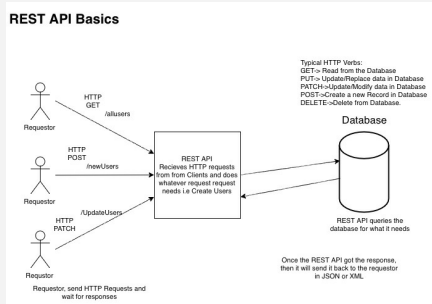


REST API Basics



REST API Best Practices (cont)

Enforce and test Access Controls	Enforce existing access controls and require additional GlideRecordSecure* API in scripted RESI services
Build Tests to verify functionality	Tests should validate the response code, headers, and resource you implement. You can also use tests to validate to confirm that errors return useful responses.

*GlideRecordSecure API Ensure that the ACLs are defined on the underlying user.

Scripted REST APIs

API URIs	This part the for the scripted rest has to define name_space, api_id, resource_path, version
API Query Parameter	When defining a scripted resource, which parameter is mandatory for the request can also be defined
API Error Objects*	Scripted REST APIs provide multiple ways to send an error in a response to a requesting client.

*Multiple error objects are available in scripted REST API scripts to report error information to requesting clients. All scripted REST API error objects use the sn_ws_err namespace.

Error objects available are 400,404,406,409,415

REST Security

How is REST API Secure?

The REST API uses basic authentication or OAuth to enforce access control. Access control is defined on tables to restrict the data viewership.

Will all tables be available for the REST API Access?

By default, Yes. All tables including system tables, and scoped tables are available.

How can I restrict a table Access through web services?

In the table properties, uncheck the option for Allow access to this table through web services.

Does REST API support CORS?

Cross Origin Resource Security is supported.

How can I Define CORS Rules?

CORS Rules can be defined in sys_cors_rule. Which allows to specify allowed origins, methods, and headers to expose.

How to disable CORS Support for Instance?

CORS support on instance is defined by glide.rest.cors.enabled set it to false.

Can I use OAuth with REST?

Yes, use OAuth token for REST Requests

Can I use MFA with REST?

Yes again, with a REST Request, if MFA is enabled then append token=token:passwrddtoken. Encode using base64 encoding

REST API Best Practices

Follow REST API Conventions	REST API conventions define specific behaviour for each type of method. For ex : <i>GET</i> : to Query the data, <i>POST</i> : to create Data, <i>PUT and PATCH</i> : to Update data, <i>DELETE</i> : to delete records.
Use Versioning to control changes to API	Use versioning to implement new functionalities, so that the existing functionalities will not impact
Return an Informative HTTP Status code	Return a status code, which inform the requestor about the success and failures (defined in the response codes section)
Return useful error information	Provide the requestor with enough information of why the failure occurred. Error message is a mix of error message and error code



Building Blocks REST API			REST API Response Codes (cont)		
API	API allows to select a specific Application Programming interface, which is available in SNOW	Ex TableAPI,AggregateAPI	400	Bad Request	The Request URI can't match the API.
Namespace	REST APIs provided by ServiceNow has now namespace	Scripted REST may use a different one	401	Unauthorized	The User is not authorized
Method	REST enables the use of few methods like GET,POST,DELETE,PATCH	Not all the APIs available from ServiceNow would have all the methods available	403	Forbidden	The Operation requested not permitted for the user
Request Header	Allows to specify a header for the Integration	Can add Custom header as per requirement	404	Not Found	The requested resource not found
Query parameter	Allows to specify an encoded query for the REST Call	Can add more query parameters or even a sys_id for some methods	405	Method not allowed	The HTTP action is not allowed
<p>You can prepare the sample request using the REST API Explorer in ServiceNow.</p> <p>ServiceNow REST URI looks like this <LINKFORSNOW>/api/now/apiname/. For ex : if we are using a table API for POST then the link look something like below : POST <LINKOFServiceNow>/api/now/table/tablename</p>			406	Not acceptable	The endpoint doesn't support the response format
			415	Unsupported media type	The endpoint does not support the media type
REST API Rate Limit			RESTMessageV2		
<p>To prevent excessive inbound REST API requests, set rules that limit the number of inbound REST API requests processed per hour.</p> <p>There is an option to create Rate Limit for users with specific roles, or for all users. The table for creating rate limit is sys_rate_limit_rules.</p> <p>In the basic Response Header, the Rate limit would be specified for ex : x-RateLimit-Limit -->10</p>			execute()	Sends the REST message	
			executeAsync()	Sends the REST message instance doesn't wait for response	
			getEndpoint()	Get the URL of the endpoint	
			getRequestBody()	Get the content of the request body	
			getRequestHeader(<headername>)*	Get the value for an HTTP header.	
			getRequestHeaders()	Get HTTP headers that are associated with the request.	
REST API Headers					
Accept	application/json, application/xml				
Content-Type	application/json, application/xml				
<p>By design, POST, PUT, PATCH, and DELETE operations required to provide both headers.</p> <p>GET operations require only the Accept header.</p> <p>There is an option to override the HTTP method, such as GET or POST, by setting the X-http-method-override header.</p>					
REST API Response Codes					
200	Success	Success with Response Body			
201	Created	Success with Response Body			
204	Success	Success with Response Body			



RESTMessageV2 (cont)		RESTMessageV2 (cont)	
saveResponseBodyAsAttachment(tblname,recordid,filename)**	Configures the REST message to save the returned response body as an attachment record.	setMIDServer(midserver)	The name of the MID Server active MID Server with the
saveResponseBodyAsAttachment(tblname,recordid,filename,encryptcontext)*	Configure the REST message to save the returned response body as an encrypted attachment record.	setMutualAuth(profile-name)	Set the mutual authentication message.
setAuthenticationProfile(type,profileid)**	Set the credentials for the REST message using an existing basic auth or OAuth 2.0 profile.	setQueryParameter(-name, value)	Append a parameter to the name=value.
setBasicAuth(username,password)	Sets basic authentication headers for the REST message.	setRequestBody(-body)	Set the body content to send using PUT or POST HTTP
setEccCorrelator(correlator)	Associate outbound requests and the resulting response record in the ECC queue. This method only applies to REST messages sent through a MID Server.	setRequestBodyFromAttachment(attachmentsysid)	Sets the request body using
setEccParameter(name,value)	Override a value from the database by writing to the REST message payload. This method only applies to REST messages sent through a MID Server.	setRequestHeader(name,value);	Set an HTTP header in the value.
setEndpoint(endpoint)	Set the endpoint for the REST message.	setRequestorProfile(requestorcontext,requestorid)	Override the default requestor order to retrieve an OAuth different requestor.
setHttpMethod(method)	The HTTP method this REST message performs, such as GET or PUT.	setStringParameter(name,value)	Set a REST message function from the REST message
setHttpTimeout(millisecond)	Set the amount of time the REST message waits for a response from the web service provider before the request times out.	setStringParameter-NoEscape(name,value)	XML reserved characters equivalent escaped characters
setLogLevel(level)	Set the log level for this message and the corresponding response. Valid values for level are basic, elevated, and all.	waitForResponse(seconds)	In seconds. Wait at most Queue/Mid Server.

*By design, this method cannot return the value for a header. To grant this method access to all headers, set the property `allowAllHeaders` to true.
 **the input parameters for this functions are string, and requestorid is integer.
 *encryptcontext should specify the sysid of the encryption key.



By **Bibin Gokuldas** (bibingokuldas)
cheatography.com/bibingokuldas/
bibingokuldas.com/

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