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Lab Guide

Integration 103:

Accessing The Web Services API

Jason Petty & Josh Nerius

Lab instance: https:// **<<name>>**.lab.service-now.com

Login / Passwords:

admin / Knowledge14

itil / Knowledge14

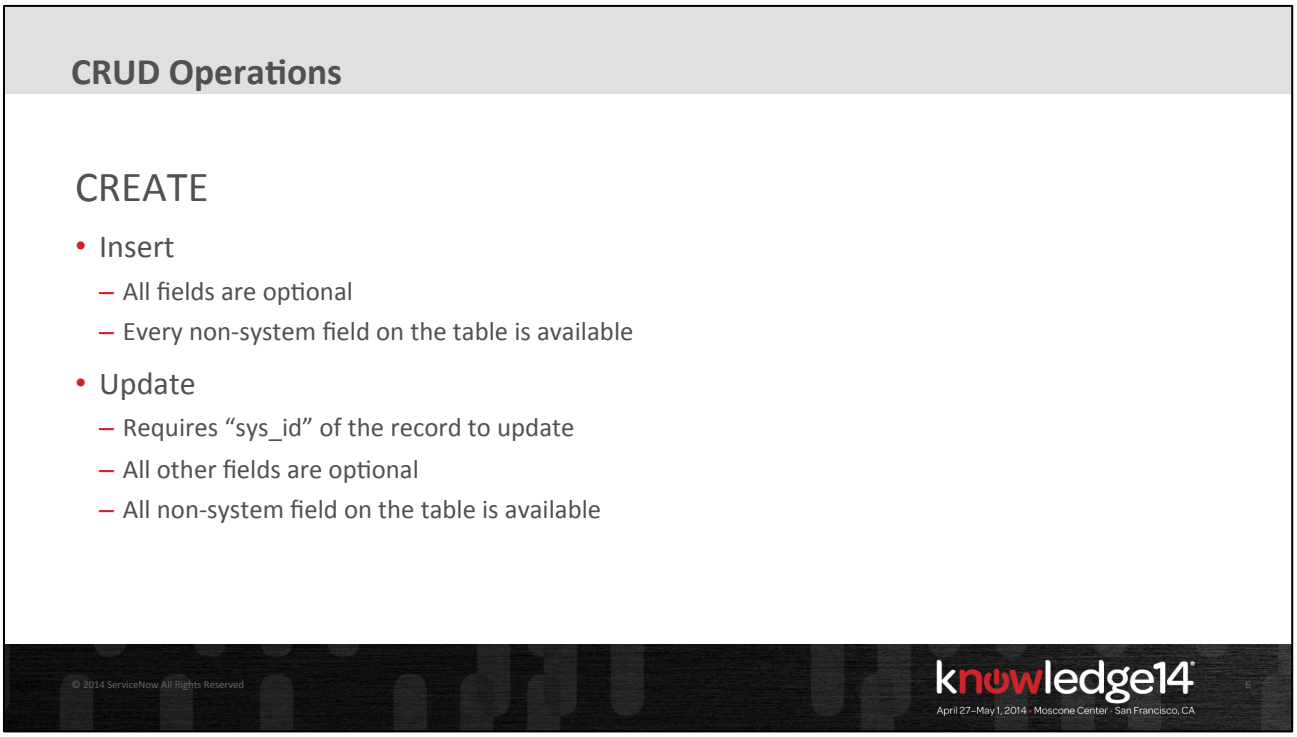
employee / Knowledge14

Direct SOAP Web Services

- Built into the architecture
- Every table (OOB or Custom)
  - <tablename>.do?WSDL
  - <tablename>.do?SOAP
- CRUD Operations

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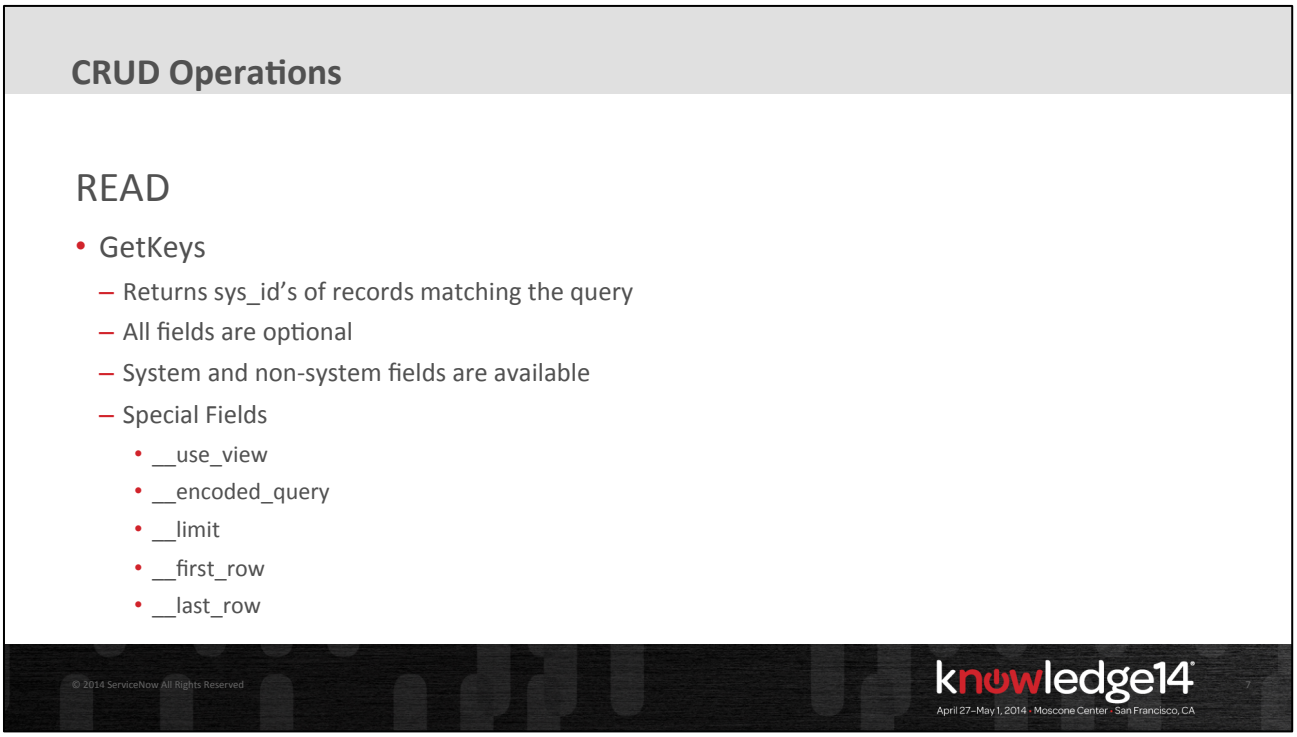


The supported create operations include a function for insert, as well as update.

With the insert function, all nonsystem fields are available to set through the web service. However, none of those fields are required. You can use any combination of those fields that you need to.

The update function does require a sys_id element that contains the ID of the record that will be updated. All the other fields are optional as with the insert function.

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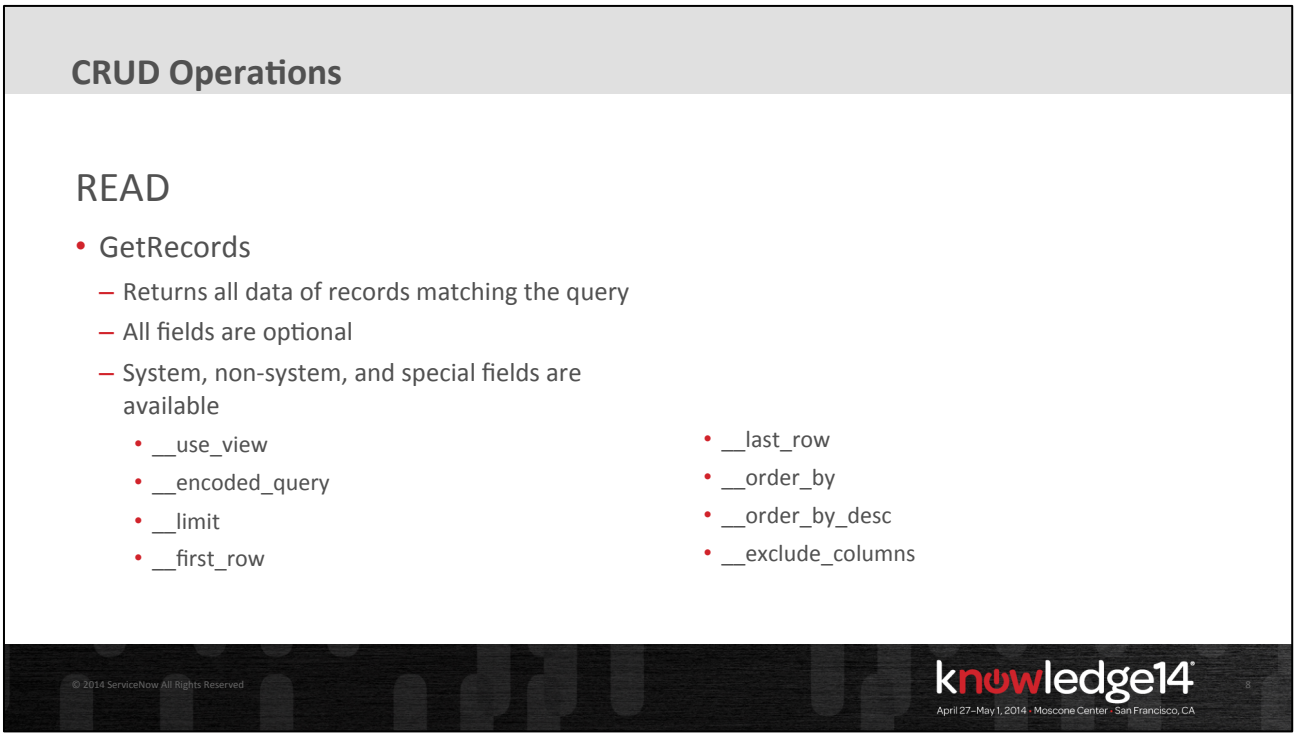
The reading operations consist of the getKeys, get, and getRecords methods.

The getKeys function returns the unique sys_id's of all records matching the query in the soap body.

The soap request will take in all system and nonsystem fields associated with the record. All of these fields are optional, and can be used to build powerful queries.

Besides the system and nonsystem fields, there are some special fields that are also available. These fields allow for enhanced queries as well as important components that allow for pagination of data.

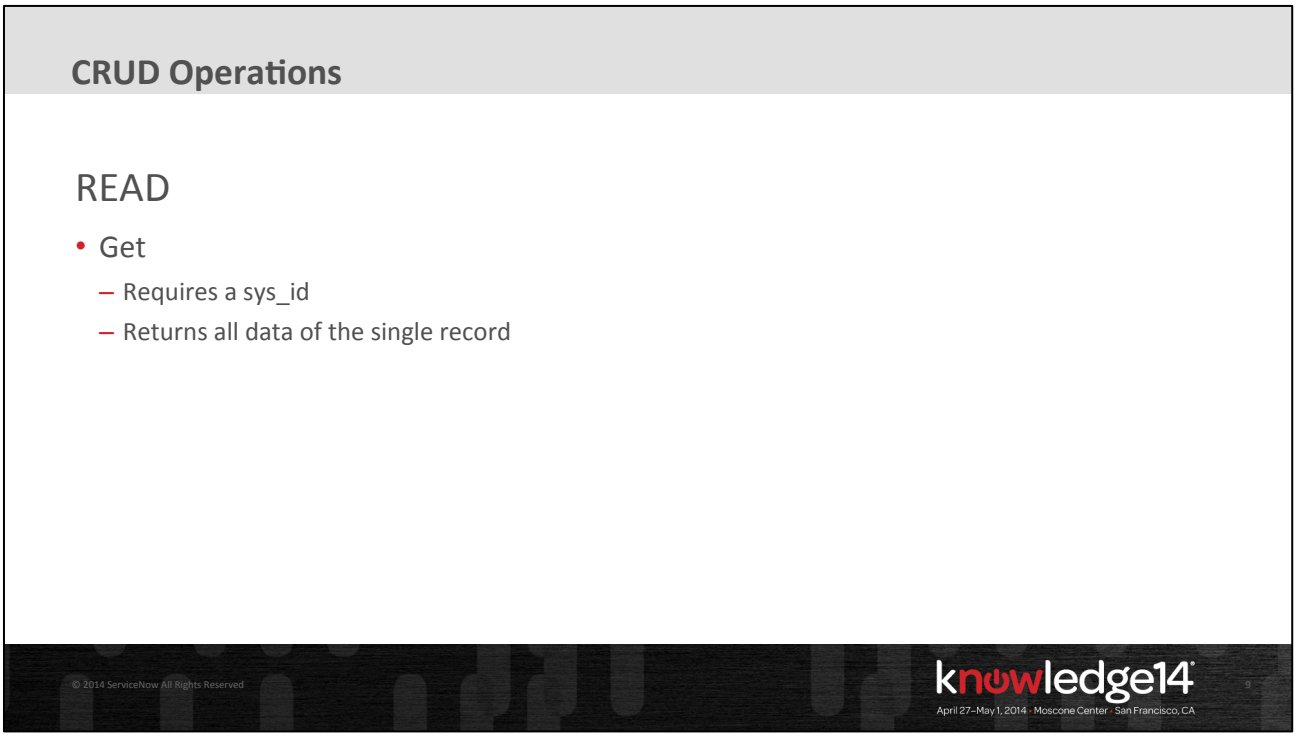
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The getRecords function will return an entire data set for each record that matches the specified query. Both system and nonsystem field details are included in each data set.

The request is built with any number of the system and nonsystem fields associated with the record. Also included are some special fields, similar to those available in the getKeys() function.

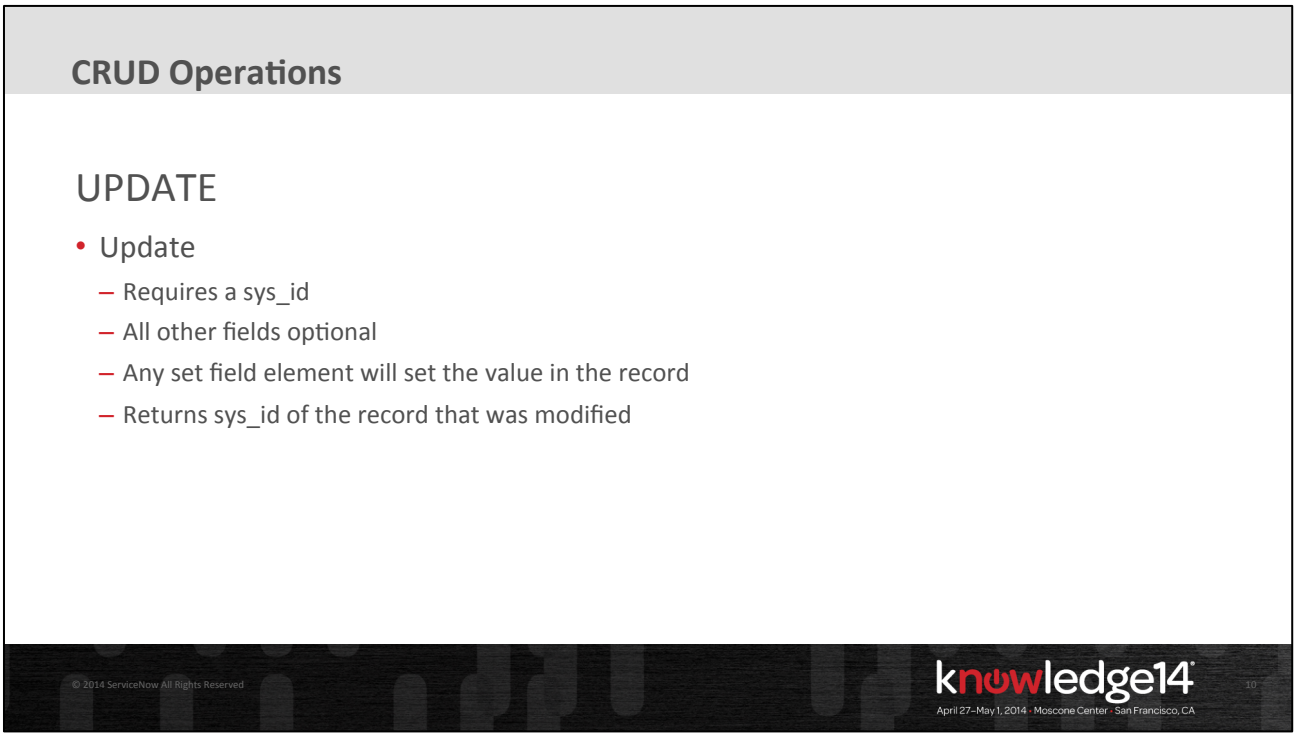
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The "get" function is the simplest of the read functions. The request is built by providing a sys_id of the record that you want to query.

