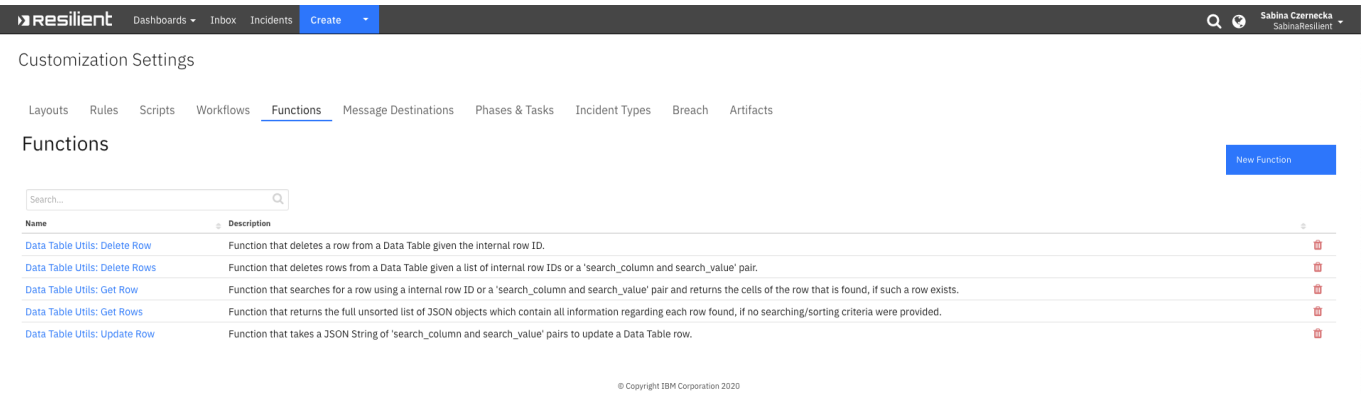


# IBM Resilient - Data Table Helper Functions

## Table of Contents

- [Function - Get Row](#)
- [Function - Get Rows](#)
- [Function - Update Row](#)
- [Function - Delete Row](#)
- [Function - Delete Rows](#)
- [Rules](#)
- [Display the Data Table in an Incident](#)

This package contains 5 functions that help you manipulate IBM Resilient Data Tables



The 4 functions allow you to GET, UPDATE, DELETE a row and GET and DELETE rows in a Data Table

## Function - Get Row:

Function that searches for a row using a internal row ID or a 'search\_column and search\_value' pair and returns the cells of the row that is found, if such a row exists.

Inputs:

Output:

```
results = {
  'inputs': {
    'incident_id': 2095,
    'dt_utils_row_id': None,
    'dt_utils_search_column': 'dt_col_name',
    'dt_utils_search_value': 'Mary Murphy',
    'dt_utils_datatable_api_name': 'dt_utils_test_data_table'
  },
  'success': True,
  'row': {
    'type_id': 1000,
    'cells': {
      'dt_col_name': {
        'row_id': 1,
        'id': 'dt_col_name',
        'value': 'Mary Murphy'
      },
      'dt_col_status': {
        'row_id': 1,
        'id': 'dt_col_status',
        'value': 'Incomplete'
      },
      'dt_col_time': {
        'row_id': 1,
        'id': 'dt_col_time',
        'value': '10:45'
      },
      'dt_col_id': {
        'row_id': 1,
        'id': 'dt_col_id',
        'value': '635'
      }
    },
    'actions': [],
    'inc_owner': 'admin@res.com',
    'version': 2,
    'table_name': 'Test Data Table',
    'inc_name': 'Test DT Utils',
    'inc_id': 2095,
    'id': 1
  }
}
```

### Pre-Process Script:

This example uses the Artifact Value as the value to search the data table for

```
# The ID of this incident
inputs.incident_id = incident.id

# The api name of the Data Table to update
```

```
inputs.dt_utils_datatable_api_name = "dt_utils_test_data_table"

# The column api name to search for
inputs.dt_utils_search_column = "dt_col_name"

# The cell value to search for
inputs.dt_utils_search_value = artifact.value

## Alternatively you can get the row by its ID by defining this input:
# inputs.dt_utils_row_id = 3
```

## Function - Get Rows:

Function that returns the full unsorted list of JSON objects which contain all information regarding each row found, if no searching/sorting criteria were provided.

