Lab Guide

The Latest in Integration 301

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admin / Knowledge16

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employee / Knowledge16

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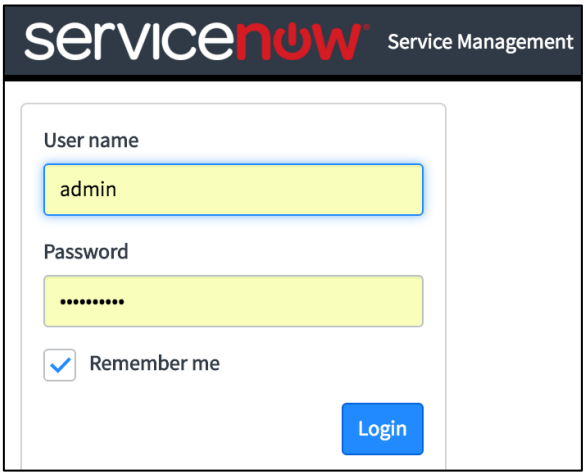
Lab Goal

This lab explains how to create the endpoints needed in a Scripted REST API in order to provide full functionality to a user interface. Your instance was provided with an AngularJS based front-end to provide a streamlined overview interface for your support organization. This front-end expects certain API endpoints to be implemented, but those do not yet exist.