The response will return the data set of all fields associated with that record.

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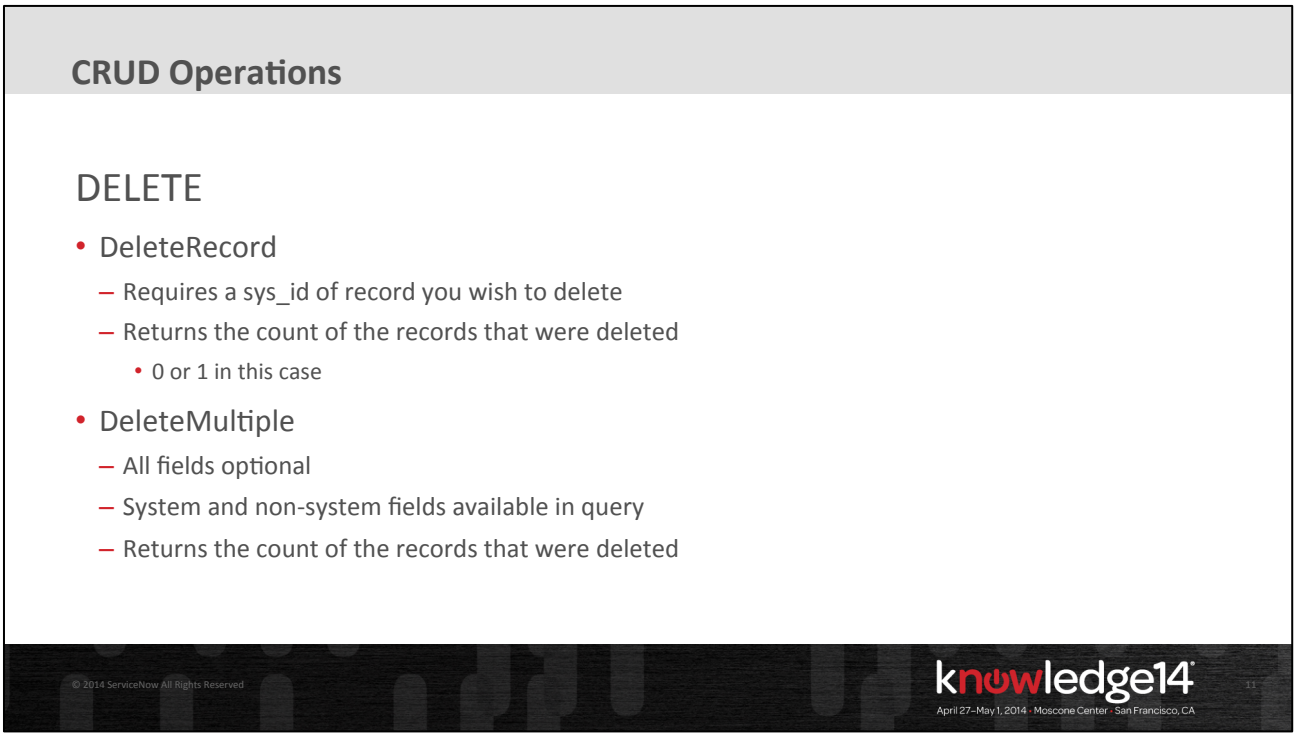


The "update" function requires a "sys_id" field that specifies which record will be updated in the table. All of the other fields provided in the request are optional.

Any field in which you set data inside the element will overwrite the current value for that field once the update function is finished.

The response for this Web service function is the system ID of the record that was modified.

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There are two delete functions that are available with the web service. These are: "deleteRecord" and "deleteMultiple".

The deleteRecord function requires a system ID element of the record that you wish to delete. The response for this function is a count of the number of records that were deleted with the query. Since this function only deletes one record, your response should have a count of either zero or one.

The deleteMultiple function provides all the fields available on the table. All of these fields are optional. Those fields that you choose to use will act as a query against the table. All records on the table that match the values specified in this fields of the request will be deleted. The response will contain a count of the number of records that were deleted by this operation.

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Exercise 1

Learn how to access tables within the ServiceNow database to both query and manipulate data using a SOAP Client.

In this exercise, you will leverage the GUI SOAP Message tool (or use a tool of your choice, such as SOAP-UI) to access the auto-generated SOAP Web Services on basic ServiceNow instance tables. You will create, query, update, and delete records on a custom table.

Direct SOAP Web Services

Notes about the SOAP Client Options

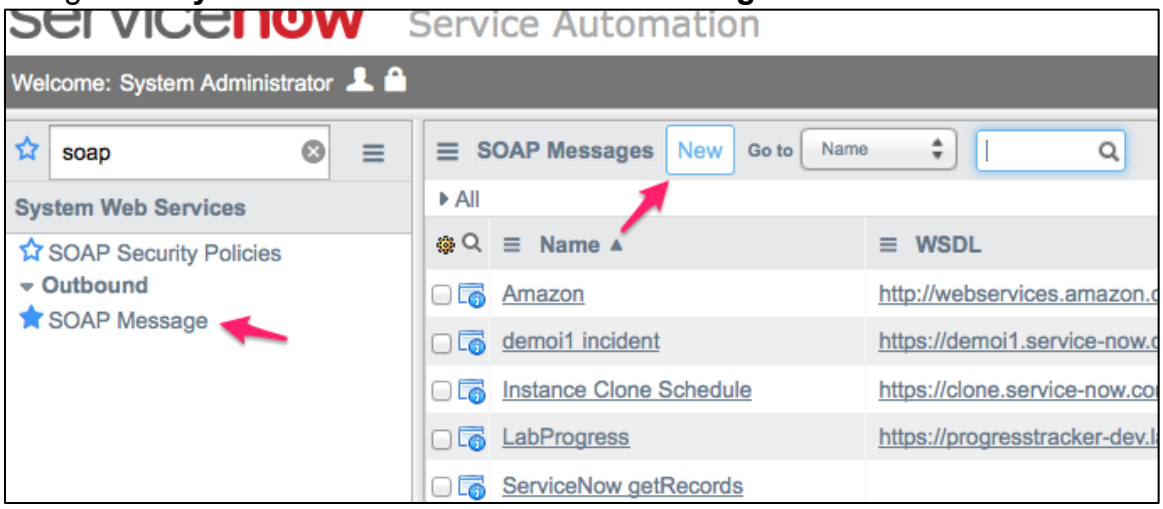
1. For the exercises in this lab, the lab documentation will use the GUI based SOAP utility provided by ServiceNow, called “SOAP Message”. Please feel free to use any other third party SOAP Client to perform this lab if you are more comfortable with that tool.

2. It is important to understand that these web services that we will call are available to any client, not just a ServiceNow instance. We use the ServiceNow instance as the client in these examples because that will be accessible to everyone in the lab without requiring anyone to download third party software.

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Setup a client to communicate with the Weather Camera records

1. Navigate to **System Web Services > SOAP Message** and click **New**

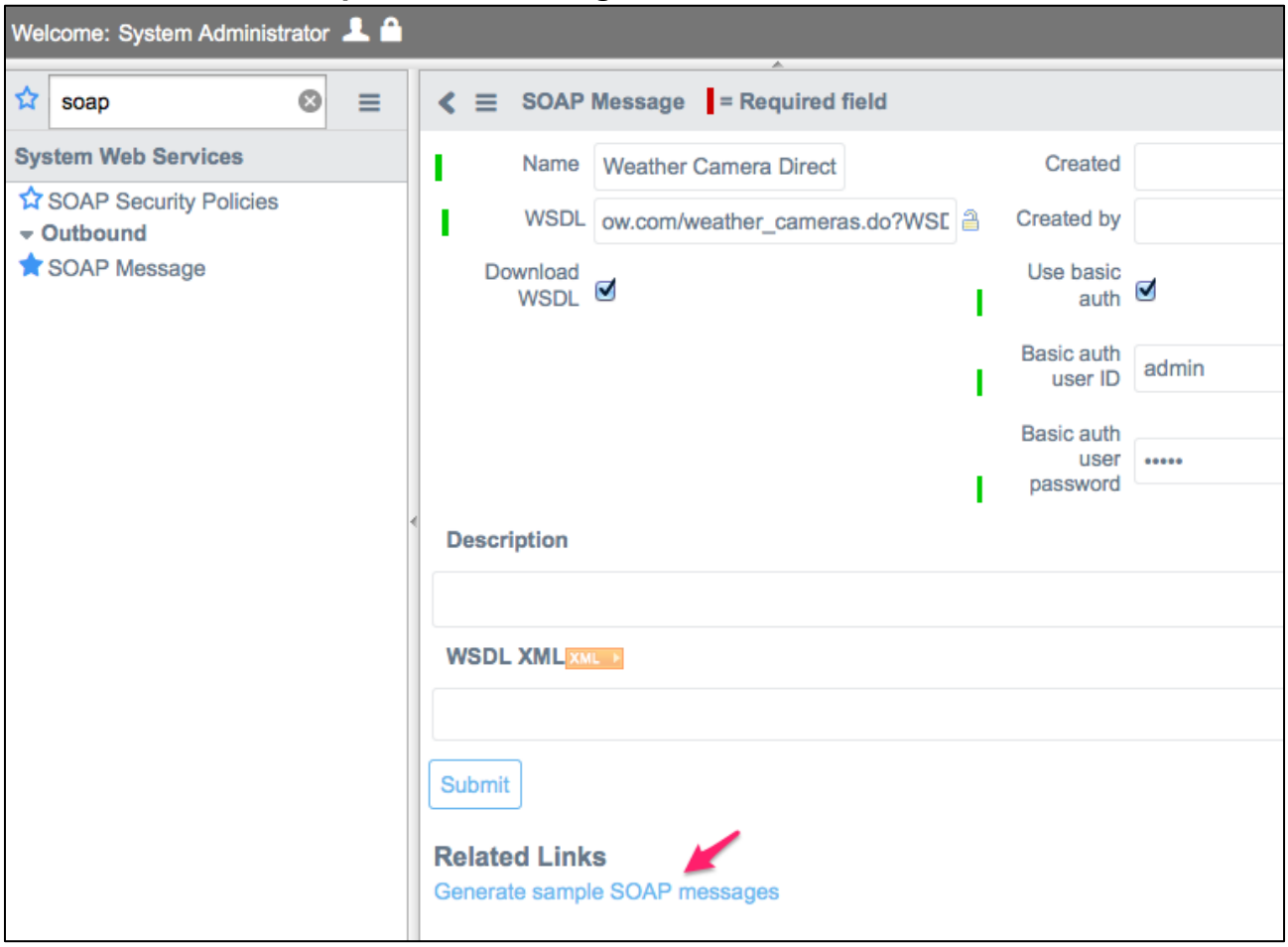


2. Set up the SOAP Client to consume the **Weather Cameras** table in ServiceNow

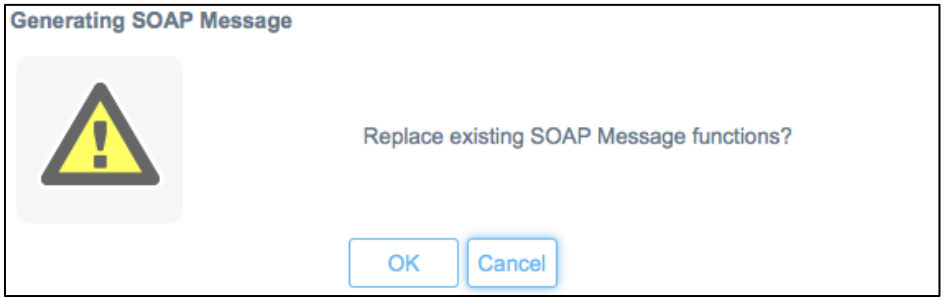
   - **Name**: Weather Camera Direct
   - **WSDL**: https://YOURINSTANCE.lab.service-now.com/weather_cameras.do?WSDL
   - **Download WSDL**: Checked
   - **Use basic auth**: Checked
   - **Basic auth user ID**: admin
   - **Basic auth user password**: Knowledge14 (or whatever your password may be)

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3. Click the **Generate sample SOAP messages** link

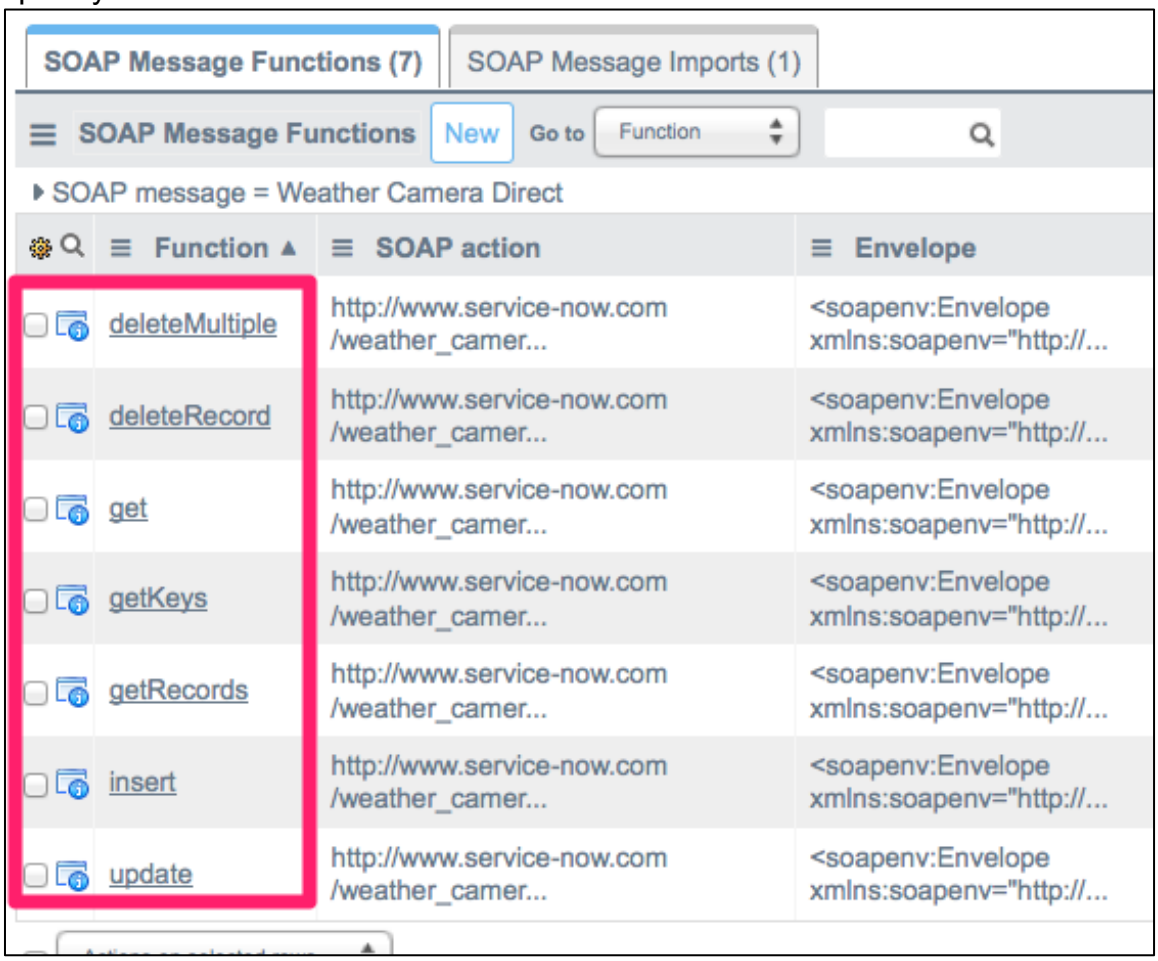


4. Click OK on the prompt to Replace existing SOAP message functions



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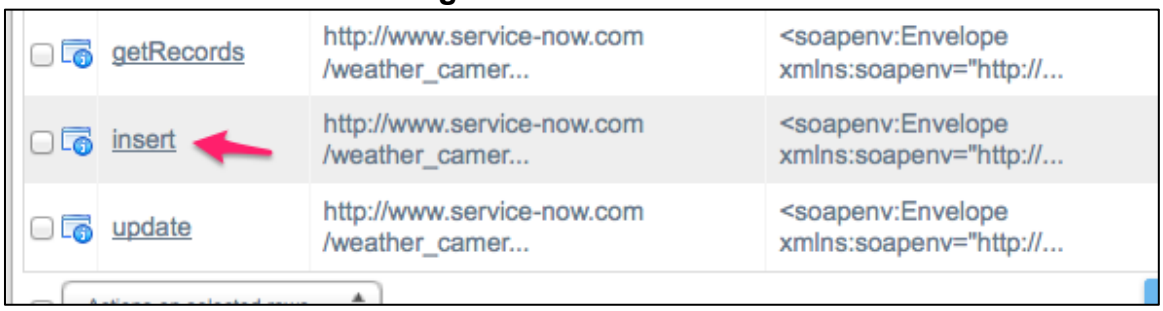
5. Once the SOAP functions have been read by the client, the available functions will show up for you to use