Inputs:

Name	Type	Required	Example	Tooltip
<code>incident_id</code>	Number	Yes	2095	ID of the current Incident
<code>dt_utils_datatable_api_name</code>	String	Yes	"dt_utils_test_data_table"	API name of the Data Table to search

Name	Type	Required	Example	Tooltip
<code>dt_utils_sort_by</code>	String	No	<code>"dt_col_status"</code>	The name of the API column
<code>dt_utils_sort_direction</code>	Select	No	<code>{'name': 'ASC'}</code>	-
<code>dt_utils_max_rows</code>	Number	No	1	A number of max rows to return
<code>dt_utils_search_column</code>	String	No	<code>"dt_col_name"</code>	API name of the column to search
<code>dt_utils_search_value</code>	String	No	<code>"Mary Murphy"</code>	Cell value to search for

## Output:

```

results={
  'inputs': {
    'incident_id': 2095,
    'dt_utils_datatable_api_name': 'dt_utils_test_data_table',
    'dt_utils_sort_by': 'dt_col_status',
    'dt_utils_sort_direction': 'ASC',
    'dt_utils_max_rows': 1,
    'dt_utils_search_column': 'dt_col_name',
    'dt_utils_search_value': 'Mary Murphy'
  },
  'success': True,
  'rows': [
    {
      'type_id': 1000,
      'cells': {
        'dt_col_name': {
          'row_id': 1,
          'id': 'dt_col_name',
          'value': 'Mary Murphy'
        },
        'dt_col_status': {

```

```

        'row_id': 1,
        'id': 'dt_col_status',
        'value': 'Incomplete'
    },
    'dt_col_time': {
        'row_id': 1,
        'id': 'dt_col_time',
        'value': '10:45'
    },
    'dt_col_id': {
        'row_id': 1,
        'id': 'dt_col_id',
        'value': '635'
    }
},
'actions': [

],
'inc_owner': 'admin@res.com',
'version': 2,
'table_name': 'Test Data Table',
'inc_name': 'Test DT Utils',
'inc_id': 2095,
'id': 1
}
]
}

```

### Pre-Process Script:

This example uses the Artifact Value as the value to search the data table for

```

# The ID of this incident
inputs.incident_id = incident.id

# The api name of the Data Table to update
inputs.dt_utils_datatable_api_name = "dt_utils_test_data_table"

# The number of max rows to return
if rule.properties.dt_utils_max_rows:
    inputs.dt_utils_max_rows = rule.properties.dt_utils_max_rows
else:
    inputs.dt_utils_max_rows = 0

# The direction of the sort
inputs.dt_utils_sort_direction = rule.properties.dt_utils_sort_direction

# The api name of the column to sort by
if rule.properties.dt_utils_sort_by:
    inputs.dt_utils_sort_by = rule.properties.dt_utils_sort_by
else:
    inputs.dt_utils_sort_by = None

```

```
# The column api name to search for
inputs.dt_utils_search_column = "dt_col_name"

# The cell value to search for
inputs.dt_utils_search_value = artifact.value
```

Post-Processing Script

```
noteText = str(results["rows"])
incident.addNote(noteText)
```

Function - Update Row:

Function that takes a JSON String of 'search\_column and search\_value' pairs to update a Data Table row.

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Dashboards

Inbox

Incidents

Create

Search

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Customization Settings

Layouts

Rules

Scripts

Workflows

Functions

Message Destinations

Phases & Tasks

Incident Types

Breach

Artifacts

Workflows / Example: Data Table Utils: Update Row

Name \*

Example: Data Table Utils: Update Row

API Name \*

example\_data\_table\_utils\_update\_row

Description

An example Workflow showing how to use the Data Table Utils: Update Row Function. It uses an Artifact value to search and find a row in the data table. Then updates the cells with the given values.