Lab 1.0 Create the Application and API

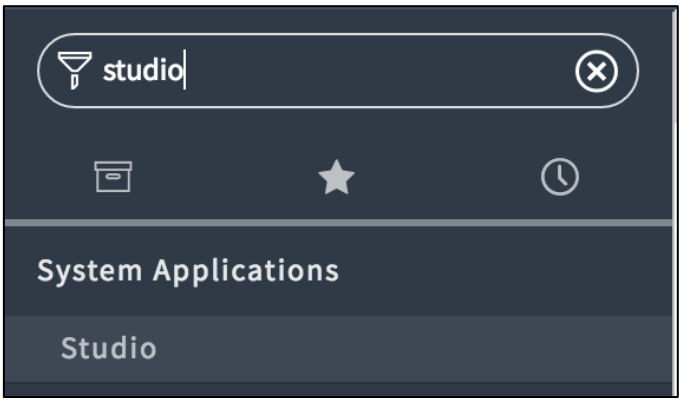
Log on to Your Instance

1. Navigate to the unique instance URL provided to you.
2. Log in using the **admin** credentials provided.

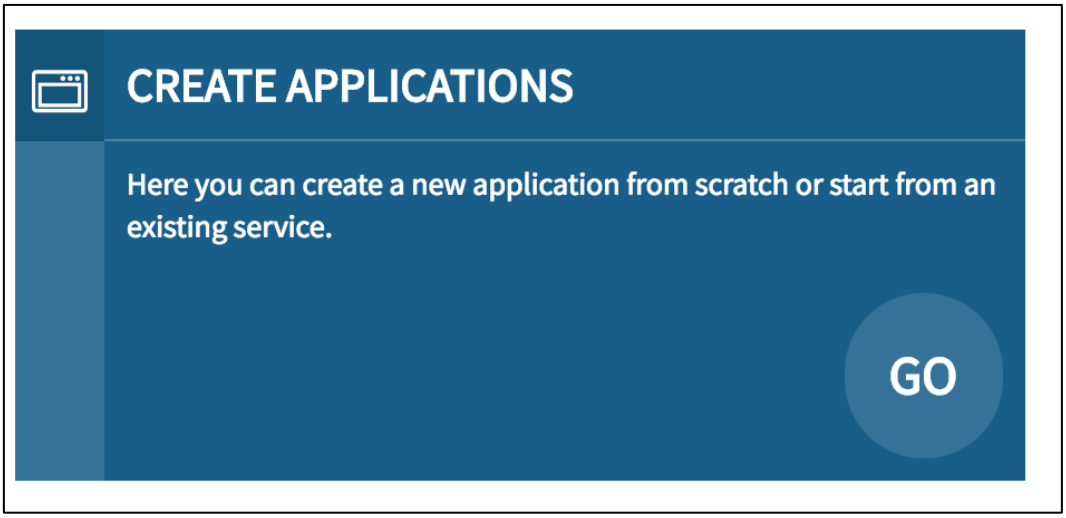


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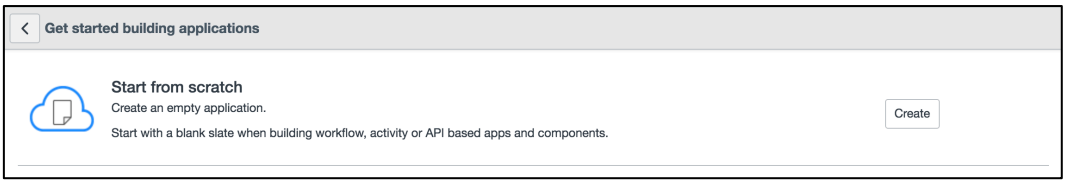
3. Navigate to **System Applications > Studio**.



4. Select **Create Applications** and **Go**.

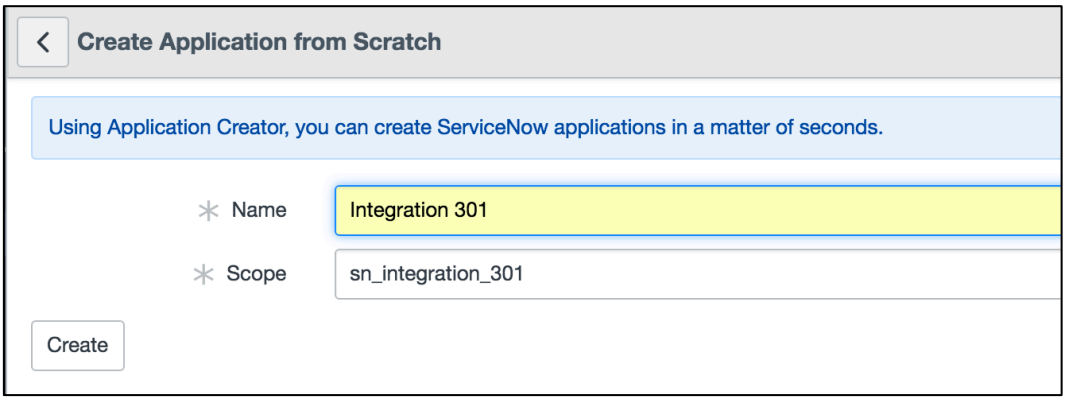


5. Select **Start from Scratch** and **Create**.

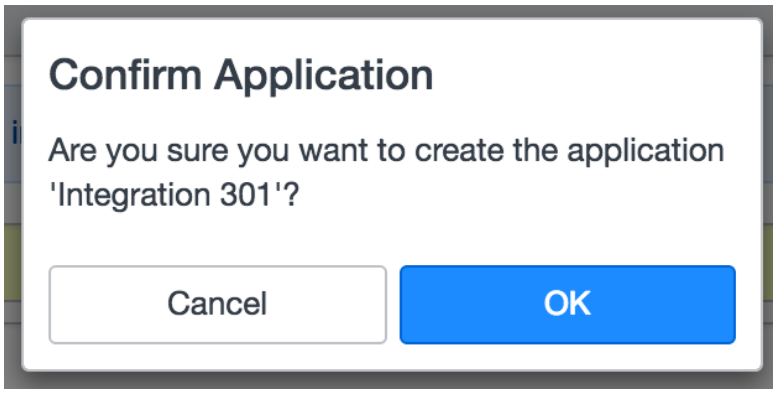


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6. Give the application the name **Integration 301**. The scope automatically fills in. Click **Create**.

