

```
{
  "approvalLayouts" : [ {
    "id" : "04aD00000008Py9IAE",
    "label" : "MyApprovalProcessName",
    "layoutItems" : [...],
    "name" : "MyApprovalProcessName"
  } ]
}
```

## SObject CompactLayouts

Returns a list of compact layouts for a specific object. This resource is available in REST API version 29.0 and later.

## Syntax

### URI

For a compact layout description for a specific object, use `/vXX.X/objects/Object/describe/compactLayouts/`

### Formats

JSON, XML

**HTTP methods**

HEAD, GET

**Authentication**Authorization: Bearer *token***Request parameters**

None required

## Example

**Getting compact layouts**

```
/services/data/v29.0/subjects/Account/describe/compactLayouts
```

**Example JSON Response body**

This sample JSON response is for compact layouts created on the Account object. In this example, only one custom compact layout was created for Account. The custom compact layout is assigned as the primary compact layout for the object, and it contains two fields: Account Name and Phone.

```
{
  "compactLayouts" : [ {
    "actions" : [ {
      "custom" : false,
      "icons" : null,
      "label" : "Call",
      "name" : "CallHighlightAction"
    }, {
      "custom" : false,
      "icons" : null,
      "label" : "Send Email",
      "name" : "EmailHighlightAction"
    }, {
      "custom" : false,
      "icons" : null,
      "label" : "Map",
      "name" : "MapHighlightAction"
    }, {
      "custom" : false,
      "icons" : null,
      "label" : "Read News",
      "name" : "NewsHighlightAction"
    }, {
      "custom" : false,
      "icons" : null,
      "label" : "View Website",
      "name" : "WebsiteHighlightAction"
    } ],
    "fieldItems" : [ {
      "editable" : false,
      "label" : "Account Name",
      "layoutComponents" : [ {
        "components" : [ ],

```

```

"details" : {
  "autoNumber" : false,
  "byteLength" : 765,
  "calculated" : false,
  "calculatedFormula" : null,
  "cascadeDelete" : false,
  "caseSensitive" : false,
  "controllerName" : null,
  "createable" : true,
  "custom" : false,
  "defaultValue" : null,
  "defaultValueFormula" : null,
  "defaultedOnCreate" : false,
  "dependentPicklist" : false,
  "deprecatedAndHidden" : false,
  "digits" : 0,
  "displayLocationInDecimal" : false,
  "externalId" : false,
  "extraTypeInfo" : null,
  "filterable" : true,
  "groupable" : true,
  "htmlFormatted" : false,
  "idLookup" : false,
  "inlineHelpText" : null,
  "label" : "Account Name",
  "length" : 255,
  "mask" : null,
  "maskType" : null,
  "name" : "Name",
  "nameField" : true,
  "namePointing" : false,
  "nillable" : false,
  "permissionable" : false,
  "picklistValues" : [ ],
  "precision" : 0,
  "queryByDistance" : false,
  "referenceTo" : [ ],
  "relationshipName" : null,
  "relationshipOrder" : null,
  "restrictedDelete" : false,
  "restrictedPicklist" : false,
  "scale" : 0,
  "soapType" : "xsd:string",
  "sortable" : true,
  "type" : "string",
  "unique" : false,
  "updateable" : true,
  "writeRequiresMasterRead" : false
},
"displayLines" : 1,
"tabOrder" : 2,
"type" : "Field",
"value" : "Name"
} ],

```

```

    "placeholder" : false,
    "required" : false
  }, {
    "editable" : false,
    "label" : "Phone",
    "layoutComponents" : [ {
      "components" : [ ],
      "details" : {
        "autoNumber" : false,
        "byteLength" : 120,
        "calculated" : false,
        "calculatedFormula" : null,
        "cascadeDelete" : false,
        "caseSensitive" : false,
        "controllerName" : null,
        "createable" : true,
        "custom" : false,
        "defaultValue" : null,
        "defaultValueFormula" : null,
        "defaultedOnCreate" : false,
        "dependentPicklist" : false,
        "deprecatedAndHidden" : false,
        "digits" : 0,
        "displayLocationInDecimal" : false,
        "externalId" : false,
        "extraTypeInfo" : null,
        "filterable" : true,
        "groupable" : true,
        "htmlFormatted" : false,
        "idLookup" : false,
        "inlineHelpText" : null,
        "label" : "Account Phone",
        "length" : 40,
        "mask" : null,
        "maskType" : null,
        "name" : "Phone",
        "nameField" : false,
        "namePointing" : false,
        "nillable" : true,
        "permissionable" : true,
        "picklistValues" : [ ],
        "precision" : 0,
        "queryByDistance" : false,
        "referenceTo" : [ ],
        "relationshipName" : null,
        "relationshipOrder" : null,
        "restrictedDelete" : false,
        "restrictedPicklist" : false,
        "scale" : 0,
        "soapType" : "xsd:string",
        "sortable" : true,
        "type" : "phone",
        "unique" : false,
        "updateable" : true,

```

```

        "writeRequiresMasterRead" : false
    },
    "displayLines" : 1,
    "tabOrder" : 3,
    "type" : "Field",
    "value" : "Phone"
} ],
"placeholder" : false,
"required" : false
} ],
"id" : "0AHD000000000AboAI",
"imageItems" : [ {
    "editable" : false,
    "label" : "Photo URL",
    "layoutComponents" : [ {
        "components" : [ ],
        "details" : {
            "autoNumber" : false,
            "byteLength" : 765,
            "calculated" : false,
            "calculatedFormula" : null,
            "cascadeDelete" : false,
            "caseSensitive" : false,
            "controllerName" : null,
            "createable" : false,
            "custom" : false,
            "defaultValue" : null,
            "defaultValueFormula" : null,
            "defaultedOnCreate" : false,
            "dependentPicklist" : false,
            "deprecatedAndHidden" : false,
            "digits" : 0,
            "displayLocationInDecimal" : false,
            "externalId" : false,
            "extraTypeInfo" : "imageurl",
            "filterable" : true,
            "groupable" : true,
            "htmlFormatted" : false,
            "idLookup" : false,
            "inlineHelpText" : null,
            "label" : "Photo URL",
            "length" : 255,
            "mask" : null,
            "maskType" : null,
            "name" : "PhotoUrl",
            "nameField" : false,
            "namePointing" : false,
            "nillable" : true,
            "permissionable" : false,
            "picklistValues" : [ ],
            "precision" : 0,
            "queryByDistance" : false,
            "referenceTo" : [ ],
            "relationshipName" : null,

```

```

        "relationshipOrder" : null,
        "restrictedDelete" : false,
        "restrictedPicklist" : false,
        "scale" : 0,
        "soapType" :
        "xsd:string",
        "sortable" : true,
        "type" : "url",
        "unique" : false,
        "updateable" : false,
        "writeRequiresMasterRead" : false
    },
    "displayLines" : 1,
    "tabOrder" : 1,
    "type" : "Field",
    "value" : "PhotoUrl"
} ],
"placeholder" : false,
"required" : false
} ],
"label" : "Custom Account Compact Layout",
"name" : "Custom_Account_Compact_Layout"
} ],
"defaultCompactLayoutId" : "0AHD000000000AbOAI",
"recordTypeCompactLayoutMappings" : [ {
    "available" : true,
    "compactLayoutId" : "0AHD000000000AbOAI",
    "compactLayoutName" : "Custom_Account_Compact_Layout",
    "recordTypeId" : "012000000000000AAA",
    "recordTypeName" : "Master",
    "urls" : {
        "compactLayout" :
"/services/data/v31.0/subjects/Account/describe/compactLayouts/012000000000000AAA"
    }
} ],
"urls" : {
    "primary" : "/services/data/v31.0/subjects/Account/describe/compactLayouts/primary"
}
}
}

```

If you haven't defined any compact layouts for an object, the `compactLayoutId` returns as `Null`.

## Describe Layouts

Returns a list of layouts and descriptions. The list of fields and the layout name are returned.

### URI

To return descriptions of global publisher layouts, the URI is: `/vXX.X/subjects/Global/describe/layouts/`

For a layout description for a specific object, use `/vXX.X/subjects/Object/describe/layouts/`

For a layout description for objects that have more than one record type defined, use

`/vXX.X/subjects/Object/describe/layouts/<recordTypeId>`. For example, the following URI requests the

layout for a specific Contact record ID: /vXX.X/subjects/Contact/describe/layouts/012xx00000024x5AAA.

A GET request for objects that have more than one record type defined returns `null` for the layouts section of the response.

### Formats

JSON, XML

### HTTP Method

HEAD, GET

### Authentication

Authorization: Bearer ***token***

### Parameters

None required

### Example for getting global publisher layouts

```
curl
https://yourInstance.salesforce.com/services/data/v35.0/subjects/Global/describe/layouts/
-H "Authorization: Bearer token"
```

### Example JSON Response body `contactlayout.json` file

```
[ { "name" : "contactlayout",
  "searchColumns" : [ { "field" : "Account.Name",
    "format" : null,
    "label" : "Account Name",
    "name" : "Name"
  },
  { "field" : "Account.Site",
    "format" : null,
    "label" : "Account Site",
    "name" : "Site"
  },
  { "field" : "Account.Phone",
    "format" : null,
    "label" : "Phone",
    "name" : "Phone"
  },
  { "field" : "User.Alias",
    "format" : null,
    "label" : "Account Owner Alias",
    "name" : "Owner.Alias"
  }
]
},
{ "label" : "Search Results",
  "limitRows" : 25,
  "searchColumns" : [ { "field" : "Contact.Name",
    "format" : null,
    "label" : "Name",
    "name" : "Name"
  },
  { "field" : "Account.Name",
    "format" : null,
    "label" : "Account Name",
    "name" : "Account.Name"
  }
]
```

```

    },
    { "field" : "Account.Site",
      "format" : null,
      "label" : "Account Site",
      "name" : "Account.Site"
    },
    { "field" : "Contact.Phone",
      "format" : null,
      "label" : "Phone",
      "name" : "Phone"
    },
    { "field" : "Contact.Email",
      "format" : null,
      "label" : "Email",
      "name" : "Email"
    },
    { "field" : "User.Alias",
      "format" : null,
      "label" : "Contact Owner Alias",
      "name" : "Owner.Alias"
    }
  ]
},
{ "label" : "Search Results",
  "limitRows" : 25,
  "searchColumns" : [ { "field" : "Lead.Name",
    "format" : null,
    "label" : "Name",
    "name" : "Name"
  },
    { "field" : "Lead.Title",
      "format" : null,
      "label" : "Title",
      "name" : "Title"
    },
    { "field" : "Lead.Phone",
      "format" : null,
      "label" : "Phone",
      "name" : "Phone"
    },
    { "field" : "Lead.Company",
      "format" : null,
      "label" : "Company",
      "name" : "Company"
    },
    { "field" : "Lead.Email",
      "format" : null,
      "label" : "Email",
      "name" : "Email"
    },
    { "field" : "Lead.Status",
      "format" : null,
      "label" : "Lead Status",
      "name" : "toLabel(Status)"
    }
  ]
}

```



```

    },
    { "field" : "Name.Alias",
      "format" : null,
      "label" : "Owner Alias",
      "name" : "Owner.Alias"
    }
  ],
},
]

```

## SObject PlatformAction

PlatformAction is a virtual read-only object. It enables you to query for actions displayed in the UI, given a user, a context, device format, and a record ID. Examples include standard and custom buttons, quick actions, and productivity actions.

Returns the description of the PlatformAction.

### Syntax

#### URI

Use `/services/data/vXX.X/objects/PlatformAction`

#### Available since release

This resource is available in API version 33.0 and later.

#### Formats

JSON, XML

#### HTTP methods

GET

#### Authentication

Authorization: Bearer *token*

#### Request body

None.

### Usage

The only thing you can do with this resource is [Query](#) it.

## SObject Quick Actions

Returns a list of actions and their details. This resource is available in REST API version 28.0 and later. When working with actions, also refer to [Quick Actions](#).

#### URI

To return a specific object's actions as well as global actions, use: `/vXX.X/objects/object/quickActions/`

To return a specific action, use `/vXX.X/objects/object/quickActions/{action name}`

To return a specific action's descriptive detail, use `/vXX.X/objects/object/quickActions/{action name}/describe/`

To return a specific action's default values, including default field values, use

`services/data/vXX.X/subjects/object/quickActions/{action name}/defaultValues/`

In API version 28.0, to evaluate the default values for an action, use `vXX.X/subjects/object/quickActions/{action name}/defaultValues/{parent id}`

In API version 29.0 and greater, to evaluate the default values for an action, use

`vXX.X/subjects/object/quickActions/{action name}/defaultValues/{context id}`

This returns the default values specific to the {context id} object.

### Formats

JSON, XML

### HTTP Method

HEAD, GET, POST

### Authentication

Authorization: Bearer **token**

### Parameters

None required

### Example for getting Account actions

```
curl
https://yourInstance.salesforce.com/services/data/v28.0/subjects/Account/quickActions
-H "Authorization: Bearer token"
```

### Example for creating a contact on Account using an action

```
curl
https://yourInstance.salesforce.com/services/data/v28.0/subjects/Account/quickActions/CreateContact
-H 'Authorization: Bearer access_token -H "Content-Type: application/json" -d
@newcontact.json'
```

### Example JSON request body `newcontact.json` file

```
{
  "contextId" : "001D0000000JRSGf",
  "record" : { "LastName" : "Smith" }
}
```

### Considerations

- The resources return all actions—both global and standard—in addition to the ones requested.

## SObject Rich Text Image Retrieve

---

Retrieves the specified image data from a specific rich text area field in a given record.

### URI

`/vXX.X/subjects/SObjectName/id/richTextImageFields/fieldName/contentReferenceId`

### Formats

PNG or JPEG binary image data.

HTTP Method

GET

Authentication

Authorization: Bearer *token*

Parameters

Parameter	Description
SObjectName	Indicates the name of the standard object of the record.
id	The ID of the object.
fieldName	The name of the rich text area field.
contentReferenceId	The reference ID that uniquely identifies an image within a rich text area field. You can obtain the reference by <a href="#">retrieving information for the object</a> . The description will show the contents of the rich text area field. For example:

```
{
  "attributes" : {
    "type" : "Lead",
    "url" :
"/services/data/v43.0/subjects/Lead/00QRM000003ZfDb2AK"
  },
  "Id" : "00QRM000003ZfDb2AK",
  ...
  "ContactPhoto__c" :
  "Sarah Loehr and her two dogs.
  <img alt=\"Sarah Loehr.\" \"
  src=\"https://c.na44.content.stmfa.stm.force.com/servlet/rtaImage?

  eid=00QRM000003ZfDb&
  feoid=00NRM000001E73j&
  refid=0EMRM00000002Ip\"></img>"
}
```

The `refid` parameter of the image (0EMRM00000002Ip in this example) is the `contentReferenceId`.

Example

For an example of retrieving the blob data from a rich text area field, see [Get an Image from a Rich Text Area Field](#) on page 39.

Error responses

See [Status Codes and Error Responses](#) on page 258.

# SObject Relationships

Accesses records by traversing object relationships via friendly URLs. You can retrieve, update, or delete the record associated with the traversed relationship field. If there are multiple related records, you can retrieve the complete set of associated records. This resource is available in REST API version 36.0 and later.

URI

/v**XX.X**/subjects/*SObject*/**id**/*relationship field name*

Formats

JSON, XML

HTTP Methods

GET, PATCH, DELETE

Authentication

Authorization: Bearer *token*

Parameters

Parameter	Description
fields	Optional for GET. A list of fields in the associated relationship record to return. Fields are separated by commas. For example: <div><code>/services/data/v36.0/subjects/<i>SObject</i>/<b>id</b>/<i>relationship field</i>?fields=<i>field1</i>,<i>field2</i></code></div>

Response Body

For retrievals via GET, the response body is the contents of the record associated with the relationship field. Here is an example of a request and JSON response body for a simple relationship traversal that returns the Distributor\_\_c record associated with a relationship field on custom object Merchandise\_\_c.

```
https://yourInstance.salesforce.com/services/data/v44.0/subjects/Merchandise__c/a01D000000INjVe/Distributor__r

{
  "attributes" :
  {
    "type" : "Distributor__c",
    "url" : "/services/data/v36.0/subjects/Distributor__c/a03D0000003DUhcIAG"
  },
  "Id" : "a03D0000003DUhcIAG",
  "OwnerId" : "005D0000001KyEIIA0",
  "IsDeleted" : false,
  "Name" : "Distributor1",
  "CreatedDate" : "2011-12-16T17:43:01.000+0000",
  "CreatedById" : "005D0000001KyEIIA0",
  "LastModifiedDate" : "2011-12-16T17:43:01.000+0000",
  "LastModifiedById" : "005D0000001KyEIIA0",
  "SystemModstamp" : "2011-12-16T17:43:01.000+0000",
  "Location__c" : "San Francisco"
}
```

A response body isn't returned for updates via PATCH and deletions via DELETE.

Error Responses

If no record is associated with a relationship field, a 404 error response is returned. If the relationship field normally resolves to multiple records and no relationship set exists, a 200 response is returned. If the `fields` parameter is used with fields that don't exist or aren't visible to the consumer by field-level security, a 400 error response is returned. For other error messages, see [Status Codes and Error Responses](#) on page 258.

Example

For examples of using SObject Relationships to access relationship fields, see [Traverse Relationships with Friendly URLs](#) on page 51.

# SObject Suggested Articles

Returns a list of suggested Salesforce Knowledge articles for a case, work order, or work order line item.

## Syntax

URI

To return suggested articles for a case, work order, or work order line item that is being created, use `vXX.X/subjects/SObject/suggestedArticles?language=article language&subject=subject&description=description`. The *SObject* can be Case, WorkOrder, or WorkOrderLineItem. Suggestions are based on common keywords in the title, description, and other information that's entered before the record has been saved and assigned an ID.

For example: `vXX.X/subjects/Case/suggestedArticles?language=article language&subject=subject&description=description` or `vXX.X/subjects/WorkOrder/suggestedArticles?language=article language&subject=subject&description=description`.

To return suggested articles for an existing record with an ID, use `vXX.X/subjects/SObject/ID/suggestedArticles?language=article language`

Available since release

30.0

Formats

JSON, XML

HTTP methods

GET

Authentication

Authorization: Bearer *token*

Request body

None required

Request parameters

Parameter	Description
articleTypes	Optional. Three-character ID prefixes indicating the desired article types. You can specify multiple values for this parameter in a single REST call, by repeating the parameter name for each value. For example, <code>articleTypes=ka0&amp;articleTypes=ka1</code> .
categories	Optional. The name of the data category group and the data category API name (not category title) for desired articles. The syntax is <code>categories={ "Group" : "Category" }</code> . Characters in the URL might need to be encoded. For example: <div>categories=%7B%22Regions%22%3A%22Asia%22%2C%22Products%22%3A%22Laptops%22%7D</div>

Parameter	Description
	The same data category group can't be specified more than once. However, you can specify multiple data category group and data category pairs. For example, <code>categories={ "Regions": "Asia", "Products": "Laptops" } .</code>
<code>description</code>	Text of the description. Valid only for new records without an existing ID and required if <code>subject</code> is null. Article suggestions are based on common keywords in the subject, description, or both.
<code>language</code>	Required. Language that the article is written in.
<code>limit</code>	Optional. Specifies the maximum number of suggested articles to return.
<code>publishStatus</code>	Optional. The article's publication status. Valid values: <ul style="list-style-type: none"> <li>• Draft--Not published</li> <li>• Online--Published in Salesforce Knowledge</li> <li>• Archived</li> </ul>
<code>subject</code>	Text of the subject. Valid only for new records without an existing ID and required if <code>description</code> is null. Article suggestions are based on common keywords in the subject, description, or both.
<code>topics</code>	Optional. The topic of returned articles. For example: <code>topics=outlook&amp;topics=email</code> .
<code>validationStatus</code>	Optional. The validation status of returned articles.

## Example for getting suggested articles for a case that's being created

```
curl
https://yourInstance.salesforce.com/services/data/v30.0/subjects/Case/suggestedArticles?
language=en_US&subject=orange+banana&articleTypes=ka0&articleTypes=ka1
-H "Authorization: Bearer token"
```

## Example JSON response body

```
[ {
  "attributes" : {
    "type" : "KnowledgeArticleVersion",
    "url" : "/services/data/v30.0/subjects/KnowledgeArticleVersion/ka0D00000004CcQ"
  }, {
    "Id" : "ka0D00000004CcQ"
  }, {
    "attributes" : {
      "type" : "KnowledgeArticleVersion",
      "url" : "/services/data/v30.0/subjects/KnowledgeArticleVersion/ka0D00000004CXo"
    }, {
      "Id" : "ka0D00000004CXo"
    }
  } ]
```

## Usage

Salesforce Knowledge must be enabled in your organization. The user must have the “View Articles” permission enabled. The articles suggested include only the articles the user can access, based on the data categories and article types the user has permissions to view.

Articles are suggested based on a relevance algorithm. The `suggestedArticles` resource is designed to get the IDs of articles relevant to a case, work order, or work order line item. It’s intended to be used with other services that then use the IDs to get article data for display.

## SObject User Password

---

Set, reset, or get information about a user password. This resource is available in REST API version 24.0 and later.

### URI

`/vXX.X/subjects/User/user ID/password`

For managing passwords for self-service users, the URI is:

`/vXX.X/subjects/SelfServiceUser/self service user ID/password`

### Formats

JSON, XML

### HTTP Method

HEAD, GET, POST, DELETE

### Authentication

Authorization: Bearer **token**

### Parameters

None required

### Example

For examples of getting password information, setting a password, and resetting a password, see [Manage User Passwords](#) on page 77.

### Considerations

- If the session does not have permission to access the user information, an `INSUFFICIENT_ACCESS` error will be returned.
- When using this resource to set a new password, the new password must conform to the password policies for the organization, otherwise you will get an `INVALID_NEW_PASSWORD` error response.
- You can only set one password per request.
- When you use the DELETE method of this resource, Salesforce will reset the user password to an auto-generated password, which will be returned in the response.

## Platform Event Schema by Event Name

---

Gets the definition of a platform event in JSON format for an event name.

## Syntax

### URI

`/vXX.X/subjects/Event_Name/eventSchema`

**Available since release**

40.0

**Formats**

JSON

**HTTP methods**

GET

**Authentication**Authorization: Bearer *token***Parameters**

Parameter	Description
<code>payloadFormat</code>	<p>(Optional query parameter. Available in API version 43.0 and later.) The format of the returned event schema. This parameter can take one of the following values.</p> <ul style="list-style-type: none"> <li>EXPANDED—The JSON representation of the event schema, which is the default format when <code>payloadFormat</code> is not specified in API version 43.0 and later.</li> <li>COMPACT—A format that adheres to the open-source Apache Avro specification for the record complex type (see <a href="#">Apache Avro Format</a>). Subscribers use the compact schema format to deserialize compact events received in binary form.</li> </ul>

## Error Codes

400 Bad Request	Description
In API version 43.0 and later	The request was formatted incorrectly—an invalid value was passed for the <code>payloadFormat</code> parameter in the URI.
In API version 42.0 and earlier	The request was formatted incorrectly—the <code>payloadFormat</code> parameter was passed in the URI but this API version doesn't support this parameter.

## Examples for API Version 43.0 and Later

This URI gets the schema of a platform event named `Low_Ink__e`. In API version 43.0 and later, the default response format is the JSON representation of the event schema.

```
/services/data/v43.0/subjects/Low_Ink__e/eventSchema
```

Or:

```
/services/data/v43.0/subjects/Low_Ink__e/eventSchema?payloadFormat=EXPANDED
```

The returned response for the expanded format looks like the following in API version 43.0.

```
{
  "name" : "Low_Ink__e",
  "namespace" : "com.sforce.eventbus",
  "type" : "expanded-record",
  "fields" : [ {
```



```

"name" : "data",
"type" : {
  "type" : "record",
  "name" : "Data",
  "namespace" : "",
  "fields" : [ {
    "name" : "schema",
    "type" : "string"
  }, {
    "name" : "payload",
    "type" : {
      "type" : "record",
      "name" : "Payload",
      "doc" : "",
      "fields" : [ {
        "name" : "CreatedDate",
        "type" : "string",
        "doc" : "CreatedDate:DateTime"
      }, {
        "name" : "CreatedById",
        "type" : "string",
        "doc" : "CreatedBy:EntityId"
      }, {
        "name" : "Printer_Model__c",
        "type" : [ "null", "string" ],
        "doc" : "Data:Text",
        "default" : null
      }, {
        "name" : "Serial_Number__c",
        "type" : [ "null", "string" ],
        "doc" : "Data:Text",
        "default" : null
      }, {
        "name" : "Ink_Percentage__c",
        "type" : [ "null", "double" ],
        "doc" : "Data:Double",
        "default" : null
      } ]
    } ]
  }, {
    "name" : "event",
    "type" : {
      "type" : "record",
      "name" : "Event",
      "fields" : [ {
        "name" : "replayId",
        "type" : "long"
      } ]
    } ]
  } ]
}, {
  "name" : "channel",
  "type" : "string"
}

```


```
} ]
}
```

To get the compact (Apache Avro) format, use the following URL.

```
/services/data/v43.0/subjects/Low_Ink__e/eventSchema?payloadFormat=COMPACT
```


The returned response for the compact format looks like the following in API version 43.0.

```
{
  "name" : "Low_Ink__e",
  "namespace" : "com.sforce.eventbus",
  "doc" : "43.0",
  "type" : "record",
  "fields" : [ {
    "name" : "CreatedDate",
    "type" : "long",
    "doc" : "CreatedDate:DateTime"
  }, {
    "name" : "CreatedById",
    "type" : "string",
    "doc" : "CreatedBy:EntityId"
  }, {
    "name" : "Printer_Model__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Serial_Number__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Ink_Percentage__c",
    "type" : [ "null", "double" ],
    "doc" : "Data:Double",
    "default" : null
  } ],
  "uuid" : "5E5OtZj5_Gm6Vax9XMXH9A"
}
```

 **Note:** The compact schema doesn't include the `replayId` or `channel` fields because these fields are not necessary for deserializing the compact event received.

## Examples for API Version 42.0 and Earlier

In API version 42.0 and earlier, the response format adheres to the open-source Apache Avro specification for the record complex type.

 **Note:** This format is what the API returns in API version 43.0 and later when appending the `?payloadFormat=COMPACT` parameter.

```
/services/data/v42.0/subjects/Low_Ink__e/eventSchema
```

The returned response looks like the following in API version 42.0.

```
{
  "name" : "Low_Ink__e",
  "namespace" : "com.sforce.eventbus",
  "doc" : "42.0",
  "type" : "record",
  "fields" : [ {
    "name" : "CreatedDate",
    "type" : "long",
    "doc" : "CreatedDate:DateTime"
  }, {
    "name" : "CreatedBy",
    "type" : "string",
    "doc" : "CreatedBy:EntityId"
  }, {
    "name" : "Printer_Model__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Serial_Number__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Ink_Percentage__c",
    "type" : [ "null", "double" ],
    "doc" : "Data:Double",
    "default" : null
  } ],
  "uuid" : "5E5OtZj5_Gm6Vax9XMXH9A"
}
```

 **Note:** When you change the definition of a platform event, the schema ID for this platform event changes.

## Apache Avro Format

The fields in the returned response adhere to the open-source Apache Avro specification for the record complex type (see [Avro Records](#) in the Apache Avro specification). Note the following:

- `name` is the name of the platform event.
- `namespace` corresponds to `com.sforce.eventbus`.
- `type` is the Avro complex type.
- `fields` is a JSON array containing the fields of the platform event. For each field, `type` indicates that the field can be either null or have a value of the specified type. When the field is not present, the value is `default`. Also, `doc` is the field data type. The data type information is used to convert `DateTime` fields from long to `DateTime`.