Object Type \*

Artifact

Cancel

Save & Close

Save

Creator

Sabina Czernecka

Last Modified

15/07/2020 12:11

Last Modified By

API\_ALL

Associated Rules

Update DT Row

Inputs: data\_table\_api\_name, search\_column, search\_value

Output: the data table row that contains its ID and Cells

Inputs: data\_table\_api\_name, row\_id, cells\_to\_update

Output: the updated row

Data Table Utils: Get Row

X

Data Table Utils: Update Row

If we find a row, continue, else end

Inputs:

Name	Type	Required	Example	Info
incident_id	Number	Yes	2095	ID of the current Incident

Name	Type	Required	Example	Info
dt_utils_datatable_api_name	String	Yes	"dt_utils_test_data_table"	API name of the Data Table to search
dt_utils_row_id	Number	Yes	5	ID of the Row to update
dt_utils_cells_to_update	JSON String	Yes	'{"dt_col_status": "Done", "dt_col_time": "Just Now"}'	A JSON String of column name and cell value pairs to update

## Output:

```

results = {
  'inputs': {
    'incident_id': 2095,
    'dt_utils_row_id': 1,
    'dt_utils_cells_to_update': {
      'dt_col_status': 'Done',
      'dt_col_time': 'Just Now'
    },
    'dt_utils_datatable_api_name': 'dt_utils_test_data_table'
  },
  'success': True,
  'row': {
    'type_id': 1000,
    'cells': {
      'dt_col_name': {
        'row_id': 1,
        'id': 'dt_col_name',
        'value': 'Mary Murphy'
      },
      'dt_col_status': {
        'row_id': 1,
        'id': 'dt_col_status',
        'value': 'Done'
      },
      'dt_col_time': {

```



```

        'row_id': 1,
        'id': 'dt_col_time',
        'value': 'Just Now'
    },
    'dt_col_id': {
        'row_id': 1,
        'id': 'dt_col_id',
        'value': '635'
    }
},
'actions': [],
'inc_owner': 'admin@res.com',
'version': 3,
'table_name': 'Test Data Table',
'inc_name': 'Test DT Utils',
'inc_id': 2095,
'id': 1
}
}

```

### Pre-Process Script:

In this example we make use of the **dict\_to\_json\_str** function to allow us to easily form a JSON String to pass column name and cell value pairs to the function in order to update the Data Table

```

#####
### Define pre-processing functions ###
#####
def dict_to_json_str(d):
    """Function that converts a dictionary into a JSON string.
    Supports types: basestring, bool, int and nested dicts.
    Does not support lists.
    If the value is None, it sets it to False."""

    json_entry = '{"0}":{"1}'
    json_entry_str = '"{0}":"{1}"'
    entries = []

    for entry in d:
        key = entry
        value = d[entry]

        if value is None:
            value = False

        if isinstance(value, list):
            helper.fail('dict_to_json_str does not support Python Lists')

        if isinstance(value, basestring):
            value = value.replace(u'\"', u'\\\"')
            entries.append(json_entry_str.format(key, value))

```

```

elif isinstance(value, bool):
    value = 'true' if value == True else 'false'
    entries.append(json_entry.format(key, value))

elif isinstance(value, dict):
    entries.append(json_entry.format(key, dict_to_json_str(value)))

else:
    entries.append(json_entry.format(key, value))

return '{0} {1} {2}'.format('{', ','.join(entries), '}')

#####
### Define Inputs ###
#####

# The ID of this incident
inputs.incident_id = incident.id

# The api name of the Data Table to update [here it is taken from previous
Get Row Function]
inputs.dt_utils_datatable_api_name =
workflow.properties.row_to_update.inputs.dt_utils_datatable_api_name

# The ID of the row to update [again, taken from previous Get Row Function]
inputs.dt_utils_row_id = workflow.properties.row_to_update.row["id"]

# The column api names and the value to update the cell to
inputs.dt_utils_cells_to_update = dict_to_json_str({
    "dt_col_time": "Just Now",
    "dt_col_status": "Done"
})

```

---

## Function - Delete Row:

Function that deletes a row from a Data Table given the internal row ID.

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Inbox

Incidents

Create

Search

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Customization Settings

Layouts

Rules

Scripts

Workflows

Functions

Message Destinations

Phases & Tasks

Incident Types

Breach

Artifacts

Workflows / Example: Data Table Utils: Delete Row

Name \*

Example: Data Table Utils: Delete Row

API Name \*

example\_data\_table\_utils\_delete\_row

Description

An example Workflow showing how to use the Data Table Utils: Delete Row Function. It uses an Artifact value to search and find a row in the data table. Then deletes that row.