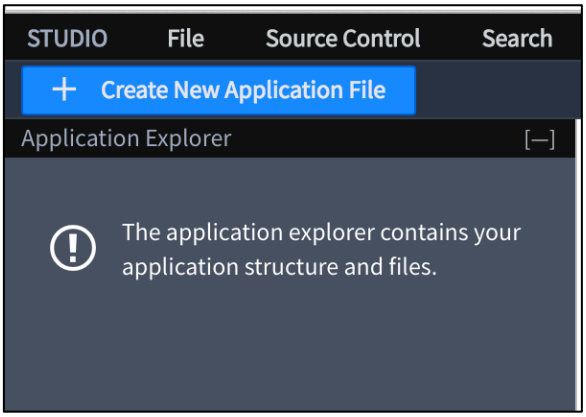


7. The confirmation dialog appears. Click **OK**.

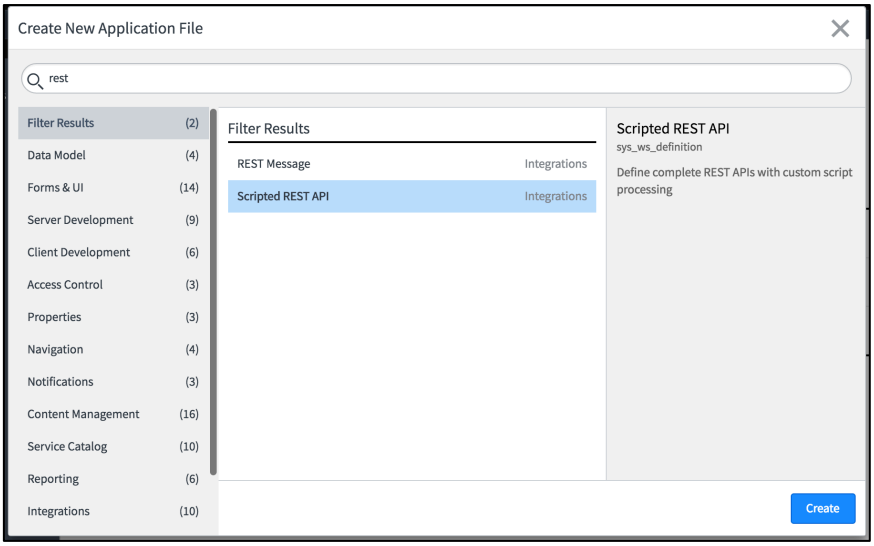


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8. Select **Edit App** from the resulting dialog. When the Studio interface opens, click **Create New Application File**.



9. Enter **rest** in the filter box. Select **Scripted REST API** and click **Create**.



10. For Name enter **Incident Plus**. The API ID auto-fills. Leave Protection Policy as **--None--.** Click **Submit**.

11. Examine the values in the form. Note the **API namespace** and **Base API Path**.

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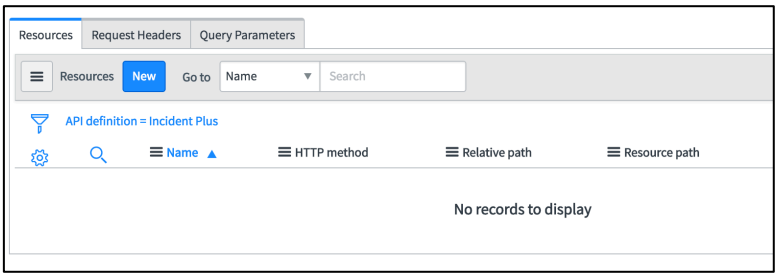
Lab Goal

This lab explains how to create the first resource of a new Scripted REST API and establish a query parameter to control it.

Lab 2.1 Create the First Resource

Create a Resource

1. At the bottom of the Scripted REST API tab, find the Resources tab. Click **New**.



2. Fill out the form using the following values:

Field	Value
Name	All Incidents
Active	Selected
HTTP Method	GET
Relative Path	/all
Requires Authentication	Selected

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3. Enter the following code into the **Script** field:

   This code is also available at **http://bit.ly/K16_Int301_Lab2**

```
(function process( /*RESTAPIRequest*/ request, /*RESTAPIResponse*/ response) {
    var gr = new GlideRecord('incident');
    var returnArray = [];
    gr.orderBy('sys_updated_on');
    var limit = request.queryParams.limit;
    if (limit == null) {
        gr.setLimit(20);
    } else {
        gr.setLimit(limit);
    }
    gr.query();
    while (gr.next()) {
        returnArray.push((new global.GR2JSON()).convert(gr));
    }

    return returnArray;

})(request, response);
```