The response also includes the `uuid` field, which contains the schema's ID. The ID is the MD5 fingerprint of the normalized Avro schema encoded as a base-64 URL variant. You can append this ID to the `/vxx.x/event/eventSchema/` URI to retrieve the schema.

# Platform Event Schema by Schema ID

Gets the definition of a platform event in JSON format for a schema ID.

## Syntax

### URI

/v`XX.X`/event/eventSchema/***Schema\_ID***

### Available since release

40.0

### Formats

JSON

### HTTP methods

GET

### Authentication

Authorization: Bearer ***token***

### Parameters

Parameter	Description
<code>payloadFormat</code>	(Optional query parameter. Available in API version 43.0 and later.) The format of the returned event schema. This parameter can take one of the following values. <ul style="list-style-type: none"><li>EXPANDED—The JSON representation of the event schema, which is the default format when <code>payloadFormat</code> is not specified in API version 43.0 and later.</li><li>COMPACT—A format that adheres to the open-source Apache Avro specification for the record complex type (see <a href="#">Apache Avro Format</a>). Subscribers use the compact schema format to deserialize compact events received in binary form.</li></ul>

## Error Codes

400 Bad Request	Description
In API version 43.0 and later	The request was formatted incorrectly—an invalid value was passed for the <code>payloadFormat</code> parameter in the URI.
In API version 42.0 and earlier	The request was formatted incorrectly—the <code>payloadFormat</code> parameter was passed in the URI but this API version doesn't support this parameter.

## Examples for API Version 43.0 and Later

This URI gets the schema of a platform event whose schema ID is `5E5OtZj5_Gm6Vax9XMXH9A`. This schema ID is a sample ID. Replace it with a valid schema ID for your event.

```
/services/data/v43.0/event/eventSchema/5E5OtZj5_Gm6Vax9XMXH9A
```

Or:

```
/services/data/v43.0/event/eventSchema/5E5OtZj5_Gm6Vax9XMXH9A?payloadFormat=EXPANDED
```

In API version 43.0 and later, the response format is the JSON representation of the event schema by default. The returned response looks like the following in API version 43.0.

```
{
  "name" : "Low_Ink__e",
  "namespace" : "com.sforce.eventbus",
  "type" : "expanded-record",
  "fields" : [ {
    "name" : "data",
    "type" : {
      "type" : "record",
      "name" : "Data",
      "namespace" : "",
      "fields" : [ {
        "name" : "schema",
        "type" : "string"
      }, {
        "name" : "payload",
        "type" : {
          "type" : "record",
          "name" : "Payload",
          "doc" : "",
          "fields" : [ {
            "name" : "CreatedDate",
            "type" : "string",
            "doc" : "CreatedDate:DateTime"
          }, {
            "name" : "CreatedById",
            "type" : "string",
            "doc" : "CreatedBy:EntityId"
          }, {
            "name" : "Printer_Model__c",
            "type" : [ "null", "string" ],
            "doc" : "Data:Text",
            "default" : null
          }, {
            "name" : "Serial_Number__c",
            "type" : [ "null", "string" ],
            "doc" : "Data:Text",
            "default" : null
          }, {
            "name" : "Ink_Percentage__c",
            "type" : [ "null", "double" ],
            "doc" : "Data:Double",
            "default" : null
          } ]
        }
      }, {
        "name" : "event",
        "type" : {
          "type" : "record",
```

```

        "name" : "Event",
        "fields" : [ {
            "name" : "replayId",
            "type" : "long"
        } ]
    }
} ]
}
}, {
    "name" : "channel",
    "type" : "string"
} ]
}

```

To get the compact (Apache Avro) format, use the following URI.

```
/services/data/v43.0/event/eventSchema/5E50tZj5_Gm6Vax9XXMH9A?payloadFormat=COMPACT
```

The returned response for the compact format looks like the following in API version 43.0.

```

{
  "name" : "Low_Ink__e",
  "namespace" : "com.sforce.eventbus",
  "doc" : "43.0",
  "type" : "record",
  "fields" : [ {
    "name" : "CreatedDate",
    "type" : "long",
    "doc" : "CreatedDate:DateTime"
  }, {
    "name" : "CreatedById",
    "type" : "string",
    "doc" : "CreatedBy:EntityId"
  }, {
    "name" : "Printer_Model__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Serial_Number__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Ink_Percentage__c",
    "type" : [ "null", "double" ],
    "doc" : "Data:Double",
    "default" : null
  } ],
  "uuid" : "5E50tZj5_Gm6Vax9XXMH9A"
}

```



**Note:** The compact schema doesn't include the `replayId` or `channel` fields because these fields are not necessary for deserializing the compact event received.

## Example for API Version 42.0 and Earlier

In API version 42.0 and earlier, the response format adheres to the open-source Apache Avro specification for the record complex type.



**Note:** This format is what the API returns in API version 43.0 and later when appending the `?payloadFormat=COMPACT` parameter.

This URI gets the schema of a platform event whose schema ID is `5E5OtZj5_Gm6Vax9XMXH9A`. This schema ID is a sample ID. Replace it with a valid schema ID for your event.

```
/services/data/v42.0/event/eventSchema/5E5OtZj5_Gm6Vax9XMXH9A
```

The returned response looks like the following in API version 42.0.

```
{
  "name" : "Low_Ink__e",
  "namespace" : "com.sforce.eventbus",
  "doc" : "42.0",
  "type" : "record",
  "fields" : [ {
    "name" : "CreatedDate",
    "type" : "long",
    "doc" : "CreatedDate:DateTime"
  }, {
    "name" : "CreatedById",
    "type" : "string",
    "doc" : "CreatedBy:EntityId"
  }, {
    "name" : "Printer_Model__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Serial_Number__c",
    "type" : [ "null", "string" ],
    "doc" : "Data:Text",
    "default" : null
  }, {
    "name" : "Ink_Percentage__c",
    "type" : [ "null", "double" ],
    "doc" : "Data:Double",
    "default" : null
  } ],
  "uuid" : "5E5OtZj5_Gm6Vax9XMXH9A"
}
```



**Note:** When you change the definition of a platform event, the schema ID for this platform event changes.

If you don't have the schema ID, you can get the schema by supplying the platform event name. Make a GET request to `/vXX.X/subjects/Event_Name/eventSchema`. See [Platform Event Schema by Event Name](#).

## Apache Avro Format

The fields in the returned response adhere to the open-source Apache Avro specification for the record complex type (see [Avro Records](#) in the Apache Avro specification). Note the following:

- `name` is the name of the platform event.
- `namespace` corresponds to `com.sforce.eventbus`.
- `type` is the Avro complex type.
- `fields` is a JSON array containing the fields of the platform event. For each field, `type` indicates that the field can be either null or have a value of the specified type. When the field is not present, the value is `default`. Also, `doc` is the field data type. The data type information is used to convert `DateTime` fields from long to `DateTime`.

The response also includes the `uuid` field, which contains the schema's ID. The ID is the MD5 fingerprint of the normalized Avro schema encoded as a base-64 URL variant. You can append this ID to the `/vxx.X/event/eventSchema/` URI to retrieve the schema.

## AppMenu

---

Returns a list of items in either the Salesforce app drop-down menu or the Salesforce for Android, iOS, and mobile web navigation menu.

### Syntax

#### URI

To return a list of the Salesforce app drop-down menu items, the URI is: `/vxx.X/appMenu/AppSwitcher/`

To return a list of the Salesforce for Android, iOS, and mobile web navigation menu items, the URI is:  
`/vxx.X/appMenu/Salesforce1/`

#### Available since release

29.0

#### Formats

JSON, XML

#### HTTP methods

GET, HEAD

#### Authentication

Authorization: Bearer *token*

#### Request body

None

#### Request parameters

None required

## Example

### Getting appMenu types

```
curl https://yourInstance.salesforce.com/services/data/v29.0/appMenu/ -H "Authorization: Bearer token"
```

### Example response body for `/vxx.X/appMenu/AppSwitcher/`

```
{
  "appMenuItems" : [ {
    "type" : "Tabset",
    "content" : null,
    "icons" : null,
```



```

    "colors" : null,
    "label" : "Sales",
    "url" : "/home/home.jsp?tsid=02uxx00000056Sq"
  }, {
    "type" : "Tabset",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "Service",
    "url" : "/home/home.jsp?tsid=02uxx00000056Sr"
  }, {
    "type" : "Tabset",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "Marketing",
    "url" : "/home/home.jsp?tsid=02uxx00000056St"
  }, {
    "type" : "Tabset",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "Salesforce Chatter",
    "url" : "/home/home.jsp?tsid=02uxx00000056Su"
  }, {
    "type" : "Tabset",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "Community",
    "url" : "/home/home.jsp?tsid=02uxx00000056Sw"
  }, {
    "type" : "Tabset",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "App Launcher",
    "url" : "/app/mgmt/applauncher/appLauncher.apexp?tsid=02uxx00000056Sx"
  } ]
}

```

**Example response body for /vXX.X/appMenu/Salesforce1/**

```

{
  "appMenuItems" : [ {
    "type" : "Standard.Search",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "Smart Search Items",
    "url" : "/search"
  }, {
    "type" : "Standard.MyDay",
    "content" : null,
    "icons" : null,

```

```

    "colors" : null,
    "label" : "Today",
    "url" : "/myDay"
  }, {
    "type" : "Standard.Tasks",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "Tasks",
    "url" : "/tasks"
  }, {
    "type" : "Standard.Dashboards",
    "content" : null,
    "icons" : null,
    "colors" : null,
    "label" : "Dashboards",
    "url" : "/dashboards"
  }, {
    "type" : "Tab.flexiPage",
    "content" : "MySampleFlexiPage",
    "icons" : [ {
      "contentType" : "image/png",
      "width" : 32,
      "height" : 32,
      "theme" : "theme3",
      "url" : "http://myorg.com/img/icon/custom51_100/bell32.png"
    }, {
      "contentType" : "image/png",
      "width" : 16,
      "height" : 16,
      "theme" : "theme3",
      "url" : "http://myorg.com/img/icon/custom51_100/bell16.png"
    }, {
      "contentType" : "image/svg+xml",
      "width" : 0,
      "height" : 0,
      "theme" : "theme4",
      "url" : "http://myorg.com/img/icon/t4/custom/custom53.svg"
    }, {
      "contentType" : "image/png",
      "width" : 60,
      "height" : 60,
      "theme" : "theme4",
      "url" : "http://myorg.com/img/icon/t4/custom/custom53_60.png"
    }, {
      "contentType" : "image/png",
      "width" : 120,
      "height" : 120,
      "theme" : "theme4",
      "url" : "http://myorg.com/img/icon/t4/custom/custom53_120.png"
    } ],
    "colors" : [ {
      "context" : "primary",
      "color" : "FC4F59",

```

```

        "theme" : "theme4"
    }, {
        "context" : "primary",
        "color" : "FC4F59",
        "theme" : "theme3"
    } ],
    "label" : "My App Home Page",
    "url" : "/servlet/servlet.Integration?lid=01rxx0000000Vsd&ic=1"
}, {
    "type" : "Tab.apexPage",
    "content" : "/apex/myapexpage",
    "icons" : [ {
        "contentType" : "image/png",
        "width" : 32,
        "height" : 32,
        "theme" : "theme3",
        "url" : "http://myorg.com/img/icon/cash32.png"
    }, {
        "contentType" : "image/png",
        "width" : 16,
        "height" : 16,
        "theme" : "theme3",
        "url" : "http://myorg.com/img/icon/cash16.png"
    }, {
        "contentType" : "image/svg+xml",
        "width" : 0,
        "height" : 0,
        "theme" : "theme4",
        "url" : "http://myorg.com/img/icon/t4/custom/custom41.svg"
    }, {
        "contentType" : "image/png",
        "width" : 60,
        "height" : 60,
        "theme" : "theme4",
        "url" : "http://myorg.com/img/icon/t4/custom/custom41_60.png"
    }, {
        "contentType" : "image/png",
        "width" : 120,
        "height" : 120,
        "theme" : "theme4",
        "url" : "http://myorg.com/img/icon/t4/custom/custom41_120.png"
    } ],
    "colors" : [ {
        "context" : "primary",
        "color" : "3D8D8D",
        "theme" : "theme4"
    }, {
        "context" : "primary",
        "color" : "3D8D8D",
        "theme" : "theme3"
    } ],
    "label" : "label",
    "url" : "/servlet/servlet.Integration?lid=01rxx0000000Vyb&ic=1"

```

```
} ]  
}
```

## Compact Layouts

Returns a list of compact layouts for multiple objects. This resource is available in REST API version 31.0 and later.

This resource returns the primary compact layout for a set of objects. The set of objects is specified using a query parameter. Up to 100 objects can be queried at once.



**Note:** PersonAccount isn't supported for bulk queries. If you want to get the primary compact layout for PersonAccount, get it directly from `/services/data/v31.0/objects/Account/describe/compactLayouts/primaryPersonAccount`.

## Syntax

### URI

`/vXX.X/compactLayouts?q=object list`

### Available since release

31.0

### Formats

JSON, XML

### HTTP methods

GET

### Authentication

Authorization: Bearer **token**

### Request parameters

Parameter	Description
q	A comma-delimited list of objects. The primary compact layout for each object in this list will be returned in the response of this resource.

## Example

### Request for getting compact layouts for multiple objects

```
/services/data/v31.0/compactLayouts?q=Account,Contact,CustomObj__c
```

### Response for compact layouts for multiple objects

```
{  
  "Account" : {  
    "actions" : [ {  
      "behavior" : null,  
      "content" : null,  
      "contentSource" : null,  
      "custom" : false,  
    }  
  ]  
}
```

```

        "encoding" : null,
        "height" : null,
        "icons" : null,
        "label" : "Call",
        "menubar" : false,
        "name" : "CallHighlightAction",
        "overridden" : false,
        "resizeable" : false,
        "scrollbars" : false,
        "showsLocation" : false,
        "showsStatus" : false,
        "toolbar" : false,
        "url" : null,
        "width" : null,
        "windowPosition" : null
    },
    ...
    "id" : "0AHD000000000AbOAI",
    "label" : "Custom Account Compact Layout",
    "name" : "Custom_Account_Compact_Layout"
},
"Contact" : {
    "actions" : [ {
        "behavior" : null,
        "content" : null,
        "contentSource" : null,
        "custom" : false,
        "encoding" : null,
        "height" : null,
        "icons" : null,
        "label" : "Call",
        "menubar" : false,
        "name" : "CallHighlightAction",
        "overridden" : false,
        "resizeable" : false,
        "scrollbars" : false,
        "showsLocation" : false,
        "showsStatus" : false,
        "toolbar" : false,
        "url" : null,
        "width" : null,
        "windowPosition" : null
    },
    ...
    "id" : null,
    "label" : "System Default",
    "name" : "SYSTEM"
}
"CustomObj__c" : {
    "actions" : [ {
        "behavior" : null,
        "content" : null,
        "contentSource" : null,
        "custom" : false,

```

```

    "encoding" : null,
    "height" : null,
    "icons" : null,
    "label" : "Call",
    "menubar" : false,
    "name" : "CallHighlightAction",
    "overridden" : false,
    "resizeable" : false,
    "scrollbars" : false,
    "showsLocation" : false,
    "showsStatus" : false,
    "toolbar" : false,
    "url" : null,
    "width" : null,
    "windowPosition" : null
  },
  ...
  "id" : null,
  "imageItems" : null,
  "label" : "System Default",
  "name" : "SYSTEM"
}
}

```

## Consent

---

Your users can store consent preferences in different locations and possibly inconsistently. You can locate your customers' preferences for consent across multiple records when using API version 44.0 and later. Tracking consent preferences helps you and your users respect the most restrictive requests.

Consent API aggregates consent settings across the Contact, Individual, Lead, Person Account, and User objects when the records have a lookup relationship.

## Syntax

### URI

/services/data/v44.0/consent/action/action?ids=list\_of\_ids&verbose=true\_or\_false&aggregatedConsent=true\_or\_false

### Available since release

44.0

### Formats

JSON

### HTTP methods

GET


### Authentication

Authorization: Bearer *token*

### Request body

None

## Request parameters

Parameter	Description
<code>action</code>	<p>Required. Allowed values are:</p> <ul style="list-style-type: none"> <li>• <code>email</code></li> <li>• <code>fax</code></li> <li>• <code>geotrack</code></li> <li>• <code>phone</code></li> <li>• <code>portability</code></li> <li>• <code>process</code></li> <li>• <code>profile</code></li> <li>• <code>shouldForget</code></li> <li>• <code>solicit</code></li> <li>• <code>storePiiElsewhere</code></li> <li>• <code>track</code></li> </ul> <p> <b>Note:</b> When you select <i>email</i> as the <code>action</code>, the API only aggregates consent for records that contain the same email address. If the record ID specified in the URI is associated with a record that contains a different email address, the consent settings of the associated record aren't included in the API response.</p>
<code>aggregatedConsent</code>	Optional: true or false. <code>aggregatedConsent</code> is the same as <code>aggregatedConsent=true</code> . If true, one result is returned indicating whether to proceed or not, rather than a result for each ID. If any ID in the list returns false, the aggregated result is false.
<code>ids</code>	Required. Comma-separated list of IDs. The ID can be the record ID or the email address listed on the record.
<code>verbose</code>	Optional: true or false. <code>verbose</code> is the same as <code>verbose=true</code> . Verbose responses are slower than non-verbose responses. See the examples for a verbose response.

## Error Codes

Code	Description
<code>CONVERTED_LEAD_IS_INVALID</code>	Converted leads aren't allowed.
<code>INFO_NOT_FOUND</code>	No consent information was found, although the record ID or email address was valid.
<code>INVALID_ID</code>	The format of the record ID doesn't match the format of record IDs from Contact, Individual, Lead, Person Account, or User.
<code>URI_TOO_LONG</code>	The total length of the URL is limited to 16K characters, which is about 800 IDs in a request.

# Security

To call Consent API, you must have either the View All Data or the Allow User Access to Privacy Data user permission. Requiring a perm ensures that the System Administrator gives explicit permission. This API accesses org-wide consent data, such as links between records and the value of consent flags, not just records to which the user ordinarily has access.

# Examples

## Simple URI structure

```
/services/data/v44.0/consent/action/track?ids=003xx000004TxyY,00Qxx00000syyO,003zz000004zzZ
```

## Email addresses as IDs, and a verbose response

```
/services/data/v44.0/consent/action/email?ids=j0t5t5b2@tkbxp5ia.com,4qux1swo@23wj7pwh.com&verbose=true
```

## Response

```
{
  "j0t5t5b2@tkbxp5ia.com" : {
    "result" : "Success",
    "proceed" : {
      "email" : "false"
    },
    "explanation" : [ {
      "objectConsulted" : "Contact",
      "field" : "HasOptedOutOfEmail",
      "recordId" : "003xx000004TxyY",
      "value" : "true"
    } ]
  },
  "4qux1swo@23wj7pwh.com" : {
    "result" : "Success",
    "proceed" : {
      "email" : "true"
    },
    "explanation" : [ {
      "objectConsulted" : "Contact",
      "field" : "HasOptedOutOfEmail",
      "recordId" : "003xx000004TxyZ",
      "value" : "false"
    } ]
  }
}
```

# Usage

The following table shows how the API responses are determined.

 **Note:** When the API compares consent settings across records, it doesn't incorporate settings from converted leads.

Action	Fields Consulted	API Response	Response Schema
--------	------------------	--------------	-----------------



email	Contact.HasOptedOutOfEmail Lead.HasOptedOutOfEmail PersonAccount.HasOptedOutOfEmail	Returns TRUE if all consulted field values are 0.  Returns FALSE if any consulted field value is 1 or if no related Contact, Lead, or Person Account object exists.	<pre>{   "&lt;ID/Email&gt;":   {     "result": "&lt;Success/errormessage&gt;",     "proceed": { "email": "&lt;true/false&gt;" }   } }</pre>
fax	Contact.HasOptedOutOfFax Lead.HasOptedOutOfFax PersonAccount.HasOptedOutOfFax	Returns TRUE if all consulted field values are 0.  Returns FALSE if any consulted field value is 1 or if no related Contact, Lead, or Person Account object exists.	<pre>{   "&lt;ID/Email&gt;":   {     "result": "&lt;Success/errormessage&gt;",     "proceed": { "fax": "&lt;true/false&gt;" }   } }</pre>
geotrack	Individual.HasOptedOutGeoTracking	Returns TRUE if the consulted field value is 0.  Returns FALSE if the consulted field value is 1 or if no related Individual object exists.	<pre>{   "&lt;ID/Email&gt;":   {     "result": "&lt;Success/errormessage&gt;",     "proceed": { "geotrack": "&lt;true/false&gt;" }   } }</pre>
phone	Contact.DoNotCall Lead.DoNotCall PersonAccount.DoNotCall	Returns TRUE if all consulted field values are 0.  Returns FALSE if any consulted field value is 1 or if no related Contact, Lead, or Person Account object exists.	<pre>{   "&lt;ID/Email&gt;":   {     "result": "&lt;Success/errormessage&gt;",     "proceed": { "phone": "&lt;true/false&gt;" }   } }</pre>
portability	Individual.SendIndividualData	Returns TRUE if the consulted field value is 1.  Returns FALSE if the consulted field value is	<pre>{   "&lt;ID/Email&gt;":   {     "result": "&lt;Success/errormessage&gt;",</pre>

		0 or if no related Individual object exists.	"proceed" : { "portability" : "<true/false>" } } }
process	Individual.HasOptedOutProcessing	Returns TRUE if the consulted field value is 0.  Returns FALSE if the consulted field value is 1 or if no related Individual object exists.	{ "ID/Email" : { "result" : "<Success/errormessage>", "proceed" : { "process" : "<true/false>" } } }
profile	Individual.HasOptedOutProfiling	Returns TRUE if the consulted field value is 0.  Returns FALSE if the consulted field value is 1 or if no related Individual object exists.	{ "ID/Email" : { "result" : "<Success/errormessage>", "proceed" : { "profile" : "<true/false>" } } }
shouldForget	Individual.ShouldForget	Returns TRUE if the consulted field value is 1.  Returns FALSE if the consulted field value is 0 or if no related Individual object exists.	{ "ID/Email" : { "result" : "<Success/errormessage>", "proceed" : { "shouldForget" : "<true/false>" } } }
solicit	Individual.HasOptedOutSolicit	Returns TRUE if the consulted field value is 0.  Returns FALSE if the consulted field value is 1 or if no related Individual object exists.	{ "ID/Email" : { "result" : "<Success/errormessage>", "proceed" : { "solicit" : "<true/false>" } } }

storePIIElsewhere	Individual.CanStorePiiElsewhere	Returns TRUE if the consulted field value is 1. Returns FALSE if the consulted field value is 0 or if no related Individual object exists.	{ "<ID/Email>": { "result": "<Success/errormessage>", "proceed": { "storePIIElsewhere": "<true/false>" } } }
track	Individual.HasOptedOutTracking	Returns TRUE if the consulted field value is 0. Returns FALSE if the consulted field value is 1 or if no related Individual object exists.	{ "<ID/Email>": { "result": "<Success/errormessage>", "proceed": { "track": "<true/false>" } } }

## Invocable Actions

Represents a standard or custom invocable action.

Use actions to add more functionality to your applications. Choose from standard actions, such as posting to Chatter or sending email, or create actions based on your company's needs.

This resource is available in REST API version 32.0 and later.

## Syntax

### URI

Get a list of custom actions:

`/vXX.X/actions`

### Formats

JSON, XML

### HTTP Methods

GET, POST

### Authentication

Authorization: Bearer *token*

### Parameters

None

Example

Using GET to retrieve a list of general action types for the current organization:

```
/services/data/v32.0/actions
```

JSON Response body

```
{
  "standard" : "/services/data/v32.0/actions/standard",
  "custom" : "/services/data/v32.0/actions/custom"
}
```

Example

Using POST to send a simple email message:

```
/services/data/v32.0/actions/standard/emailSimple
```

JSON Request body

```
{
  "inputs" : [ {
    "emailAddresses" : "Fred@Acme.com",
    "emailSubject" : "Note",
    "emailBody" : "Message of the day.",
    "senderAddress" : "Bill@TheCloud.org"
  } ]
}
```

JSON Response body

```
{
  "actionName" : "emailSimple",
  "errors" : null,
  "isSuccess" : true,
  "outputValues" : null
}
```

Standard actions return their name in `actionName`. The value of `actionName` varies for custom actions.

Action	<code>actionName</code> value
Flow	The flow name
Apex	The class's invocable method name
Quick action	<object name>.<quick action name> For a global quick action, there's no <object name>. prefix.
Email alert	<object name>.<email alert name>

For more information about actions, see the [Actions Developer Guide](#).

## Standard Invocable Actions

Returns the list of actions that can be statically invoked. You can also get basic information for each type of action.

This resource is available in REST API version 32.0 and later.

### Syntax

#### URI

Get a list of standard actions:

`/vXX.X/actions/standard`

#### Formats

JSON

#### HTTP Methods

GET, HEAD, POST

#### Authentication

Authorization: Bearer *token*

#### Parameters

None

#### Notes

The Post to Chatter action supports the following features using a special format in the body post.

- @mentions using @ [<id>]
- Topics using # [<topicString>]

For example, the string `Hi @[0050000000000001] check this out #[some_topic]`. is stored appropriately as `Hi @Joe, check this out #some_topic`. where "@Joe" and "#some\_topic" are links to the user and topic, respectively.

## Examples

### Retrieving a list of standard actions for the current organization

```
/services/data/v32.0/actions/standard
```

#### JSON Response body

```
{
  "actions" : [ {
    "label" : "Submit for Approval",
    "name" : "submit",
    "type" : "SUBMITAPPROVAL"
  }, {
    "label" : "Post to Chatter",
    "name" : "chatterPost",
    "type" : "CHATTERPOST" },
  {
    "label" : "Send Email",
    "name" : "emailSimple",
    "type" : "EMAILSIMPLE"
  } ]
}
```

**Get the attributes of a single standard action, for example, `emailSimple`**

`/services/data/v32.0/actions/standard/emailSimple`

**JSON Response body**

```
{
  "description" : "Send an email where you specify the subject, body, and recipients.",
  "inputs" : [ {
    "byteLength" : 0,
    "description" : "Optional. The email recipients specified as a comma-separated list.",

    "label" : "Email Addresses (comma-separated)",
    "maxOccurs" : 1,
    "name" : "emailAddresses",
    "picklistValues" : null,
    "required" : false,
    "subjectType" : null,
    "type" : "STRING"
  }, {
    "byteLength" : 0,
    "description" : "Optional. The email recipients specified as a collection of Strings.",

    "label" : "Email Addresses (collection)",
    "maxOccurs" : 5,
    "name" : "emailAddressesArray",
    "picklistValues" : null,
    "required" : false,
    "subjectType" : null,
    "type" : "STRING"
  }, {
    "byteLength" : 0,
    "description" : "Optional. Who the email is from. Defaults to the current user.",
    "label" : "Sender Type",
    "maxOccurs" : 1,
    "name" : "senderType",
    "picklistValues" : null,
    "required" : false,
    "subjectType" : null,
    "type" : "STRING"
  }, {
    "byteLength" : 0,
    "description" : "Required. The email's subject.",
    "label" : "Subject",
    "maxOccurs" : 1,
    "name" : "emailSubject",
    "picklistValues" : null,
    "required" : true,
    "subjectType" : null,
    "type" : "STRING"
  }, {
    "byteLength" : 0,
    "description" : "Required. The body of the email in plain text.",
    "label" : "Body",
    "maxOccurs" : 1,
    "name" : "emailBody",
```

```
"picklistValues" : null,  
"required" : true,  
"sobjectType" : null,  
"type" : "TEXTAREA"  
} ],  
"label" : "Send Email",  
"name" : "emailSimple",  
"outputs" : [ ],  
"standard" : true,  
"targetEntityName" : null,  
"type" : "EMAILSIMPLE"  
}
```

## Custom Invocable Actions

Returns the list of all custom actions. You can also get basic information for each type of action.