Object Type \*

Artifact

Cancel

Save & Close

Save

Creator

Sabina Czernecka

Last Modified

15/07/2020 12:11

Last Modified By

API\_ALL

Associated Rules

Delete DT Row

Inputs: data\_table\_api\_name, search\_column, search\_value

Output: the data table row that contains its ID and Cells

Workflow Diagram

Start -> Data Table Utils: Get Row -> Decision -> Data Table Utils: Delete Row -> End

If we find a row, continue, else end

Inputs: data\_table\_api\_name, row\_id

Output: a success flag if row deleted

Inputs:

Name	Type	Required	Example	Info
incident_id	Number	Yes	2095	ID of the current Incident
dt_utils_datatable_api_name	String	Yes	"dt_utils_test_data_table"	API name of the Data Table to search
dt_utils_row_id	Number	Yes	5	ID of the Row to delete

Output:

```
results = {
  'inputs': {
    'incident_id': 2095,
    'dt_utils_row_id': 2,
    'dt_utils_datatable_api_name': 'dt_utils_test_data_table'
  },
  'success': True,
  'row': {
    'message': None,
```

```
'hints': [],  
'success': True,  
'title': None  
}  
}
```

## Pre-Process Script:

```
# The ID of this incident  
inputs.incident_id = incident.id  
  
# The api name of the Data Table [here it is taken from previous Get Row  
Function]  
inputs.dt_utils_datatable_api_name =  
workflow.properties.row_to_delete.inputs.dt_utils_datatable_api_name  
  
# The ID of the row to delete [again, taken from previous Get Row Function]  
inputs.dt_utils_row_id = workflow.properties.row_to_delete.row["id"]
```

## Function - Delete Rows:

Function that deletes rows from a Data Table given a list of internal row IDs or a 'search\_column and search\_value' pair.

Note: This function works with no issue when run on an Artifact workflow. There is an issue when the function is run on a custom workflow on a Data Table. If the delete rows action is performed of the row that meets the condition specified in the pre-process script, this row will not be deleted.

The screenshot shows the 'Customization Settings' page in the Resilient interface. The 'Workflows' tab is selected, and the 'Example: Data Table Utils: Delete Rows' workflow is being edited. The settings form includes:

- Name:** Example: Data Table Utils: Delete Rows
- API Name:** example\_data\_table\_utils\_delete\_rows
- Description:** An example Workflow showing how to use the Data Table Utils: Delete Rows Function. It allows the user to delete rows using either internal row IDs or 'search\_column and search\_value' pair in a Data Table.
- Object Type:** Artifact

On the right, a metadata panel shows:

- Creator:** Sabina Czernecka
- Last Modified:** 01/08/2020 23:09
- Last Modified By:** Sabina Czernecka
- Associated Rules:** Delete DT Rows

Below the form is a workflow diagram. It starts with a 'Data Table Utils: Get Rows' function (labeled 'foo') which outputs 'The Data Table rows'. This output is connected to a decision diamond. The decision logic is: 'If we find a row's, continue, else end'. The 'continue' path leads to a 'Data Table Utils: Delete Rows' function (also labeled 'foo'), which then outputs 'The list of internal row IDs of the Data Table that were deleted' and connects to an end node. The 'else end' path also leads to the end node. The diagram includes a toolbar on the left with various workflow symbols.

## Inputs:

Name	Type	Required	Example	Tooltip
dt_utils_datatable_api_name	text	Yes	–	The API name of the Data Table
dt_utils_rows_ids	text	No	–	The list of internal rows IDs of a Data Table to delete
dt_utils_search_column	text	No	–	The API name of the column to search
dt_utils_search_value	text	No	–	The cell value to search for within the search column
incident_id	number	Yes	–	-

Output:

```
results = [30,31]
```

Pre-Process Script:

```
# Data Table Utils: Example: Delete Row

#####
### Define Inputs ###
#####

# The ID of this incident
inputs.incident_id = incident.id

# The api name of the Data Table, search column, search value [here it is
taken from previous Get Rows Function inputs]
inputs.dt_utils_datatable_api_name =
workflow.properties.rows_to_delete.inputs.dt_utils_datatable_api_name

# The internal IDs of the rows that will be deleted [again, taken from
previous Get Rows Function]
if workflow.properties.rows_to_delete and
workflow.properties.rows_to_delete.rows:
    rows_ids = []
    for row in workflow.properties.rows_to_delete.rows:
        rows_ids.append(row["id"])
    inputs.dt_utils_rows_ids = str(rows_ids)

## Alternatively you can delete row/rows by defining the list of internal
row IDs or by defining the 'search_column and search_value' pair:
# inputs.dt_utils_rows_ids = "[2,3]" # or
# inputs.dt_utils_search_column = "dt_col_name"
# inputs.dt_utils_search_value = "Mary Murphy"
```