4. Click **Submit**.

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Lab Goal

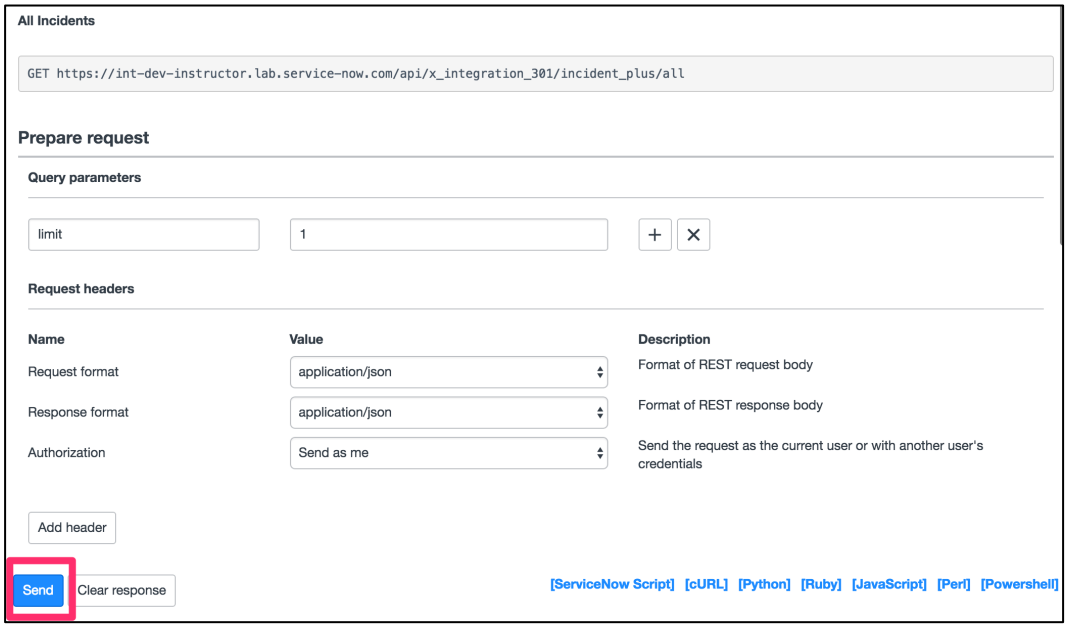
This lab explains how to use the REST API Explorer to examine a newly created resource and to query with different parameters.

Lab 2.2
Test the Resource

Test Resource with REST API Explorer

1. Scroll to **Related Links** and click **Explore REST API**.

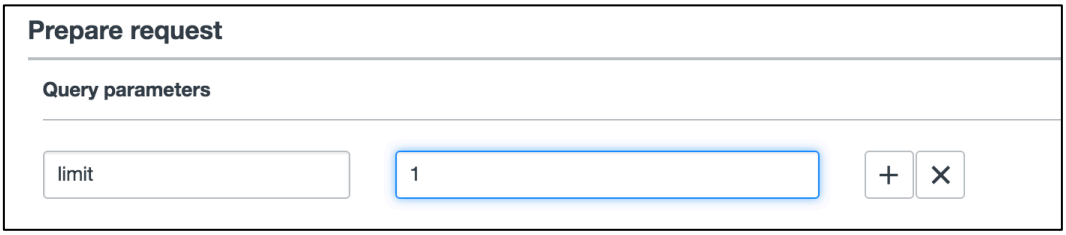
2. Look at the interface and the available options. To test the API, click **Send**. Scroll to the **Response** section. Note the headers, and look at the **Response Body** section. Understanding how the headers affect the response is crucial. Are the results what you expected? Why or why not?



3. Change the Response Format choice list from "**application/json**" to "**application/xml**" and click **Send** again. Which headers changed? Examine the **Response Body** for differences.

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4. In the Query Parameters section, click **Add Query Parameter**. Enter the values "**limit**" in the left box and "**1**" in the right box. Click **Send** again. Examine the Response Body. Try different values for the limit, including nonnumeric values, negative numbers, or others that represent an invalid query. Note the results.



5. Click the **plus button (+)** to add another query parameter. Create any name/value pair, and click **Send**. Did it change the results? Why or why not?

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Lab Goal

The next labs explain how to create the same endpoint path with a variety of HTTP verbs. Each will have a different effect on the record. This first will be a variation on the first resource in which you fetch a single specified Incident.