This resource is available in REST API version 32.0 and later.

### Syntax

#### URI

Get a list of custom actions:

`/vXX.X/actions/custom`

#### Formats

JSON, XML

#### HTTP Methods

GET, HEAD, POST

#### Authentication

Authorization: Bearer *token*

#### Parameters

None

#### Notes

Sending email with the emailAlert action counts against your daily email limit for workflows. For more information, see “Daily Allocations for Email Alerts” in the Salesforce Help.

When invoking an Apex action using the POST method and supplying the inputs in the request, only the following primitive types are supported as inputs:

- Blob
- Boolean
- Date
- Datetime
- Decimal
- Double
- ID
- Integer

- Long
- String
- Time

Describe and invoke for an Apex action respect the profile access for the Apex class. If you don't have access an error is issued.

If you add an Apex action to a flow, and then remove the Invocable Method annotation from the Apex class, a runtime error in the flow occurs.

When a flow user invokes an autolaunched flow, the active flow version is run. If there's no active version, the latest version is run. When a flow admin invokes a flow, the latest version is always run.

If any of the following elements are used in a flow, packageable components that reference these elements aren't automatically included in the package.

- Apex
- Email alerts
- Post to Chatter
- Quick Actions
- Send Email
- Submit for Approval

For example, if you use an email alert, manually add the email template that is used by that email alert. To deploy the package successfully, manually add those referenced components to the package.

### Example

Retrieving a list of custom actions for the current organization:

```
/services/data/v33.0/actions/custom
```

### JSON Response body

```
{
  "quickAction" : "/services/data/v33.0/actions/custom/quickAction",
  "apex" : "/services/data/v33.0/actions/custom/apex",
  "emailAlert" : "/services/data/v33.0/actions/custom/emailAlert",
  "flow" : "/services/data/v33.0/actions/custom/flow"
}
```

## List View Describe

Returns detailed information about a list view, including the ID, the columns, and the SOQL query.

This resource is available in REST API version 32.0 and later.

### URI

```
/vXX.X/objects/{objectType}/listviews/{queryLocator}/describe
```

### Formats

JSON, XML

### HTTP Method

GET

### Authentication

Authorization: Bearer *token*



**Parameters**

None

**Example:****Retrieving information about a list view**

```
curl
https://yourInstance.salesforce.com/services/data/v32.0/objects/Account/listviews/00BD0000005WbBPAK/describe
-H "Authorization: Bearer token"
```

**JSON Response body**

```
{
  "columns" : [ {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "Name",
    "hidden" : false,
    "label" : "Account Name",
    "selectListItem" : "Name",
    "sortDirection" : "ascending",
    "sortIndex" : 0,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "Site",
    "hidden" : false,
    "label" : "Account Site",
    "selectListItem" : "Site",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "BillingState",
    "hidden" : false,
    "label" : "Billing State/Province",
    "selectListItem" : "BillingState",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : "9-0",
    "descendingLabel" : "0-9",
    "fieldNameOrPath" : "Phone",
    "hidden" : false,
    "label" : "Phone",
    "selectListItem" : "Phone",
    "sortDirection" : null,
```

```

    "sortIndex" : null,
    "sortable" : true,
    "type" : "phone"
  }, {
    "ascendingLabel" : "Low to High",
    "descendingLabel" : "High to Low",
    "fieldNameOrPath" : "Type",
    "hidden" : false,
    "label" : "Type",
    "selectListItem" : "toLabel(Type)",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "picklist"
  }, {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "Owner.Alias",
    "hidden" : false,
    "label" : "Account Owner Alias",
    "selectListItem" : "Owner.Alias",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "Id",
    "hidden" : true,
    "label" : "Account ID",
    "selectListItem" : "Id",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "id"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "CreatedDate",
    "hidden" : true,
    "label" : "Created Date",
    "selectListItem" : "CreatedDate",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "datetime"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "LastModifiedDate",
    "hidden" : true,
    "label" : "Last Modified Date",
    "selectListItem" : "LastModifiedDate",

```

```

    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "datetime"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "SystemModstamp",
    "hidden" : true,
    "label" : "System Modstamp",
    "selectListItem" : "SystemModstamp",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "datetime"
  } ],
  "id" : "00BD0000005WcBe",
  "orderBy" : [ {
    "fieldNameOrPath" : "Name",
    "nullsPosition" : "first",
    "sortDirection" : "ascending"
  }, {
    "fieldNameOrPath" : "Id",
    "nullsPosition" : "first",
    "sortDirection" : "ascending"
  } ],
  "query" : "SELECT name, site, billingstate, phone, tolabel(type), owner.alias,
id, createddate, lastmodifieddate, systemmodstamp FROM Account WHERE CreatedDate =
THIS_WEEK ORDER BY Name ASC NULLS FIRST, Id ASC NULLS FIRST",
  "scope" : null,
  "subjectType" : "Account",
  "whereCondition" : {
    "field" : "CreatedDate",
    "operator" : "equals",
    "values" : [ "THIS_WEEK" ]
  }
}

```

## List View Results

---

Executes the SOQL query for the list view and returns the resulting data and presentation information.

This resource is available in REST API version 32.0 and later.

### URI

/vXX.X/subjects/{subjectType}/listviews/{listViewID}/results

### Formats

JSON, XML

### HTTP Method

GET

**Authentication**

Authorization: Bearer **token**

**Parameters**

Parameter	Description
limit	The maximum number of records to return, between 1-2000. The default value is 25.
offset	The first record to return. Use this parameter to paginate the results. The default value is 1.

**Example:****Retrieving results from a specific list view**

```
curl
https://yourInstance.salesforce.com/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCMA0/results
-H "Authorization: Bearer token"
```

**JSON Response body**

```
{
  "columns" : [ {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "Name",
    "hidden" : false,
    "label" : "Account Name",
    "selectListItem" : "Name",
    "sortDirection" : "ascending",
    "sortIndex" : 0,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "Site",
    "hidden" : false,
    "label" : "Account Site",
    "selectListItem" : "Site",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "BillingState",
    "hidden" : false,
    "label" : "Billing State/Province",
    "selectListItem" : "BillingState",
    "sortDirection" : null,
```

```

    "sortIndex" : null,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : "9-0",
    "descendingLabel" : "0-9",
    "fieldNameOrPath" : "Phone",
    "hidden" : false,
    "label" : "Phone",
    "selectListItem" : "Phone",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "phone"
  }, {
    "ascendingLabel" : "Low to High",
    "descendingLabel" : "High to Low",
    "fieldNameOrPath" : "Type",
    "hidden" : false,
    "label" : "Type",
    "selectListItem" : "toLabel(Type)",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "picklist"
  }, {
    "ascendingLabel" : "Z-A",
    "descendingLabel" : "A-Z",
    "fieldNameOrPath" : "Owner.Alias",
    "hidden" : false,
    "label" : "Account Owner Alias",
    "selectListItem" : "Owner.Alias",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : true,
    "type" : "string"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "Id",
    "hidden" : true,
    "label" : "Account ID",
    "selectListItem" : "Id",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "id"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "CreatedDate",
    "hidden" : true,
    "label" : "Created Date",
    "selectListItem" : "CreatedDate",

```

```

    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "datetime"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "LastModifiedDate",
    "hidden" : true,
    "label" : "Last Modified Date",
    "selectListItem" : "LastModifiedDate",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "datetime"
  }, {
    "ascendingLabel" : null,
    "descendingLabel" : null,
    "fieldNameOrPath" : "SystemModstamp",
    "hidden" : true,
    "label" : "System Modstamp",
    "selectListItem" : "SystemModstamp",
    "sortDirection" : null,
    "sortIndex" : null,
    "sortable" : false,
    "type" : "datetime"
  } ],
  "developerName" : "MyAccounts",
  "done" : true,
  "id" : "00BD0000005WcCN",
  "label" : "My Accounts",
  "records" : [ {
    "columns" : [ {
      "fieldNameOrPath" : "Name",
      "value" : "Burlington Textiles Corp of America"
    }, {
      "fieldNameOrPath" : "Site",
      "value" : null
    }, {
      "fieldNameOrPath" : "BillingState",
      "value" : "NC"
    }, {
      "fieldNameOrPath" : "Phone",
      "value" : "(336) 222-7000"
    }, {
      "fieldNameOrPath" : "Type",
      "value" : "Customer - Direct"
    }, {
      "fieldNameOrPath" : "Owner.Alias",
      "value" : "TUser"
    }, {
      "fieldNameOrPath" : "Id",
      "value" : "001D000000JliSTIAZ"
    }, {

```

```

    "fieldNameOrPath" : "CreatedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "LastModifiedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "SystemModstamp",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  } ]
}, {
  "columns" : [ {
    "fieldNameOrPath" : "Name",
    "value" : "Dickenson plc"
  }, {
    "fieldNameOrPath" : "Site",
    "value" : null
  }, {
    "fieldNameOrPath" : "BillingState",
    "value" : "KS"
  }, {
    "fieldNameOrPath" : "Phone",
    "value" : "(785) 241-6200"
  }, {
    "fieldNameOrPath" : "Type",
    "value" : "Customer - Channel"
  }, {
    "fieldNameOrPath" : "Owner.Alias",
    "value" : "TUser"
  }, {
    "fieldNameOrPath" : "Id",
    "value" : "001D000000JliSVIAZ"
  }, {
    "fieldNameOrPath" : "CreatedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "LastModifiedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "SystemModstamp",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  } ]
}, {
  "columns" : [ {
    "fieldNameOrPath" : "Name",
    "value" : "Edge Communications"
  }, {
    "fieldNameOrPath" : "Site",
    "value" : null
  }, {
    "fieldNameOrPath" : "BillingState",
    "value" : "TX"
  }, {
    "fieldNameOrPath" : "Phone",
    "value" : "(512) 757-6000"
  } ]
} ]

```

```

    }, {
      "fieldNameOrPath" : "Type",
      "value" : "Customer - Direct"
    }, {
      "fieldNameOrPath" : "Owner.Alias",
      "value" : "TUser"
    }, {
      "fieldNameOrPath" : "Id",
      "value" : "001D000000JliSSIAZ"
    }, {
      "fieldNameOrPath" : "CreatedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "LastModifiedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "SystemModstamp",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    } ]
  }, {
    "columns" : [ {
      "fieldNameOrPath" : "Name",
      "value" : "Express Logistics and Transport"
    }, {
      "fieldNameOrPath" : "Site",
      "value" : null
    }, {
      "fieldNameOrPath" : "BillingState",
      "value" : "OR"
    }, {
      "fieldNameOrPath" : "Phone",
      "value" : "(503) 421-7800"
    }, {
      "fieldNameOrPath" : "Type",
      "value" : "Customer - Channel"
    }, {
      "fieldNameOrPath" : "Owner.Alias",
      "value" : "TUser"
    }, {
      "fieldNameOrPath" : "Id",
      "value" : "001D000000JliSXIAZ"
    }, {
      "fieldNameOrPath" : "CreatedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "LastModifiedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "SystemModstamp",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    } ]
  }, {
    "columns" : [ {
      "fieldNameOrPath" : "Name",

```



```

    "value" : "GenePoint"
  }, {
    "fieldNameOrPath" : "Site",
    "value" : null
  }, {
    "fieldNameOrPath" : "BillingState",
    "value" : "CA"
  }, {
    "fieldNameOrPath" : "Phone",
    "value" : "(650) 867-3450"
  }, {
    "fieldNameOrPath" : "Type",
    "value" : "Customer - Channel"
  }, {
    "fieldNameOrPath" : "Owner.Alias",
    "value" : "TUser"
  }, {
    "fieldNameOrPath" : "Id",
    "value" : "001D000000JliSPIAZ"
  }, {
    "fieldNameOrPath" : "CreatedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "LastModifiedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "SystemModstamp",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  } ]
}, {
  "columns" : [ {
    "fieldNameOrPath" : "Name",
    "value" : "Grand Hotels and Resorts Ltd"
  }, {
    "fieldNameOrPath" : "Site",
    "value" : null
  }, {
    "fieldNameOrPath" : "BillingState",
    "value" : "IL"
  }, {
    "fieldNameOrPath" : "Phone",
    "value" : "(312) 596-1000"
  }, {
    "fieldNameOrPath" : "Type",
    "value" : "Customer - Direct"
  }, {
    "fieldNameOrPath" : "Owner.Alias",
    "value" : "TUser"
  }, {
    "fieldNameOrPath" : "Id",
    "value" : "001D000000JliSWIAZ"
  }, {
    "fieldNameOrPath" : "CreatedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  } ]
} ]

```

```

    }, {
      "fieldNameOrPath" : "LastModifiedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "SystemModstamp",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    } ]
  }, {
    "columns" : [ {
      "fieldNameOrPath" : "Name",
      "value" : "Pyramid Construction Inc."
    }, {
      "fieldNameOrPath" : "Site",
      "value" : null
    }, {
      "fieldNameOrPath" : "BillingState",
      "value" : null
    }, {
      "fieldNameOrPath" : "Phone",
      "value" : "(014) 427-4427"
    }, {
      "fieldNameOrPath" : "Type",
      "value" : "Customer - Channel"
    }, {
      "fieldNameOrPath" : "Owner.Alias",
      "value" : "TUser"
    }, {
      "fieldNameOrPath" : "Id",
      "value" : "001D000000JliSUIAZ"
    }, {
      "fieldNameOrPath" : "CreatedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "LastModifiedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "SystemModstamp",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    } ]
  }, {
    "columns" : [ {
      "fieldNameOrPath" : "Name",
      "value" : "sForce"
    }, {
      "fieldNameOrPath" : "Site",
      "value" : null
    }, {
      "fieldNameOrPath" : "BillingState",
      "value" : "CA"
    }, {
      "fieldNameOrPath" : "Phone",
      "value" : "(415) 901-7000"
    }, {
      "fieldNameOrPath" : "Type",

```

```

      "value" : null
    }, {
      "fieldNameOrPath" : "Owner.Alias",
      "value" : "TUser"
    }, {
      "fieldNameOrPath" : "Id",
      "value" : "001D000000JliSaIAJ"
    }, {
      "fieldNameOrPath" : "CreatedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "LastModifiedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "SystemModstamp",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    } ]
  }, {
    "columns" : [ {
      "fieldNameOrPath" : "Name",
      "value" : "United Oil and Gas Corp."
    }, {
      "fieldNameOrPath" : "Site",
      "value" : null
    }, {
      "fieldNameOrPath" : "BillingState",
      "value" : "NY"
    }, {
      "fieldNameOrPath" : "Phone",
      "value" : "(212) 842-5500"
    }, {
      "fieldNameOrPath" : "Type",
      "value" : "Customer - Direct"
    }, {
      "fieldNameOrPath" : "Owner.Alias",
      "value" : "TUser"
    }, {
      "fieldNameOrPath" : "Id",
      "value" : "001D000000JliSZIAZ"
    }, {
      "fieldNameOrPath" : "CreatedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "LastModifiedDate",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    }, {
      "fieldNameOrPath" : "SystemModstamp",
      "value" : "Fri Aug 01 21:15:46 GMT 2014"
    } ]
  }, {
    "columns" : [ {
      "fieldNameOrPath" : "Name",
      "value" : "United Oil and Gas, Singapore"
    }, {

```

```

    "fieldNameOrPath" : "Site",
    "value" : null
  }, {
    "fieldNameOrPath" : "BillingState",
    "value" : "Singapore"
  }, {
    "fieldNameOrPath" : "Phone",
    "value" : "(650) 450-8810"
  }, {
    "fieldNameOrPath" : "Type",
    "value" : "Customer - Direct"
  }, {
    "fieldNameOrPath" : "Owner.Alias",
    "value" : "TUser"
  }, {
    "fieldNameOrPath" : "Id",
    "value" : "001D000000JliSRIAZ"
  }, {
    "fieldNameOrPath" : "CreatedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "LastModifiedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "SystemModstamp",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  } ]
}, {
  "columns" : [ {
    "fieldNameOrPath" : "Name",
    "value" : "United Oil and Gas, UK"
  }, {
    "fieldNameOrPath" : "Site",
    "value" : null
  }, {
    "fieldNameOrPath" : "BillingState",
    "value" : "UK"
  }, {
    "fieldNameOrPath" : "Phone",
    "value" : "+44 191 4956203"
  }, {
    "fieldNameOrPath" : "Type",
    "value" : "Customer - Direct"
  }, {
    "fieldNameOrPath" : "Owner.Alias",
    "value" : "TUser"
  }, {
    "fieldNameOrPath" : "Id",
    "value" : "001D000000JliSQIAZ"
  }, {
    "fieldNameOrPath" : "CreatedDate",
    "value" : "Fri Aug 01 21:15:46 GMT 2014"
  }, {
    "fieldNameOrPath" : "LastModifiedDate",

```

```

        "value" : "Fri Aug 01 21:15:46 GMT 2014"
      }, {
        "fieldNameOrPath" : "SystemModstamp",
        "value" : "Fri Aug 01 21:15:46 GMT 2014"
      } ]
    }, {
      "columns" : [ {
        "fieldNameOrPath" : "Name",
        "value" : "University of Arizona"
      }, {
        "fieldNameOrPath" : "Site",
        "value" : null
      }, {
        "fieldNameOrPath" : "BillingState",
        "value" : "AZ"
      }, {
        "fieldNameOrPath" : "Phone",
        "value" : "(520) 773-9050"
      }, {
        "fieldNameOrPath" : "Type",
        "value" : "Customer - Direct"
      }, {
        "fieldNameOrPath" : "Owner.Alias",
        "value" : "TUser"
      }, {
        "fieldNameOrPath" : "Id",
        "value" : "001D000000JliSYIAZ"
      }, {
        "fieldNameOrPath" : "CreatedDate",
        "value" : "Fri Aug 01 21:15:46 GMT 2014"
      }, {
        "fieldNameOrPath" : "LastModifiedDate",
        "value" : "Fri Aug 01 21:15:46 GMT 2014"
      }, {
        "fieldNameOrPath" : "SystemModstamp",
        "value" : "Fri Aug 01 21:15:46 GMT 2014"
      } ]
    } ],
    "size" : 12
  }
}

```

## List Views

Returns the list of list views for the specified sObject, including the ID and other basic information about each list view. You can also get basic information for a specific list view by ID.

This resource is available in REST API version 32.0 and later.

### URI

Get a list of list views:

`/vXX.X/subjects/{subjectType}/listviews`

Get basic information about one list view:

/vXX.X/subjects/{subjectType}/listviews/{listViewID}

#### Available since release

31.0

#### Formats

JSON, XML

#### HTTP Methods

GET

#### Authentication

Authorization: Bearer **token**

#### Parameters

None



#### Example:

##### Retrieving a list of list views for the Account object

```
curl
https://yourInstance.salesforce.com/services/data/v32.0/subjects/Account/listviews
-H "Authorization: Bearer token"
```

##### JSON Response body

```
{
  "done" : true,
  "listviews" : [ {
    "describeUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBeMAK/describe",
    "developerName" : "NewThisWeek",
    "id" : "00BD0000005WcBeMAK",
    "label" : "New This Week",
    "resultsUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBeMAK/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBeMAK"
  }, {
    "describeUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBpMAK/describe",
    "developerName" : "NewLastWeek",
    "id" : "00BD0000005WcBpMAK",
    "label" : "New Last Week",
    "resultsUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBpMAK/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBpMAK"
  }, {
    "describeUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcC6MAK/describe",
    "developerName" : "PlatinumandGoldSLACustomers",
    "id" : "00BD0000005WcC6MAK",
    "label" : "Platinum and Gold SLA Customers",
    "resultsUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcC6MAK/results",
    "soqlCompatible" : true,
```

```

    "url" : "/services/data/v32.0/subjects/Account/listviews/00BD0000005WcC6MAK"
  }, {
    "describeUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCEMA0/describe",
    "developerName" : "RecentlyViewedAccounts",
    "id" : "00BD0000005WcCEMA0",
    "label" : "Recently Viewed Accounts",
    "resultsUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCEMA0/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCEMA0"
  }, {
    "describeUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCFMA0/describe",
    "developerName" : "AllAccounts",
    "id" : "00BD0000005WcCFMA0",
    "label" : "All Accounts",
    "resultsUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCFMA0/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCFMA0"
  }, {
    "describeUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCNMA0/describe",
    "developerName" : "MyAccounts",
    "id" : "00BD0000005WcCNMA0",
    "label" : "My Accounts",
    "resultsUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCNMA0/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/subjects/Account/listviews/00BD0000005WcCNMA0"
  } ],
  "nextRecordsUrl" : null,
  "size" : 6,
  "subjectType" : "Account"
}

```

### Retrieving basic information about one list view

Use the ID of a list view to get basic information about a specific list view.

```

curl
https://yourInstance.salesforce.com/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBeMAK
-H "Authorization: Bearer token"

```

### JSON Response body

```

{
  "describeUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBeMAK/describe",
  "developerName" : "NewThisWeek",
  "id" : "00BD0000005WcBeMAK",
  "label" : "New This Week",
  "resultsUrl" :
"/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBeMAK/results",
  "soqlCompatible" : true,

```

```
{
  "url" : "/services/data/v32.0/subjects/Account/listviews/00BD0000005WcBeMAK"
}
```

## Support Knowledge with REST API

Knowledge Support REST APIs allow both authorized and guest users to retrieve the user's visible data categories and their associated articles.

Authenticated users need the `UserProfile.apiEnabled` permission, Knowledge enabled in the organization, read rights on the article type, and any other knowledge specific permission or preference that controls visibility to articles.

Guest users need the `Guest Access to the Support API` preference enabled on the relevant Site, Knowledge enabled in the organization, and read rights on the article type and article channel that controls the visibility for guest users.

### Syntax

The root endpoint for all Knowledge support APIs that can be open to guest users.

#### Available since release

38.0

#### Method

GET

#### Formats

JSON, XML

#### Authentication

OAuth accesstoken

#### Endpoint

<prefix>/support

#### HTTP headers

**Accept:** Optional. Can be either `application/json` or `application/xml`.

#### Input

None

#### Output

The following resources are related to Knowledge.

```
{
  "dataCategoryGroups" : "/services/data/vxx.0/support/dataCategoryGroups",
  "knowledgeArticles" : "/services/data/vxx.0/support/knowledgeArticles"
  :
}
```

Where `vxx.0` is the API version you requested.

#### IN THIS SECTION:

##### [Data Category Groups](#)

Get data category groups that are visible to the current user.



[Data Category Detail](#)

Get data category details and the child categories by a given category.

[Articles List](#)

Get a page of online articles for the given language and category through either search or query.

[Articles Details](#)

Get all online article fields, accessible to the user.

## Data Category Groups

Get data category groups that are visible to the current user.

### Syntax

**Available since release**

38.0

**Method**

GET

**Formats**

JSON, XML

**Authentication**

OAuth accesstoken

**Endpoint**

[prefix]/support/dataCategoryGroups

**HTTP headers**

**Accept:** Optional. Can be either `application/json` or `application/xml`.

**Accept-language:** Optional. Language to translate the categories. Any ISO-639 language abbreviation, and an ISO-3166 country code subtag in the HTTP Accept-Language header. Only one language accepted. If no language specified, the non-translated labels are returned.

**Input:**

string `sObjectName`: Required. `KnowledgeArticleVersion` only.

boolean `topCategoriesOnly`: Optional. Defaults to true

- True returns only the top level categories.
- False returns the entire tree.



**Note:** All the input parameters are case-sensitive.

**Output:**

A list of the active data category groups that are visible to the current user in the site context. Returns id, name, label, and their top level categories or the entire data category group tree that are visible to the current user. The labels must be translated to the given language if they are available.

- **Data Category Group List**

This payload lists the active root Data Category Groups that can be used in other requests to return the data categories and articles related to it.

```
{
  "categoryGroups": [ Data Category Group, ....],
}
```

 **Note:** Returns only the active groups that are associated to the given entity (by `sObjectName`). Only `KnowledgeArticleVersion` is supported.

- **Data Category Group**

This represents an individual data category group, and its root category.


```
{
  "name": String, // the unique name of the category group
  "label": String, // returns the translated version if it is available
  "objectUsage" : String, // currently only "KnowledgeArticleVersion" is available.

  "topCategories": [ Data Category Summary, ....]
}
```

- **Data Category Summary**

This provides a summary of data category information. The Summary and Detail responses share common properties, with the goal of providing only as much information as is necessary from associated resources.

```
{
  "name": String, // the unique name of the category
  "label": String, // returns the translated version if it is available
  "url": URL, // the url points to the data category detail API
  "childCategories": [ Data Category Summary, ....] // null if topCategoriesOnly is
true
}
```

 **Note:** The URL property is a pre-calculated path to the unique resource representing this data category, in this case it is a [Data Category Detail API](#).

## Example

### Input

```
/services/data/v38.0/support/dataCategoryGroups?sObjectName=KnowledgeArticleVersion
```

### Output

```
{
  "categoryGroups" : [ {
    "label" : "Doc",
    "name" : "Doc",
    "objectUsage" : "KnowledgeArticleVersion",
    "topCategories" : [ {
      "childCategories" : null,
      "label" : "All",
      "name" : "All",
      "url" :
```

```

"/services/data/v38.0/support/dataCategoryGroups/Doc/dataCategories/All?sObjectName=KnowledgeArticleVersion"

} ]
}, {
"label" : "Manual",
"name" : "Manual",
"objectUsage" : "KnowledgeArticleVersion",
"topCategories" : [ {
  "childCategories" : null,
  "label" : "All",
  "name" : "All",
  "url" :
"/services/data/v38.0/support/dataCategoryGroups/Manual/dataCategories/All?sObjectName=KnowledgeArticleVersion"

} ]
} ]
}

```

## Usage

Salesforce Knowledge must be enabled in your organization. This resource can be used in API version 38.0 and later. Use the language code format used in [Which Languages Does Salesforce Support?](#).

Only the user's visible data categories are returned. A user might be able to see several sub trees in the category group, therefore, the top categories that are visible to the user in each group are returned.

## Data Category Detail

Get data category details and the child categories by a given category.