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Use the SOAP Client to create Weather Camera records

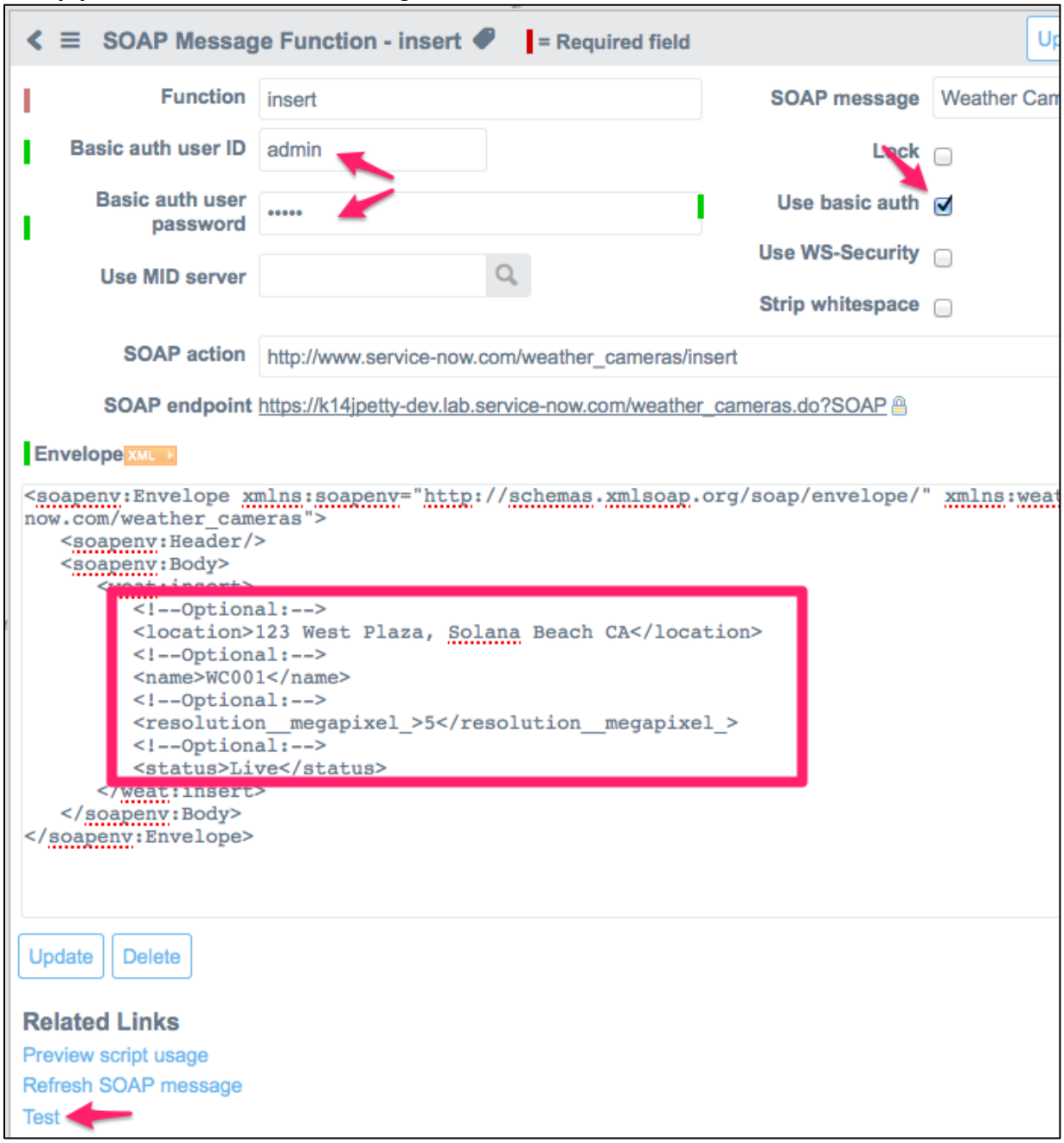
6. Click the “insert” **SOAP Message Function**



7. Set the following fields in the SOAP Message client
    - **Use basic auth:** Checked
    - **Basic auth user ID:** admin
    - **Basic auth user password**: Knowledge14
8. Update the **Envelope** by replacing the following variable strings with test data
    - ${location} : 123 West Plaza, Solana Beach CA
    - ${name} : WC001
    - ${resolution} : 5
    - ${status} : Live

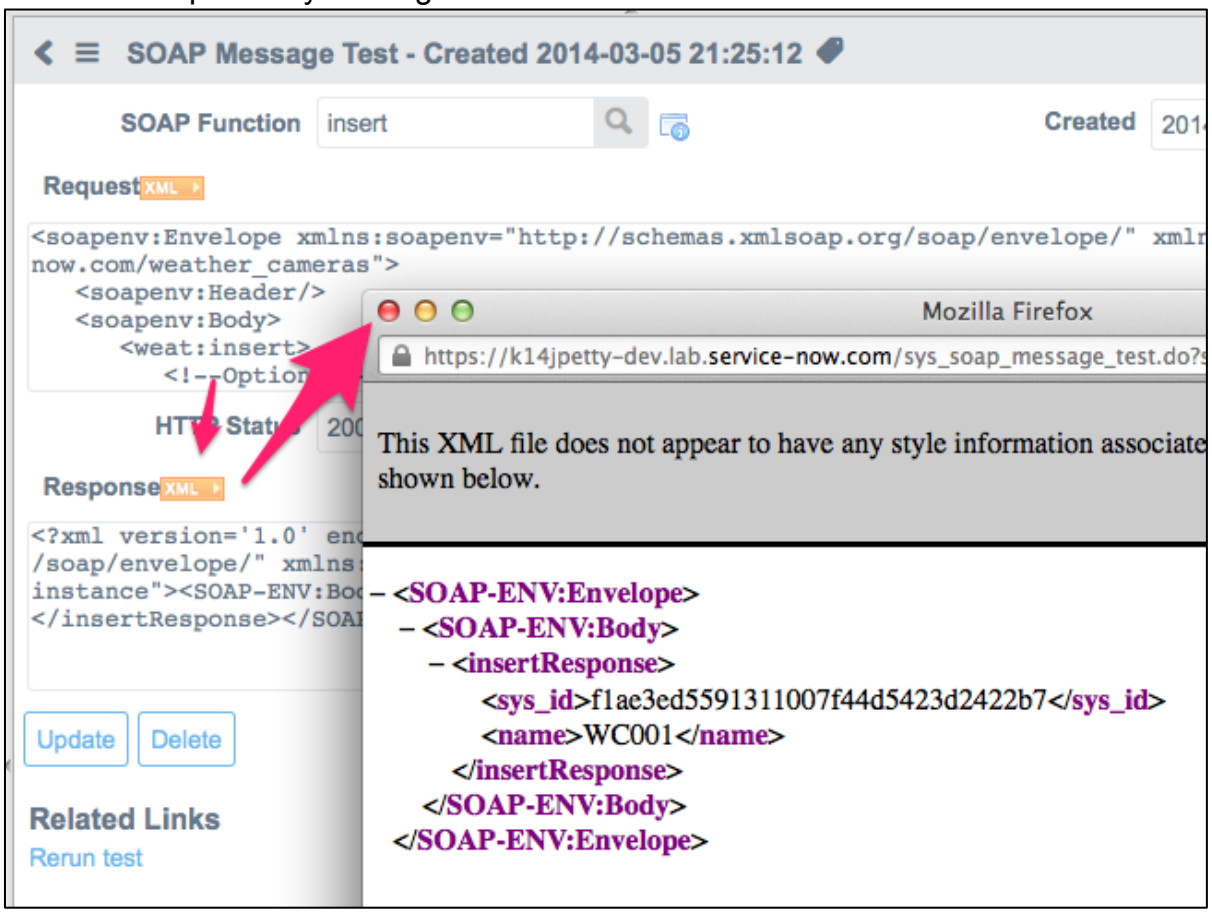
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9. Verify your data with the following screenshot, and then click **Test**

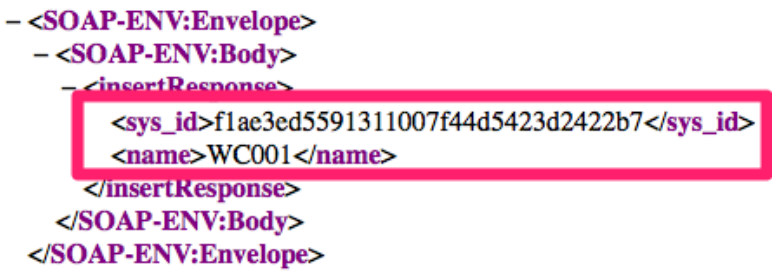


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10. You should then be shown the response of the SOAP Request. You can view the formatted response by clicking the **XML** icon



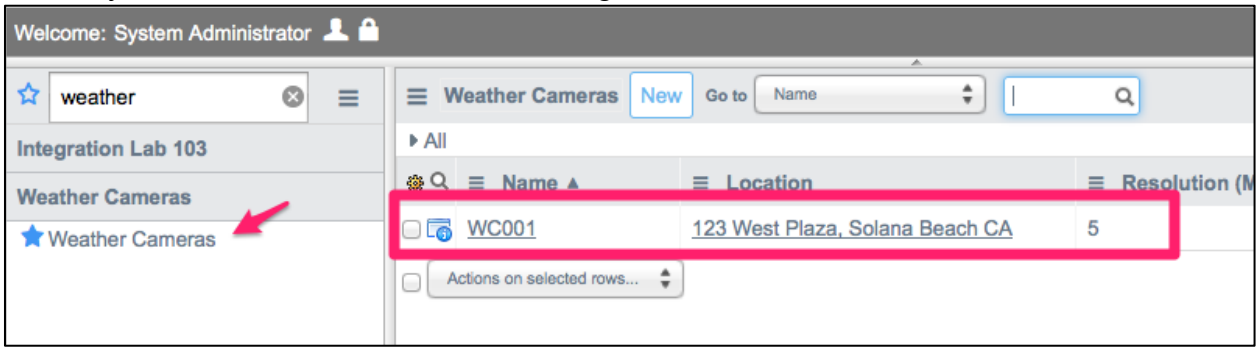
11. The response should contain the new Weather Camera display name as well as the unique GUID it stored for the record in the database



12. **Copy** the “sys_id” string to your clipboard so that we can use it in the next few steps

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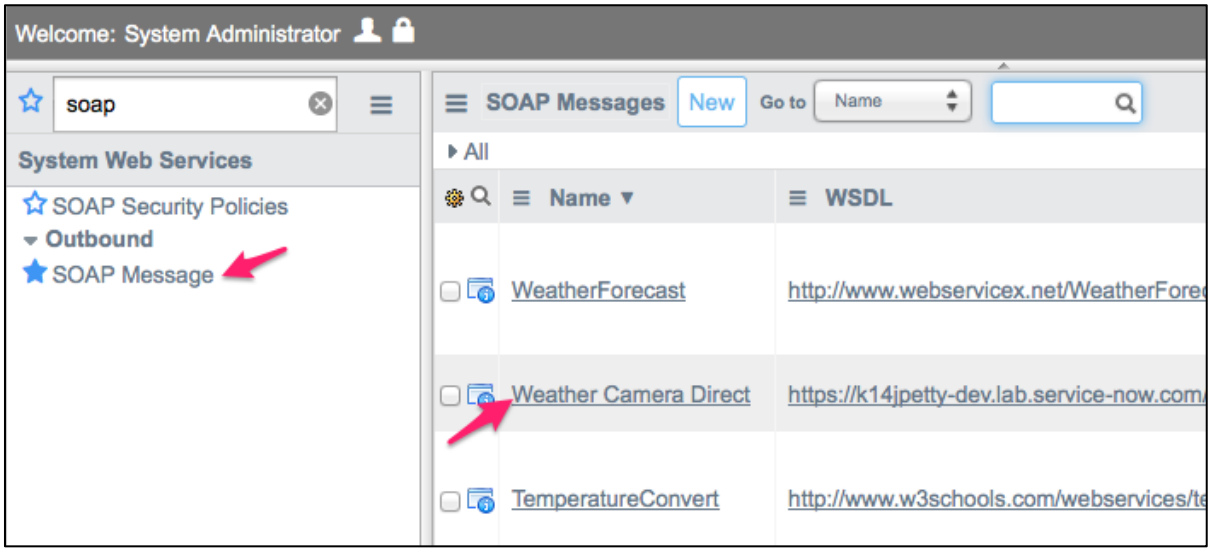
13. To verify that the record was created, navigate to **Weather Cameras > Weather Cameras**



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Update the WC001 camera status to “Down” via SOAP

1. Browse to the Web Service client record we created for Weather Cameras by navigating to **System Web Services > Outbound > SOAP Message** and click on the **Weather Camera Direct** record



2. Click the “update” **SOAP Message Function**



3. Set the following fields in the SOAP Message client
    - **Use basic auth:** Checked
    - **Basic auth user ID:** admin
    - **Basic auth user password**: Knowledge14