Post-Process Script:

```
incident.addNote("Rows deleted: {0}".format(str(results["rows_ids"])))
```

Rules

Rule Name	Object Type	Workflow Triggered
Get DT Row	Artifact	Example: Data Table Utils: Get Row
Get DT Rows	Artifact	Example: Data Table Utils: Get Rows
Update DT Row	Artifact	Example: Data Table Utils: Update Row
Delete DT Row	Artifact	Example: Data Table Utils: Delete Row
Delete DT Rows	Artifact	Example: Data Table Utils: Delete Rows

Data table

Data Table Utils: Test Data Table

Test Data Table

Search...

Q

Print

Export

ID	Time	Name	Status	
635	10:45	Mary Murphy	Incomplete	...

Displaying 1 - 1 of 1

API Name:

dt\_utils\_test\_data\_table

Columns:

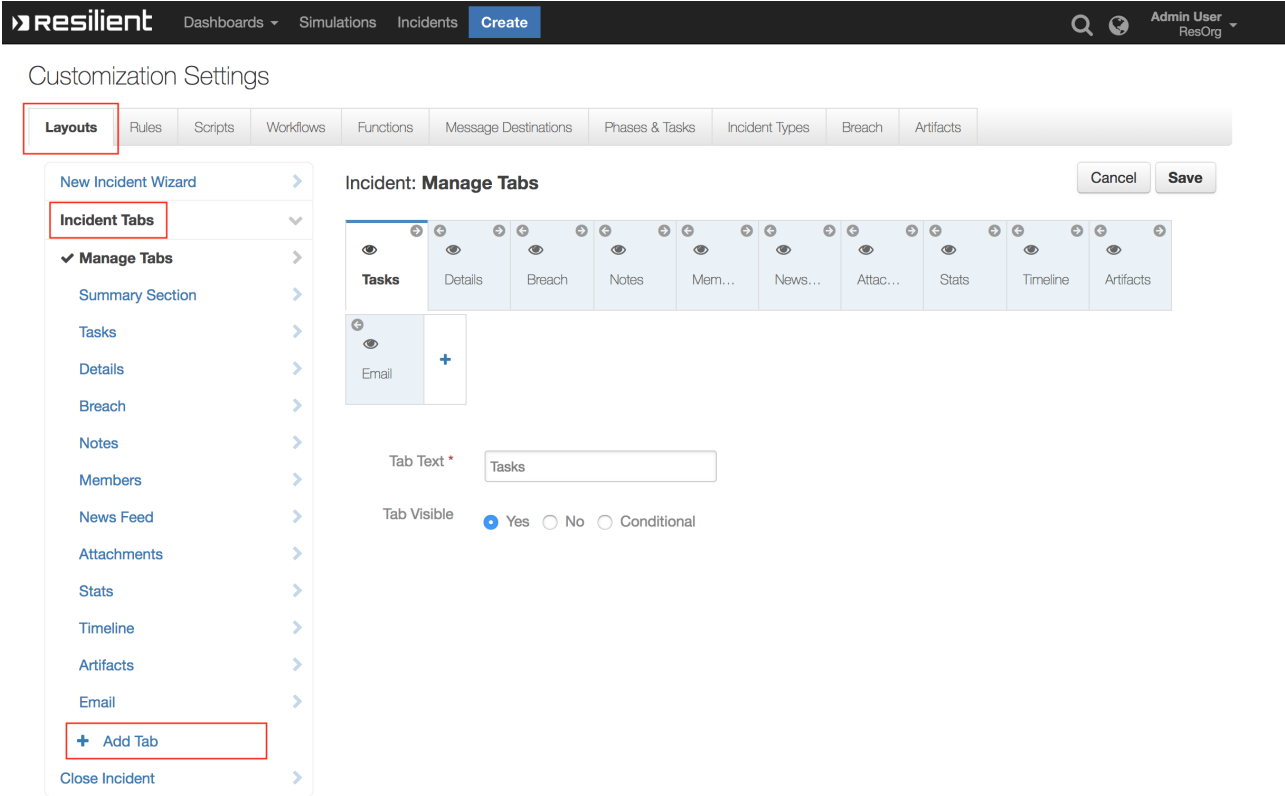
Column Name	API Access Name	Type
ID	dt_col_id	Text
Time	dt_col_time	Text
Name	dt_col_name	Text