Lab 3.1
Create a Single Record GET Resource

Create the GET Resource

1. At the bottom of the Scripted REST API tab, find the **Resources** tab. Click **New**.
2. Fill out the form using the following values:

Field	Value
Name	Get One Incident
Active	Selected
HTTP Method	GET
Relative Path	/incident/{sys_id}
Requires Authentication	Selected

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3. Enter the following code into the **Script** field:
   This code is also available at http://bit.ly/K16_Int301_Lab3

```
(function process(/*RESTAPIRequest*/ request, /*RESTAPIResponse*/ response) {
    var gr = new GlideRecord('incident');
    var sys_id = request.pathParams.sys_id;
    var json = new global.GR2JSON();

    if (gr.get(sys_id) ) {
          return json.convert(gr);
    }

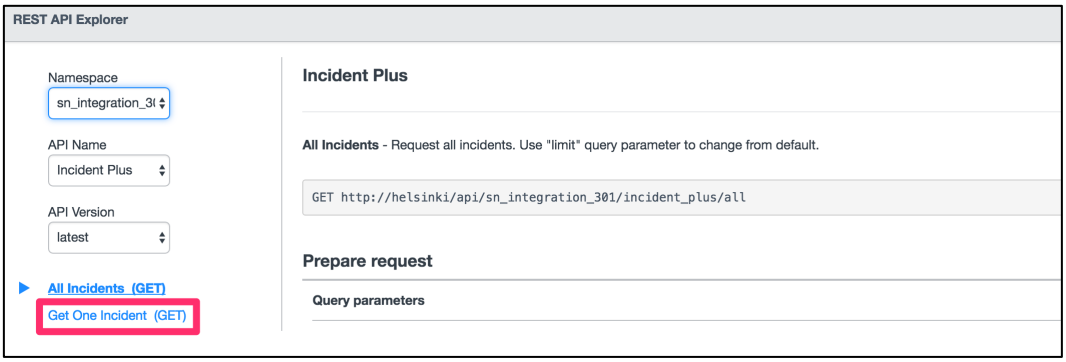

})(request, response);
```

4. Click **Submit**.

Test Resource with REST API Explorer

1. Navigate to the **Incident** application and find any Incident on the system. Open it and copy the **sys_id** of that incident.

2. Open the **REST API Explorer**. In the left panel click **Get One Incident**.



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3. Under **Prepare request**, enter the copied sys_id from above into the **sys_id** field.



4. Click **Send** and examine the output. Is it what you expected? Why or why not?

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Lab Goal

This next lab explains how to create the same endpoint, but with a POST verb in order to create a new record.

Lab 4.1 Create a Single Record POST Resource

Create the POST Resource

1. At the bottom of the Scripted REST API tab, find the **Resources** tab. Click **New**.
2. Fill out the form using the following values:

Field	Value
Name	Create Incident
Active	Selected
HTTP Method	POST
Relative Path	/incident
Requires Authentication	Selected

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3. Enter the following code into the **Script** field:

   This code is also available at **http://bit.ly/K16_Int301_Lab4**

```
(function process(/*RESTAPIRequest*/ request, /*RESTAPIResponse*/ response) {
    var gr = new GlideRecord('incident');
    var body = request.body.data;

    for (var key in body) {
          if (body.hasOwnProperty(key)) {
                gr[key] = body[key];
          }
    }
    var id = gr.insert();
    var return_message = "";

    if (id == null) {
          return_message = "Record creation failed";
          response.setStatus(400);
    } else {
          return_message = "Record inserted as "+ id;
    }

    return return_message;


})(request, response);
```

4. Click **Submit**.

Test Resource with REST API Explorer

1. Open the **REST API Explorer**. In the left panel click **Create Incident**.

2. Under **Request Body**, enter some field and value pairs to use as data for the newly created Incident. Any valid field will work, but some good choices for fields include **short_description**, **description**, **impact**, **urgency**, **category** and **subcategory**.

3. Click **Send** and examine the output. Is it what you expected? Why or why not?

4. Try some valid choices for **category** and **subcategory** such as **network** and **dns**. Try some invalid choices. What changed? Are you able to insert invalid choices into the record?

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Lab Goal

This lab explains how to create the same endpoint, but with a DELETE verb in order to remove an existing record.