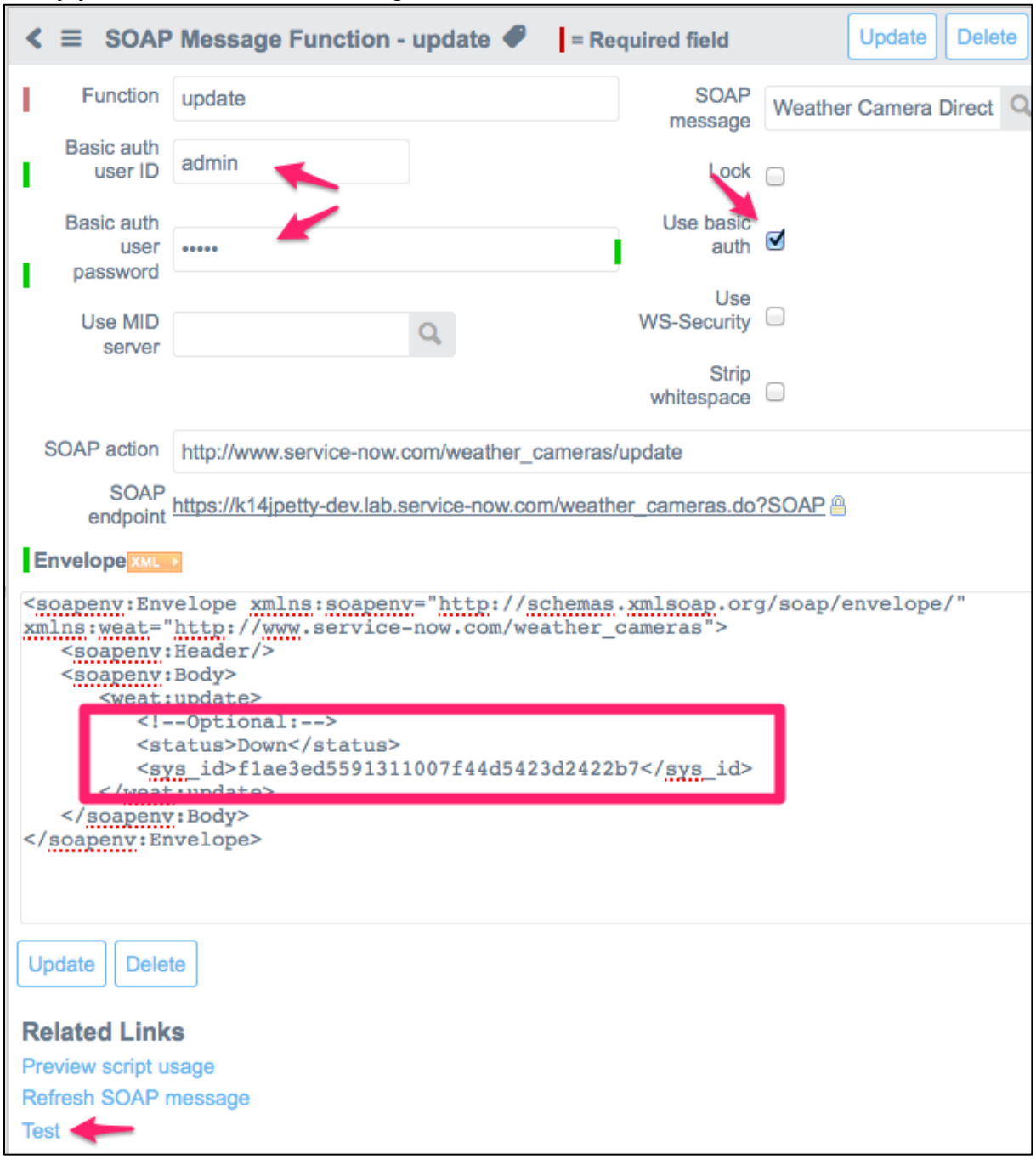
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4. Update the **Envelope** by replacing (or deleting where noted) the following variable strings with test data

    - ${location} : *Delete the element entirely*
    - ${name} : *Delete the element entirely*
    - ${resolution} : *Delete the element entirely*
    - ${status} : Down
    - ${sys_id} : *Paste the sys_id that you copied earlier. If you missed it, you can always get the sys_id of a record by browsing to it and right-clicking on the record and choosing "Copy sys_id" from the menu.*

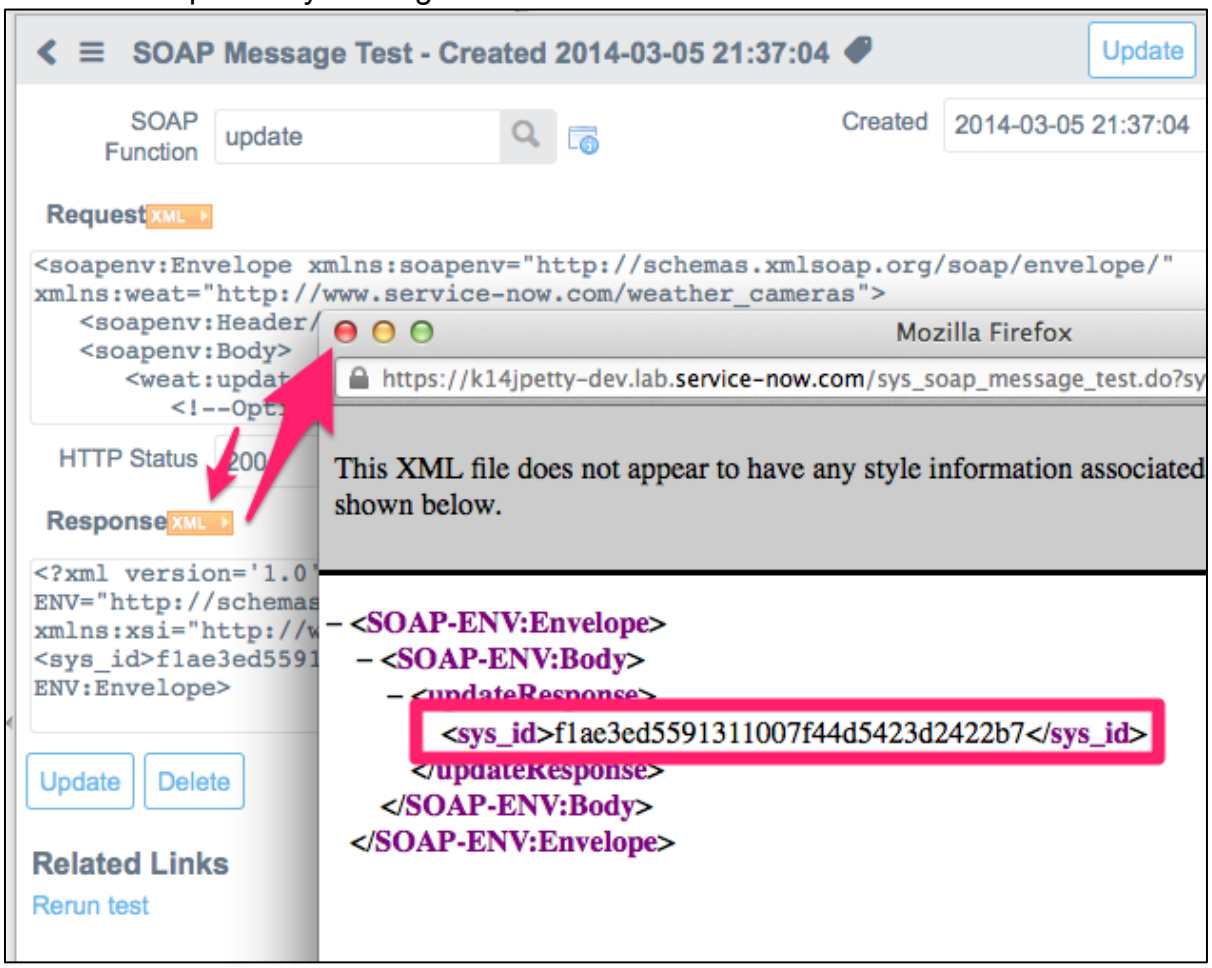
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5. Verify your data with the following screenshot, and then click **Test**



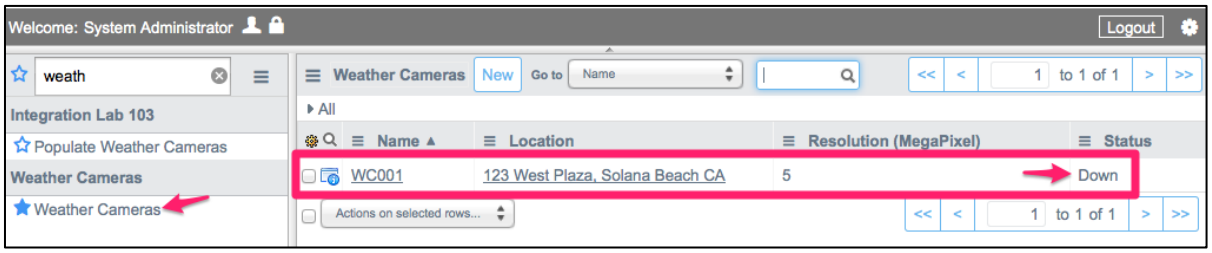
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6. You should then be shown the response of the SOAP Request. You can view the formatted response by clicking the **XML** icon



7. The response should contain the sys_id of the Weather Camera record that was updated.

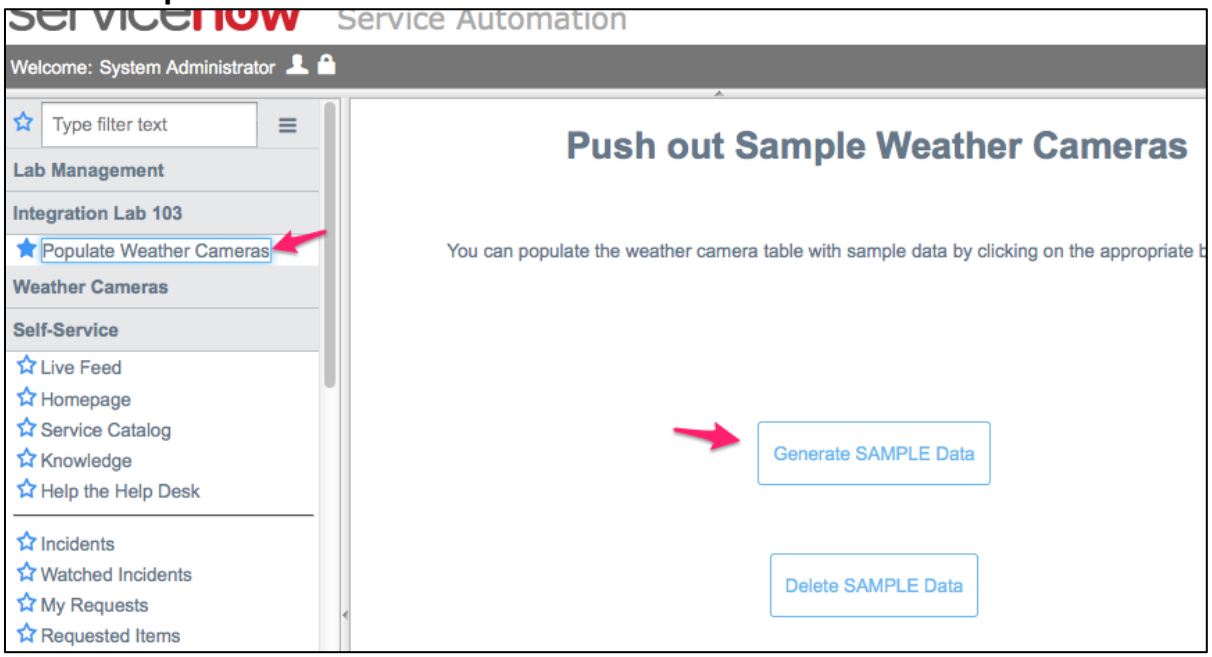
8. To verify that the record was updated, navigate to **Weather Cameras > Weather Cameras**



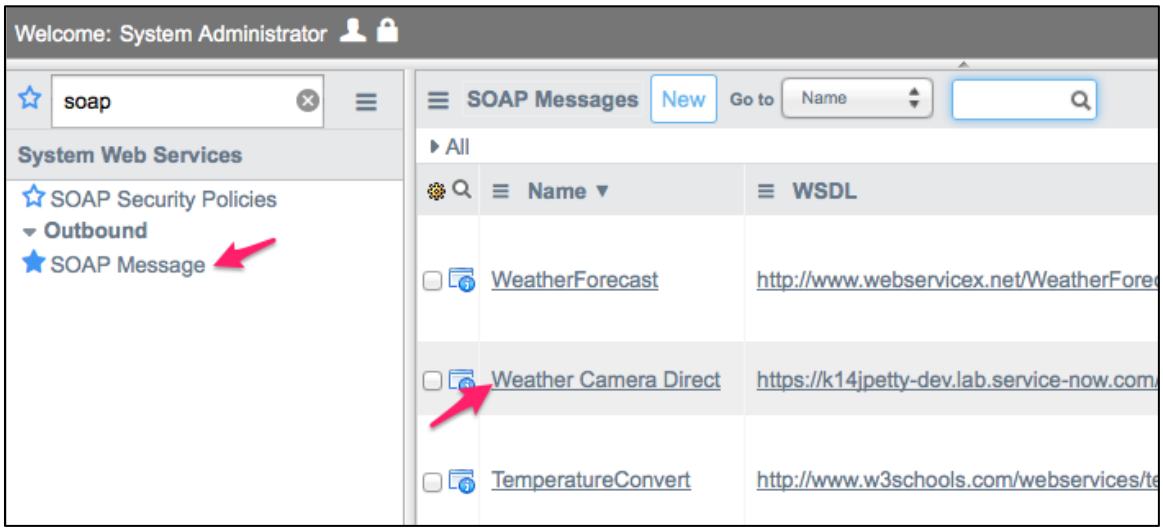
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Use SOAP to query all Cameras that have a status of: Down

1. In order to make our query more interesting, we are going to use a tool created for this lab to generate several Weather Camera records. Simply navigate to **Integration Lab 103 > Tools > Populate Weather Cameras** and click on the **Generate SAMPLE Data** button.