## Syntax

### Available since release

38.0

### Method

GET

### Formats

JSON, XML

### Authentication

OAuth accesstoken

### Endpoint

[prefix]/support/dataCategoryGroups/[group]/dataCategories/[category]

### HTTP headers

**Accept:** Optional. Can be either `application/json` or `application/xml`.

**Accept-language:** Optional. Language to translate the categories. Any ISO-639 language abbreviation, and an ISO-3166 country code subtag in the HTTP Accept-Language header. Only one language accepted. If no language specified, the non-translated labels are returned.

**Input:**

string sObjectName: Required. KnowledgeArticleVersion only.

**Output:**

Details of the category and a list of child categories (name, label, etc.).

- **Data Category Detail**

Used for situations where the hierarchical representation of data categories is important. The child property contains a list of child data categories.

```
{
  "name": String, // the unique name of the category
  "label": String, // returns the translated version if it is available
  "url": URL,
  "childCategories": [ Data Category Summary, ...],
}
```



**Note:** If the category isn't visible to the current user the return is empty.

## Example

**Input**

```
/services/data/v38.0/support/dataCategoryGroups/Doc/dataCategories/All?sObjectName=KnowledgeArticleVersion
```

**Output**

```
{
  "childCategories" : [ {
    "childCategories" : null,
    "label" : "Help",
    "name" : "Help",
    "url" :
"/services/data/v38.0/support/dataCategoryGroups/Doc/dataCategories/Help?sObjectName=KnowledgeArticleVersion"
  }, {
    "childCategories" : null,
    "label" : "QA",
    "name" : "QA",
    "url" :
"/services/data/v38.0/support/dataCategoryGroups/Doc/dataCategories/QA?sObjectName=KnowledgeArticleVersion"
  } ],
  "label" : "All",
  "name" : "All",
  "url" :
"/services/data/v38.0/support/dataCategoryGroups/Doc/dataCategories/All?sObjectName=KnowledgeArticleVersion"
}
```

## Usage

Salesforce Knowledge must be enabled in your organization. This resource can be used in API version 38.0 and later. Use the language code format used in [Which Languages Does Salesforce Support?](#)

## Articles List

Get a page of online articles for the given language and category through either search or query.

### Syntax

#### Available since release

38.0

#### Method

GET

#### Formats

JSON, XML

#### Authentication

OAuth access token

#### Endpoint

[prefix]/support/knowledgeArticles

#### HTTP headers

**Accept:** Optional. Can be either `application/json` or `application/xml`.

**Accept-language:** Required. The article must be an active language in the user's organization

- If the language code isn't valid, an error message is returned: "The language code is not valid or not supported by Knowledge."
- If the language code is valid, but not supported by Knowledge, then an error message is returned: "Invalid language code. Check that the language is included in your Knowledge language settings."

#### Input:

string `q`: Optional, Performs an SOSL search. If the query string is null, empty, or not given, an SOQL query runs.

The characters `?` and `*` are used for wildcard searches. The characters `(`, `)`, and `"` are used for complex search terms. See [https://developer.salesforce.com/docs/atlas.en-us.soql\\_sosl.meta/soql\\_sosl/sforce\\_api\\_calls\\_soql\\_find.htm](https://developer.salesforce.com/docs/atlas.en-us.soql_sosl.meta/soql_sosl/sforce_api_calls_soql_find.htm).

string `channel`: Optional, defaults to user's context. For information on channel values, see [Valid channel values](#).


- **App**: Visible in the internal Salesforce Knowledge application
- **Pkb**: Visible in the public knowledge base
- **Csp**: Visible in the Customer Portal
- **Prm**: Visible in the Partner Portal

string `categories` in map json format {`"group1": "category1", "group2": "category2", ...` }

Optional, defaults to None. Category group must be unique in each group:category pair, otherwise you get `ARGUMENT_OBJECT_PARSE_ERROR`.

string `queryMethod` values are: `AT`, `BELOW`, `ABOVE`, `ABOVE_OR_BELOW`. Only valid when categories are specified, defaults to `ABOVE_OR_BELOW`.

string `sort`: Optional, a sortable field name `LastPublishedDate`, `CreatedDate`, `Title`, `ViewScore`. Defaults to `LastPublishedDate` for query and relevance for search.

 **Note:** When sorting on `ViewScore` it is only available for query, not search, and no pagination is supported. You only get one page of results.

string `order`: Optional, either `ASC` or `DESC`, defaults to `DESC`. Valid only when `sort` is valid.

integer pageSize: Optional, defaults to 20. Valid range 1 to 100.

integer pageNumber : Optional, defaults to 1.

### Output:

A page of online articles in the given language and category visible to the current user.

- **Article Page**

A page of articles. The individual entries are article summaries so the size can be kept at a minimum.

```
{
  "articles": [ Article Summary, ... ], // list of articles
  "currentPageUrl": URL, // the article list API with current page number
  "nextPageUrl": URL, // the article list API with next page number,
  // which can be null if there are no more articles.
  "pageNumber": Int // the current page number, starting at 1.
}
```

 **Note:** The API supports paging. Each page of responses includes a URL to its page, as well as the URL to the next page of articles.

 **Note:** if the user input parameter has the default value, the API does not show this parameter in either currentPageUrl or nextPageUrl.

- **Article Summary**

A summary of an article used in a list of article responses. It shares similar properties to the Article Detail representation, as one is a superset of the other.

```
{
  "id": Id, // articleId
  "articleNumber": String,
  "articleType": String, // apiName of the article type, available in API v44.0
  // and later
  "title": String,
  "urlName": String, // available in API v44.0 and later
  "summary": String,
  "url": URL, // to the Article Detail API
  "viewCount": Int, // view count in the interested channel
  "viewScore": double (in xxx.xxxx precision), // view score in the interested
  // channel.
  "upVoteCount": int, // up vote count in the interested channel.
  "downVoteCount": int, // down vote count in the interested channel.
  "lastPublishedDate": Date // last publish date in ISO8601 format
  "categoryGroups": [ Data Category Group, ... ]}
}
```

The “url” property always points to the [Article Details](#) resource endpoint. For information on valid channel values, see the [channel parameter description](#)

- **Data Category Group**

An individual data category group, its root category, and a list of selected data categories in the group.

```
{
  "groupName": String, // the unique name of the category group
  "groupLabel": String, // returns the translated version
  "selectedCategories": [ Data Category Summary, ... ]
}
```

- **Data Category Summary**

Provides a summary of data category information. The Summary and Detail responses share common properties.

```
{
    "categoryName": String, // the unique name of the category
    "categoryLabel": String, // returns the translated version, per the API
    language specified
    "url": String // returns the url for the DataCategory REST API.
}
```



**Note:** The outputs of Data Category Group and Data Category Summary in Article List API are different from the Data Category Groups API.

## Example

### Input

```
/services/data/v38.0/support/knowledgeArticles?sort=ViewScore&channel=Pkb&pageSize=3
HTTP Headers:
Content-Type: application/json; charset=UTF-8
Accept: application/json
Accept-Language: en-US
```

### Output

```
{
  "articles" : [ {
    "articleNumber" : "000001002",
    "categoryGroups" : [ ],
    "downVoteCount" : 0,
    "id" : "kA0xx000000000BCAQ",
    "lastPublishedDate" : "2015-02-25T02:07:18Z",
    "summary" : "With this online Chinese input tool, you can type Chinese characters
through your web browser without installing any Chinese input software in your system.
The Chinese online input tool uses the popular Pin Yin input method. It is a fast and
convenient tool to input Chinese on English OS environments.",
    "title" : "Long text test",
    "upVoteCount" : 0,
    "url" : "/services/data/v38.0/support/knowledgeArticles/kA0xx000000000BCAQ",
    "viewCount" : 4,
    "viewScore" : 100.0
  }, {
    "articleNumber" : "000001004",
    "categoryGroups" : [ ],
    "downVoteCount" : 0,
    "id" : "kA0xx000000000LCAQ",
    "lastPublishedDate" : "2016-06-21T21:11:02Z",
    "summary" : "The number of characters required for complete coverage of all these
languages' needs cannot fit in the 256-character code space of 8-bit character encodings,
requiring at least a 16-bit fixed width encoding or multi-byte variable-length encodings.
\r\n\r\nAlthough CJK encodings have common character sets, the encodings often used to
represent them have been developed separately by different East Asian governments and
software companies, and are mutually incompatible. Unicode has attempted, with some
controversy, to unify the character sets in a process known as Han unification.\r\n\r\nCJK
```

```

character encodings should consist minimally of Han characters p",
"title" : "Test Images",
"upVoteCount" : 0,
"url" : "/services/data/v38.0/support/knowledgeArticles/kA0xx000000000LCAQ",
"viewCount" : 0,
"viewScore" : 0.0
}, {
"articleNumber" : "000001012",
"categoryGroups" : [ ],
"downVoteCount" : 0,
"id" : "kA0xx0000000006GCAQ",
"lastPublishedDate" : "2016-06-21T21:10:48Z",
"summary" : null,
"title" : "Test Draft 2",
"upVoteCount" : 0,
"url" : "/services/data/v38.0/support/knowledgeArticles/kA0xx0000000006GCAQ",
"viewCount" : 0,
"viewScore" : 0.0
} ],
"currentPageUrl" :
"/services/data/v38.0/support/knowledgeArticles?channel=Pkb&pageSize=3&sort=ViewScore",
"nextPageUrl" : null,
"pageNumber" : 1
}

```

## Usage

Salesforce Knowledge must be enabled in your organization. This resource can be used in API version 38.0 and later. The Custom File Field is not supported because it returns a link to a binary stream. Use the language code format used in [Which Languages Does Salesforce Support?](#).

## Valid **channel** Values

- When using the options string **channel**, where the matching articles are visible, the following values are valid.
  - App—Visible in the internal Salesforce Knowledge application
  - Pkb—Visible in the public knowledge base
  - Csp—Visible in the Customer Portal
  - Prm—Visible in the Partner Portal
- If **channel** isn't specified, the default value is determined by the type of user.
  - Pkb for a guest user
  - Csp for a Customer Portal user
  - Prm for a Partner Portal user
  - App for any other type of user
- If **channel** is specified, the specified value may be used to retrieve articles.
  - For guest, Customer Portal, and Partner Portal users, if the specified channel is other than the channel accessible to the user, an error is returned.
  - For all users other than guest, Customer Portal, and Partner Portal users, the specified channel value is used.



# Articles Details

Get all online article fields, accessible to the user.

## Syntax

### Available since release

38.0

### Method

GET

### Formats

JSON, XML

### Authentication

OAuth access token

### Endpoint

[prefix]/support/knowledgeArticles/{articleId}

[prefix]/support/knowledgeArticles/{articleUrlName} Available in API v44.0 and later

### HTTP headers

**Accept:** Optional. Can be either `application/json` or `application/xml`.

**Accept-language:** Required. The article must be an active language in the user's organization

- If the language code isn't valid, an error message is returned: "The language code is not valid or not supported by Knowledge."
- If the language code is valid, but not supported by Knowledge, then an error message is returned: "Invalid language code. Check that the language is included in your Knowledge language settings."

### Input:

string `channel`: Optional, defaults to user's context. For information on channel values, see [Valid channel Values](#).

- **App**: Visible in the internal Salesforce Knowledge application
- **Pkb**: Visible in the public knowledge base
- **Csp**: Visible in the Customer Portal
- **Prm**: Visible in the Partner Portal

boolean `updateViewState`: Optional, defaults to true. If true, API updates the view count in the given channel as well as the total view count.

boolean `isUrlName`: Optional, defaults to false. If true, indicates that the last portion of the endpoint is a URL name instead of an article ID. Available in API v44.0 and later

### Output:

The detailed fields of the article, if the article is online and visible to the current user.

#### • Article Detail

Full detail of an article, with complete metadata and layout-driven fields used for display of an article. It includes all the same properties as an [Article Summary](#) representation.

```
{
  "id": Id,      // articleId,
  "articleNumber": String,
  "articleType": String, // apiName of the article type, available in API
```

```
v44.0 and later
    "title": String,
    "urlName": String,    // available in API v44.0 and later
    "summary": String,
    "url": URL,
    "versionNumber": Int,
    "createdDate": Date,  // in ISO8601 format
    "createdBy": User Summary on page 180,
    "lastModifiedDate": Date,  // in ISO8601 format
    "lastModifiedBy": User Summary on page 180,
    "lastPublishedDate": Date, // in ISO8601 format
    "layoutItems": [ Article Field, ... ], // standard and custom fields visible
to the user, sorted based on the layouts of the article type.
    "categories": [ Data Category Groups, ... ],
    "appUpVoteCount": Int,
    "cspUpVoteCount": Int,
    "prmUpVoteCount": Int,
    "pkbUpVoteCount": Int,
    "appDownVoteCount": Int,
    "cspDownVoteCount": Int,
    "prmDownVoteCount": Int,
    "pkbDownVoteCount": Int,
    "allViewCount": Int,
    "appViewCount": Int,
    "cspViewCount": Int,
    "prmViewCount": Int,
    "pkbViewCount": Int,
    "allViewScore": Double,
    "appViewScore": Double,
    "cspViewScore": Double,
    "prmViewScore": Double,
    "pkbViewScore": Double
}
```

- **User Summary**

```
{
    "id": String
    "isActive": boolean    // true/false
    "userName": String    // login name
    "firstName": String
    "lastName": String
    "email": String
    "url": String          // to the chatter user detail url:
/services/data/xx.x/chatter/users/{userId}, for guest user, it will return null.
}
```

- **Article Field**

An individual field of article information, which is listed in an [Article Detail](#) in the order required by the administrator's layout.

```
{
    "type": Enum,          // see the Notes
    "name": String,        // In API v43.0 and earlier, the developer name. In
API v44.0 and later, the API name.
}
```

```

"label": String,           // label
"value": String,
}

```

## Example

### Input

```

/services/data/v38.0/support/knowledgeArticles/kA0xx000000000LCAQ
HTTP Headers:
Content-Type: application/json; charset=UTF-8
Accept: application/json
Accept-Language: en-US

```

### Output

```

{
  "allViewCount" : 17,
  "allViewScore" : 100.0,
  "appDownVoteCount" : 0,
  "appUpVoteCount" : 0,
  "appViewCount" : 17,
  "appViewScore" : 100.0,
  "articleNumber" : "000001004",
  "categoryGroups" : [ ],
  "createdBy" : {
    "email" : "user@company.com",
    "firstName" : "Test",
    "id" : "005xx000001SvoMAAS",
    "isActive" : true,
    "lastName" : "User",
    "url" : "/services/data/v38.0/chatter/users/005xx000001SvoMAAS",
    "userName" : "admin@salesforce.org"
  },
  "createdDate" : "2016-06-21T21:10:54Z",
  "cspDownVoteCount" : 0,
  "cspUpVoteCount" : 0,
  "cspViewCount" : 0,
  "cspViewScore" : 0.0,
  "id" : "kA0xx000000000LCAQ",
  "lastModifiedBy" : {
    "email" : "user@company.com",
    "firstName" : "Test",
    "id" : "005xx000001SvoMAAS",
    "isActive" : true,
    "lastName" : "User",
    "url" : "/services/data/v38.0/chatter/users/005xx000001SvoMAAS",
    "userName" : "admin@salesforce.org"
  },
  "lastModifiedDate" : "2016-06-21T21:11:02Z",
  "lastPublishedDate" : "2016-06-21T21:11:02Z",
  "layoutItems" : [ {
    "label" : "Out of Date",
    "name" : "IsOutOfDate",

```

```

    "type" : "CHECKBOX",
    "value" : "false"
  }, {
    "label" : "sample",
    "name" : "sample",
    "type" : "PICK_LIST",
    "value" : null
  }, {
    "label" : "Language",
    "name" : "Language",
    "type" : "PICK_LIST",
    "value" : "en_US"
  }, {
    "label" : "MyNumber",
    "name" : "MyNumber",
    "type" : "NUMBER",
    "value" : null
  }, {
    "label" : "My File",
    "name" : "My_File",
    "type" : "FILE",
    "value" : null
  } ],
  "pkbDownVoteCount" : 0,
  "pkbUpVoteCount" : 0,
  "pkbViewCount" : 0,
  "pkbViewScore" : 0.0,
  "prmDownVoteCount" : 0,
  "prmUpVoteCount" : 0,
  "prmViewCount" : 0,
  "prmViewScore" : 0.0,
  "summary" : "The number of characters required for complete coverage of all these
languages' needs cannot fit in the 256-character code space of 8-bit character encodings,
requiring at least a 16-bit fixed width encoding or multi-byte variable-length encodings.
\r\n\r\nAlthough CJK encodings have common character sets, the encodings often used to
represent them have been developed separately by different East Asian governments and
software companies, and are mutually incompatible. Unicode has attempted, with some
controversy, to unify the character sets in a process known as Han unification.\r\n\r\nCJK
character encodings should consist minimally of Han characters p",
  "title" : "Test Images",
  "url" : "/services/data/v38.0/support/knowledgeArticles/kA0xx000000000LCAQ",
  "versionNumber" : 7
}

```

## Usage

Salesforce Knowledge must be enabled in your organization. This resource can be used in API version 38.0 and later. The Custom File Field is not supported because it returns a link to a binary stream. Use the language code format used in [Which Languages Does Salesforce Support?](#).

A lookup custom field is visible to guest users depending on the lookup entity type. For example, User is visible, but Case and Account are not visible. Following standard fields are not visible to a guest user, even if they are in the layout:

- archivedBy

- `isLatestVersion`
- `translationCompletedDate`
- `translationImportedDate`
- `translationExportedDate`
- `versionNumber`
- `visibleInInternalApp`
- `visibleInPKB`
- `visibleToCustomer`
- `visibleToPartner`

## Valid `channel` Values

- When using the options string `channel`, where the matching articles are visible, the following values are valid.
  - `App`—Visible in the internal Salesforce Knowledge application
  - `PKB`—Visible in the public knowledge base
  - `CSP`—Visible in the Customer Portal
  - `PRM`—Visible in the Partner Portal
- If `channel` isn't specified, the default value is determined by the type of user.
  - `PKB` for a guest user
  - `CSP` for a Customer Portal user
  - `PRM` for a Partner Portal user
  - `App` for any other type of user
- If `channel` is specified, the specified value may be used to retrieve articles.
  - For guest, Customer Portal, and Partner Portal users, if the specified channel is other than the channel accessible to the user, an error is returned.
  - For all users other than guest, Customer Portal, and Partner Portal users, the specified channel value is used.

## Parameterized Search

---

Executes a simple RESTful search using parameters instead of a SOSL clause. Indicate parameters in a URL in the GET method. Or, use POST for more complex JSON searches.

### Syntax

#### URI

`/vXX.X/parameterizedSearch/?q=search string`


#### Formats

JSON, XML

#### HTTP Method

GET, POST

**Authentication**Authorization: Bearer *token***Required Global Parameters**

Name	Description
q	<p>A search string that is properly URL-encoded.</p> <p> <b>Note:</b> SOSL clauses aren't supported.</p> <p>Available in version 36.0 and later.</p>

**Optional Global Parameters**

Name	Type	Supported Methods	Description
dataCategory	string	GET	<p>Single value. If an organization uses Salesforce Knowledge articles or answers, <code>dataCategory</code> filters all search results based on one data category.</p> <p>For example, <code>dataCategory=GlobalCategory__c</code> below <code>NorthAmerica__c</code>.</p> <p>When using <code>dataCategories</code>, specify a Salesforce Knowledge article or answer type with <code>subject</code> and all the required parameters.</p> <p>For example:</p> <pre>q=tourism&amp;subject=KnowledgeArticleVersion&amp;KnowledgeArticleVersion.where=language='en_US'+and+publishStatus='online'&amp;KnowledgeArticleVersion.fields=id,title&amp;dataCategory=Location__c+Below+North_America__c</pre> <p>If you require multiple <code>dataCategory</code> filters, use <code>dataCategories</code> with the POST method.</p>
dataCategories	<a href="#">dataCategoriesFilter[]</a>	POST	<p>If an organization uses Salesforce Knowledge articles or answers, filters all search results based on one or more data categories.</p> <p>When using <code>dataCategories</code>, specify a Salesforce Knowledge article or answer type with <code>subjects</code> and the required parameters.</p> <p>For example:</p> <pre>{   "q": "Acme",   "fields": ["id", "title"],   "subjects": [{"name": "KnowledgeArticleVersion",     "where": "language='en_US' and publishstatus='draft'"}],   "dataCategories": [     {"groupName": "location__c", "operator": "below",     "categories": ["North_America__c"]}   ] }</pre>

Name	Type	Supported Methods	Description
			<pre> ] } </pre>
defaultLimit	string	GET, POST	<p>Single value. The maximum number of results to return for each <code>subject</code> (GET) or <code>subjects</code> (POST) specified.</p> <p>The maximum <code>defaultLimit</code> is 2000.</p> <p>At least one <code>subject</code> must be specified.</p> <p>GET example:  <code>defaultLimit=10&amp;subject=Account&amp;subject=Contact</code>.</p> <p>When an <code>subject</code> limit is specified using <code>subject.limit=value</code>, such as <code>Account.limit=10</code>, this parameter is ignored for that object.</p>
division	string	GET, POST	<p>Single value. Filters search results based on the division field.</p> <p>For example in the GET method, <code>division=global</code>.</p> <p>Specify a division by its name rather than ID.</p> <p>All searches within a specific division also include the <code>global</code> division.</p>
fields	string	GET	<p>Comma-separated list of one or more fields to return in the response for each <code>subject</code> specified. At least one <code>subject</code> must be specified at the global level.</p> <p>For example: <code>fields=id&amp;subject=Account&amp;subject=Contact</code>.</p> <p>The global <code>fields</code> parameter is overridden when <code>subject</code> are specified using <code>subject.fields=field names</code>. For example, <code>Contact.fields=id,FirstName,LastName</code> would override the global setting of just returning the <code>id</code>.</p> <p>If unspecified, then the search results contain the IDs of records matching all fields for the specified object.</p> <p><b>Functions</b></p> <p>The following optional functions can be used within the <code>fields</code> parameter.</p> <ul style="list-style-type: none"> <li>• <code>toLabel</code>: Translates response field value into the user's language. For example, <code>Lead.fields=id,toLabel (Status)</code>. This function requires extra setup.</li> <li>• <code>convertCurrency</code>: Converts response currency fields to the user's currency. For example, <code>Opportunity.fields=id,convertCurrency (Amount)</code>. This function requires extra setup. Multi-currency must be enabled for your org.</li> <li>• <code>format</code>: Applies localized formatting to standard and custom number, date, time, and currency fields. For example, <code>Opportunity.fields=id,format (Amount)</code>.</li> </ul> <p>Aliasing is support within <code>fields</code> for <code>toLabel</code>, <code>convertCurrency</code>, and <code>format</code>. In addition, aliasing is required when the query includes the same field</p>

Name	Type	Supported Methods	Description
			multiple times. For example, <code>Opportunity.fields=id,format(Amount) AliasAmount</code>
<code>fields</code>	<code>string[]</code>	POST	<p>Array of one or more fields to return in the response for each <code>subjects</code> specified. At least one <code>subjects</code> must be specified at the global level.</p> <p>For example:</p> <pre>{   "q": "Acme",   "fields": ["Id", "Name", "Phone"],   "subjects": [     { "name": "Account",       { "name": "Contact", "fields": ["Id", "FirstName", "LastName"] },       { "name": "Lead" } ] ] }</pre> <p>The global <code>fields</code> parameter is overridden when <code>subjectsFilter[]</code> fields are specified. Such as, in the previous example, <code>Id</code>, <code>FirstName</code>, and <code>LastName</code> is returned for <code>Contact</code> instead of the global fields of <code>Id</code>, <code>Name</code> and <code>Phone</code>.</p> <p>If unspecified, then the search results contain the IDs of records matching all fields for the specified object.</p> <p><b>Functions</b></p> <p>The following optional functions can be used within the <code>fields</code> parameter.</p> <ul style="list-style-type: none"> <li>• <code>toLabel</code>: Translates response field value into the user's language. This function requires extra setup. For example: <pre>{   ...   "subjects": [ { "name": "Lead", "fields": ["Id", "toLabel (Status) " ] },   ... }</pre> </li> <li>• <code>convertCurrency</code>: Converts response currency fields to the user's currency. This function requires extra setup. Multi-currency must be enabled in the org. For example: <pre>{   ...   "subjects": [ { "name": "Opportunity",     "fields": ["Id", "convertCurrency (Amount) " ] } ]   ... }</pre> </li> </ul>



Name	Type	Supported Methods	Description
			<ul style="list-style-type: none"> <li><code>format</code>: Applies localized formatting to standard and custom number, date, time, and currency fields. For example: <pre> {   ...   "subjects": [ { "name": "Opportunity",     "fields": [ "Id", "format (Amount) " ] } ]   ... }</pre> </li> </ul> <p>Aliasing is supported within <code>fields</code> for <code>toLabel</code>, <code>convertCurrency</code>, and <code>format</code>. In addition, aliasing is required when the query includes the same field multiple times. For example:</p> <pre> {   ...   "subjects": [ { "name": "Opportunity", "fields": [ "Id",     "format (Amount) AliasAmount" ] } ]   ... }</pre>
<code>in</code>	string	GET, POST	<p>Scope of fields to search. If you specify one or more scope values, the fields are returned for all found objects.</p> <p>Use one of the following values:</p> <ul style="list-style-type: none"> <li><code>ALL</code></li> <li><code>NAME</code></li> <li><code>EMAIL</code></li> <li><code>PHONE</code></li> <li><code>SIDEBAR</code></li> </ul> <p>This clause doesn't apply to articles, documents, feed comments, feed items, files, products, and solutions. If any of these objects are specified, the search is not limited to specific fields; all fields are searched.</p>
<code>metadata</code>	string	GET, POST	<p>Specifies if metadata should be returned in the response. No metadata is returned by default. To include metadata in the response, use the <code>LABELS</code> value, which returns the display label for the fields returned in search results. For example:</p> <pre>?q=Acme&amp;metadata=LABELS</pre>
<code>netWorkIds</code>	string	GET	<p>Filters search results by a comma-separated list.</p> <p>A network ID represents the community ID.</p>
<code>netWorkIds</code>	string[]	POST	<p>Filters search results by an array.</p> <p>A network ID represents the community ID.</p>
<code>offset</code>	string	GET, POST	<p>Single value. The starting row offset into the result set returned.</p> <p>The maximum <code>offset</code> is 2000.</p>

Name	Type	Supported Methods	Description
			Only one <code>subject</code> can be specified when using this parameter.
<code>overallLimit</code>	string	GET, POST	Single value. The maximum number of results to return across all <code>subject</code> parameters specified.  The maximum <code>overallLimit</code> is 2000.
<code>pricebookId</code>	string	GET, POST	Single value. Filters product search results by a price book ID for only the Product2 object. The price book ID must be associated with the product that you're searching for. For example, <code>?q=laptop&amp;subject=product2&amp;pricebookId=01sxx0000002MffAAE</code>
<code>snippet</code>	string	GET, POST	The target length (maximum number of snippet characters) to return in Salesforce Knowledge article, case, case comment, feed, feed comment, idea, and idea comment search results. The <code>snippet</code> parameter displays contextual excerpts and highlights the search term for each article in the search results. Snippet results are used to differentiate matches to the search term in article search results. The target length can be from 50 to 1000 characters.  Snippet and highlights are generated from email, text, and text area (long and rich) fields. Snippets aren't displayed for partially matching searches or if the user doesn't have access to the field that contains the snippet. Snippets are only displayed when 20 or fewer results are returned on a page.  At least one of the following <code>subject</code> values must be specified. <ul style="list-style-type: none"> <li>To search a specific article type, use the article type name with the suffix <code>__kav</code>.</li> <li>To search all article types, use <code>KnowledgeArticleVersion</code>.</li> <li>To search case, case comment, feed, feed comment, idea, and idea comment types, use <code>Case</code>, <code>CaseComment</code>, <code>FeedItem</code>, <code>FeedComment</code>, <code>Idea</code>, and <code>IdeaComment</code>.</li> </ul> For example, <code>q=tourism&amp;subject=Case&amp;snippet=500</code> .
<code>subject</code>	string	GET	Objects to return in the response. Must be a valid object type.  You can use multiple <code>subject</code> values, such as <code>subject=Account&amp;subject=Contact</code> .  If unspecified, then the search results contain the IDs of all objects.
<code>subjects</code>	<a href="#">subjectsFilter[]</a>	POST	Objects to return in the response. Must contain valid object types. Use with the required parameters.  For example: <pre> {   "q": "Acme",   "fields": ["id", "title"],   "subjects": [{"name": "Solution__kav", </pre>

Name	Type	Supported Methods	Description
			<pre>"where": "language='en_US' and publishstatus='draft'",       { "name": "FAQ__kav",         "where": "language='en_US' and publishstatus='draft'" }     }</pre> <p>If unspecified, then the search results contain the IDs of all objects.</p>
<code>spellCorrection</code>	boolean	GET, POST	<p>Specifies whether spell correction is enabled for a user's search. When set to <code>true</code>, spell correction is enabled for searches that support spell correction. The default value is <code>true</code>.</p> <p>For example:</p> <pre>q=Acme&amp;subject=Account&amp;Account.fields=id&amp;spellCorrection=true</pre>
<code>updateTracking</code>	string	GET, POST	<p>Specifies a value of <code>true</code> to track keywords that are used in Salesforce Knowledge article searches only.</p> <p>If unspecified, the default value of <code>false</code> is applied.</p>
<code>updateViewStat</code>	string	GET, POST	<p>Specifies a value of <code>true</code> to update an article's view statistics. Valid only for Salesforce Knowledge article searches.</p> <p>If unspecified, the default value of <code>false</code> is applied.</p>

### `dataCategoriesFilter[]` Parameters

Parameters must be specified in the order presented in the table (`groupName`, `operator`, `categories`).