Column Name	API Access Name	Type
Status	dt_col_status	Text

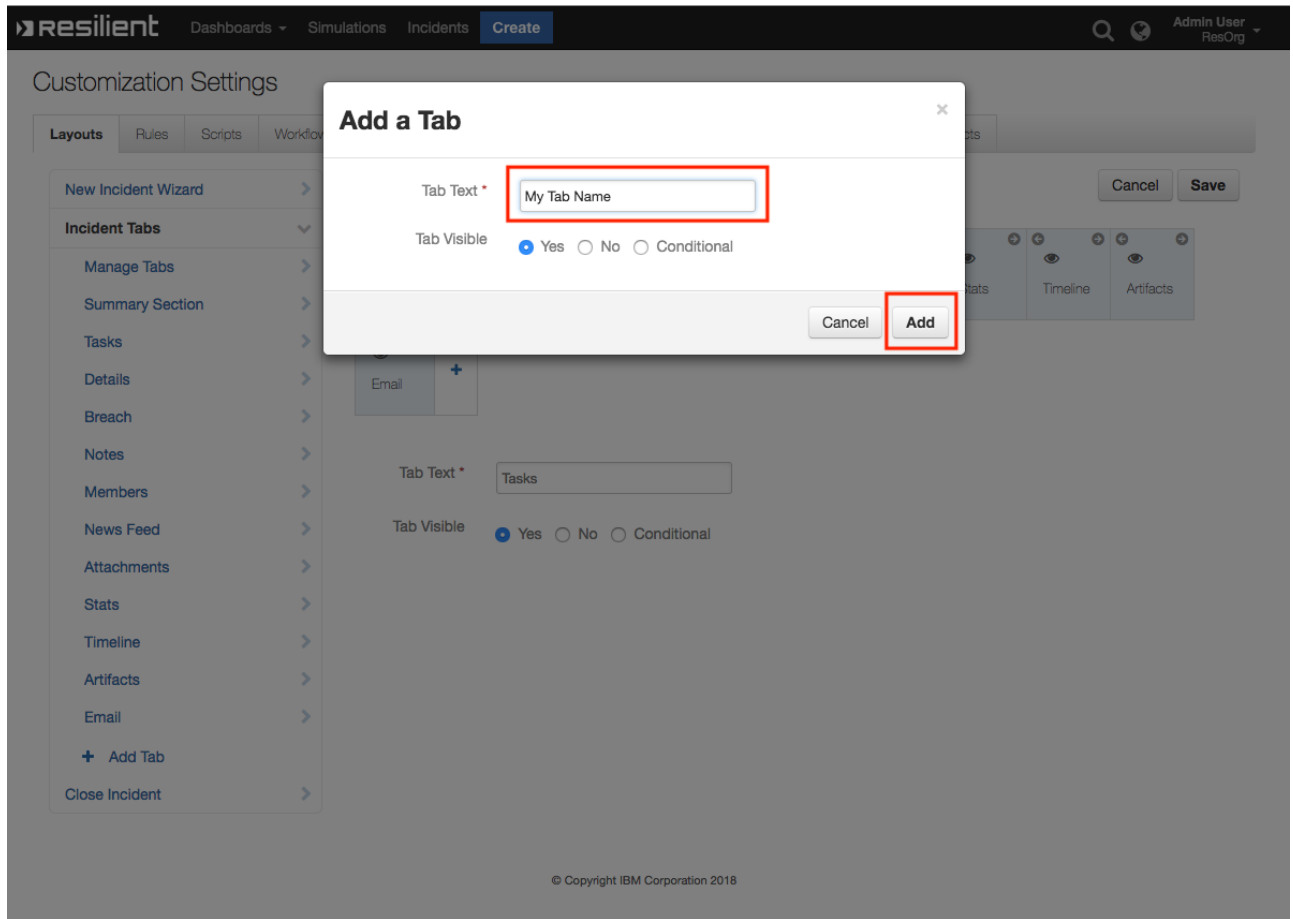
Display the Datatable in an Incident

- In order to **display** the Test Data Table in your Incident, you must **modify your Layout Settings**