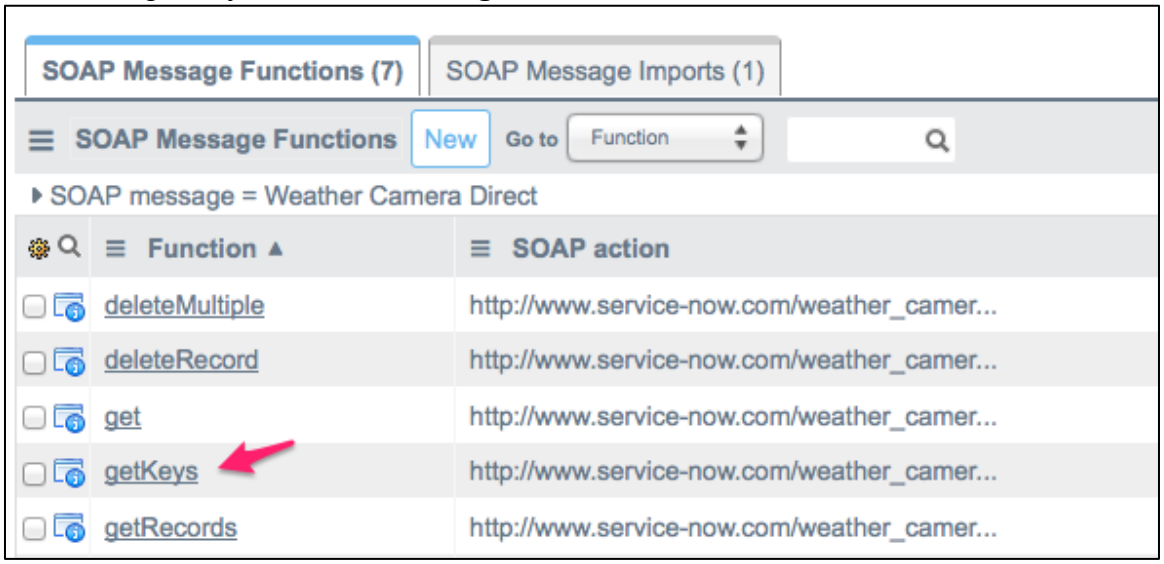


2. Browse to the Web Service client record we created for Weather Cameras by navigating to **System Web Services > Outbound > SOAP Message** and click on the **Weather Camera Direct** record



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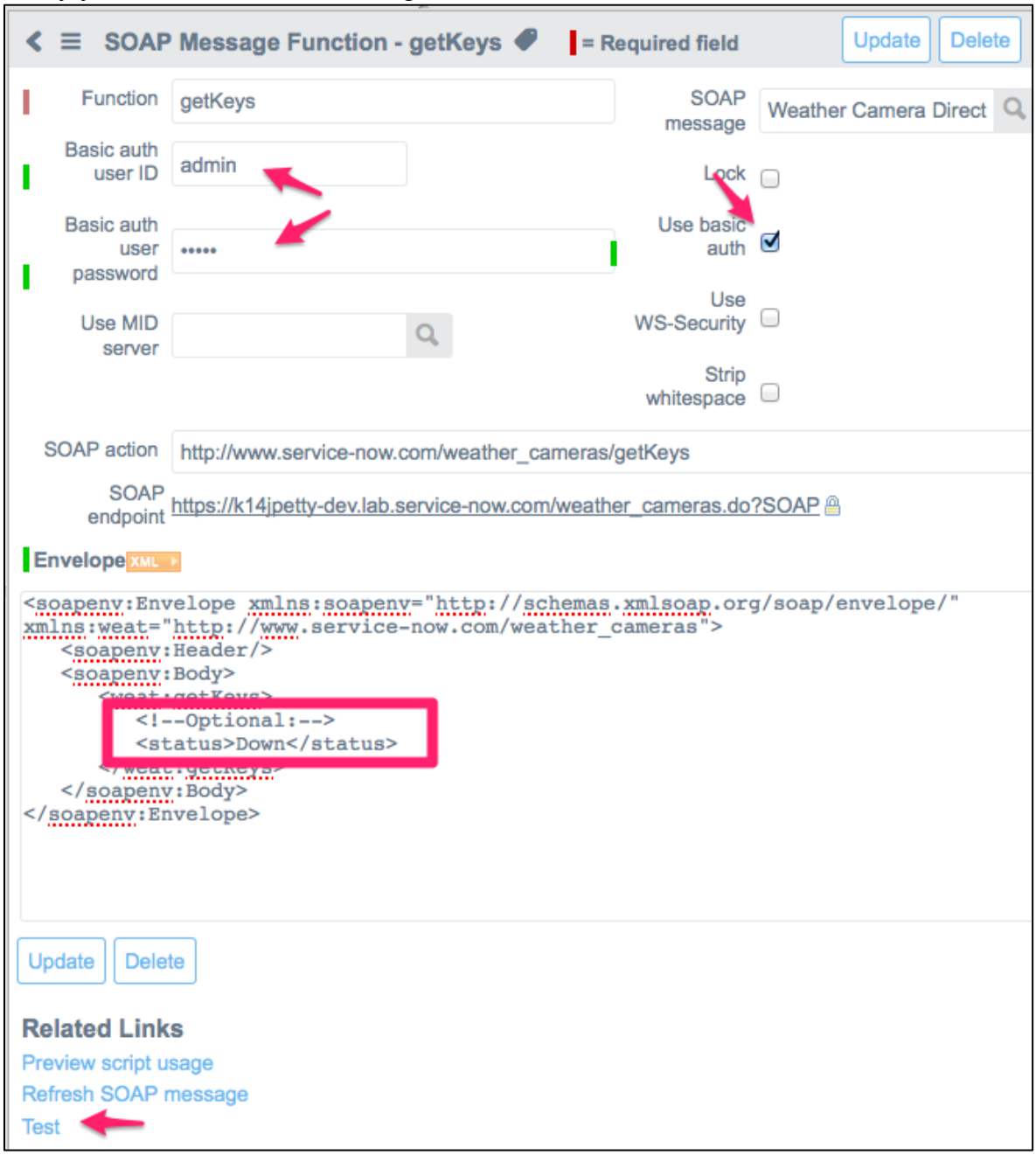
3. Click the “getKeys” **SOAP Message Function**



4. Set the following fields in the SOAP Message client
    - **Use basic auth:** Checked
    - **Basic auth user ID:** admin
    - **Basic auth user password**: Knowledge14
5. Update the **Envelope** by replacing the following variable strings with test data (or following alternative instructions is present)
    - ${location} : *Delete the element entirely*
    - ${name} : *Delete the element entirely*
    - ${resolution} : *Delete the element entirely*
    - ${status} : Down
    - *Delete all other elements within the “getKeys” tag*

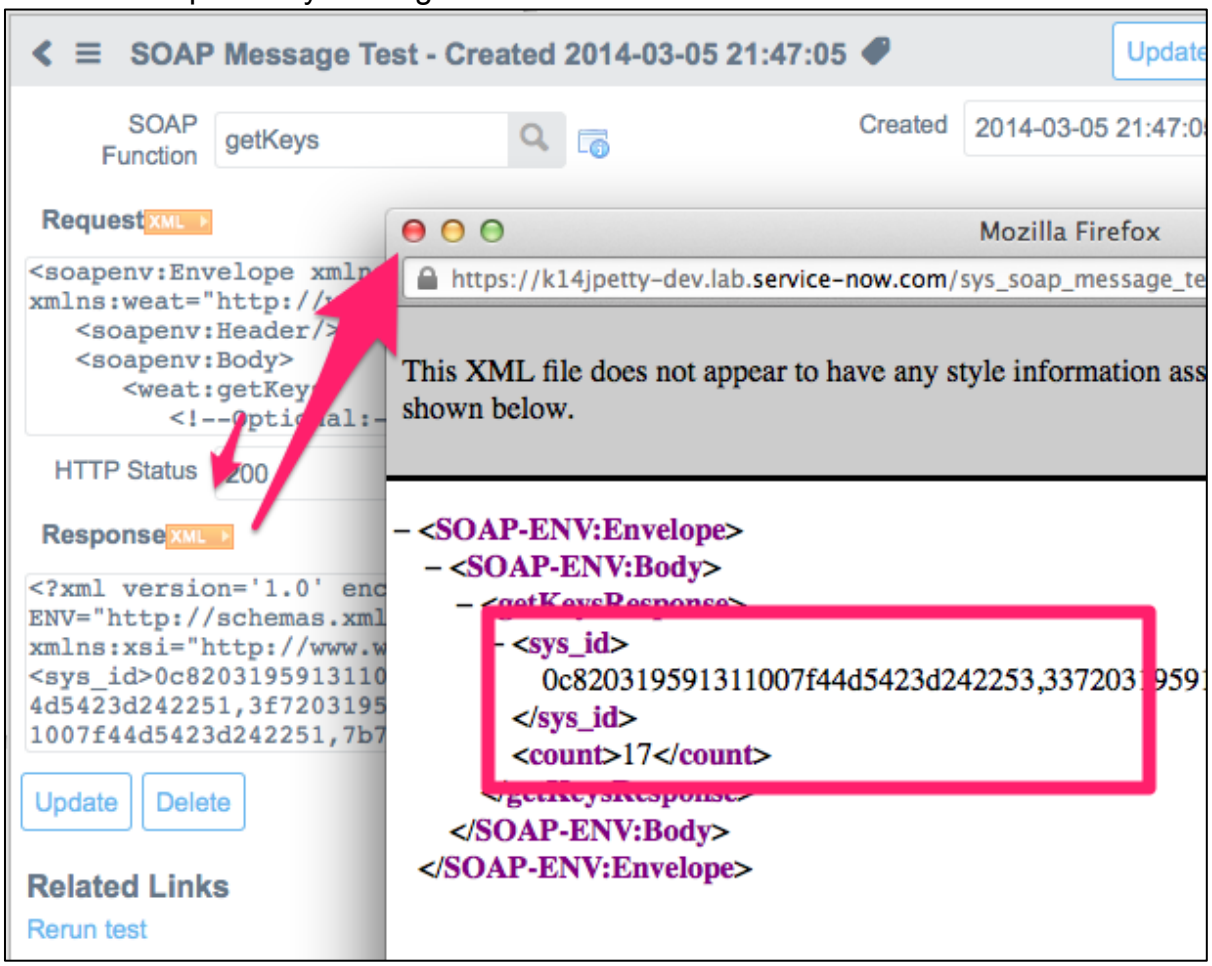
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6. Verify your data with the following screenshot, and then click **Test**



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7. You should then be shown the response of the SOAP Request. You can view the formatted response by clicking the **XML** icon



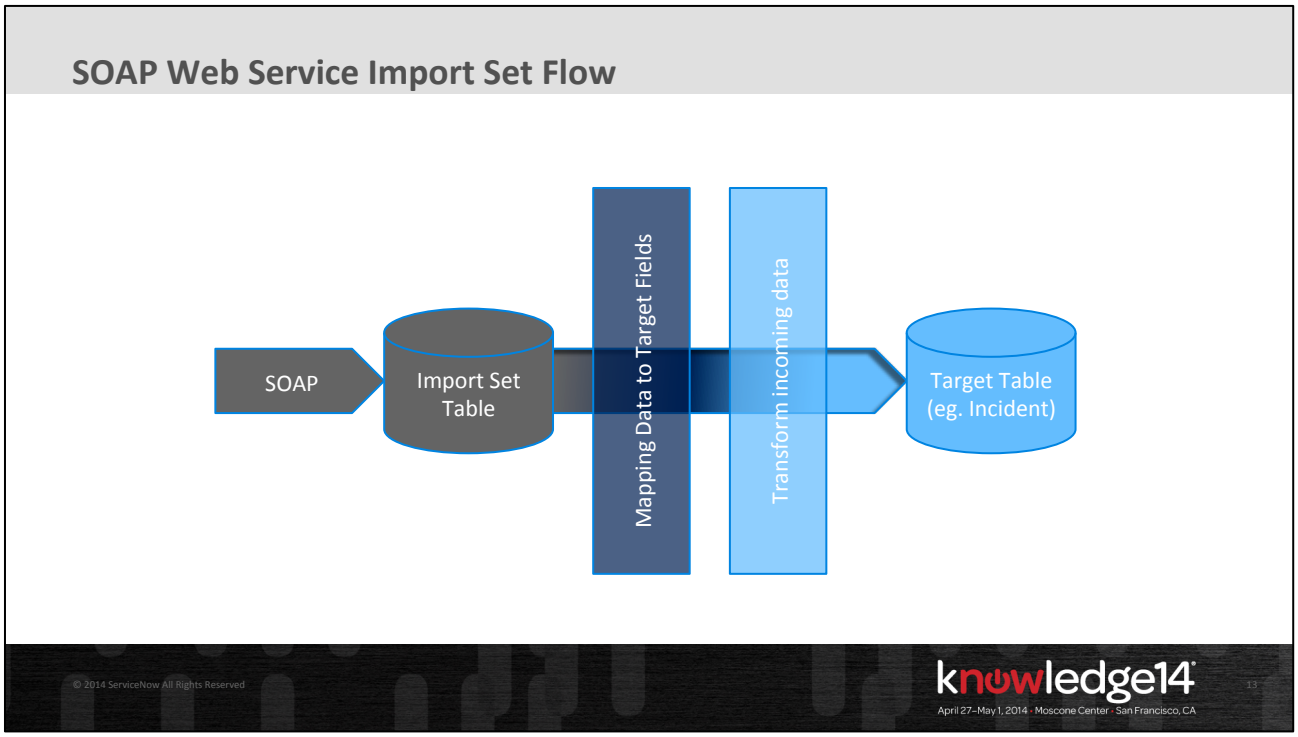
8. The response should contain a comma-separated list of the sys_id's of all weather camera records that are listed as being "Down". The response also contains a count of how many records were returned.

Mark your completion of this lab

1. Navigate to the **Lab Management > Report Lab Progress** module in the navigation pane

2. Click on the **I'm Done** button to notify your instructor that you are done with the lab exercise.

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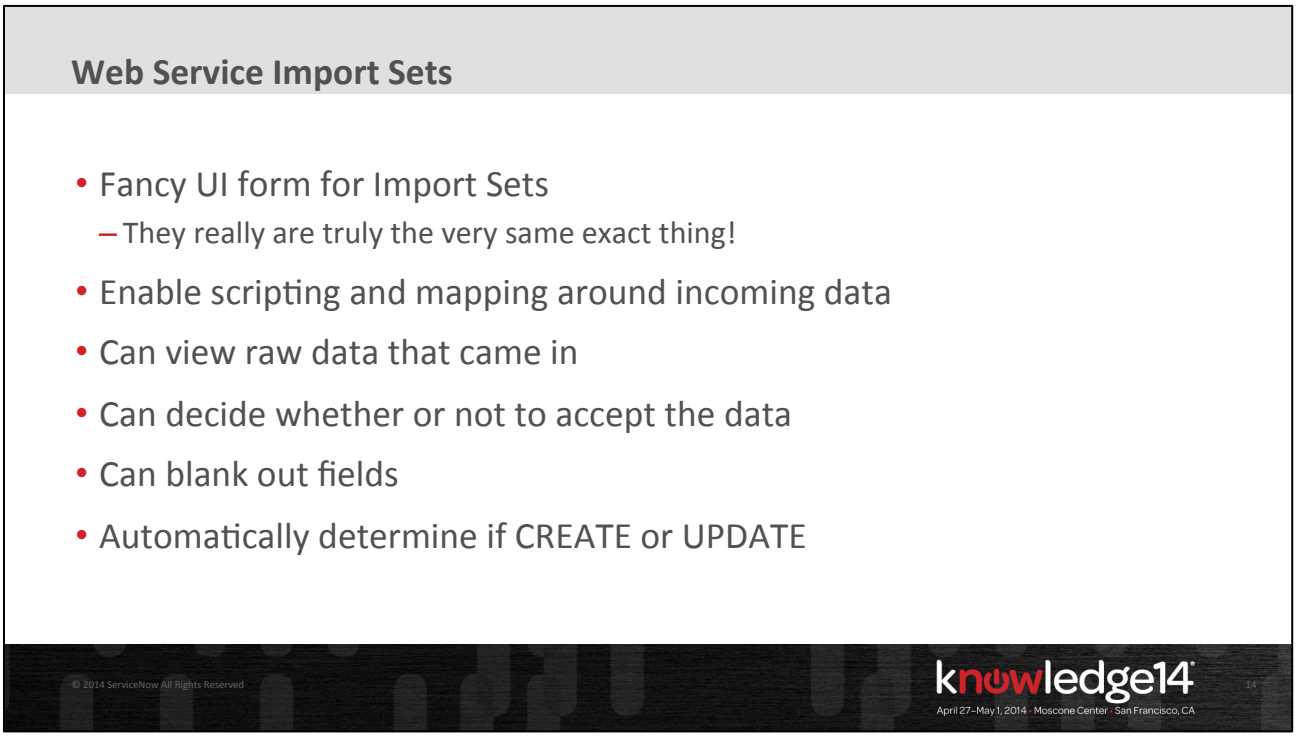


ServiceNow offers a soap web service import set feature that allows Web service requests to come through an import set table similar to those that are used with the standard data sources in the product.

Each web service import set contains its own WSDL and SOAP endpoint. This Web service can be consumed from a client that posts data directly to the import settable.

Once the data is inserted into the table, it is mapped to the target table and any transform scripts that are set on the map are executed before the data is written to the target table.

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Web service import sets are really the same thing as a traditional import set that is used with data sources. These import sets simply have a different UI associated with them that displays Web service information such as WSDL's, etc. However, any other import set table in the system also has the same Web service functions associated with them regardless of whether the that information is displayed in its UI or not.