Lab 5.1 Create a DELETE Resource

Create the PUT Resource

1. At the bottom of the Scripted REST API tab, find the **Resources** tab. Click **New**.
2. Fill out the form using the following values:

Field	Value
Name	Delete Incident
Active	Selected
HTTP Method	DELETE
Relative Path	/incident/{sys_id}
Requires Authentication	Selected

3. For the **Script** field, write code that queries for the existing record via the **sys_id** path parameter and then deletes the record.

   This code is also available at **http://bit.ly/K16_Int301_Lab5**

4. Click **Submit**.

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Test Resource with REST API Explorer

1. Open the REST API Explorer. In the left panel click **Delete Incident**.
2. Navigate to the **Incident** application and find any Incident on the system. Open it and copy the sys_id of that incident.
3. Under **Prepare Request**, enter the copied sys_id from above into the **sys_id** field.
4. Click **Send** and examine the record that you tried to delete. Is the result what you expected? Why or why not?

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Lab Goal

The next section of labs, explain how to create the same endpoint with a PUT verb in order to edit an existing record.

Lab 6.1
Create a Single Record PUT Resource

Create the PUT Resource

1. At the bottom of the Scripted REST API tab, find the **Resources** tab. Click **New**.
2. Fill out the form using the following values:

Field	Value
Name	Update Incident
Active	Selected
HTTP Method	PUT
Relative Path	/incident/{sys_id}
Requires Authentication	Selected

3. For the **Script** field, write code that queries for the existing record via the **sys_id** path parameter and then updates the record based on values provided in the body of the object as it did in the POST resource.
4. Click **Submit**.

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Test Resource with REST API Explorer

1. Open the REST API Explorer. In the left panel click **Delete Incident**.
2. Navigate to the **Incident** application and find any Incident on the system. Open it and copy the sys_id of that incident.
3. Under **Prepare Request**, enter the copied sys_id from above into the **sys_id** field.
4. Click **Send** and examine the record that you tried to delete. Is it what you expected? Why or why not?
5. Change values and submit again.

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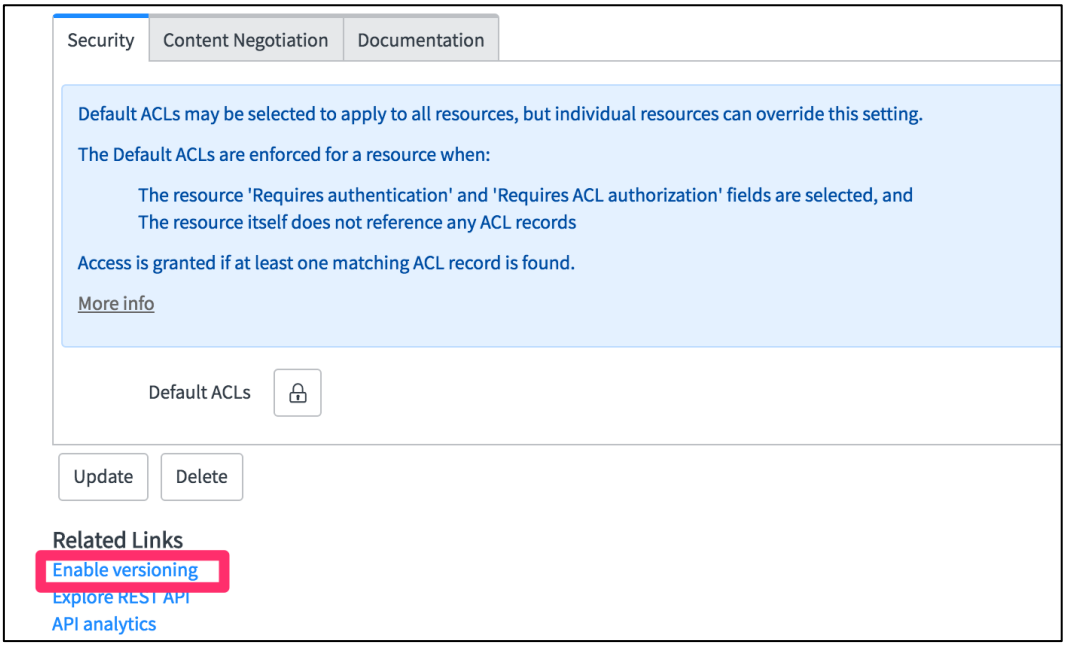
Lab Goal

This next section of labs explain how to create a new version for the API.