Name	Type	Description
<code>groupName</code>	string	The name of the data category group to filter by.
<code>operator</code>	string	<p>Valid values:</p> <ul style="list-style-type: none"> <li>• ABOVE</li> <li>• ABOVE_OR_BELOW</li> <li>• AT</li> <li>• BELOW</li> </ul>
<code>categories</code>	string[]	The name of the categories to filter by.

### `subjectsFilter[]` Parameters (POST Method Only)

Name	Type	Description
<code>fields</code>	string[]	Array of one or more fields to return in the response for the <code>subject</code> .

Name	Type	Description
limit	string	Specify the maximum number of rows that are returned for the <code>subject</code> .
name	string	Name of the <code>subject</code> to return in the response.
orderBy	string	<p>Controls the field order of the results using the following syntax <code>"orderBy" : "field {ASC DESC} [NULLS_{FIRST LAST}] "</code></p> <p>For example:</p> <pre>{   ...   "subjects": [ { "name": "Account", "fields": ["Id", "name"], "orderBy": "Name DESC Nulls_last" } ]   ... }</pre> <ul style="list-style-type: none"> <li>• ASC: ascending. Default.</li> <li>• DESC: descending.</li> <li>• NULLS_FIRST: Null records at the beginning of the results. Default.</li> <li>• NULLS_LAST: Null records at the end of the results.</li> </ul>
where	string	<p>Filter search results for this object by specific field values.</p> <p>For example, <code>where : conditionExpression</code>. Here the <code>conditionExpression</code> of the WHERE clause uses the following syntax: <code>fieldExpression [logicalOperator fieldExpression2 ... ]</code>.</p> <p>Add multiple field expressions to a condition expression by using logical and comparison operators.</p>

### subject-level Parameters (GET Method Only)

The following optional parameters can be used with the `subject` parameter in a GET method to further refine search results. These settings would override any settings specified at the global level.

The format is `subject.parameter`, such as `Account.fields`. An `subject` must be specified to use these parameters, for example, `subject=Account&Account.fields=id,name`.

Name	Type	Description
fields	string	<p>Comma-separated list of one or more fields to return in the response.</p> <p>For example, <code>KnowledgeArticleVersion.fields=id,title</code>.</p>
limit	string	<p>Specifies the maximum number of rows that are returned for the <code>subject</code>.</p> <p>For example, <code>Account.limit=10</code>.</p>
orderBy	string	<p>Controls the field order of the results using the following syntax <code>orderBy = field {ASC DESC} [NULLS_{FIRST LAST}]</code></p> <p>For example: <code>Account.orderBy=Name</code></p> <ul style="list-style-type: none"> <li>• ASC: ascending. Default.</li> <li>• DESC: descending.</li> </ul>

Name	Type	Description
		<ul style="list-style-type: none"> <li>• <code>NULLS_FIRST</code>: Null records at the beginning of the results. Default.</li> <li>• <code>NULLS_LAST</code>: Null records at the end of the results.</li> </ul>
where	string	<p>Filter search results for this object by specific field values.</p> <p>Forexample, <code>Account.where = conditionExpression</code>. Here the <code>conditionExpression</code> of the WHERE clause uses the following syntax: <code>fieldExpression [logicalOperator fieldExpression2 ... ]</code>.</p> <p>Add multiple field expressions to a condition expression by using logical and comparison operators. For example, <code>KnowledgeArticleVersion.where=publishstatus='online' and language='en_US'</code>.</p>

### Example GET Method

```
.../v37.0/parameterizedSearch/?q=Acme&subject=Account&Account.fields=id,name&Account.limit=10
```

### Example POST Method

```
{
  "q": "Smith",
  "fields": ["id", "firstName", "lastName"],
  "subjects": [{"fields": ["id", "NumberOfEmployees"],
    "name": "Account",
    "limit": 20},
    {"name": "Contact"}],
  "in": "ALL",
  "overallLimit": 100,
  "defaultLimit": 10
}
```

## Process Approvals

Returns a list of all approval processes. Can also be used to submit a particular record if that entity supports an approval process and one has already been defined. Records can be approved and rejected if the current user is an assigned approver. When using a POST request to do bulk approvals, the requests that succeed are committed and the requests that don't succeed send back an error.

## Syntax

### URI

To return a list of the approvals, the URI is: `/vXX.X/process/approvals/`

### Available since release

30.0

### Formats

JSON, XML

**HTTP methods**

GET, HEAD, POST

**Authentication**Authorization: Bearer *token***Request parameters**

None required

**Request body**

The request body contains an array of process requests that contain the following information:

Name	Type	Description
actionType	string	Represents the kind of action to take: <i>Submit</i> , <i>Approve</i> , or <i>Reject</i> .
contextActorId	ID	The ID of the submitter who's requesting the approval record.
contextId	ID	The ID of the item that is being acted upon.
comments	string	The comment to add to the history step associated with this request.
nextApproverIds	ID[]	If the process requires specification of the next approval, the ID of the user to be assigned the next request.
processDefinitionId	string	The developer name or ID of the process definition.
skipEntryCriteria	boolean	Determines whether to evaluate the entry criteria for the process (true) or not (false) if the process definition name or ID isn't null. If the process definition name or ID isn't specified, this argument is ignored, and standard evaluation is followed based on process order. By default, the entry criteria isn't skipped if it's not set by this request.

**Response body**

The response contains an array of process results that contain the following information:

Name	Type	Description
actorIds	ID[]	IDs of the users who are currently assigned to this approval step.
entityId	ID	The object being processed.
errors	Error[]	The set of errors returned if the request failed.
instanceId	ID	The ID of the ProcessInstance associated with the object submitted for processing.
instanceStatus	string	The status of the current process instance (not an individual object but the entire process instance). The valid values are "Approved," "Rejected," "Removed," or "Pending."
newWorkItemIds	ID[]	Case-insensitive IDs that point to ProcessInstanceWorkitem items (the set of pending approval requests)
success	boolean	<i>true</i> if processing or approval completed successfully.

### Examples

- See [Get a List of All Approval Processes](#).
- See [Submit a Record for Approval](#).
- See [Approve a Record](#).
- See [Reject a Record](#).
- See [Bulk Approvals](#).

## Process Rules

---

Returns a list of all active workflow rules. If a rule has actions, the actions will be listed under the rule. Can also be used to trigger all workflow rules that are associated with a specified record. The actions for a rule are only fired if the rule's criteria is met. When using a POST request, if anything fails, the whole transaction is rolled back.

Cross-object workflow rules cannot be invoked using the REST API.

## Syntax

### URI

To get a list of the workflow rules or to trigger one or more workflow rules, the URI is: `/vXX.X/process/rules/`

To get the rules for a particular object: `/vXX.X/process/rules/SObjectName`

To get the metadata for a particular rule: `/vXX.X/process/rules/SObjectName/workflowRuleId`

### Available since release

30.0

### Formats

JSON, XML

### HTTP methods

HEAD, GET, POST

### Authentication

Authorization: Bearer *token*

### Request parameters

None required

### Request body

The request body contains an array of context IDs:

Name	Type	Description
<code>contextId</code>	ID	The ID of the item that is being acted upon.

### Examples

- See [Get a List of Process Rules](#).
- See [Get a Particular Process Rule](#).
- See [Trigger Process Rules](#).

## Product Schedules

Work with revenue and quantity schedules for opportunity products. Establish or reestablish a product schedule with multiple installments for an opportunity product. Delete all installments in a schedule.

This resource is available in REST API version 43.0 and later.

### URI

/vXX.X/subjects/OpportunityLineItem/{OpportunityLineItemId}/OpportunityLineItemSchedules

### Formats

JSON, XML

### HTTP Method

GET, PUT, DELETE

### Authentication

Authorization: Bearer **token**

### Parameters

Parameter	Description
type	The type of the schedule. Required when establishing OpportunityLineItemSchedules. Valid values include Quantity, Revenue, or Both.
quantity	The total number of units to be repeated or divided in a quantity schedule. Must be an integer other than 0.
quantityScheduleType	The type of the quantity schedule, if the product has one. Valid values are Divide or Repeat.
quantityScheduleInstallmentPeriod	If the product has a quantity schedule, the amount of time covered by the schedule. Valid values are Daily, Weekly, Monthly, Quarterly, or Yearly.
quantityScheduleInstallmentsNumber	If the product has a quantity schedule, the number of installments. May be an integer between 1 to 150, inclusive.
quantityScheduleStartDate	The date the quantity schedule starts. Format is YYYY-MM-DD.
revenue	The amount of revenue that should be repeated or divided.
revenueScheduleType	The type of the revenue schedule, if the product has one. Valid values are Divide or Repeat.
revenueScheduleInstallmentPeriod	If the product has a revenue schedule, the amount of time covered by the schedule. Valid values are Daily, Weekly, Monthly, Quarterly, or Yearly.
revenueScheduleInstallmentsNumber	If the product has a revenue schedule, the number of installments. May be an integer between 1 to 150, inclusive.
revenueScheduleStartDate	The date the revenue schedule starts. Format is YYYY-MM-DD.



**Example:**

Establish both quantity and revenue schedules for an opportunity product; establish a revenue schedule only; establish a quantity schedule only.

```
curl
https://yourInstance.salesforce.com/services/data/v43.0/objects/OpportunityLineItem/00kF0000001WUJA744/OpportunityLineItemSchedules
-H "Authorization: Bearer token"
```

**JSON Request body**

```
{
  "type": "Both",
  "quantity": 100,
  "quantityScheduleType": "Repeat",
  "quantityScheduleInstallmentPeriod": "Monthly",
  "quantityScheduleInstallmentsNumber": 12,
  "quantityScheduleStartDate": "2018-09-15",
  "revenue": 100,
  "revenueScheduleType": "Repeat",
  "revenueScheduleInstallmentPeriod": "Monthly",
  "revenueScheduleInstallmentsNumber": 12,
  "revenueScheduleStartDate": "2018-09-15"
}

{
  "type": "Revenue",
  "revenue": 100,
  "revenueScheduleType": "Divide",
  "revenueScheduleInstallmentPeriod": "Quarterly",
  "revenueScheduleInstallmentsNumber": 10,
  "revenueScheduleStartDate": "2018-09-15"
}

{
  "type": "Quantity",
  "quantity": 10,
  "quantityScheduleType": "Repeat",
  "quantityScheduleInstallmentPeriod": "Daily",
  "quantityScheduleInstallmentsNumber": 150,
  "quantityScheduleStartDate": "2020-09-15",
}
```

## Query

---

Executes the specified SOQL query.

If the query results are too large, the response contains the first batch of results and a query identifier in the `nextRecordsUrl` field of the response. The identifier can be used in an additional request to retrieve the next batch.

**URI**

/vXX.X/query/?q=**SOQL query**

For retrieving query performance feedback without executing the query:

`/vXX.X/query/?explain=SOQL query`

For retrieving query performance feedback on a report or list view:

`/vXX.X/query/?explain=report or list view ID`

For retrieving additional query results if the initial results are too large:

`/vXX.X/query/query identifier`

### Formats

JSON, XML


### HTTP Method

GET

### Authentication

Authorization: Bearer **token**

### Parameters

Parameter	Description
<code>q</code>	A SOQL query. Note that you will need to replace spaces with “+” characters in your query string to create a valid URI. An example query parameter string might look like: “SELECT+Name+FROM+MyObject”. If the SOQL query string is invalid, a MALFORMED_QUERY response is returned.
<code>explain</code>	<p>A SOQL query to get performance feedback on. Use <code>explain</code> instead of <code>q</code> to get a response that details how Salesforce will process your query. You can use this feedback to further optimize your queries. You can also use a report or list view ID in place of the query string to get feedback on how Salesforce will process your report or list view.</p> <p>The <code>explain</code> parameter is available in API version 30.0 and later.</p> <p> <b>Note:</b> Using <code>explain</code> with the REST API query resource is a beta feature. There is no support associated with this beta feature. For more information, contact Salesforce.</p> <p>If the SOQL query string is invalid, a MALFORMED_QUERY response is returned. If the report or list view ID is invalid, an INVALID_ID response is returned.</p>

### Response body

For a query using the `q` parameter, the response contains an array of query result records. For a query using the `explain` parameter, the response contains one or more query plans that can be used to execute the query, report, or list view. The plans are sorted from most optimal to least optimal. Each plan has the following information:

Name	Type	Description
<code>cardinality</code>	number	The estimated number of records the query would return, based on index fields, if any.
<code>fields</code>	string[]	The index fields used for the query, if the leading operation type is <code>Index</code> , otherwise null.

Name	Type	Description
leadingOperationType	string	The primary operation type that will be used to optimize the query. This can be one of these values: <ul style="list-style-type: none"> <li>• Index—The query will use an index on the query object.</li> <li>• Other—The query will use optimizations internal to Salesforce.</li> <li>• Sharing—The query will use an index based on the user's sharing rules. If there are sharing rules that limit which records are visible to the current user, those rules can be used to optimize the query.</li> <li>• TableScan—The query will scan all records for the query object, and won't use an index.</li> </ul>
notes	feedback note[]	An array of one or more feedback notes. Each note contains: <ul style="list-style-type: none"> <li>• description—A detailed description of an aspect of the optimization. This could include information on optimizations that could not be used, with details on why they weren't used.</li> <li>• fields—An array of one or more fields used for the optimization.</li> <li>• tableEnumOrId—The table name for the fields used for the optimization.</li> </ul> This response field is available in API version 33.0 and later.
relativeCost	number	The cost of this query compared to the SOQL selective query threshold. A value greater than 1.0 means the query won't be selective. See "More Efficient SOQL Queries" in the <a href="#">Apex Code Developer's Guide</a> for more information on selective queries.
subjectCardinality	number	The approximate count of all records in your organization for the query object.
subjectType	string	The name of the query object, such as Merchandise__c.

### Example

For an example of making a query and retrieving additional query results using the query identifier, see [Execute a SOQL Query](#) on page 59.

For an example using the `explain` parameter to get feedback on a query and a report, see [Get Feedback on Query Performance](#) on page 61.

For more information on SOQL see the [SOQL and SOSL Reference](#). For more information on query batch sizes, see [Changing the Batch Size in Queries](#) in the *SOAP API Developer Guide*.

## QueryAll

Executes the specified SOQL query. Unlike the Query resource, QueryAll will return records that have been deleted because of a merge or delete. QueryAll will also return information about archived Task and Event records. QueryAll is available in API version 29.0 and later.

If the query results are too large, the response contains the first batch of results and a query identifier in the `nextRecordsUrl` field of the response. The identifier can be used in an additional request to retrieve the next batch. Note that even though `nextRecordsUrl` has `query` in the URL, it will still provide remaining results from the initial QueryAll request. The remaining results will include deleted records that matched the initial query.

**URI**

/vXX.X/queryAll/?q=**SOQL query**

For retrieving additional query results if the initial results are too large:

/vXX.X/queryAll/**query identifier**

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer **token**

**Parameters**

Parameter	Description
q	A SOQL query. Note that you will need to replace spaces with "+" characters in your query string to create a valid URI. An example query parameter string might look like: "SELECT+Name+FROM+MyObject".

**Example**

- For an example of making a query that includes deleted items, see [Execute a SOQL Query that Includes Deleted Items](#) on page 60
- For an example of a query that retrieves additional results using the query identifier, see [Retrieving the Remaining SOQL Query Results](#) on page 61

For more information on SOQL see the [SOQL and SOSL Reference](#). For more information on query batch sizes, see [Changing the Batch Size in Queries](#) in the *SOAP API Developer Guide*.

## Quick Actions

---

Returns a list of global actions and object-specific actions. This resource is available in REST API version 28.0 and later. When working with actions, also refer to [SOBJECT Quick Actions](#).

**URI**

/vXX.X/quickActions/

**Formats**

JSON, XML

**HTTP Method**

HEAD, GET, POST

**Authentication**

Authorization: Bearer **token**

**Parameters**

None required

### Considerations

Add all required fields to an object before you create a quick action for that object. If you add a required field after creating a quick action, the field won't appear in the quick action's describe results. Then, when the quick action runs, the field won't be available and an error occurs for the missing field. If you don't want the required field to appear in the quick action's layout, set a default value for the field.

### Example usage for getting global quick actions

```
curl https://yourInstance.salesforce.com/services/data/v28.0/quickActions/ -H
"Authorization: Bearer token"
```

### Example for creating a contact using an action

```
curl https://yourInstance.salesforce.com/services/data/v28.0/quickActions/CreateContact
-H 'Authorization: Bearer access_token -H "Content-Type: application/json" -d
@newcontact.json'
```

### Example JSON request body `newcontact.json` file

```
{
  "record" : { "LastName" : "Smith" }
}
```

## Recent List Views

---

Returns the list of recently used list views for the given sObject type.

This resource is available in REST API version 32.0 and later.

### URI

/vXX.X/objects/{objectType}/listviews/recent

### Formats

JSON, XML

### HTTP Method

GET

### Authentication

Authorization: Bearer **token**

### Parameters

None

### Example:

#### Retrieving recent list views for the Account object

```
curl
https://yourInstance.salesforce.com/services/data/v32.0/objects/Account/listviews/recent
-H "Authorization: Bearer token"
```

**JSON Response body**

```
{
  "done" : true,
  "listviews" : [ {
    "describeUrl" :
"/services/data/v32.0/objects/Account/listviews/00BD0000005WcCNMA0/describe",
    "developerName" : "MyAccounts",
    "id" : "00BD0000005WcCNMA0",
    "label" : "My Accounts",
    "resultsUrl" :
"/services/data/v32.0/objects/Account/listviews/00BD0000005WcCNMA0/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/objects/Account/listviews/00BD0000005WcCNMA0"
  }, {
    "describeUrl" :
"/services/data/v32.0/objects/Account/listviews/00BD0000005WcBeMAK/describe",
    "developerName" : "NewThisWeek",
    "id" : "00BD0000005WcBeMAK",
    "label" : "New This Week",
    "resultsUrl" :
"/services/data/v32.0/objects/Account/listviews/00BD0000005WcBeMAK/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/objects/Account/listviews/00BD0000005WcBeMAK"
  }, {
    "describeUrl" :
"/services/data/v32.0/objects/Account/listviews/00BD0000005WcCFMA0/describe",
    "developerName" : "AllAccounts",
    "id" : "00BD0000005WcCFMA0",
    "label" : "All Accounts",
    "resultsUrl" :
"/services/data/v32.0/objects/Account/listviews/00BD0000005WcCFMA0/results",
    "soqlCompatible" : true,
    "url" : "/services/data/v32.0/objects/Account/listviews/00BD0000005WcCFMA0"
  } ],
  "nextRecordsUrl" : null,
  "size" : 3,
  "subjectType" : "Account"
}
```

## Recently Viewed Items

---

Gets the most recently accessed items that were viewed or referenced by the current user. Salesforce stores information about record views in the interface and uses it to generate a list of recently viewed and referenced records, such as in the sidebar and for the auto-complete options in search.

This resource only accesses most recently used item information. If you want to modify the list of recently viewed items, you'll need to update recently viewed information directly by using a [SOQL Query](#) with a `FOR VIEW` or `FOR REFERENCE` clause.

**URI**

/vXX.X/recent

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**Authorization: Bearer *token***Parameters**

Parameter	Description
limit	An optional limit that specifies the maximum number of records to be returned. If this parameter is not specified, the default maximum number of records returned is the maximum number of entries in RecentlyViewed, which is 200 records per object.

**Example**

- For an example of retrieving a list of recently viewed items, see [View Recently Viewed Records](#) on page 76.
- For an example of setting records as recently viewed, see [Mark Records as Recently Viewed](#) on page 77.

## Record Count

Lists information about object record counts in your organization.

This resource is available in REST API version 40.0 and later for API users with the “View Setup and Configuration” permission. The returned record count is approximate, and does not include the following types of records:

- Deleted records in the recycle bin.
- Archived records.

**URI**`/vXX.X/limits/recordCount?sObjects=Object List`**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**Authorization: Bearer *token***Parameters**

Parameter	Description
sObjects	<p>A comma-delimited list of object names. If a listed object is not found in the org, it is ignored and not returned in the response.</p> <p>This parameter is optional. If this parameter is not provided, the resource returns record counts for all objects in the org.</p>

Response body

[Record Count Response Body](#)

Example

Example request to get record counts for Account and Contact:

```
/services/data/v40.0/limits/recordCount?sObjects=Account,Contact
```

Example response for request:

```
{
  "sObjects" : [ {
    "count" : 3,
    "name" : "Account"
  }, {
    "count" : 10,
    "name" : "Contact"
  } ]
}
```

# Record Count Response Body

Describes the result of a Record Count request.

## Record Count Results

Properties

Name	Type	Description
sObjects	<a href="#">Record Count SObject Result[]</a>	Collection of SObject record count results. The order of objects in the collection is not guaranteed to match the order of objects in the request.

JSON example

```
{
  "sObjects" : [ {
    "count" : 3,
    "name" : "Account"
  }, {
    "count" : 10,
    "name" : "Contact"
  } ]
}
```



## Record Count SObject Result

### Properties

Name	Type	Description
count	Integer	The number of records for the object in the org. This is an approximate count and does not include soft-deleted or archived records.
name	String	The name of the object.

### JSON example

```
{
  "count" : 10,
  "name" : "Contact"
}
```

## Relevant Items

Gets the current user's most relevant items. Relevant items include records for objects in the user's global search scope and also most recently used (MRU) objects.

Relevant items include up to 50 of the most recently viewed or updated records for each object in the user's global search scope.



**Note:** The user's global search scope includes the objects the user interacted with most in the last 30 days, including objects the user pinned from the search results page in the Salesforce Classic.

Then, the resource finds more recent records for each most recently used (MRU) object until the maximum number of records, which is 2,000, is returned.

This resource only accesses the relevant item information. Modifying the list of relevant items is not currently supported.

This resource is available in API version 35.0 and later.

### URI

/vXX.X/objects/relevantItems

### Formats

JSON

### HTTP Method



GET

### Authentication

Authorization: Bearer *token*

### Parameters

Parameter	Description
lastUpdatedId	Optional. Compares the entire current list of relevant items to a previous version, if available. Specify the <code>lastUpdatedId</code> value returned in a previous response.

Parameter	Description
<code>subjects</code>	Optional. To scope the results to a particular object or set of objects, specify the name for one or more sObjects.   <b>Note:</b> SObject names are case-sensitive.
<code>subject.lastUpdatedId</code>	Optional. Compares the current list of relevant items for this particular object to a previous version, if available. Specify the <code>lastUpdatedId</code> value returned in a previous response.   <b>Note:</b> You can only specify this parameter for the sObjects specified in the <code>subjects</code> parameter.

**Response header**

The response contains headers unique to this resource.

Name	Type	Description
<code>lastUpdatedId</code>	string	A unique code that can be used in subsequent calls to compare the results for a complete result set with the results in this response list.
<code>newResultSetSinceLastQuery</code>	boolean (true or false)	If a response was previously requested for the current user, indicates whether the current response matches the previous response, or the one specified by a <code>lastUpdatedId</code> .

**Response body**

The response contains an array of records for each object returned, including the following information for each record.

Name	Type	Description
<code>apiName</code>	string	The object's unique name, such as <code>Account</code> .
<code>key</code>	ID	The first 3 characters of the sObject's ID that indicates the object type.
<code>label</code>	string	The object's plural label, such as <code>Accounts</code> .
<code>lastUpdatedId</code>	string	A unique code that can be used in subsequent calls to compare the results for the new result set with the current results for this object.
<code>qualifiedApiName</code>	string	A unique external name for the sObject.
<code>recordIds</code>	ID	A comma-separated list of IDs for the matching records.

**Example**

See [View Relevant Items](#).

## Retrieve Knowledge Language Settings

---

Returns the existing Knowledge language settings, including the default knowledge language and a list of supported Knowledge language information.

### Syntax

**URI**

/services/data/v31.0/knowledge Management/settings

**Available since release**

31.0

**Formats**

JSON, XML

**HTTP methods**

GET

**Authentication**

Authorization: Bearer *token*

**Request body**

None required

**Request parameters**

None

### Example for Getting KnowledgeSettings

```
curl https://yourInstance.salesforce.com/services/data/v31.0/knowledgeManagement/settings  
-H "Authorization: Bearer token"
```

### Example JSON Response Body

```
{  
  "defaultLanguage" : "en_US",  
  "knowledgeEnabled" : true,  
  "languages" : [ {  
    "active" : true,  
    "name" : "en_US"  
  }, {  
    "active" : true,  
    "name" : "it"  
  }, {  
    "active" : true,  
    "name" : "zh_CN"  
  }, {  
    "active" : true,  
    "name" : "fr"  
  } ]  
}
```

## Usage

Salesforce Knowledge must be enabled in your organization. The user must have the “Knowledge User” license on their profile. This resource can be used in API version 31.0 and later. It retrieves the Knowledge language settings, including the default knowledge language and a list of supported Knowledge language information.