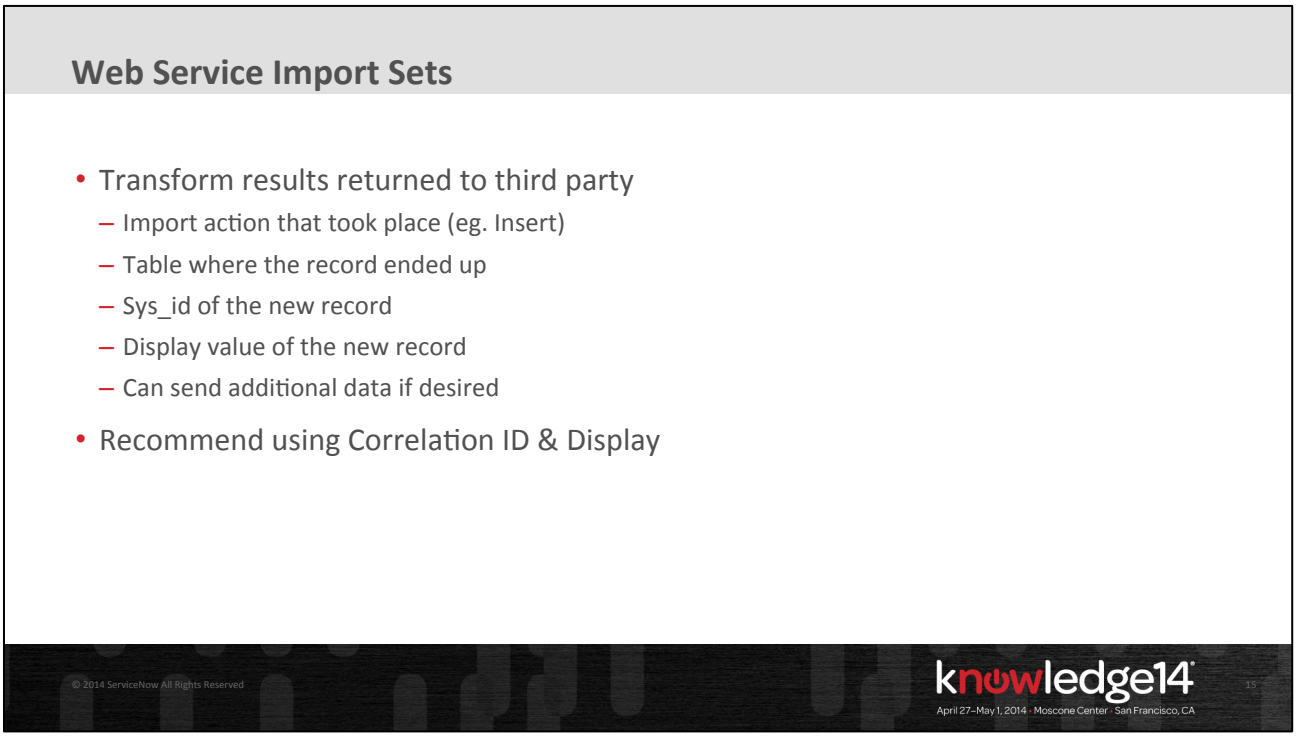
Some benefits around using web service import sets include the fact that you have the power to script, transform, and map data that is coming from the third party web service client. You also have a record of the raw data that came in from the web service should you have any troubles with requests not generating records in the system.

Another benefit of using web service imports sets is that you can build in logic to decide whether or not to accept the incoming soap data as a valid record in the system.

Also, you can blank out fields in the target table that have data when the web services saying that that field needs to be blank. When posting directly to a table through web service, specifying a blank value for a field is translated as a do not modify operation.

Finally, with web service import sets you can automatically determine if the operation should be a create or an update based on the data that is coming in.

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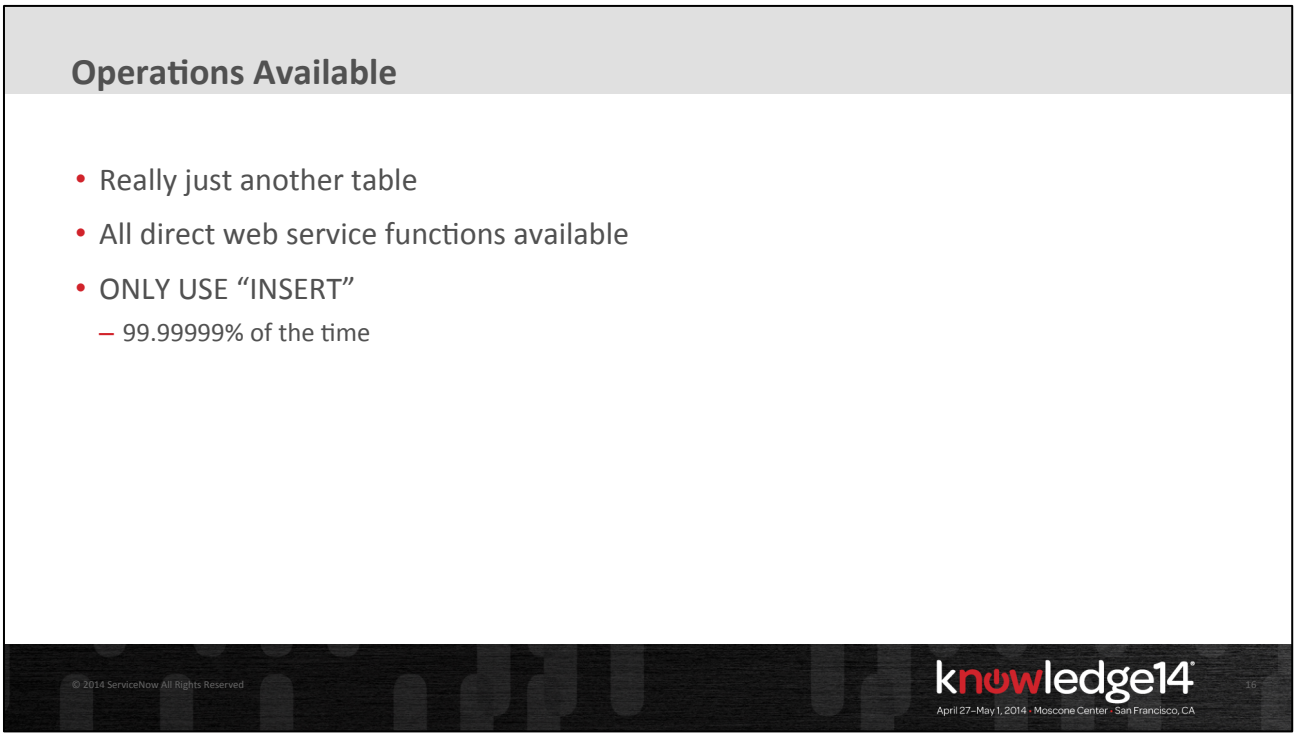
- http://wiki.servicenow.com/index.php?title=Web_Service_Import_Sets#Adding_Web_Service_Response_Values
- Explain about Correlation ID and Correlation Display fields

When a web service client posts a request to a web service import set endpoint, it will receive a response back that tells the client what action took place. For example, the web service may have decided to insert, update, Skip, or ignore the information coming in.

The response also contains information about the table where the data was ultimately placed as well as the system ID and display value of the new record that was created or of the existing record that was modified.

You can also configure your transform scripts to send more information back in the response should there be a need to do so.

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Due to the fact that an import settable is just another table in the database, the same basic functions are available on import set table that were available on regular tables in the system.

That being said, however, in nearly all cases, third party web service clients should only use the "insert" function available on the web service import set.

The reason for this, is that the "insert" function is actually the operation on the import settable and not the target table. The logic for creating versus updating records in the system are contained within the import set transform itself, and all take place during the insert of a record on the import settable.

Web service import set interfaces are only to be used to submit or modify data in ServiceNow, and should not be used for target table queries.

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Exercise 2

Learn how to create and update data to a table through a Web Service Import Set.

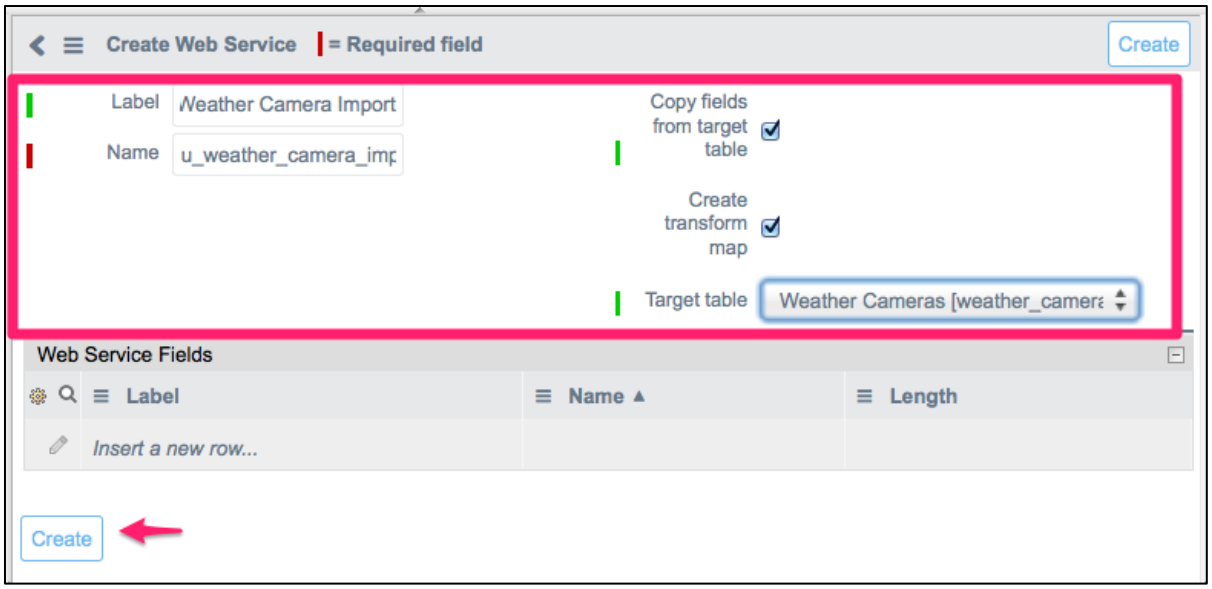
In this exercise, you will leverage the GUI SOAP Message tool (or use a tool of your choice, such as SOAP-UI) to post SOAP Requests to a Web Service Import Set that will perform insert and update operations on the Weather Camera table in your ServiceNow instance.

Web Service Import Sets

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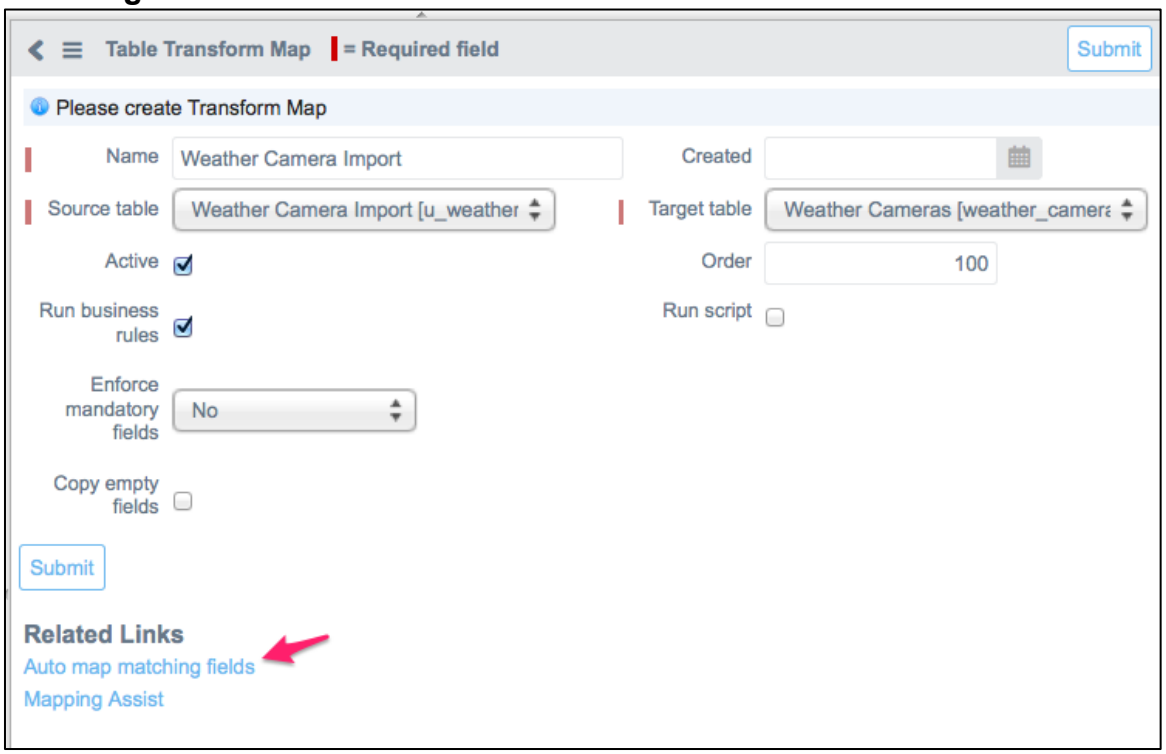
Create the Web Service Import Set

1. Navigate to **System Web Services > Inbound > Create New**
2. Fill in the following in your web service fields
    - **Label**: Weather Camera Import
    - **Name**: u_weather_camera_import
    - **Copy fields from target table**: Checked
    - **Create transform map**: Checked
    - **Target table**: Weather Cameras
3. Click the **Create** button



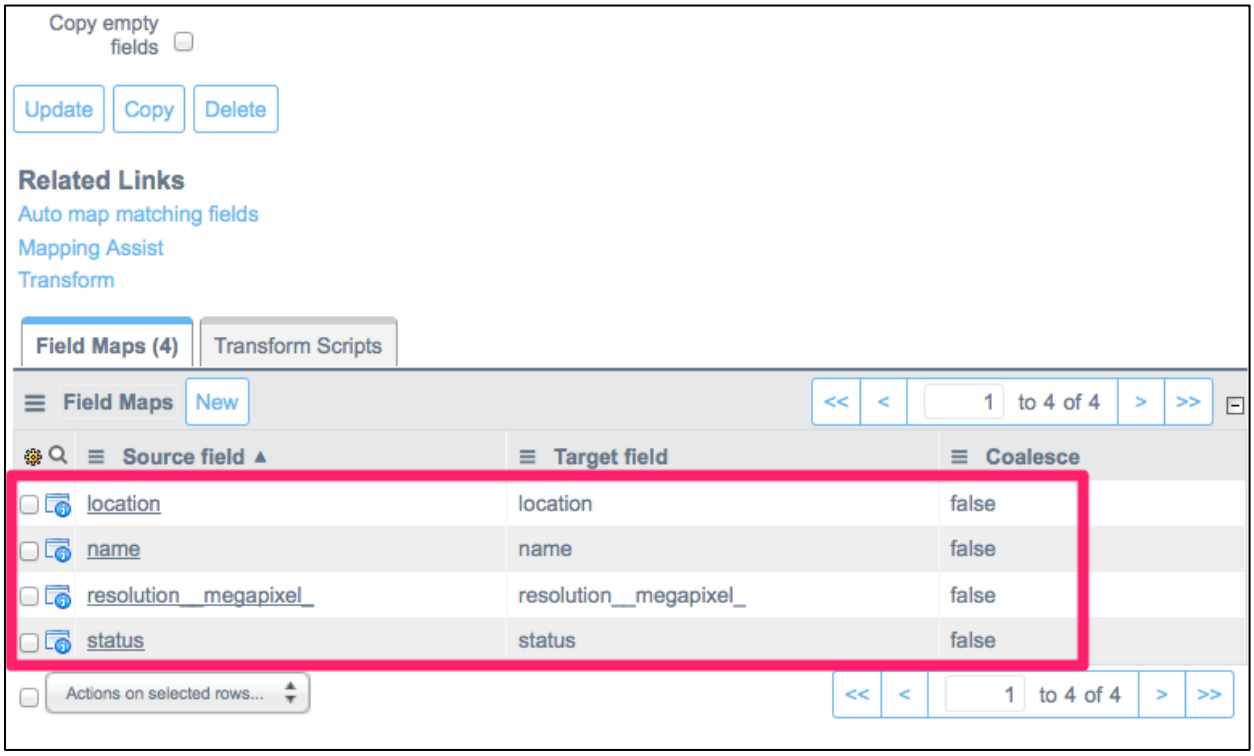
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4. You should now be taken to the **Table Transform Map** form. Click the **Auto map matching fields** link



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5. You should now have four Field Maps created for you. Each field maps to a corresponding field in the Weather Cameras table



6. In this exercise, we will assume that each weather camera name should be unique. Therefore, if weather camera data comes in where the Weather Camera name matches a record already in the Weather Camera table, we will update the record rather than insert a new record. What should you do to configure this transform accordingly?