Lab 7.1 Version the API

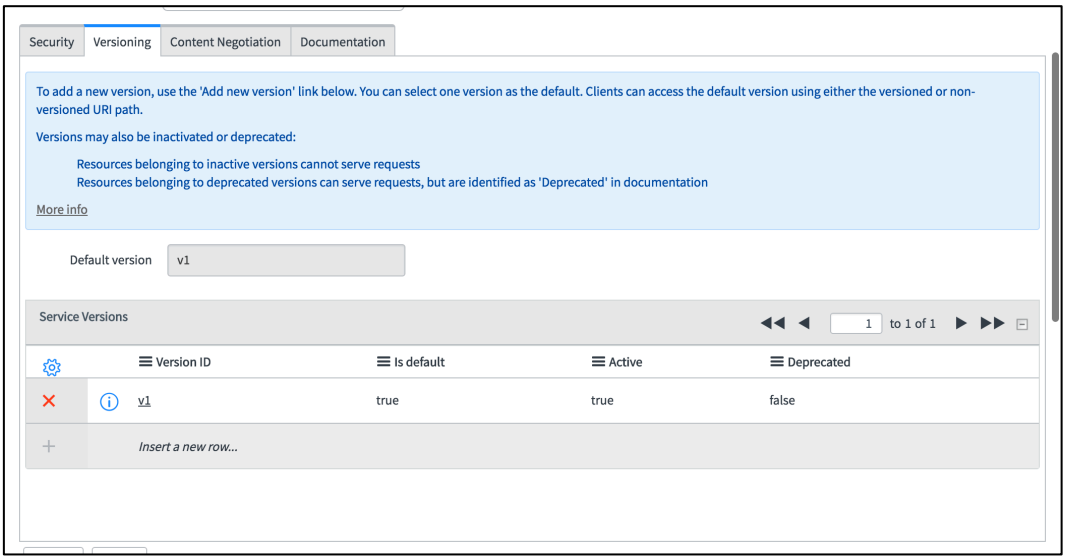
Enable Versioning

1. At the bottom of the Scripted REST API tab, find the Related Links section. Click **Enable versioning**. When asked to “Make version v1 default”, do that.

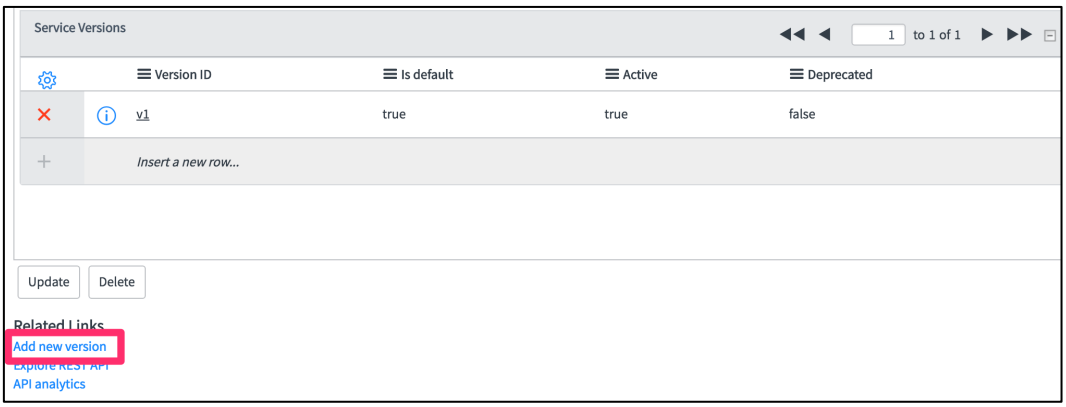


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2. Examine the contents of the **Versioning** tab.



3. In the Related Links section, click **Add new version**.



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4. In the dialog that is opened, select **Make this version the default** and for **Copy existing resources from version:** choose **v1**.



5. Look at the **Resources** section. How many resources are present now?

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Lab Goal

This next section explains how to create a new version for the API.