## Search

---

Executes the specified SOSL search. The search string must be URL-encoded.

For more information on SOSL see the [SOQL and SOSL Reference](#).

## Syntax

### URI

`/vXX.X/search/?q=SOSL search string`

### Formats

JSON, XML

### HTTP Method

GET

### Authentication

Authorization: Bearer **token**

### Parameters

Parameter	Description
q	A SOSL statement that is properly URL-encoded.

### Example

See [Search for a String](#) on page 63.

## Search Scope and Order

---

Returns an ordered list of objects in the default global search scope of a logged-in user. Global search keeps track of which objects the user interacts with and how often and arranges the search results accordingly. Objects used most frequently appear at the top of the list.

The returned list reflects the object order in the user’s default search scope, including any pinned objects on the user’s search results page. This call is useful if you want to implement a custom search results page using the optimized global search scope. The search string must be URL-encoded.

## Syntax

### URI

`/vXX.X/search/scopeOrder`

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer *token*

**Example**

See [Get the Default Search Scope and Order](#).

# Search Result Layouts

Returns search result layout information for the objects in the query string. For each object, this call returns the list of fields displayed on the search results page as columns, the number of rows displayed on the first page, and the label used on the search results page.

This call supports bulk fetch for up to 100 objects in a query.

## Syntax

**URI**

/vXX.X/search/layout/?q=*Comma delimited object list*

**Formats**

JSON, XML

**HTTP Method**

GET

**Authentication**

Authorization: Bearer *token*

**Response format**

Property	Type	Description
field	String	Object and field name formatted with a period separating. For example: Account . Name.
format	String	The type of date field, such as the date only or date and time. Only date related types are specified; otherwise, null.
label	String	Name as it appears to users
name	String	API name

**Example**

[Get Search Result Layouts for Objects](#)

# Lightning Toggle Metrics

Return details about users who switched between Salesforce Classic and Lightning Experience.

## Syntax

### URI

/services/data/vXX.X/subjects/LightningToggleMetrics

### Available since release

44.0

### Formats

JSON, XML

### HTTP methods

GET

### Authentication

**Authorization:** **Bearer token**

### Request body

SOQL query.

### Request parameters

Parameter	Description
UserId	The user ID.
RecordCount	The count of records returned.
MetricsDate	The date the switch was recorded.
Action	Did the user switch to Salesforce Classic or Lightning Experience.

## Example

This query returns the total number of switches to Salesforce Classic:

```
SELECT sum(RecordCount) Total FROM LightningToggleMetrics WHERE MetricsDate = LAST_MONTH  
AND Action = 'switchToAloha'
```

## Usage

Use this object with the following APIs:

- Platform
- Metadata API
- Tooling API

# Lightning Usage by App Type

Return the total number of Lightning Experience and Salesforce Mobile users.

## Syntax

### URI

/services/data/vXX.X/objects/LightningUsageByAppTypeMetrics

### Available since release

44.0

### Formats

JSON, XML

### HTTP methods

GET

### Authentication

**Authorization:** Bearer token

### Request body

SOQL query.

### Request parameters

Parameter	Description
AppExperience	The app used: <ul style="list-style-type: none"><li>• Salesforce Mobile</li><li>• Lightning Experience</li></ul>
MetricsDate	The date the data was recorded.
UserID	The user ID.

## Example

This query returns the daily active users by profile for Mobile:

```
SELECT MetricsDate,user.profile.name,COUNT_DISTINCT(user.id) Total FROM
LightningUsageByAppTypeMetrics WHERE MetricsDate = LAST_N_DAYS:30 AND AppExperience =
'Salesforce Mobile' GROUP BY MetricsDate,user.profile.name
```

## Usage

Use this object with the following APIs:

- Platform
- Metadata API
- Tooling API

# Lightning Usage by Browser

Return Lightning Experience usage results grouped by browser instance.

## Syntax

### URI

```
/services/data/vXX.X/subjects/LightningUsageByBrowserMetrics
```

### Available since release

44.00

### Formats

JSON, XML

### HTTP methods

GET

### Authentication

**Authorization:** *Bearer token*

### Request body

SOQL Query.

### Request parameters

Parameter	Description
Browser	The browser used.
EptBin3To5	Number of times that a page loaded between 3-5 seconds.
EptBin5To8	Number of times that a page loaded between 5-8 seconds.
EptBin8To10	Number of times that a page loaded between 8-10 seconds.
EptBinOver10	Number of times that a page loaded over 10 seconds.
EptBinUnder3	Number of times that a page loaded under 3 seconds.
MetricsDate	The date the metric was recorded.
PageName	The name of the page.
RecordCountEPT	Number of records for a page/browser where the valid EPT was recorded.
SumEPT	Sum of the EPT values for page/browser.
TotalCount	Total records for a page/browser.



## Example

This query returns browser distribution details, for the last 3 months.

```
SELECT CALENDAR_MONTH(MetricsDate) MetricsDate, Browser Browser, SUM(TotalCount) Total
FROM LightningUsageByBrowserMetrics WHERE MetricsDate = Last_N_Months:3 AND (NOT Browser
like 'OTHER%') GROUP BY CALENDAR_MONTH(MetricsDate),Browser
```

## Usage

Use this object with the following APIs:

- Platform
- Metadata API
- Tooling API

## Lightning Usage by Page

Represents standard pages users viewed most frequently in Lightning Experience.

## Syntax

URI

```
/services/data/vXX.X/subjects/LightningUsageByPageMetrics
```

Available since release

44.00

Formats

JSON, XML

HTTP methods

GET

Authentication

Authorization: Bearer token

Request body

SOQL Query.

Parameter	Description
EptBin3To5	Number of times that a page loaded between 3-5 seconds.
EptBin5To8	Number of times that a page loaded between 5-8 seconds.
EptBin8To10	Number of times that a page loaded between 8-10 seconds.
EptBinOver10	Number of times that a page loaded over 10 seconds.
EptBinUnder3	Number of times that a page loaded under 3 seconds.
PageName	The name of the page.

Parameter	Description
MetricsDate	The date the metric was recorded.
RecordCountEPT	Number of records for a page/user where the valid EPT was recorded.
SumEPT	Sum of the EPT values for a page/user.
TotalCount	Total records for a page/user.
UserId	User ID.

## Example

This example returns the top 10 most visited pages and how many times each page was visited.

```
SELECT TotalCount FROM LightningUsageByPageMetrics ORDER BY PageName ASC NULLS FIRST LIMIT 10
```

## Usage

Use this object with the following APIs:

- Platform
- Metadata API
- Tooling API

## Lightning Usage by FlexiPage

Return details about the custom pages viewed most frequently in Lightning Experience.

## Syntax

### URI

`/services/data/vXX.X/objects/LightningUsageByFlexiPageMetrics`

### Available since release

44.00

### Formats

JSON, XML

### HTTP methods

GET

### Authentication

### Authorization: Bearer token

SOQL query.

**Request parameters**

Parameter	Description
FlexiPageNameOrId	Namespace and file name, or Page ID of FlexiPage files.
FlexiPageType	The FlexiPage type. For example, record details are displayed using RecordPage" type.
MetricsDate	The date the metric was recorded.
RecordCountEPT	Number of records for a FlexiPage type, where the valid EPT was recorded.
SumEPT	Sum of the EPT values for a record
TotalCount	Total records for a type.

## Example

This query returns the top 10 most viewed custom pages over the past 7 days.

```
SELECT FlexiPageNameOrId FlexiPageNameOrId, SUM(TotalCount) Total FROM
LightningUsageByFlexiPageMetrics WHERE MetricsDate = Last_N_DAYS:7 AND (NOT FlexiPageNameOrId
= 'unknown unknown') AND (NOT FlexiPageNameOrId = 'unknown | unknown') GROUP BY
FlexiPageNameOrId ORDER BY SUM(TotalCount) Desc Limit 10
```

## Usage

Use this object with the following APIs:

- Platform
- Metadata API
- Tooling API

## Lightning Exit by Page Metrics

Return frequency metrics about the standard pages within which users switched from Lightning Experience to Salesforce Classic.

## Syntax

**URI**

```
/services/data/vXX.X/objects/LightningExitByPageMetrics
```

**Available since release**

44.0

**Formats**

JSON, XML

**HTTP methods**

GET

**Authentication****Authorization:** *Bearer token***Request body**

SOQL query.

**Request parameters**

Parameter	Description
MetricsDate	The date the data was recorded.
PageName	Current Page from which User Switched from Lightning to Aloha
RecordCount	The number of records per user and page.
UserId	The user ID.

## Example

This query returns the top 10 pages that were switched from Lightning Experience to Salesforce Classic over the past 7 days.

```
SELECT PageName PageName, SUM(RecordCount) Total FROM LightningExitByPageMetrics WHERE MetricsDate = Last_N_DAYS:7 GROUP BY PageName ORDER BY SUM(RecordCount) Desc Limit 10
```

## Usage

Use this object with the following APIs:

- Platform
- Metadata API
- Tooling API

## Search for Records Suggested by Autocomplete and Instant Results

Returns a list of suggested records whose names match the user's search string. The suggestions resource provides autocomplete results and instant results for users to navigate directly to likely relevant records, before performing a full search.

## Syntax

**URI**

vXX.X/search/suggestions?q=**search\_string**&subject=**object\_types**

**Available since release**

32.0

**Formats**

JSON, XML

**HTTP methods**

GET

**Authentication**

Authorization: Bearer *token*

**Request body**

None required

**Request parameters**

Parameter	Description
<code>fields</code>	Optional. Used for creating lookup queries. Specify multiple fields using a comma-separated list. Specifies which lookup fields to be returned in the response.
<code>groupId</code>	Optional. Specifies one or more unique identifiers of one or more groups that the question to return was posted to. Specify multiple groups using a comma-separated list. This parameter is only applicable when the parameter type equals <code>question</code> . Don't use with the <code>userId</code> .
<code>ignoreUnsupportedSObjects</code>	Optional. Specifies what to do if unsupported objects are included in the request. If <code>false</code> and an unsupported object is included, an error is returned. If <code>true</code> and an unsupported object is included, the object is ignored and no error is returned. See the Unsupported Objects section for reference. The default is <code>false</code> .
<code>limit</code>	Optional. Specifies the maximum number of suggested records to return. If a limit isn't specified, 5 records are returned by default. If there are more suggested records than the limit specified, the response body's <code>hasMoreResults</code> property is <code>true</code> .
<code>networkId</code>	Optional. Specifies one or more unique identifiers for the community(ies) that the question to return is associated to. Specify multiple communities using a comma-separated list. This parameter is only applicable when the parameter <code>type</code> equals <code>question</code> or parameter <code>subject</code> equals <code>user</code> .
<code>q</code>	Required. The user's search query string, properly URL-encoded. Suggestions are returned only if the user's query string meets the minimum length requirements: one character for queries in Chinese, Japanese, Korean, and Thai; three characters for all other languages. Query strings that exceed the maximum length of 255 characters (or 200 consecutive characters without a space break) return an error.
<code>subject</code>	<p>Required. The objects that the search is scoped to, such as Account or offer__c.</p> <p>If the <code>subject</code> value is <code>feedItem</code>, it is required to have the <code>type</code> parameter with a value of <code>question</code>.</p> <p>Specify up to 10 objects with a comma-separated list. For example:  <code>subject=Account,Contact,Lead</code>. To take advantage of this feature, activate the <b>CrossObjectTypeahead</b> permission.</p> <p>To specify the specific fields to return by object, use the following syntax with multiple fields in a comma-separated list. The <code>subject</code> is lowercase.</p> <div style="border: 1px solid #add8e6; padding: 5px; margin: 10px 0;"> <code>subject=<b>subject</b>.fields=<b>fields</b></code> </div> <p>For example:</p> <div style="border: 1px solid #add8e6; padding: 5px; margin: 10px 0;"> <code>&amp;subject=Account,Contact,Lead&amp;account.fields=Website,Phone &amp;contact.fields=Phone</code> </div>

Parameter	Description
<code>topicId</code>	Optional. Specifies the unique identifier of the single topic that the question to return was tagged as. This parameter is only applicable when the parameter <code>type</code> equals <code>question</code> .
<code>type</code>	Required when the <code>subject</code> value is <code>feedItem</code> . Including this parameter for all other <code>subject</code> values doesn't affect the query. Specifies that the type of Feed is questions. Valid value: <code>question</code> .
<code>userId</code>	Optional. Specifies one or more unique identifiers of one or more users who authored the question to return. Specify multiple users using a comma-separated list. This parameter is only applicable when the parameter type equals <code>question</code> . Don't use with the <code>groupId</code> .
<code>useSearchScope</code>	<p>Optional. Available in API version 40.0 and later. The default value is <code>false</code>. If <code>false</code>, the objects specified in the request are used to suggest records. If <code>true</code>, in addition to the objects specified in the request, the user's search scope is used to suggest records. The search scope is the list of objects a user uses most frequently.</p> <ul style="list-style-type: none"> <li>• If the request doesn't specify an object, use <code>useSearchScope=true</code>.</li> <li>• If <code>useSearchScope=true</code> and the user's search scope is empty, the default search scope is used to suggest records.</li> <li>• Only the first 10 objects are used to suggest records.</li> <li>• Objects specified in the <code>subject</code> parameter are prioritized over objects in the user's search scope.</li> <li>• Values for the <code>ignoreUnsupportedSOjects</code> parameter aren't applied to the objects in the search scope.</li> </ul> <p>This example uses only the search scope.</p> <pre>.../search/suggestions?q=Acme&amp;useSearchScope=true</pre> <p>This example uses the search scope and the Account object.</p> <pre>.../search/suggestions?q=Acme&amp;subject=Account&amp;useSearchScope=true</pre>
<code>where</code>	<p>Optional. A filter that follows the same syntax as the SOQL <code>WHERE</code> clause. URLs encode the expression.</p> <p>Use the clause for an object, or globally for all compatible objects. An example of an object-specific clause is:  <code>account.where=name%20LIKE%20%27Smith%25%27</code>. An example of a global clause is: <code>where=name%20LIKE%20%27Smith%25%27</code>. The parameter must be lower case. Any object-specific <code>where</code> clauses override the global <code>where</code> clause. You can't use this parameter for the Question object.</p> <p>To specify multiple entities, see the following example. This feature is available in version 38.0 and later.</p> <pre>...search/suggestions?q=Smith &amp;subject=Account,Contact,KnowledgeArticleVersion,CollaborationGroup,Topic,FeedItem // Specifies a global where clause (to filter Account and</pre>

Parameter	Description
	<pre> Contact) &amp;where=name%20LIKE%20%27Smith%25%27 // Overrides the global where clause for Knowledge Article  (filtering by PublishStatus and Language is required for KnowledgeArticle) &amp;knowledgearticleversion.where=PublishStatus='online'+and+language='en_US' // Overrides the global where clause for Topic &amp;topic.where=networkid=&lt;1234567891&gt; // Overrides the global where clause for CollaborationGroup &amp;collaborationgroup.where=networkid=&lt;1234567891&gt; // FeedItem-Question doesn't support where clauses, but we can filter the type and networkId&amp;type=question &amp;networkId==&lt;1234567891&gt; </pre>

## Usage

The suggestions resource returns records when the record's name field includes the exact text in the search string. The last term in the search string can match the beginning of a word. Records that contain the search string within a word aren't considered a match.



**Note:** If the user's search query contains quotation marks or wildcards, those symbols are automatically removed from the query string in the URI.



**Example:** The text string *national u* is treated as *national u\** and returns "National Utility", "National Urban Company", and "First National University".

## Suggested Records Response

The suggestions resource returns display-ready data about likely relevant records that the user can access.

A relevance algorithm determines the order of results.

Each suggested record in the results contains these elements:

Element	Description
Attributes	<p>The record's object type and the URL for accessing the record.</p> <p>Also includes the requested lookup fields' values. For example, if you requested <code>fields=Id, Name</code>, the result would include the ID and name.</p>
Name (or Title)	<p>The record's Name field. In the absence of a standard Name field, the Title field is used for these objects:</p> <ul style="list-style-type: none"> <li>• Dashboard</li> <li>• Idea</li> <li>• IdeaTheme</li> <li>• Note</li> </ul>

Element	Description
	<ul style="list-style-type: none"> <li>Question</li> </ul> <p>In the absence of a standard Name or Title field, the main identifying field is used. For example, in cases, the Case Number is used.</p>
Id	The record's unique identifier.

## Example JSON Response Body

```
[ {
  "attributes" : {
    "type" : "Account",
    "url" : "/services/data/v32.0/subjects/Account/001xx000003DH6WAAW"
  },
  "Id" : "001xx000003DH6WAAW"
  "Name" : "National Utility Service"
}, {
{
  "attributes" : {
    "type" : "Account",
    "url" : "/services/data/v32.0/subjects/Account/001xx000003DHJ4AAO"
  },
  "Id" : "001xx000003DHJ4AAO"
  "Name" : "National Utility Service"
}, {
{
  "attributes" : {
    "type" : "Account",
    "url" : "/services/data/v32.0/subjects/Account/001xx000003DHscAAG"
  },
  "Id" : "001xx000003DHscAAG"
  "Name" : "National Urban Technology Center"
} ]
```

## Example JSON Response Body for a Multiple Object Request

```
[ {
  "attributes" : {
    "type" : "Account",
    "url" : "/services/data/v38.0/subjects/Account/001xx000003DMEKAA4"
  },
  "Id" : "001xx000003DMEKAA4"
  "Name" : "Joe Doe Printing"
}, {
{
  "attributes" : {
    "type" : "Account",
    "url" : "/services/data/v38.0/subjects/Account/001xx000003DLjvAAG"
  },
  "Id" : "001xx000003DLjvAAGO"
```



```

    "Name" : "Joe Doe Plumbing"
  }, {
  {
    "attributes" : {
      "type" : "Contact",
      "url" : "/services/data/v38.0/subjects/Contact/003xx000004U9Y9AAK"
    },
    "Id" : "003xx000004U9Y9AAK"
    "Name" : "John Doe"
  } ]

```

## Example XML Response Body

```

<?xml version="1.0" encoding="UTF-8"?
<suggestions>
  <autoSuggestResults type="Account"
url="/services/data/v32.0/subjects/Account/001xx000003DH6WAAW">
    <Id>001xx000003DH6WAAW</Id>
    <Name>National Utility Service</Name>
  </autoSuggestResults>
  <autoSuggestResults type="Account"
url="/services/data/v32.0/subjects/Account/001xx000003DHJ4AAO">
    <Id>001xx000003DHJ4AAO</Id>
    <Name>National Utility Service</Name>
  </autoSuggestResults>
  <autoSuggestResults type="Account"
url="/services/data/v32.0/subjects/Account/001xx000003DHscAAG">
    <Id>001xx000003DHscAAG</Id>
    <Name>National Urban Technology Center</Name>
  </autoSuggestResults>
  <hasMoreResults>true</hasMoreResults>
</suggestions>

```

## Unsupported Objects

The suggestions resource supports all searchable objects except the following.

- ContentNote
- Event
- External objects
- FeedComment
- FeedPost
- IdeaComment
- Pricebook2
- Reply
- TagDefinition
- Task

# Search Suggested Article Title Matches

---

Returns a list of Salesforce Knowledge article titles that match the user's search query string. Provides a shortcut to navigate directly to likely relevant articles before the user performs a search.

## Syntax

### URI

`/vXX.X/search/suggestTitleMatches?q=search string&language=article language&publishStatus=article publication status`

### Available since release

30.0

### Formats

JSON, XML

### HTTP methods

GET

### Authentication

Authorization: Bearer **token**

### Request body

None required

### Request parameters

Parameter	Description
<code>articleTypes</code>	Optional. Three-character ID prefixes indicating the desired article types. You can specify multiple values for this parameter in a single REST call, by repeating the parameter name for each value. For example, <code>articleTypes=ka0&amp;articleTypes=ka1</code> .
<code>categories</code>	Optional. The name of the data category group and name of the data category for desired articles, expressed as a JSON mapping. You can specify multiple data category group and data category pairs in this parameter. For example, <code>categories={"Regions":"Asia","Products":"Laptops"}</code> . Characters in the URL might need to be encoded. For this example, <code>categories=%7B%22Regions%22%3A%22Asia%22%2C%22Products%22%3A%22Laptops%22%7D</code> .
<code>channel</code>	Optional. The channel where the matching articles are visible. Valid values: <ul style="list-style-type: none"> <li>• <code>AllChannels</code>—Visible in all channels the user has access to</li> <li>• <code>App</code>—Visible in the internal Salesforce Knowledge application</li> <li>• <code>Pkb</code>—Visible in the public knowledge base</li> <li>• <code>Csp</code>—Visible in the Customer Portal</li> <li>• <code>Prm</code>—Visible in the Partner Portal</li> </ul> If <code>channel</code> isn't specified, the default value is determined by the type of user. <ul style="list-style-type: none"> <li>• <code>Pkb</code> for a guest user</li> <li>• <code>Csp</code> for a Customer Portal user</li> </ul>

Parameter	Description
	<ul style="list-style-type: none"> <li>• <code>Prm</code> for a Partner Portal user</li> <li>• <code>App</code> for any other type of user</li> </ul> <p>If <code>channel</code> is specified, the specified value may not be the actual value requested, because of certain requirements.</p> <ul style="list-style-type: none"> <li>• For guest, Customer Portal, and Partner Portal users, the specified value must match the default value for each user type. If the values don't match or <code>AllChannels</code> is specified, then <code>App</code> replaces the specified value.</li> <li>• For all users other than guest, Customer Portal, and Partner Portal users: <ul style="list-style-type: none"> <li>– If <code>Pkb</code>, <code>Csp</code>, <code>Prm</code>, or <code>App</code> are specified, then the specified value is used.</li> <li>– If <code>AllChannels</code> is specified, then <code>App</code> replaces the specified value.</li> </ul> </li> </ul>
<code>language</code>	Required. The language of the user's query. Specifies the language that matching articles are written in.
<code>limit</code>	Optional. Specifies the maximum number of articles to return. If there are more suggested articles than the limit specified, the response body's <code>hasMoreResults</code> property is <code>true</code> .
<code>publishStatus</code>	Required. The article's publication status. Valid values: <ul style="list-style-type: none"> <li>• <code>Draft</code>—Articles aren't published in Salesforce Knowledge.</li> <li>• <code>Online</code>—Articles are published in Salesforce Knowledge.</li> <li>• <code>Archived</code>—Articles aren't published and are available in Archived Articles view.</li> </ul>
<code>q</code>	Required. The user's search query string, properly URL-encoded. Suggestions are returned only if the user's query string meets the minimum length requirements: one character for queries in Chinese, Japanese, and Korean, and three characters for all other languages. Query strings exceeding the maximum length of 250 characters return an error.
<code>topics</code>	Optional. The topic of the returned articles. For example: <code>topics=outlook&amp;topics=email</code> .
<code>validationStatus</code>	Optional. The validation status of returned articles.

## Example for getting suggested articles with matching titles

```
curl https://yourInstance.salesforce.com/services/data/v30.0/search/suggestTitleMatches?
q=orange+banana&language=en_US&publishStatus=Online -H "Authorization: Bearer token"
```

## Example JSON response body

```
{
  "autoSuggestResults" : [ {
    "attributes" : {
```

```

    "type" : "KnowledgeArticleVersion",
    "url" : "/services/data/v30.0/subjects/KnowledgeArticleVersion/ka0D00000004CcQ"
  },
  "Id" : "ka0D00000004CcQ",
  "UrlName" : "orange-banana",
  "Title" : "orange banana",
  "KnowledgeArticleId" : "kA0D00000004Cfz"
} ],
"hasMoreResults" : false
}


```

## Usage

Salesforce Knowledge must be enabled in your organization. The user must have the “View Articles” permission enabled. The articles suggested include only the articles the user can access, based on the data categories and article types the user has permissions to view.


The Suggest Article Title Matches resource is designed to return display-ready data about likely relevant articles. Articles are suggested if their titles contain the entire query string, except stopwords, such as “a,” “for,” and “the.”

For example, a search for *Backpacking for desert* returns the article, “Backpacking in the desert.”

 **Note:** Articles with titles that include stopwords from the query string, such as “Backpacking for desert survival” in this example, appear before matching articles with titles that don’t include the stopwords.

Stopwords at the end of the query string are treated as search terms.

A wildcard is automatically appended to the last token in the query string.

 **Note:** If the user’s search query contains quotation marks or wildcards, those symbols are automatically removed from the query string in the URI along with any other special characters.

If the number of suggestions returned exceeds the limit specified in the request, the end of the response contains a field called `hasMoreResults`. Its value is `true` if the suggestions returned are only a subset of the suggestions available, and `false` otherwise.

SEE ALSO:

[SObject Suggested Articles](#)

## Search Suggested Queries

Returns a list of suggested searches based on the user’s query string text matching searches that other users have performed in Salesforce Knowledge. Provides a way to improve search effectiveness, before the user performs a search.

## Syntax

### URI

`vXX.X/search/suggestSearchQueries?q=search string&language=language of query`

### Available since release

30.0

### Formats

JSON, XML

**HTTP methods**

GET

**Authentication**Authorization: Bearer *token***Request body**

None required

**Request parameters**

Parameter	Description
<code>channel</code>	<p>Optional. Specifies the Salesforce Knowledge channel where the article can be viewed. Valid values:</p> <ul style="list-style-type: none"> <li>• <code>AllChannels</code>—Visible in all channels the user has access to</li> <li>• <code>App</code>—Visible in the internal Salesforce Knowledge application</li> <li>• <code>Pkb</code>—Visible in the public knowledge base</li> <li>• <code>Csp</code>—Visible in the Customer Portal</li> <li>• <code>Prm</code>—Visible in the Partner Portal</li> </ul> <p>If <code>channel</code> isn't specified, the default value is determined by the type of user.</p> <ul style="list-style-type: none"> <li>• <code>Pkb</code> for a guest user</li> <li>• <code>Csp</code> for a Customer Portal user</li> <li>• <code>Prm</code> for a Partner Portal user</li> <li>• <code>App</code> for any other type of user</li> </ul> <p>If <code>channel</code> is specified, the specified value may not be the actual value requested, because of certain requirements.</p> <ul style="list-style-type: none"> <li>• For guest, Customer Portal, and Partner Portal users, the specified value must match the default value for each user type. If the values don't match or <code>AllChannels</code> is specified, then <code>App</code> replaces the specified value.</li> <li>• For all users other than guest, Customer Portal, and Partner Portal users: <ul style="list-style-type: none"> <li>– If <code>Pkb</code>, <code>Csp</code>, <code>Prm</code>, or <code>App</code> are specified, then the specified value is used.</li> <li>– If <code>AllChannels</code> is specified, then <code>App</code> replaces the specified value.</li> </ul> </li> </ul>
<code>language</code>	Required. The language of the user's query.
<code>limit</code>	Optional. Specifies the maximum number of suggested searches to return. If there are more suggested queries than the limit specified, the response body's <code>hasMoreResults</code> property is <code>true</code> .
<code>q</code>	Required. The user's search query string, properly URL-encoded. Suggestions are returned only if the user's query string meets the minimum length requirements: one character for queries in Chinese, Japanese, and Korean, and three characters for all other languages. Query strings exceeding the maximum length of 250 characters return an error.