_____

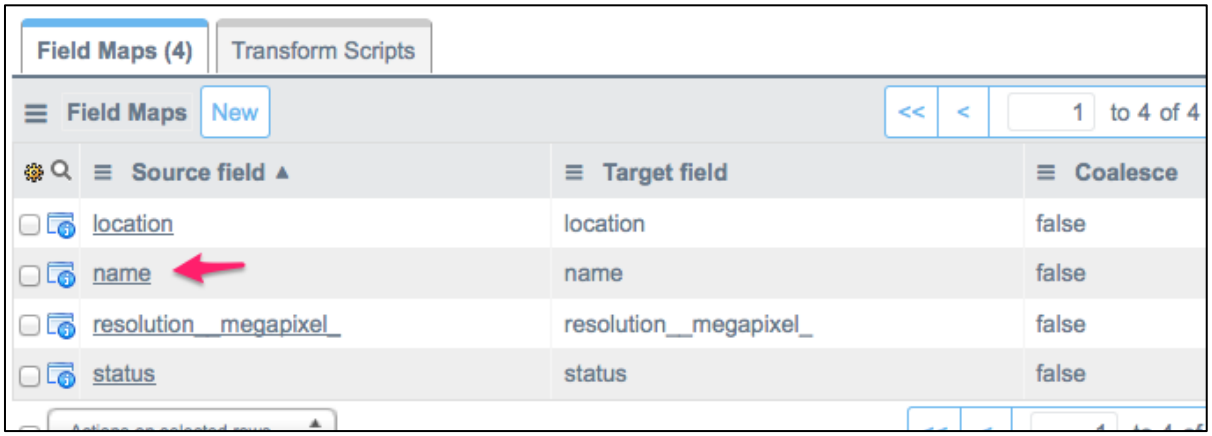
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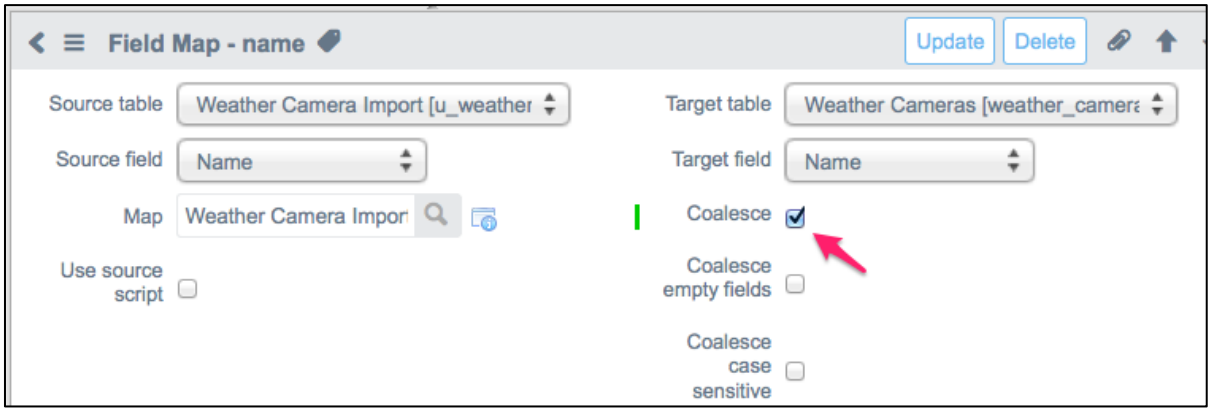
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7. In order to configure your transform map to handle the scenario, listed above, we simply just need to set the **name** field to be our **Coalesce** field for the transform. Click on the **name** record



8. Set the **Coalesce** checkbox to **Checked.**



9. Click **Update**

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10. Our status field on the Weather Cameras table is set to a small number of fixed choices. We want to handle the scenario of a third party system sending a “Status” that is incompatible with our choice list. How would you ensure that despite incorrect Status data coming in from a third party SOAP call, we ignore the incoming status value and continue updating or inserting the other incoming data?

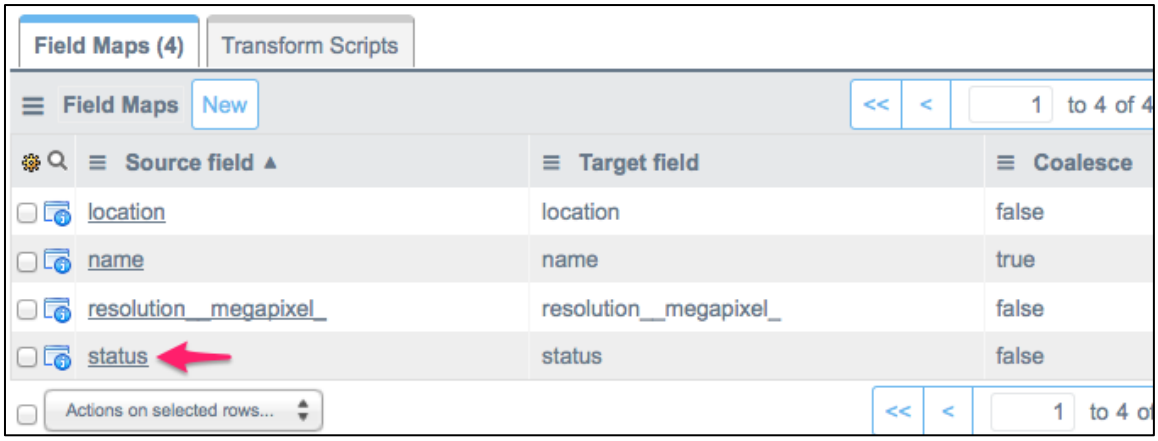
_____

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_____

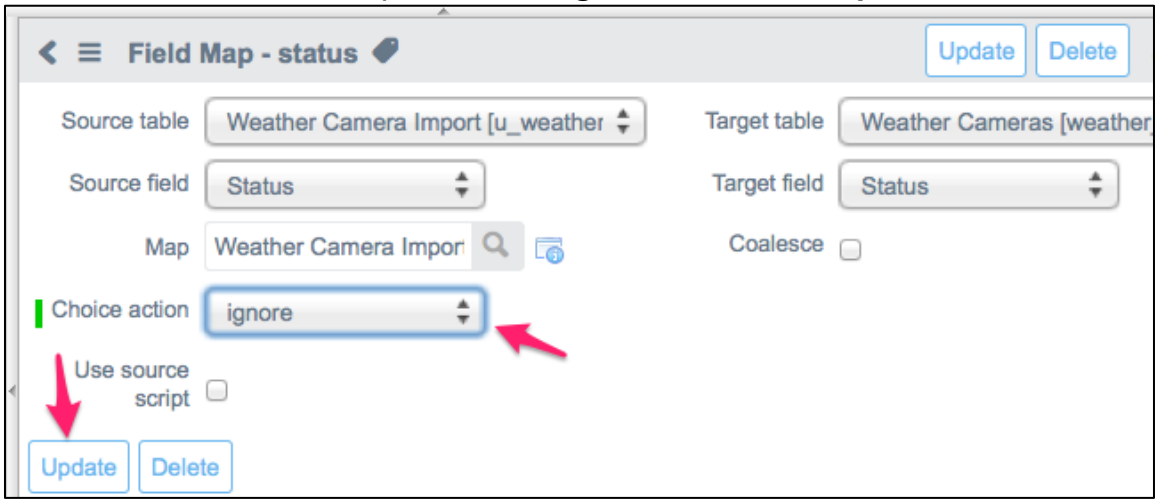
_____

11. In order to handle the scenario mentioned above, click on the **status** field mapping



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12. Set the **Choice Action** dropdown to be **ignore.** Then click **Update**.



13. Finally, lets assume that our company is only contracted for Weather Cameras at specific locations. If a third party sends us information on a camera that does not fit one of our locations, that weather camera is completely ignored. What would you do to handle this scenario?

_____

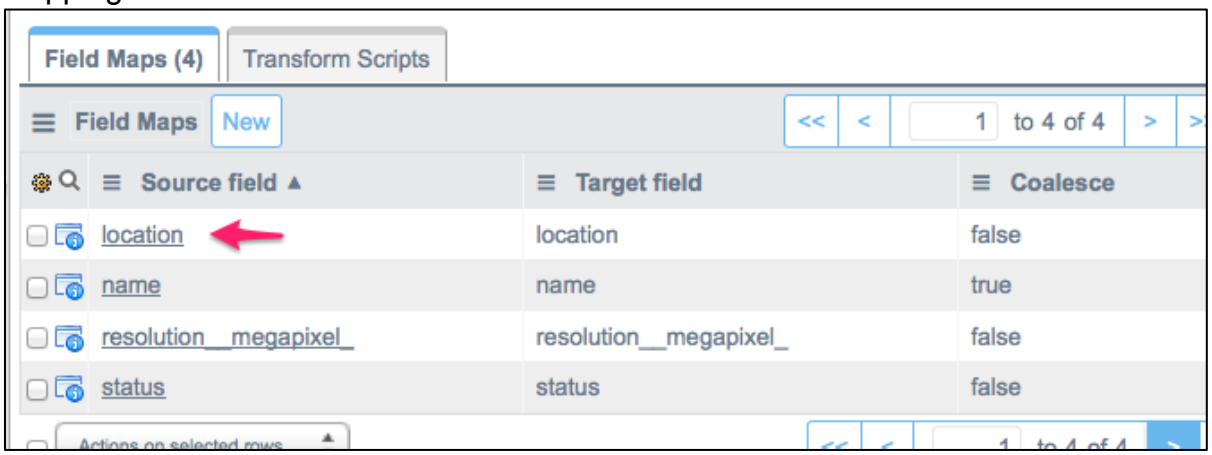
_____

_____

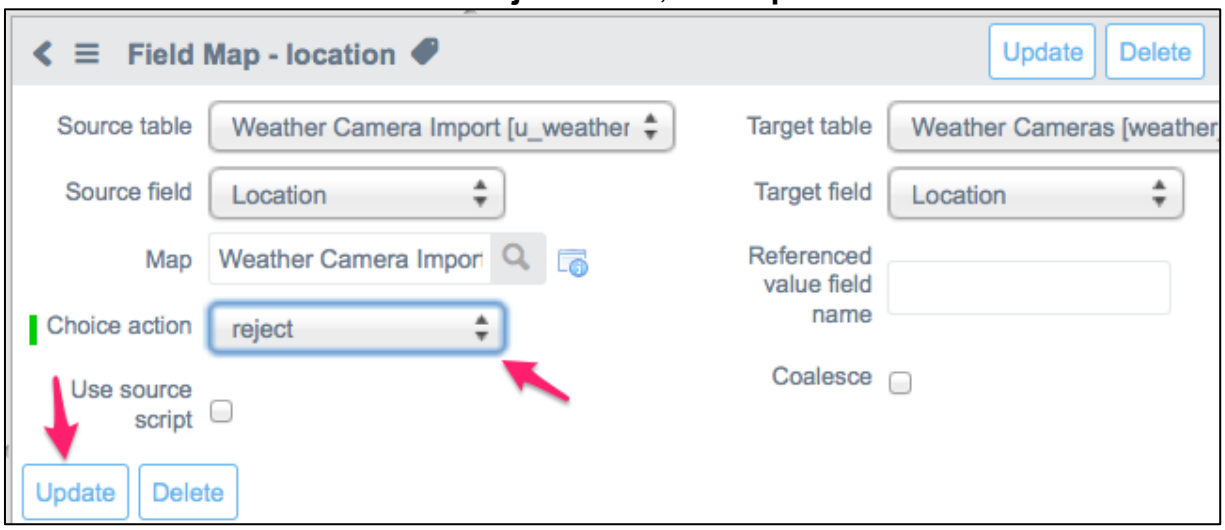
_____

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14. For us to set up the web service to enforce the scenario above, click on the **location** field mapping



15. Set the **Choice Action** field to be **reject**. Then, click **Update**.



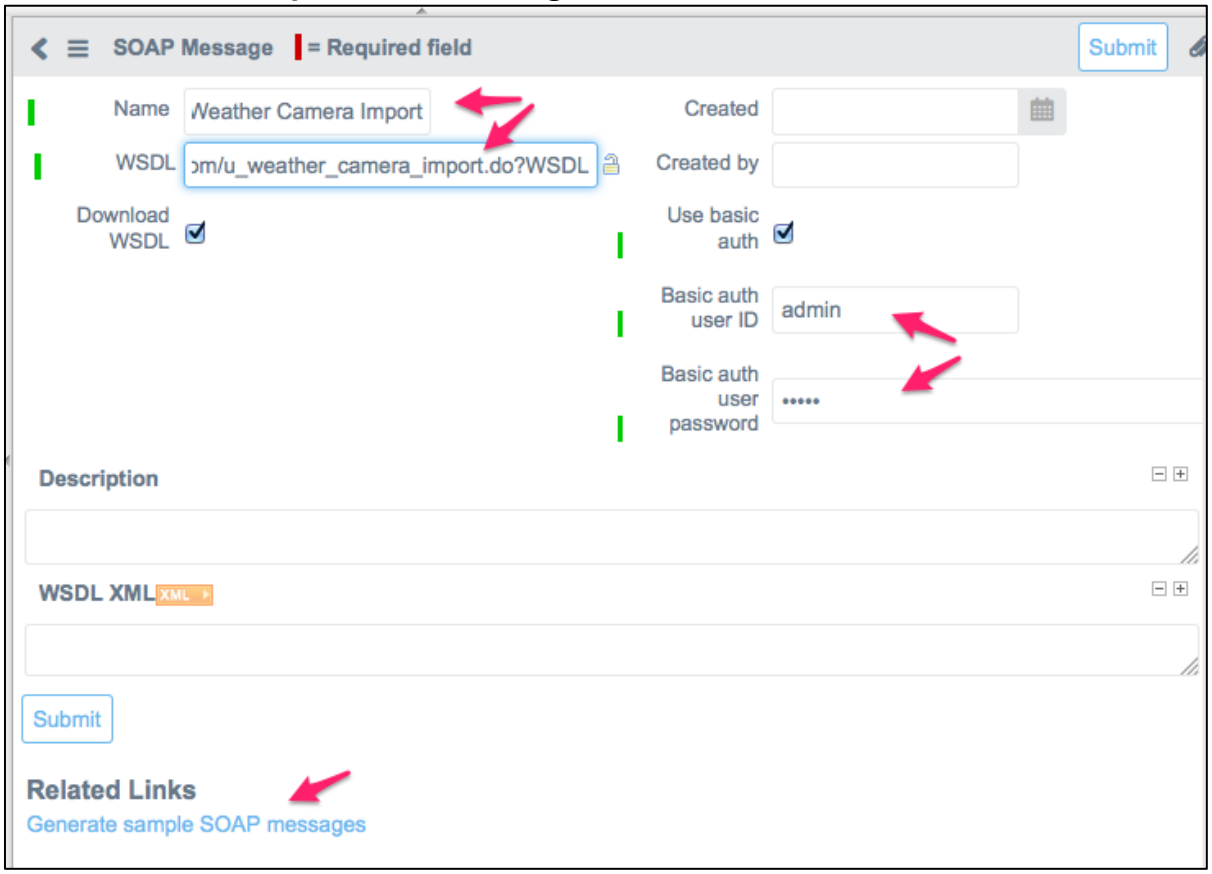
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Test your web service import set for the rejection scenario