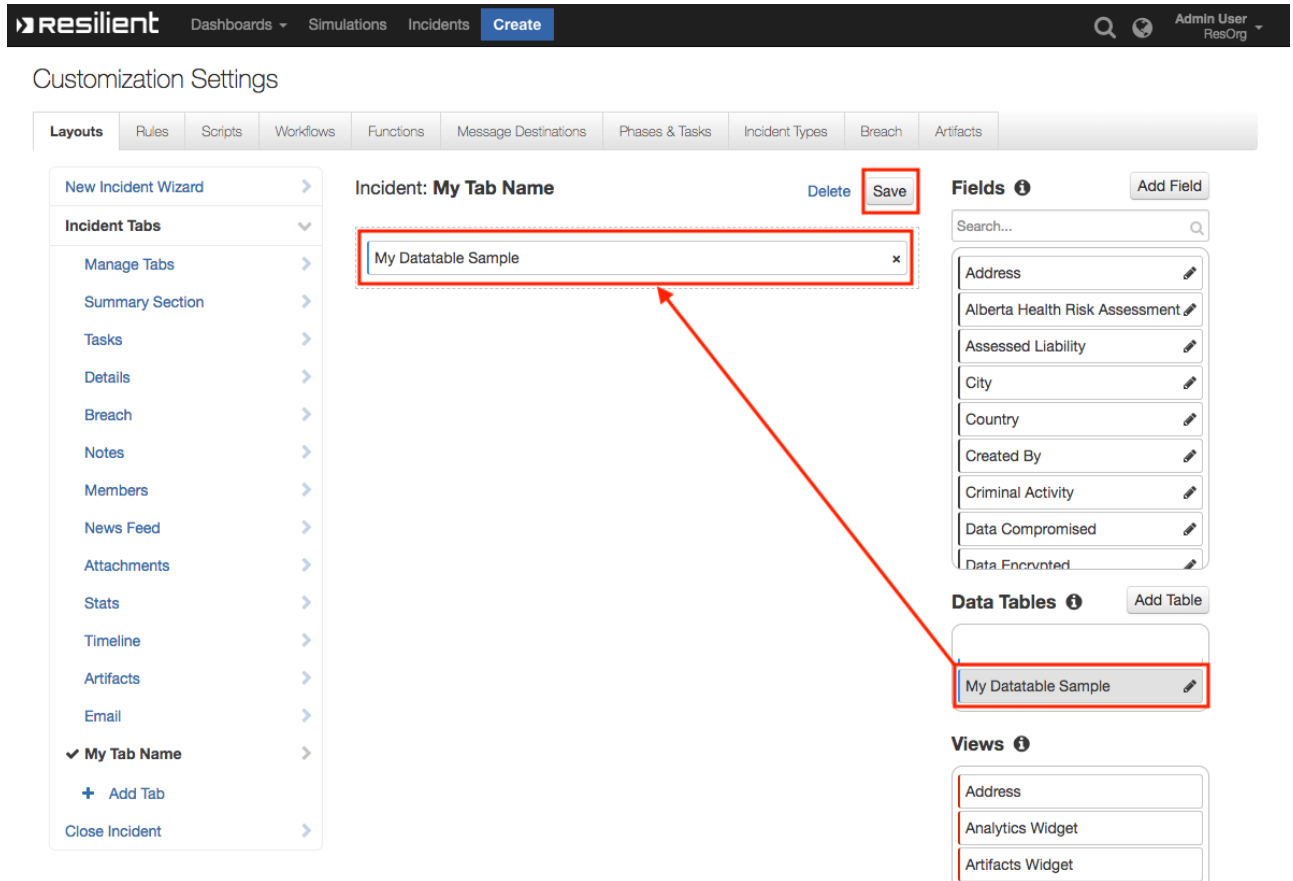
1. Go to **Customization Settings > Layouts > Incident Tabs > + Add Tab**



2. Enter **Tab Text:** **My Test Tab** and click **Add**



3. **Drag** the Data table into the middle and click **Save**



4. Create a new Incident and you will now see the **My Test Tab** with the **Test Data Table**