Lab 7.2
Create a V2 Resource

Create a Resource to Close Old Incidents

1. At the bottom of the Scripted REST API tab, find the Resources tab. Click **New**.
2. Fill out the form using the following values:

Field	Value
Name	Close Old Incidents
API Version	v2
Active	Selected
HTTP Method	POST
Relative Path	/closeOldIncidents
Requires Authentication	Selected

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3. Enter the following code into the **Script** field:

   This code is also available at **http://bit.ly/K16_Int301_Lab7**

```
(function process(/*RESTAPIRequest*/ request, /*RESTAPIResponse*/ response) {

   var gr = new GlideRecord('incident');
   var body = request.body.data;
   var return_array = [];
   var max = 3;

   var daysAgoParam = body.daysAgo;
   if (daysAgoParam != null ) {
         var daysAgo = gs.daysAgo(daysAgoParam);
         gr.addActiveQuery();
         gr.addQuery('sys_updated_on', '<=', daysAgo);
         gr.query();
         var count = 0;
         while(gr.next() ){
               gr.state = 7;
               gr.update();
               return_array.push( {"Closed Incident " :gr.number.toString()} );
               if (++count  == max) {
                     break;
               }
         }
   }
   return return_array;


})(request, response);
```

4. Under **Related Links**, click **Explore REST API**.

5. Note which API version is selected when you open the REST Explorer. Change the API Version from the drop-down list, and note which API entries are available in the left panel as you do.

6. Click **Close Old Incidents (POST)**. Under Request Body, click **Add a field**. Use **daysAgo** as the name and a **number** as the value. Start with a number around 20. Click **Send**.

7. Examine the return value in the REST Explorer. Open the **Incident > All** and look for Incidents that have been closed by the API.

8. Try a different value for **daysAgo** and rerun.

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Lab Goal

This next lab explains how to upload an attachment to an Incident via the Attachment API.

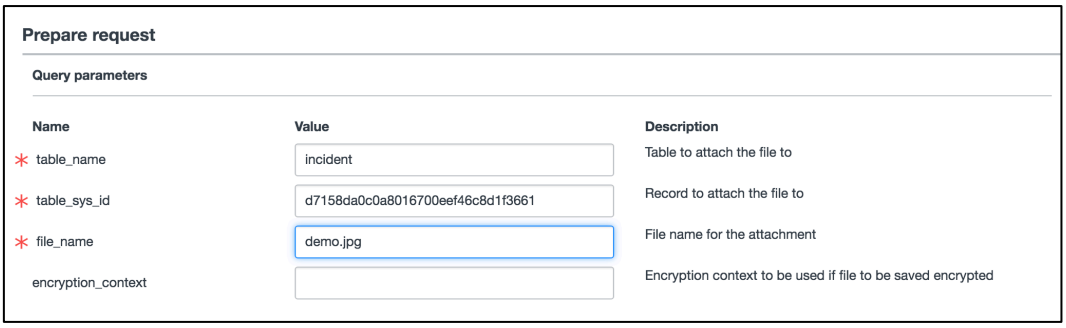
Lab 8.1
Upload an Attachment

Upload Attachment via API

1. Navigate to **Incident > All** and select an incident. Copy the sys_id from the record.
2. Open the **REST API Explorer**. Choose Namespace: **now**, API Name: **Attachment API**, and API Version: **latest**. Click **Upload an attachment from a binary request (POST)**.
3. Select any graphic file from your system. Select one under 1 MB in size.
4. Fill out the **Prepare request** section using the following values:

Name	Value
table_name	incident
table_sys_id	<sys_id from above>
file_name	<filename of selected file>

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5. Under **Request Body**, select the **Binary** tab. Click **Choose a file** and navigate to your graphic file. Click **Send**.

6. Copy the Response Body section to a text editor or note taking application to use the values in the next section.

7. Navigate back to your selected Incident. See if your selected graphic file is available.

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Lab Goal

This lab explains how to retrieve the metadata of the newly created Attachment.

Lab 8.2 Retrieve Attachment Metadata

Retrieve Attachment Metadata via API

1. Open the **REST API Explorer**. Choose Namespace: **now**, API Name: **Attachment API**, and API Version: **latest**. Click **Retrieve attachment metadata (GET)**.

2. In the Response Body from the previous section, locate the value of the sys_id. Copy that value into the sys_id field of the Rest API Explorer. Click **Send**.

3. Examine the values in the Response Body. Do they match the information expected for that Attachment?

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