## Example for getting suggested queries

```
curl https://yourInstance.salesforce.com/services/data/v30.0/search/suggestSearchQueries?
q=app&language=en_US -H "Authorization: Bearer token"
```

## Example JSON response body

```
{
  "autoSuggestResults" : [ {
    "0" : "apple",
    "1" : "apple banana",
  } ],
  "hasMoreResults" : false
}
```

## Usage

Salesforce Knowledge must be enabled in your organization.

Queries are suggested if they exactly match the query string text. The text string must be a prefix within the query; it's not considered a match if it appears within a word. For example, the text string *app* would return suggested queries *apple banana* and *banana apples* but not *pineapple*.

If the number of suggestions returned exceeds the limit specified in the request, the end of the response contains a field called `hasMoreResults`. Its value is `true` if the suggestions returned are only a subset of the suggestions available, and `false` otherwise.

If the user's search query contains quotation marks or wildcards, those symbols are automatically removed from the query string in the URI.

## Tabs

---

Returns a list of all tabs—including Lightning page tabs—available to the current user, regardless of whether the user has chosen to hide tabs via the All Tabs (+) tab customization feature. This resource is available in REST API version 31.0 and later.

## Syntax

### URI

/vXX.X/tabs/

### Formats

JSON, XML

### HTTP methods

GET, HEAD

### Authentication

Authorization: Bearer **token**

### Request body

None

**Request parameters**

None

## Example

**Usage for getting tabs**`/services/data/v31.0/tabs`**Sample JSON Response body for /vXX.X/tabs/**

This is a partial code sample, representing the Accounts tab.

```
[...
  "colors" : [ {
    "color" : "6f7ccb",
    "context" : "primary",
    "theme" : "theme4"
  }, {
    "color" : "236FBD",
    "context" : "primary",
    "theme" : "theme3"
  } ],
  "custom" : false,
  "iconUrl" : "https://yourInstance.salesforce.com/img/icon/accounts32.png",
  "icons" : [ {
    "contentType" : "image/png",
    "height" : 32,
    "theme" : "theme3",
    "url" : "https://yourInstance.salesforce.com/img/icon/accounts32.png",
    "width" : 32
  }, {
    "contentType" : "image/png",
    "height" : 16,
    "theme" : "theme3",
    "url" : "https://yourInstance.salesforce.com/img/icon/accounts16.png",
    "width" : 16
  }, {
    "contentType" : "image/svg+xml",
    "height" : 0,
    "theme" : "theme4",
    "url" : "https://yourInstance.salesforce.com/img/icon/t4/standard/account.svg",
    "width" : 0
  }, {
    "contentType" : "image/png",
    "height" : 60,
    "theme" : "theme4",
    "url" : "https://yourInstance.salesforce.com/img/icon/t4/standard/account_60.png",
    "width" : 60
  }, {
    "contentType" : "image/png",
    "height" : 120,
    "theme" : "theme4",
```

```

    "url" : "https://yourInstance.salesforce.com/img/icon/t4/standard/account_120.png",
    "width" : 120
  } ],
  "label" : "Accounts",
  "miniIconUrl" : "https://yourInstance.salesforce.com/img/icon/accounts16.png",
  "name" : "standard-Account",
  "objectName" : "Account",
  "url" : "https://yourInstance.salesforce.com/001/o",
  ...]

```

## Themes

Gets the list of icons and colors used by themes in the Salesforce application. Theme information is provided for objects in your organization that use icons and colors in the Salesforce UI.

The `If-Modified-Since` header can be used with this resource, with a date format of `EEE, dd MMM yyyy HH:mm:ss z`. When this header is used, if the object metadata has not changed since the provided date, a `304 Not Modified` status code is returned, with no response body.

## Syntax

### URI

/vXX.X/theme

### Available since release

29.0

### Formats

JSON, XML

### HTTP methods

GET

### Authentication

Authorization: Bearer *token*

### Request body

None

### Request parameters

None

### Response data

An array of theme items. Each theme item contains the following fields:

Name	Type	Description
colors	array of theme colors	Array of theme colors.
icons	array of theme icons	Array of theme icons.
name	string	Name of the object that the theme colors and icons are associated with.



Each theme color contains the following fields:

Name	Type	Description
<code>color</code>	string	The color described in Web color RGB format, for example, "00FF00".
<code>context</code>	string	The color context, which determines whether the color is the main color ("primary") for the object, or not.
<code>theme</code>	string	The associated theme. Possible values include: <ul style="list-style-type: none"> <li><code>theme2</code>—Theme used prior to Spring '10, called the "Salesforce Classic 2005 user interface theme"</li> <li><code>theme3</code>—Theme introduced in Spring '10, called the "Salesforce Classic 2010 user interface theme"</li> <li><code>theme4</code>—Theme introduced in Winter '14 for the mobile touchscreen version of Salesforce, and in Winter '16 for Lightning Experience</li> <li><code>custom</code>—Theme associated with a custom icon</li> </ul>

Each theme icon contains the following fields:

Name	Type	Description
<code>contentType</code>	string	The icon's content type, for example, "image/png."
<code>height</code>	number	The icon's height in pixels. If the icon content type is an SVG type, height and width values are not used.
<code>theme</code>	string	The associated theme. Possible values include: <ul style="list-style-type: none"> <li><code>theme2</code>—Theme used prior to Spring '10, called the "Salesforce Classic 2005 user interface theme"</li> <li><code>theme3</code>—Theme introduced in Spring '10, called the "Salesforce Classic 2010 user interface theme"</li> <li><code>theme4</code>—Theme introduced in Winter '14 for the mobile touchscreen version of Salesforce, and in Winter '16 for Lightning Experience</li> <li><code>custom</code>—Theme associated with a custom icon</li> </ul>
<code>url</code>	string	The fully qualified URL for this icon.
<code>width</code>	number	The icon's width in pixels. If the icon content type is an SVG type, height and width values are not used.

## Example

The following is an example JSON response using a request of `services/data/v29.0/theme`:

```
{
  "themeItems" : [
    {
```

```

    "name" : "Merchandise__c",
    "icons" : [
      {
        "contentType" : "image/png",
        "width" : 32,
        "url" : "https://yourInstance.salesforce.com/img/icon/computer32.png",
        "height" : 32,
        "theme" : "theme3"
      },
      {
        "contentType" : "image/png",
        "width" : 16,
        "url" : "https://yourInstance.salesforce.com/img/icon/computer16.png",
        "height" : 16,
        "theme" : "theme3"
      } ],
    "colors" : [
      {
        "context" : "primary",
        "color" : "6666CC",
        "theme" : "theme3"
      },
      {
        "context" : "primary",
        "color" : "66895F",
        "theme" : "theme4"
      } ],
    ...
  }
  ...
}
```

## Composite Resources

---

Use REST API composite resources to improve your application's performance by minimizing the number of round-trips between the client and server.

### IN THIS SECTION:

#### [Composite](#)

Executes a series of REST API requests in a single call. You can use the output of one request as the input to a subsequent request. The response bodies and HTTP statuses of the requests are returned in a single response body. The entire request counts as a single call toward your API limits.

#### [Batch](#)

Executes up to 25 subrequests in a single request. The response bodies and HTTP statuses of the subrequests in the batch are returned in a single response body. Each subrequest counts against rate limits.

#### [Object Tree](#)

Creates one or more sObject trees with root records of the specified type. An sObject tree is a collection of nested, parent-child records with a single root record.

### SObject Collections

Executes actions on multiple records in one request. Use SObject Collections to reduce the number of round-trips between the client and server. This resource is available in API version 42.0 and later.

## Composite

Executes a series of REST API requests in a single call. You can use the output of one request as the input to a subsequent request. The response bodies and HTTP statuses of the requests are returned in a single response body. The entire request counts as a single call toward your API limits.

The requests in a composite call are called *subrequests*. All subrequests are executed in the context of the same user. In a subrequest's body, you specify a reference ID that maps to the subrequest's response. You can then refer to the ID in the `url` or `body` fields of later subrequests by using a JavaScript-like reference notation.

For example, the following composite request body includes two subrequests. The first creates an account and designates the output as `refAccount`. The second creates a contact parented under the new account by referencing `refAccount` in the subrequest body.

```
{
  "compositeRequest" : [{
    "method" : "POST",
    "url" : "/services/data/v38.0/objects/Account",
    "referenceId" : "refAccount",
    "body" : { "Name" : "Sample Account" }
  }, {
    "method" : "POST",
    "url" : "/services/data/v38.0/objects/Contact",
    "referenceId" : "refContact",
    "body" : {
      "LastName" : "Sample Contact",
      "AccountId" : "@{refAccount.id}"
    }
  }
]
```

You can specify whether an error in a subrequest causes the whole composite request to roll back or just the subrequests that depend on it. You can also specify headers for each subrequest.

Composite is supported for the following resources.

- All sObject resources (`vXX.X/objects/`)
- The Query resource (`vXX.X/query/?q=soql`)
- The QueryAll resource (`vXX.X/queryAll/?q=soql`)
- The SObject Collections resource (`vXX.X/composite/objects`). Available in API version 43.0 and later.

 **Note:** You can have up to 25 subrequests in a single call. Up to 5 of these subrequests can be query operations, including Query, QueryAll, and "Query More" requests to obtain the next batch of query results.

### URI

`/vXX.X/composite`

### Formats

JSON

**HTTP method**

GET (lists other available composite resources), POST

**Authentication**

Authorization: Bearer *token*

**Parameters**

None required

**Request body**

[Composite Request Body](#)

**Response body**

[Composite Response Body](#)

**Examples**

For examples of using the Composite resource, see [Execute Dependent Requests in a Single API Call](#) and [Update an Account, Create a Contact, and Link Them with a Junction Object](#).

## Composite Request Body

Describes a collection of subrequests to execute with the Composite resource.

### Composite Collection Input

The request body contains an `allOrNone` flag that specifies how to roll back errors and a `compositeRequest` collection that includes subrequests to execute.

**Properties**

Name	Type	Description	Required or Optional
<code>allOrNone</code>	Boolean	<p>Specifies what to do when an error occurs while processing a subrequest. If the value is <code>true</code>, the entire composite request is rolled back. The top-level request returns HTTP 200 and includes responses for each subrequest.</p> <p>If the value is <code>false</code>, the remaining subrequests that don't depend on the failed subrequest are executed. Dependent subrequests aren't executed.</p> <p>In either case, the top-level request returns HTTP 200 and includes responses for each subrequest.</p>	Optional
<code>compositeRequest</code>	<a href="#">Composite Subrequest</a> []	Collection of subrequests to execute.	Required

**JSON example**

```
{
  "allOrNone" : true,
  "compositeRequest" : [{
    Composite Subrequest
  ]
}
```

```

    }, {
      Composite Subrequest
    }, {
      Composite Subrequest
    }
  ]
}

```

## Composite Subrequest

Contains the resource, method, headers, body, and reference ID for the subrequest.

### Properties

Name	Type	Description	Required or Optional
body	Varies	The input body for the subrequest. The type depends on the request specified in the <code>url</code> property.	Optional
httpHeaders	Map<String, String>	Request headers and their values to include with the subrequest. You can include any header supported by the requested resource except for the following three headers. <ul style="list-style-type: none"> <li>Accept</li> <li>Authorization</li> <li>Content-Type</li> </ul> Subrequests inherit these three header values from the top-level request. Don't specify these headers in a subrequest. If you do, the top-level request fails and returns an HTTP 400 response.	Optional
method	String	The method to use with the requested resource. Possible values are <code>POST</code> , <code>PUT</code> , <code>PATCH</code> , <code>GET</code> , and <code>DELETE</code> (case-sensitive). For a list of valid methods, refer to the documentation for the requested resource.	Required
referenceId	String	Reference ID that maps to the subrequest's response and can be used to reference the response in later subrequests. You can reference the <code>referenceId</code> in either the body or URL of a subrequest. Use this syntax to include a reference: <code>@{referenceId.FieldName}</code> . You can use two operators with the reference ID. The <code>.</code> operator references a field on a JSON object in the response. For example, let's say you retrieve an account record's data in one subrequest and assign the reference ID <code>Account1Data</code> to the output. You can refer to the account's name in later subrequests like this: <code>@{Account1Data.Name}</code> . The <code>[ ]</code> operator indexes a JSON collection in the response. For example, let's say you request basic account information with the <code>SObject Basic Information</code> resource in one subrequest and	Required

Name	Type	Description	Required or Optional
		<p>assign the reference ID <code>AccountInfo</code> to the output. Part of the response includes a collection of recently created accounts. You can refer to the ID of the first account in the recent items collection like this:</p> <pre>@{AccountInfo.recentItems[0].Id}.</pre> <p>You can use each operator recursively as long as it makes sense in the context of the response. For example, to refer to the billing city component of an account's compound address field:</p> <pre>@{NewAccount.BillingAddress.city}.</pre> <p><code>referenceId</code> is case-sensitive, so pay close attention to the case of the fields you're referring to.</p>	
<code>url</code>	String	<p>The resource to request.</p> <ul style="list-style-type: none"> <li>• The URL can include any query string parameters that the subrequest supports. The query string must be URL-encoded.</li> <li>• You can use parameters to filter response bodies.</li> <li>• The URL must start with <code>/services/data/vXX.X/</code>.</li> </ul>	Required

### JSON examples

```
{
  "method" : "GET",
  "url" : "/services/data/v38.0/subjects/Account/describe",
  "httpHeaders" : { "If-Modified-Since" : "Tue, 31 May 2016 18:00:00 GMT" },
  "referenceId" : "AccountInfo"
}
```


```
{
  "method" : "POST",
  "url" : "/services/data/v38.0/subjects/Account",
  "referenceId" : "refAccount",
  "body" : { "Name" : "Sample Account" }
}
```

```
{
  "method" : "GET",
  "url" : "/services/data/v38.0/subjects/Account/@{refAccount.id}",
  "referenceId" : "NewAccountFields"
}
```

### Usage

Because `referenceId` is case-sensitive, it's important to note the case of the fields that you're referring to. The same field can use different cases in different contexts. For example, when you create a record, the ID field appears as `id` in the response. But when you access a record's data with the `SObject Rows` resource, the ID field appears as `Id`. In the last example subrequest above, the `@{refAccount.id}` reference is valid because `refAccount` refers to the response from the POST in the second

subrequest. If you use `Id` instead (mixed case rather than all lowercase), as in `@{refAccount.Id}`, you get an error when sending the request because the reference ID uses the wrong case.

 **Note:** You can have up to 25 subrequests in a single call. Up to 5 of these subrequests can be query operations, including Query, QueryAll, and “Query More” requests to obtain the next batch of query results.

## Composite Response Body

Describes the result of a Composite request.

### Composite Results

#### Properties

Name	Type	Description
compositeResponse	<a href="#">Composite Subrequest Result</a> []	Collection of subrequest results

#### JSON example

```
{
  "compositeResponse" : [{
    Composite Subrequest Result
  }, {
    Composite Subrequest Result
  }, {
    Composite Subrequest Result
  }]
}
```

### Composite Subrequest Result

#### Properties

Name	Type	Description
body	The type depends on the response type of the subrequest.	The response body of this subrequest. See the documentation for the subrequest resource for more information.  If the subrequest returns an error, the body includes the error code and message. For more details on error responses, see <a href="#">Status Codes and Error Responses</a>
httpHeaders	Map<String, String>	Response headers and their values for this subrequest. The Composite resource doesn't support the Content-Length header, so subrequest responses don't include this header and neither does the top-level response.

Name	Type	Description
statusCode	Integer	An HTTP status code for this subrequest. If <code>allOrNone</code> is set to <code>true</code> in the composite request and a subrequest returns an error, all other subrequests return the 400 HTTP status code.
referenceID	String	The reference ID specified in the subrequest. This property lets you easily associate subrequests with their results.

### JSON example

The following example shows the response for a subrequest that successfully created an Account:

```
{
  "body" : {
    "id" : "001R00000033I6AIAU",
    "success" : true,
    "errors" : [ ]
  },
  "httpHeaders" : {
    "Location" : "/services/data/v38.0/subjects/Account/001R00000033I6AIAU"
  },
  "statusCode" : 201,
  "referenceId" : "refAccount"
}
```

The following example shows the response for a subrequest that had an error while trying to create a Contact:

```
{
  "body" : [ {
    "message" : "Email: invalid email address: Not a real email address",
    "errorCode" : "INVALID_EMAIL_ADDRESS",
    "fields" : [ "Email" ]
  } ],
  "httpHeaders" : { },
  "statusCode" : 400,
  "referenceId" : "badContact"
}
```

## Batch

Executes up to 25 subrequests in a single request. The response bodies and HTTP statuses of the subrequests in the batch are returned in a single response body. Each subrequest counts against rate limits.

The requests in a batch are called subrequests. All subrequests are executed in the context of the same user. Subrequests are independent, and you can't pass information between them. Subrequests execute serially in their order in the request body. When a subrequest executes successfully, it commits its data. Commits are reflected in the output of later subrequests. If a subrequest fails, commits made by previous subrequests are not rolled back. If a batch request doesn't complete within 10 minutes, the batch times out and the remaining subrequests aren't executed.

Batching for the following resources and resource groups is available in API version 34.0 and later.

- Limits—`vXX.X/limits`
- Object resources—`vXX.X/subjects/`



- Query—`vXX.X/query/?q=sql`
- QueryAll—`vXX.X/queryAll/?q=sql`
- Search—`vXX.X/search/?q=sql`
- Connect resources—`vXX.X/connect/`
- Chatter resources—`vXX.X/chatter/`

Batching for the following resources and resource groups is available in API version 35.0 and later.

- Actions—`vXX.X/actions`

The API version of the resource accessed in each subrequest must be no earlier than 34.0 and no later than the Batch version in the top-level request. For example, if you post a Batch request to `/services/data/v35.0/composite/batch`, you can include subrequests that access version 34.0 or 35.0 resources. But if you post a Batch request to `/services/data/v34.0/composite/batch`, you can only include subrequests that access version 34.0 resources.

**URI**

`/vXX.X/composite/batch`

**Formats**

JSON, XML

**HTTP method**

POST

**Authentication**

Authorization: Bearer *token*

**Parameters**

None required

**Request body**

[Batch Request Body](#) on page 235

**Response body**

[Batch Response Body](#) on page 237

**Examples**

For an example of using the Batch resource, see [Update a Record and Get Its Field Values in a Single Request](#) on page 96.

## Batch Request Body

Describes a collection of subrequests to execute with the Batch resource.

### Batch Collection Input

The request body contains a `batchRequests` collection that includes subrequests to execute.

**Properties**

Name	Type	Description	Required or Optional
<code>batchRequests</code>	<a href="#">Subrequest[]</a>	Collection of subrequests to execute.	Required

Name	Type	Description	Required or Optional
<code>haltOnError</code>	Boolean	<p>Controls whether Salesforce should stop processing subrequests if a subrequest fails. The default is <code>false</code>.</p> <p>If the value is <code>false</code> and a subrequest in the batch doesn't complete, Salesforce attempts to execute the subsequent subrequests in the batch.</p> <p>If the value is <code>true</code> and a subrequest in the batch doesn't complete due to an HTTP response in the 400 or 500 range, Salesforce halts execution. It returns an HTTP 412 status code and a <code>BATCH_PROCESSING_HALTED</code> error message for each subsequent subrequest. The top-level request to <code>/composite/batch</code> returns HTTP 200, and the <code>hasErrors</code> property in the response is set to <code>true</code>.</p> <p>This setting is only applied during subrequest processing, and not during initial request deserialization. If an error is detected during deserialization, such as a syntax error in the <a href="#">Subrequest</a> request data, Salesforce returns an HTTP 400 <code>Bad Request</code> error without processing any subrequests, regardless of the value of <code>haltOnError</code>. An example where this could occur is if a subrequest has an invalid <code>method</code> or <code>url</code> field.</p>	Optional

### Root XML Tag

`<batch>`

### JSON example

```
{
  "batchRequests" : [
    {
      "method" : "PATCH",
      "url" : "v34.0/subjects/account/001D000000K0fX0IAZ",
      "richInput" : {"Name" : "NewName"}
    }, {
      "method" : "GET",
      "url" : "v34.0/subjects/account/001D000000K0fX0IAZ?fields=Name,BillingPostalCode"
    }
  ]
}
```

### Subrequest

Contains the resource, method, and accompanying information for the subrequest.

**Properties**

Name	Type	Description	Required or Optional
<code>binaryPartName</code>	String	<p>The name of the binary part in the multipart request.</p> <p>When multiple binary parts are uploaded in one batch request, this value is used to map a request to its binary part. To prevent name collisions, use a unique value for each <code>binaryPartName</code> property in a batch request.</p> <p>If this value exists, a <code>binaryPartNameAlias</code> value must also exist.</p>	Optional
<code>binaryPartNameAlias</code>	String	<p>The <code>name</code> parameter in the Content-Disposition header of the binary body part. Different resources expect different values. See <a href="#">Insert or Update Blob Data</a>.</p> <p>If this value exists, a <code>binaryPartName</code> value must also exist.</p>	Optional
<code>method</code>	String	The method to use with the requested resource. For a list of valid methods, refer to the documentation for the requested resource.	Required
<code>richInput</code>		<p>The input body for the request.</p> <p>The type depends on the request specified in the <code>url</code> property.</p>	Optional
<code>url</code>	String	<p>The resource to request.</p> <ul style="list-style-type: none"> <li>The URL can include any query string parameters that the subrequest supports. The query string must be URL-encoded.</li> <li>You can use parameters to filter response bodies.</li> <li>You cannot apply headers at the subrequest level.</li> </ul>	Required

**Root XML Tag**

```
<request>
```

**JSON example**

```
{
  "method" : "GET",
  "url" : "v34.0/subjects/account/001D000000K0fX0IAZ?fields=Name,BillingPostalCode"
}
```

**SEE ALSO:**
[Batch](#)
[Update a Record and Get Its Field Values in a Single Request](#)
**Batch Response Body**

Describes the result of a Batch request.

## Batch Results

### Properties


Name	Type	Description
hasErrors	Boolean	<code>true</code> if at least one of the results in the result set is an HTTP status code in the 400 or 500 range; <code>false</code> otherwise.
results	<a href="#">Subrequest Result[]</a>	Collection of subrequest results.

### JSON example

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

## Subrequest Result

### Properties

Name	Type	Description
result	The type depends on the response type of the subrequest.   <b>Important:</b> If the result is an error, the type is a collection containing the error message and error code.	The response body of this subrequest.
statusCode	Integer	An HTTP status code indicating the status of this subrequest.

**JSON example**

```
{
  "attributes" : {
    "type" : "Account",
    "url" : "/services/data/v34.0/objects/Account/001D000000K0fXOIAZ"
  },
  "Name" : "NewName",
  "BillingPostalCode" : "94015",
  "Id" : "001D000000K0fXOIAZ"
}
```

**SEE ALSO:**[Batch](#)[Update a Record and Get Its Field Values in a Single Request](#)

## SObject Tree

Creates one or more sObject trees with root records of the specified type. An sObject tree is a collection of nested, parent-child records with a single root record.

In the request data, you supply the record hierarchies, required and optional field values, each record's type, and a reference ID for each record. Upon success, the response contains the IDs of the created records. If an error occurs while creating a record, the entire request fails. In this case, the response contains only the reference ID of the record that caused the error and the error information.

The request can contain the following:

- Up to a total of 200 records across all trees
- Up to five records of different types
- SObject trees up to five levels deep

Because an sObject tree can contain a single record, you can use this resource to create up to 200 unrelated records of the same type.

When the request is processed and records are created, triggers, processes, and workflow rules fire separately for each of the following groups of records.

- Root records across all sObject trees in the request
- All second-level records of the same type—for example, second-level Contacts across all sObject trees in the request
- All third-level records of the same type
- All fourth-level records of the same type
- All fifth-level records of the same type

**URI**

/vXX.X/composite/tree/***SObjectName***

**Formats**

JSON, XML

**HTTP method**

POST

**Authentication**

Authorization: Bearer ***token***

Parameters

None required

Request body

[SObject Tree Request Body](#) on page 240

Response body

[SObject Tree Response Body](#) on page 243

Examples

- For an example of creating unrelated records of the same type, see [Create Multiple Records](#) on page 99.
- For an example of creating nested records, see [Create Nested Records](#) on page 97.

# Object Tree Request Body

Describes a collection of sObject trees to create with the SObject Tree resource.

## Object Tree Collection Input

The request body contains a `records` collection that includes sObject trees.

Properties

Name	Type	Description	Required or Optional
records	<a href="#">SObject Tree Input[]</a>	Collection of record trees to create. Each tree's root record type must correspond to the sObject specified in the SObject Tree URL.	Required

Root XML Tag

<SObjectTreeRequest>

JSON example

```
{
  "records" : [{
    "attributes" : {"type" : "Account", "referenceId" : "ref1"},
    "name" : "SampleAccount",
    "phone" : "1234567890",
    "website" : "www.salesforce.com",
    "numberOfEmployees" : "100",
    "industry" : "Banking",
    "Contacts" : {
      "records" : [{
        "attributes" : {"type" : "Contact", "referenceId" : "ref2"},
        "lastname" : "Smith",
        "title" : "President",
        "email" : "sample@salesforce.com"
      }, {
        "attributes" : {"type" : "Contact", "referenceId" : "ref3"},
        "lastname" : "Evans",
        "title" : "Vice President",
```

```

        "email" : "sample@salesforce.com"
      }]
    }
  }, {
    "attributes" : {"type" : "Account", "referenceId" : "ref4"},
    "name" : "SampleAccount2",
    "phone" : "1234567890",
    "website" : "www.salesforce2.com",
    "numberOfEmployees" : "100",
    "industry" : "Banking"
  }]
}

```

### XML example

```

<SObjectTreeRequest>
  <records type="Account" referenceId="ref1">
    <name>SampleAccount</name>
    <phone>1234567890</phone>
    <website>www.salesforce.com</website>
    <numberOfEmployees>100</numberOfEmployees>
    <industry>Banking</industry>
    <Contacts>
      <records type="Contact" referenceId="ref2">
        <lastname>Smith</lastname>
        <title>President</title>
        <email>sample@salesforce.com</email>
      </records>
      <records type="Contact" referenceId="ref3">
        <lastname>Evans</lastname>
        <title>Vice President</title>
        <email>sample@salesforce.com</email>
      </records>
    </Contacts>
  </records>
  <records type="Account" referenceId="ref4">
    <name>SampleAccount2</name>
    <phone>1234567890</phone>
    <website>www.salesforce2.com</website>
    <numberOfEmployees>100</numberOfEmployees>
    <industry>Banking</industry>
  </records>
</SObjectTreeRequest>

```

### SObject Tree Input

An sObject tree is a recursive data structure that contains a root record, its data, and its child records represented as other sObject trees.

## Properties

Name	Type	Description	Required or Optional
<code>attributes</code>	Collection	Attributes for this record. The <code>attributes</code> property contains two subproperties: <ul style="list-style-type: none"> <li><code>type</code> (required)—This record's type.</li> <li><code>referenceId</code> (required)—Reference ID for this record. Must be unique in the context of the request and start with an alphanumeric character.</li> </ul> In XML, include <code>attributes</code> inside the <code>records</code> element.	Required
Required object fields	Depends on field	Required fields and field values for this record.	Required
Optional object fields	Depends on field	Optional fields and field values for this record.	Optional
Child relationships	<a href="#">SObject Tree Collection Input</a>	This record's child relationships, such as an account's child contacts. Child relationships are either master-detail or lookup relationships. To view an object's valid child relationships, use the SObject Describe resource or Schema Builder. The value of this property is an SObject Tree Collection Input that contains child sObject trees.	Optional

## Root XML Tag

```
<records>
```

## JSON example

```
{
  "attributes" : {"type" : "Account", "referenceId" : "ref1"},
  "name" : "SampleAccount",
  "phone" : "1234567890",
  "website" : "www.salesforce.com",
  "NumberOfEmployees" : "100",
  "industry" : "Banking",
  "Contacts" : {
    "records" : [{
      "attributes" : {"type" : "Contact", "referenceId" : "ref2"},
      "lastname" : "Smith",
      "title" : "President",
      "email" : "sample@salesforce.com"
    }, {
      "attributes" : {"type" : "Contact", "referenceId" : "ref3"},
      "lastname" : "Evans",
      "title" : "Vice President",
      "email" : "sample@salesforce.com"
    }
  ]
}
```



**XML example**

```

<records type="Account" referenceId="ref1">
  <name>SampleAccount</name>
  <phone>1234567890</phone>
  <website>www.salesforce.com</website>
  <numberOfEmployees>100</numberOfEmployees>
  <industry>Banking</industry>
  <Contacts>
    <records type="Contact" referenceId="ref2">
      <lastname>Smith</lastname>
      <title>President</title>
      <email>sample@salesforce.com</email>
    </records>
    <records type="Contact" referenceId="ref3">
      <lastname>Evans</lastname>
      <title>Vice President</title>
      <email>sample@salesforce.com</email>
    </records>
  </Contacts>
</records>

```

SEE ALSO:

[SObject Tree](#)[Create Multiple Records](#)[Create Nested Records](#)

## SObject Tree Response Body

Describes the result of an SObject Tree request.

**Properties**

Name	Type	Description
<code>hasErrors</code>	Boolean	<code>true</code> if an error occurred while creating a record; <code>false</code> otherwise.
<code>results</code>	Collection	Upon success, <code>results</code> contains the reference ID of each requested record and its new record ID. Upon failure, it contains only the reference ID of the record that caused the error, error status code, error message, and fields related to the error. In the case of duplicate reference IDs, <code>results</code> contains one item for each instance of the duplicate ID.

**JSON example upon success**

```

{
  "hasErrors" : false,
  "results" : [{
    "referenceId" : "ref1",
    "id" : "001D000000K0fXoIAZ"
  }, {

```

```

    "referenceId" : "ref4",
    "id" : "001D000000K0fXPIAZ"
  }, {
    "referenceId" : "ref2",
    "id" : "003D000000QV9n2IAD"
  }, {
    "referenceId" : "ref3",
    "id" : "003D000000QV9n3IAD"
  }
}

```

### XML example upon success

```

<?xml version="1.0" encoding="UTF-8"?>
<SObjectTreeResponse>
  <hasErrors>false</hasErrors>
  <results>
    <id>001D000000K0fXPIAZ</id>
    <referenceId>ref1</referenceId>
  </results>
  <results>
    <id>001D000000K0fXPIAZ</id>
    <referenceId>ref4</referenceId>
  </results>
  <results>
    <id>003D000000QV9n2IAD</id>
    <referenceId>ref2</referenceId>
  </results>
  <results>
    <id>003D000000QV9n3IAD</id>
    <referenceId>ref3</referenceId>
  </results>
</SObjectTreeResponse>

```

### JSON example upon failure

```

{
  "hasErrors" : true,
  "results" : [{
    "referenceId" : "ref2",
    "errors" : [{
      "statusCode" : "INVALID_EMAIL_ADDRESS",
      "message" : "Email: invalid email address: 123",
      "fields" : [ "Email" ]
    }]
  }]
}

```

### XML example upon failure

```

<SObjectTreeResponse>
  <hasErrors>true</hasErrors>
  <results>
    <errors>
      <fields>Email</fields>
      <message>Email: invalid email address: 123</message>
    </errors>
  </results>
</SObjectTreeResponse>

```

```

        <statusCode>INVALID_EMAIL_ADDRESS</statusCode>
    </errors>
    <referenceId>ref2</referenceId>
</results>
</SObjectTreeResponse>

```

**SEE ALSO:**[SObject Tree](#)[Create Multiple Records](#)[Create Nested Records](#)

## SObject Collections

Executes actions on multiple records in one request. Use SObject Collections to reduce the number of round-trips between the client and server. This resource is available in API version 42.0 and later.

**URI**

The URI to use depends on the operation.

**Create**

POST /vXX.X/composite/subjects

**Retrieve**

GET

/vXX.X/composite/subjects/***SubjectName***?ids=***recordId, recordId***&fields=***fieldname, fieldname***

**Update**

PATCH /vXX.X/composite/subjects

**Delete**

DELETE /vXX.X/composite/subjects?ids=***recordId, recordId***

**Formats**

JSON, XML

**HTTP method**

GET, DELETE, PATCH, POST

**Authentication**

Authorization: Bearer ***token***

The parameters, request body, and response body you use depend on the operation. For details, see the specific operation.

**IN THIS SECTION:**[Create Multiple Records with Fewer Round-Trips](#)

Use a POST request with sObject Collections to add up to 200 records, returning a list of SaveResult objects. You can choose whether to roll back the entire request when an error occurs.

[Retrieve Multiple Records with Fewer Round-Trips](#)

Use a GET or POST request with sObject Collections to retrieve one or more records of the same object type. A list of sObjects that represents the individual records of the specified type is returned. The number of sObjects returned matches the number of IDs passed in the request.

### [Update Multiple Records with Fewer Round-Trips](#)

Use a PATCH request with sObject Collections to update up to 200 records, returning a list of SaveResult objects. You can choose whether to roll back the entire request when an error occurs.

### [Delete Multiple Records with Fewer Round-Trips](#)

Use a DELETE request with sObject Collections to delete up to 200 records, returning a list of DeleteResult objects. You can choose to roll back the entire request when an error occurs.

## Create Multiple Records with Fewer Round-Trips

Use a POST request with sObject Collections to add up to 200 records, returning a list of SaveResult objects. You can choose whether to roll back the entire request when an error occurs.

### Request Syntax

POST /vXX.X/composite/subjects

### Parameters

Parameter	Description
allOrNone	Optional. Indicates whether to roll back the entire request when the creation of any object fails ( <code>true</code> ) or to continue with the independent creation of other objects in the request. The default is <code>false</code> .
records	Required. A list of sObjects. In a POST request using sObject Collections, set the <code>type</code> attribute for each object, but don't set the <code>id</code> field for any object.

### Usage Guidelines

- The list can contain up to 200 objects.
- The list can contain objects of different types, including custom objects.
- Each object must contain an attributes map. The map must contain a value for `type`.



**Note:** Using sObject Collections to insert blob data requires more values in the attributes map. For more information, see [Using sObject Collections to Insert a Collection of Blob Records](#).

- Objects are created in the order they're listed. The SaveResult objects are returned in the order in which the create requests were specified.
- If the request body includes objects of more than one type, they are processed as chunks. For example, if the incoming objects are `{account1, account2, contact1, account3}`, the request is processed in three chunks: `{{account1, account2}, {contact1}, {account3}}`. A single request can process up to 10 chunks.
- A single request can process up to 10 chunks.
- You can't create records for multiple object types in one call when one of the types is related to a feature in the Salesforce Setup area.

### Checking for Errors

- If the request isn't well formed, the API returns a `400 Bad Request` HTTP Status. Fix the syntax of the request and try again.

- If the request is well formed, the API returns a 200 OK HTTP Status. If an item was processed successfully, the `success` flag shows for that item. Error information is returned in the `errors` array.

## Request Body Example

```
POST /composite/subjects
{
  "allOrNone" : false,
  "records" : [{
    "attributes" : {"type" : "Account"},
    "Name" : "example.com",
    "BillingCity" : "San Francisco"
  }, {
    "attributes" : {"type" : "Contact"},
    "LastName" : "Johnson",
    "FirstName" : "Erica"
  }]
}
```

## Response Body Examples

This example shows a response when all the items were processed successfully.

```
HTTP/1.1 200 OK

[
  {
    "id" : "001RM000003oLnnYAE",
    "success" : true,
    "errors" : [ ]
  },
  {
    "id" : "003RM0000068xV6YAI",
    "success" : true,
    "errors" : [ ]
  }
]
```

This example shows a response when some items caused errors and `allOrNone` is `false`.

```
HTTP/1.1 200 OK

[
  {
    "success" : false,
    "errors" : [
      {
        "statusCode" : "DUPLICATES_DETECTED",
        "message" : "Use one of these records?",
        "fields" : [ ]
      }
    ]
  },
  {
```

```

    "id" : "003RM0000068xVCYAY",
    "success" : true,
    "errors" : [ ]
  }
]

```

This example shows a response when some items caused errors and `allOrNone` is true.

```

HTTP/1.1 200 OK

[
  {
    "success" : false,
    "errors" : [
      {
        "statusCode" : "DUPLICATES_DETECTED",
        "message" : "Use one of these records?",
        "fields" : [ ]
      }
    ]
  },
  {
    "success" : false,
    "errors" : [
      {
        "statusCode" : "ALL_OR_NONE_OPERATION_ROLLED_BACK",
        "message" : "Record rolled back because not all records were valid and the
request was using AllOrNone header",
        "fields" : [ ]
      }
    ]
  }
]

```

## Retrieve Multiple Records with Fewer Round-Trips

Use a GET or POST request with sObject Collections to retrieve one or more records of the same object type. A list of sObjects that represents the individual records of the specified type is returned. The number of sObjects returned matches the number of IDs passed in the request.

You can specify approximately 800 IDs before the URL length causes the HTTP 414 error `URI too long`. To retrieve more records than the URL length can accommodate, use a POST request to retrieve up to 2,000 records of the same object type. If you use POST, the IDs and fields of the records to retrieve are specified in the request body.

## Request Syntax

If you're using a GET request, use the following syntax, where *SObjectName* is the object type of the records from which you're retrieving data.

GET

`/vXX.X/composite/sobjects/SObjectName?ids=recordId, recordId&fields=fieldname, fieldname`

If you're using a POST request, use the following syntax, where *SObjectName* (required) is the object type of the records from which you're retrieving data.

```
POST /composite/objects/SObjectName
{
  "ids" : ["recordId", "recordId", "recordId"],
  "fields" : ["fieldname", "fieldname"]
}
```

## Parameters

Parameter	Description
ids	Required. A list of one or more IDs of the objects to return. All IDs must belong to the same object type.
fields	Required. A list of fields to include in the response. The field names you specify must be valid, and you must have read-level permissions to each field.

## Usage Guidelines

- If you specify an invalid field name or a field name that you don't have permission to read, HTTP 400 `Bad Request` is returned.
- If you don't have access to an object, or if a passed ID is invalid, the array returns null for that object.

## Request Example

If you're using a GET request, use the syntax shown in the following example.

```
GET
/composite/objects/Account?ids=001xx000003DGb1AAG,001xx000003DGb0AAG,001xx000003DGb9AAG&fields=id,name
```

If you're using a POST request, use a request body as shown in the following example.

```
POST /composite/objects/Account
{
  "ids" : ["001xx000003DGb1AAG", "001xx000003DGb0AAG", "001xx000003DGb9AAG"],
  "fields" : ["id", "name"]
}
```

## Response Body Example

```
[
  {
    "attributes" : {
      "type" : "Account",
      "url" : "/services/data/v42.0/objects/Account/001xx000003DGb1AAG"
    },
    "Id" : "001xx000003DGb1AAG",
    "Name" : "Acme"
  },
  {
    "attributes" : {
```

```

    "type" : "Account",
    "url" : "/services/data/v42.0/objects/Account/001xx000003DGb0AAG"
  },
  "Id" : "001xx000003DGb0AAG",
  "Name" : "Global Media"
},
null
]

```

## Update Multiple Records with Fewer Round-Trips

Use a PATCH request with sObject Collections to update up to 200 records, returning a list of SaveResult objects. You can choose whether to roll back the entire request when an error occurs.


### Request Syntax

PATCH /vXX.X/composite/objects

### Parameters

Parameter	Description
allOrNone	Optional. Indicates whether to roll back the entire request when the update of any object fails ( <code>true</code> ) or to continue with the independent update of other objects in the request. The default is <code>false</code> .
records	Required. A list of sObjects. In a POST request using sObject Collections, set the <code>type</code> attribute for each object, but don't set the <code>id</code> field for any object.

### Usage Guidelines

- The list can contain up to 200 objects.
  - The list can contain objects of different types, including custom objects.
  - Each object must contain an attributes map. The map must contain a value for `type`.
-  **Note:** Using sObject Collections to update blob data requires more values in the attributes map. For more information, see [Using SObject Collections to Insert a Collection of Blob Records](#).
- Each object must contain an `id` field with a valid ID value.
  - Objects are updated in the order they're listed. The SaveResult objects are returned in the order in which the update requests were specified.
  - If the request body includes objects of more than one type, they are processed as chunks. For example, if the incoming objects are `{account1, account2, contact1, account3}`, the request is processed in three chunks: `{ {account1, account2}, {contact1}, {account3} }`. A single request can process up to 10 chunks.
  - You can't update records for multiple object types in one call when one of those types is related to a feature in the Salesforce Setup area.



## Checking for Errors

- If the request isn't well formed, the API returns a 400 Bad Request HTTP Status. Fix the syntax of the request and try again.
- If the request is well formed, the API returns a 200 OK HTTP Status. If an item was processed successfully, the `success` flag shows for that item. Error information is returned in the `errors` array.

## Request Body Example

```
PATCH /composite/subjects
{
  "allOrNone" : false,
  "records" : [{
    "attributes" : {"type" : "Account"},
    "id" : "001xx000003DGb2AAG",
    "NumberOfEmployees" : 27000
  }, {
    "attributes" : {"type" : "Contact"},
    "id" : "003xx000004TmiQAAS",
    "Title" : "Lead Engineer"
  }]
}
```

## Response Body Examples

This example shows a response when all the items were processed successfully.

```
HTTP/1.1 200 OK

[
  {
    "id" : "001RM000003oCprYAE",
    "success" : true,
    "errors" : [ ]
  },
  {
    "id" : "003RM0000068og4YAA",
    "success" : true,
    "errors" : [ ]
  }
]
```

This example shows a response when some items caused errors and `allOrNone` is `false`.

```
HTTP/1.1 200 OK

[
  {
    "id" : "001RM000003oCprYAE",
    "success" : true,
    "errors" : [ ]
  },
  {
    "success" : false,
    "errors" : [
```

```

    {
      "statusCode" : "MALFORMED_ID",
      "message" : "Contact ID: id value of incorrect type: 001xx000003DGb2999",
      "fields" : [
        "Id"
      ]
    }
  ]
}
]

```

This example shows a response when some items caused errors and `allOrNone` is `true`.

HTTP/1.1 200 OK

```

[
  {
    "id" : "001RM000003oCprYAE",
    "success" : false,
    "errors" : [
      {
        "statusCode" : "ALL_OR_NONE_OPERATION_ROLLED_BACK",
        "message" : "Record rolled back because not all records were valid and the
request was using AllOrNone header",
        "fields" : [ ]
      }
    ]
  },
  {
    "success" : false,
    "errors" : [
      {
        "statusCode" : "MALFORMED_ID",
        "message" : "Contact ID: id value of incorrect type: 001xx000003DGb2999",
        "fields" : [
          "Id"
        ]
      }
    ]
  }
]
]

```

## Delete Multiple Records with Fewer Round-Trips

Use a DELETE request with sObject Collections to delete up to 200 records, returning a list of DeleteResult objects. You can choose to roll back the entire request when an error occurs.

### Request Syntax

DELETE /vXX.X/composite/subjects?ids=***recordId, recordId***

## Parameters

Parameter	Description
<code>allOrNone</code>	Optional. Indicates whether to roll back the entire request when the deletion of any object fails ( <code>true</code> ) or to continue with the independent deletion of other objects in the request. The default is <code>false</code> .
<code>ids</code>	Required. A list of up to 200 IDs of objects to be deleted. The IDs can belong to different object types, including custom objects.

## Usage Guidelines

- The `DeleteResult` objects are returned in the order in which the IDs of the deleted objects were specified.
- You can't delete records for multiple object types in one call when one of those types is related to a feature in the Salesforce Setup area.

## Checking for Errors

- If the request isn't well formed, the API returns a `400 Bad Request` HTTP Status. Fix the syntax of the request and try again.
- If the request is well formed, the API returns a `200 OK` HTTP Status. If an item was processed successfully, the `success` flag shows for that item. Error information is returned in the `errors` array.

## Request Example

```
DELETE /composite/subjects?ids=001xx000003Dgb2AAG,003xx000004TmiQAAS&allOrNone=false
```

## Response Body Examples

This example shows a response when all the items were processed successfully.

```
HTTP/1.1 200 OK

[
  {
    "id" : "001RM000003oLrHYAU",
    "success" : true,
    "errors" : [ ]
  },
  {
    "id" : "001RM000003oLraYAE",
    "success" : true,
    "errors" : [ ]
  }
]
```

This example shows a response when some items caused errors and `allOrNone` is `false`.

```
HTTP/1.1 200 OK

[
```

```
[
  {
    "id" : "001RM000003oLrfYAE",
    "success" : true,
    "errors" : [ ]
  },
  {
    "success" : false,
    "errors" : [
      {
        "statusCode" : "MALFORMED_ID",
        "message" : "malformed id 001RM000003oLrB000",
        "fields" : [ ]
      }
    ]
  }
]
```

This example shows a response when some items caused errors and `allOrNone` is `true`.

```
HTTP/1.1 200 OK

[
  {
    "id" : "001RM000003oLruYAE",
    "success" : false,
    "errors" : [
      {
        "statusCode" : "ALL_OR_NONE_OPERATION_ROLLED_BACK",
        "message" : "Record rolled back because not all records were valid and the
request was using AllOrNone header",
        "fields" : [ ]
      }
    ]
  },
  {
    "success" : false,
    "errors" : [
      {
        "statusCode" : "MALFORMED_ID",
        "message" : "malformed id 001RM000003oLrB000",
        "fields" : [ ]
      }
    ]
  }
]
```

## Headers

---

This section lists custom HTTP request and response headers used for REST API.

## IN THIS SECTION:

[Assignment Rule Header](#)

The Assignment Rule header is a request header applied when creating or updating Accounts, Cases, or Leads. If enabled, the active assignment rules are used. If disabled, the active assignment rules are not applied. If a valid AssignmentRule ID is provided, the AssignmentRule is applied. If the header is not provided with a request, REST API defaults to using the active assignment rules.

[Call Options Header](#)

Specifies the client-specific options when accessing REST API resources. For example, you can write client code that ignores namespace prefixes by specifying the prefix in the call options header.

[Limit Info Header](#)

This response header is returned in each request to the REST API. You can use the information to monitor API limits.

[Package Version Header](#)

Specifies the version of each package referenced by a client. A package version is a number that identifies the set of components and behavior contained in a package. This header can also be used to specify a package version when making calls to an Apex REST web service.

[Query Options Header](#)

Specifies options used in a query, such as the query results batch size. Use this request header with the Query resource.

## Assignment Rule Header

The Assignment Rule header is a request header applied when creating or updating Accounts, Cases, or Leads. If enabled, the active assignment rules are used. If disabled, the active assignment rules are not applied. If a valid AssignmentRule ID is provided, the AssignmentRule is applied. If the header is not provided with a request, REST API defaults to using the active assignment rules.



**Note:** This header also gets applied when making REST API calls that indirectly result in creating or updating Accounts, Cases, or Leads. For example, if you use this header with a call that updates a record, and the update executes an Apex trigger that updates a Case, the assignment rules would be applied.

## Header Field Name and Values

**Field name**

`Sforce-Auto-Assign`

**Field values**

- `TRUE`. Active assignment rules are applied for created or updated Accounts, Cases, or Leads.
- `FALSE`. Active assignment rules are not applied for created or updated Accounts, Cases, or Leads.
- Valid AssignmentRule ID. The given AssignmentRule is applied for created Accounts, Cases, or Leads.

`TRUE` and `FALSE` are not case-sensitive.

If the header is not provided in the request, the default value is `TRUE`.

**Example**

`Sforce-Auto-Assign: FALSE`

## Call Options Header

Specifies the client-specific options when accessing REST API resources. For example, you can write client code that ignores namespace prefixes by specifying the prefix in the call options header.

The Call Options header can be used with SObject Basic Information, SObject Rows, Query, QueryAll, Search, and SObject Rows by External ID.

## Header Field Name and Values

### Field name

`Sforce-Call-Options`

### Field values

- `client`—A string that identifies a client.
- `defaultNamespace`—A string that identifies a developer namespace prefix. Resolve field names in managed packages without having to specify the namespace everywhere.

### Example

If the developer namespace prefix is `battle`, and you have a custom field called `botId` in a package, set the default namespace with the call options header:

```
Sforce-Call-Options: client=SampleCaseSensitiveToken/100, defaultNamespace=battle
```

Then queries such as the following succeed:

```
/vXX.X/query/?q=SELECT+Id+botId__c+FROM+Account
```

In this case the actual field queried is the `battle__botId__c` field.

Using this header allows you to write client code without having to specify the namespace prefix. In the previous example, without the header you must write `battle__botId__c`.

If this field is set, and the query also specifies the namespace, the response doesn't include the prefix. For example, if you set this header to `battle`, and issue a query like `SELECT+Id+battle__botId__c+FROM+Account`, the response uses a `botId__c` element, not a `battle_botId__c` element.

The `defaultNamespace` field is ignored when retrieving describe information, which avoids ambiguity between namespace prefixes and customer fields of the same name.

## Limit Info Header

This response header is returned in each request to the REST API. You can use the information to monitor API limits.

## Header Field Name and Values

### Field name

`Sforce-Limit-Info`

### Field values

- `api-usage`—Specifies the API usage for the organization against which the call was made in the format `nn/nnnn`. The first number is the number of API calls used, and the second number is the API limit for the organization.
- `per-app-api-usage`—Specifies the limit quota information for the currently connected app. API limit app quotas are currently available through a pilot program. For information on enabling this feature for your organization, contact Salesforce.

This example includes the limit quota for a `sample-connected-app` connected app. If there is no limit quota information, this field isn't returned.

```
Sforce-Limit-Info: api-usage=25/5000;
per-app-api-usage=17/250 (appName=sample-connected-app)
```

### Example

Response to a REST request for a Merchandise record, including the limit information in line three:

```
HTTP/1.1 200 OK
Date: Mon, 20 May 2013 22:21:46 GMT
Sforce-Limit-Info: api-usage=18/5000
Last-Modified: Mon, 20 May 2013 20:49:32 GMT
Content-Type: application/json;charset=UTF-8
Transfer-Encoding: chunked

{
  "attributes" : {
    "type" : "Merchandise__c",
    "url" : "/services/data/v44.0/subjects/Merchandise__c/a00D00000008pQSNIA2"
  },
  "Id" : "a00D00000008pQSNIA2",
  "OwnerId" : "005D00000001QX8WIAW",
  "IsDeleted" : false,
  "Name" : "Phone Case - iPhone 4/4S",
  "CreatedDate" : "2013-05-20T20:49:32.000+0000",
  "CreatedById" : "005D00000001QX8WIAW",
  "LastModifiedDate" : "2013-05-20T20:49:32.000+0000",
  "LastModifiedById" : "005D00000001QX8WIAW",
  "SystemModstamp" : "2013-05-20T20:49:32.000+0000",
  "LastActivityDate" : null,
  "LastViewedDate" : "2013-05-20T22:19:56.000+0000",
  "LastReferencedDate" : "2013-05-20T22:19:56.000+0000",
  "Description__c" : "Phone Case for iPhone 4/4S",
  "Price__c" : 16.99,
  "Stock_Price__c" : 12.99,
  "Total_Inventory__c" : 108.0
}
```

## Package Version Header

Specifies the version of each package referenced by a client. A package version is a number that identifies the set of components and behavior contained in a package. This header can also be used to specify a package version when making calls to an Apex REST web service.

The Package Version header can be used with the following resources: Describe Global, SObject Describe, SObject Basic Information, SObject Rows, Describe Layouts, Query, QueryAll, Search, and SObject Rows by External ID.

## Header Field Name and Values

### Field name and value

`x-sfdc-packageversion-[namespace]: xx.x`, where `[namespace]` is the unique namespace of the managed package and `xx.x` is the package version.

**Example**

```
x-sfdc-packageversion-clientPackage: 1.0
```

## Query Options Header

Specifies options used in a query, such as the query results batch size. Use this request header with the Query resource.

### Header Field Name and Values

**Field name**

```
Sforce-Query-Options
```

**Field values**

- **batchSize**—A numeric value that specifies the number of records returned for a query request. Child objects count toward the number of records for the batch size. For example, in relationship queries, multiple child objects are returned per parent row returned.

The default is 2,000; the minimum is 200, and the maximum is 2,000. There is no guarantee that the requested batch size is the actual batch size. Changes are made as necessary to maximize performance.

**Example**

```
Sforce-Query-Options: batchSize=1000
```

## Status Codes and Error Responses

Either when an error occurs or when a response is successful, the response header contains an HTTP code, and the response body usually contains:

- The HTTP response code
- The message accompanying the HTTP response code
- The field or object where the error occurred (if the response returns information about an error)

HTTP response code	Description
200	"OK" success code, for GET or HEAD request.
201	"Created" success code, for POST request.
204	"No Content" success code, for DELETE request.
300	The value returned when an external ID exists in more than one record. The response body contains the list of matching records.
304	The request content has not changed since a specified date and time. The date and time is provided in a <code>If-Modified-Since</code> header. See <a href="#">Get Object Metadata Changes</a> for an example.
400	The request couldn't be understood, usually because the JSON or XML body contains an error.
401	The session ID or OAuth token used has expired or is invalid. The response body contains the <code>message</code> and <code>errorCode</code> .



HTTP response code	Description
403	The request has been refused. Verify that the logged-in user has appropriate permissions. If the error code is <code>REQUEST_LIMIT_EXCEEDED</code> , you've exceeded API request limits in your org.
404	The requested resource couldn't be found. Check the URI for errors, and verify that there are no sharing issues.
405	The method specified in the Request-Line isn't allowed for the resource specified in the URI.
415	The entity in the request is in a format that's not supported by the specified method.
500	An error has occurred within Lightning Platform, so the request couldn't be completed. Contact Salesforce Customer Support.

### Incorrect ID example

Using a non-existent ID in a request using JSON or XML (*request\_body.json* or *request\_body.xml*)

```
{
  "fields" : [ "Id" ],
  "message" : "Account ID: id value of incorrect type: 001900K0001pPuOAAU",
  "errorCode" : "MALFORMED_ID"
}
```

### Resource does not exist

Requesting a resource that doesn't exist, for example, if you try to create a record using a misspelled object name

```
{
  "message" : "The requested resource does not exist",
  "errorCode" : "NOT_FOUND"
}
```

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