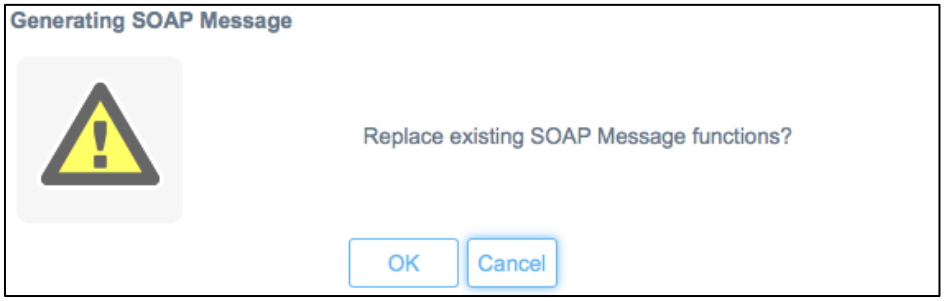
1. Use a SOAP client to test the web service you created. In this lab, we will use the ServiceNow GUI SOAP Message utility. To use this, navigate to **System Web Services > Outbound > SOAP Message**.
2. Click **New** to start configuring a new SOAP Message record.
3. Set the following fields in the SOAP Message client
    - **Name:** Weather Camera Import
    - **WSDL**: https://YOURINSTANCE/u_weather_camera_import.do?WSDL
    - **Download** WSDL: Checked
    - **Use basic auth:** Checked
    - **Basic auth user ID:** admin
    - **Basic auth user password**: Knowledge14

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4. Click **Generate sample SOAP messages**

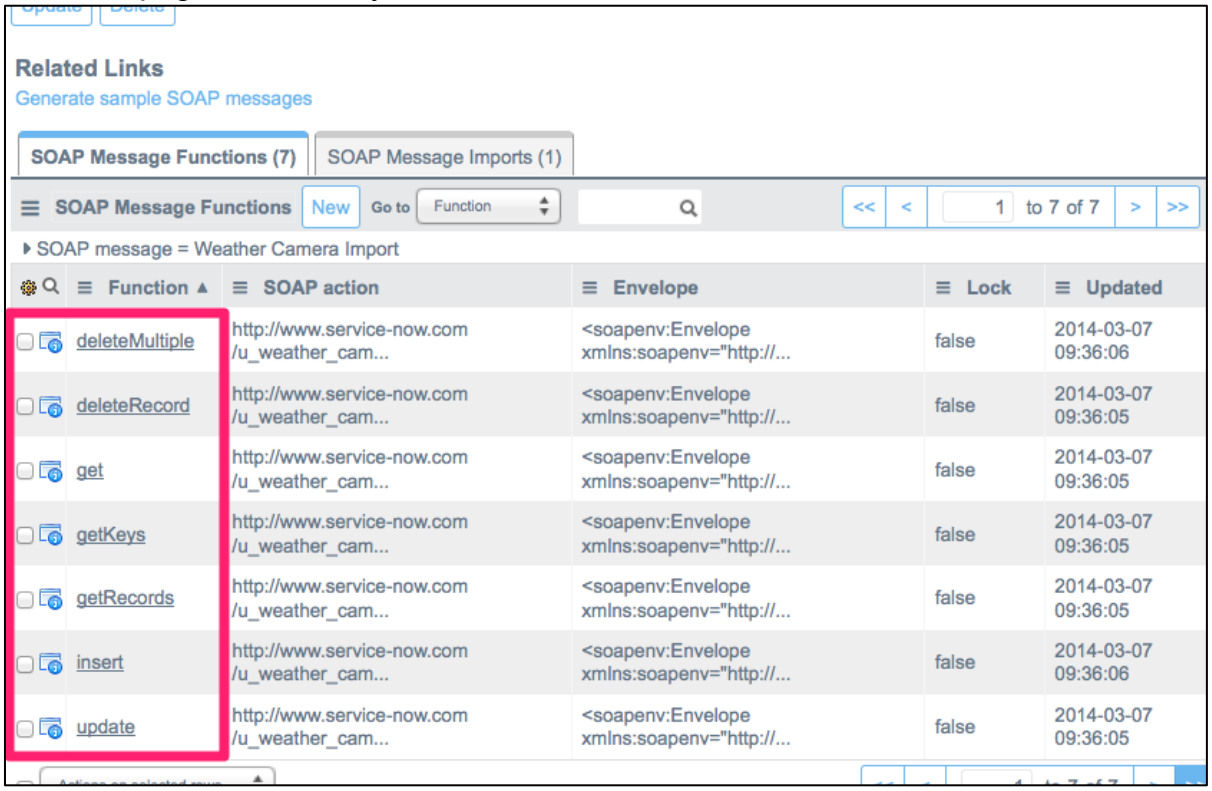


5. Click OK on the prompt to Replace existing SOAP message functions



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6. Once the page refreshes, you should see a list of available functions



7. Although there are seven functions available to us, we are ever only going to use one of the function calls. Which function call is it? Why would we really only ever use that particular function and none of the rest?

_____

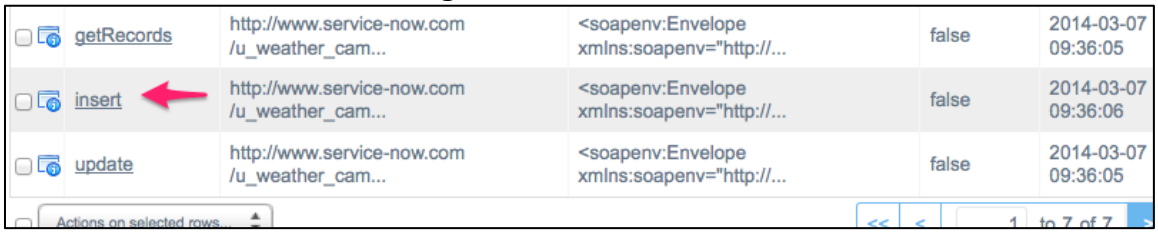
_____

_____

_____

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8. Click the “insert” **SOAP Message Function**



9. Set the following fields in the SOAP Message client

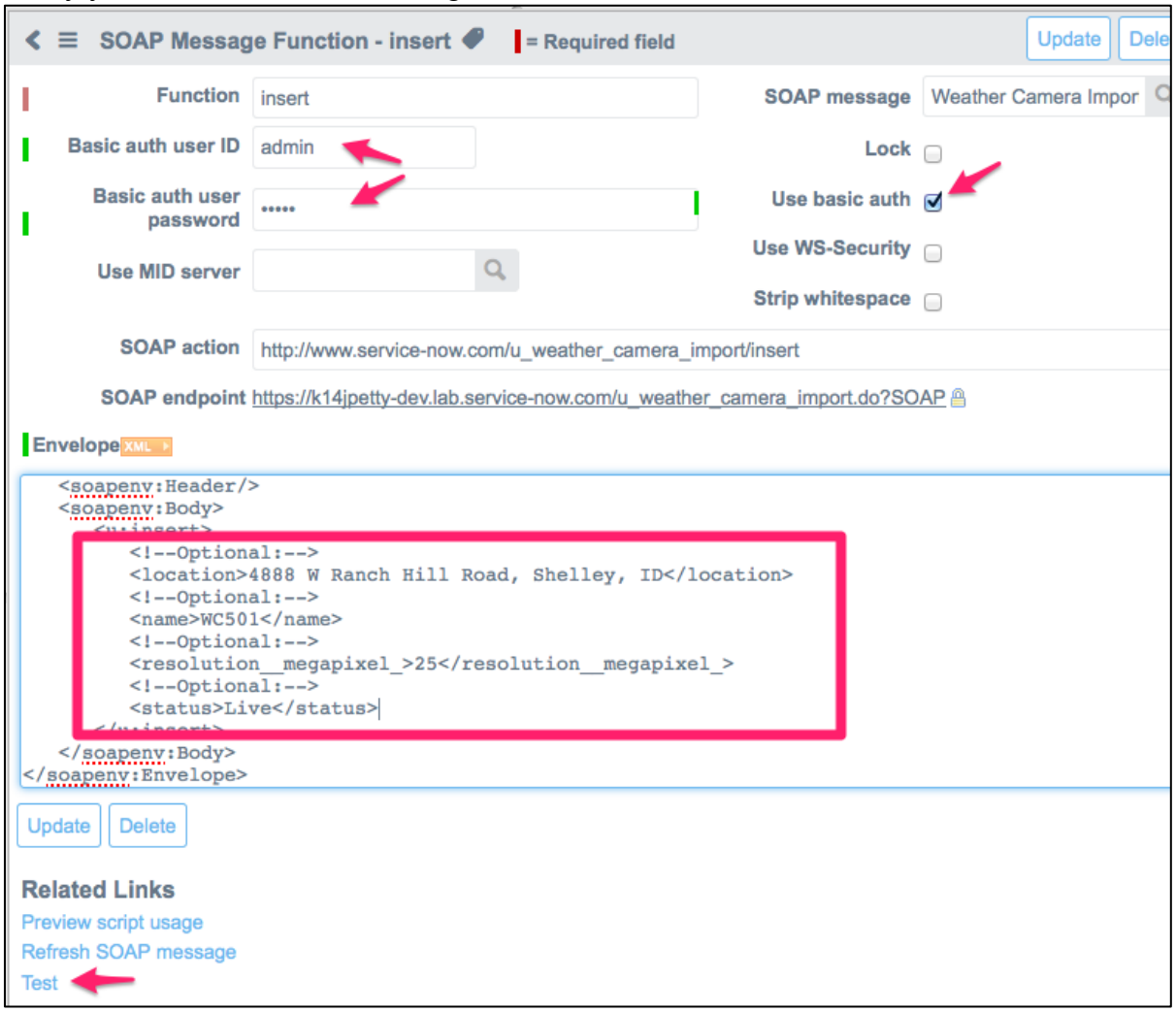
   - **Use basic auth:** Checked
   - **Basic auth user ID:** admin
   - **Basic auth user password**: Knowledge14

10. Update the **Envelope** by replacing the following variable strings with test data. Please note, we will use an unknown location value to test to see if this weather camera is rejected by our import set

    - ${location} : 4888 W Ranch Hill Road, Shelley, ID
    - ${name} : WC501
    - ${ resolution__megapixel_} : 25
    - ${status} : Live

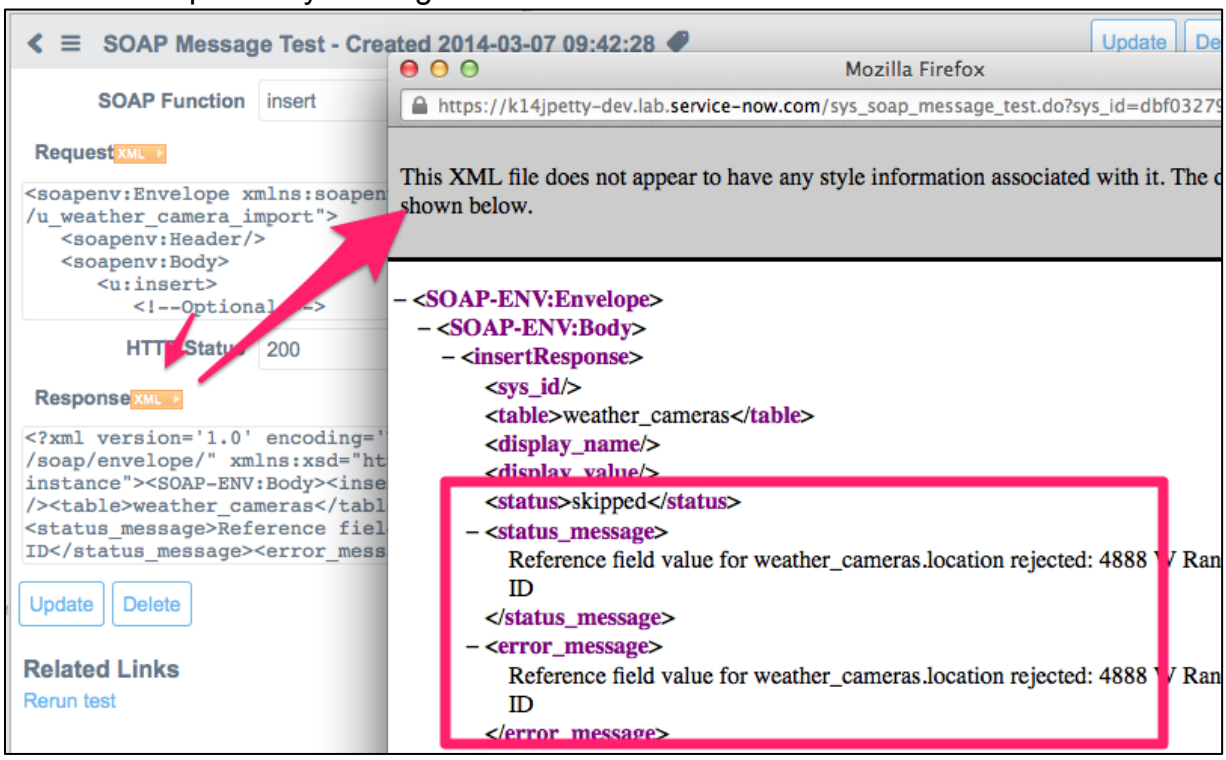
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11. Verify your data with the following screenshot, and then click **Test**

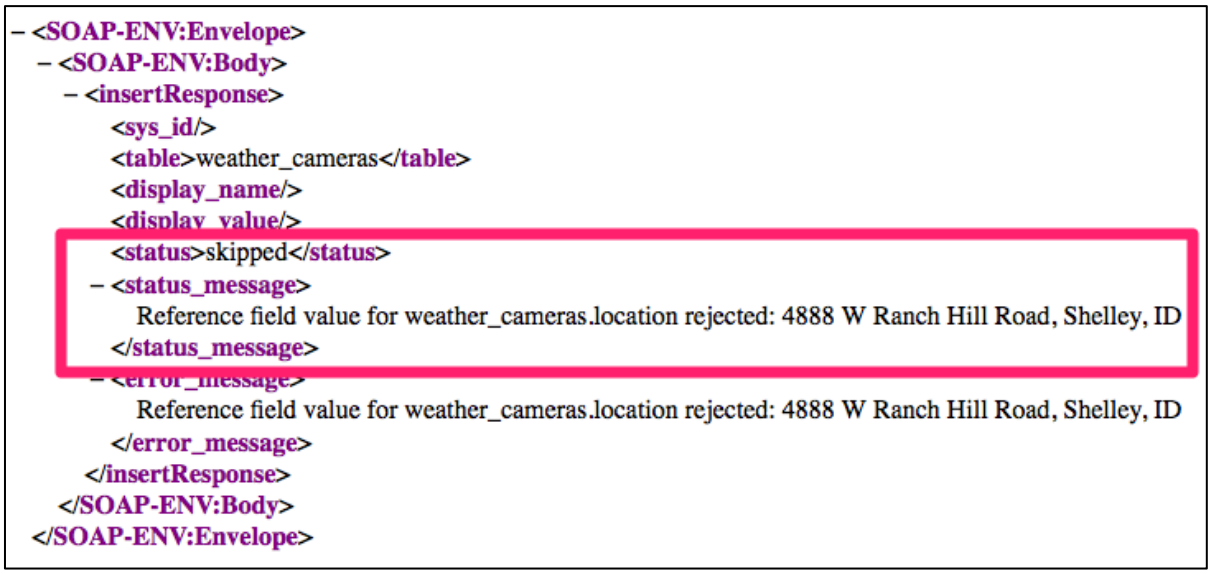


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12. You should then be shown the response of the SOAP Request. You can view the formatted response by clicking the **XML** icon



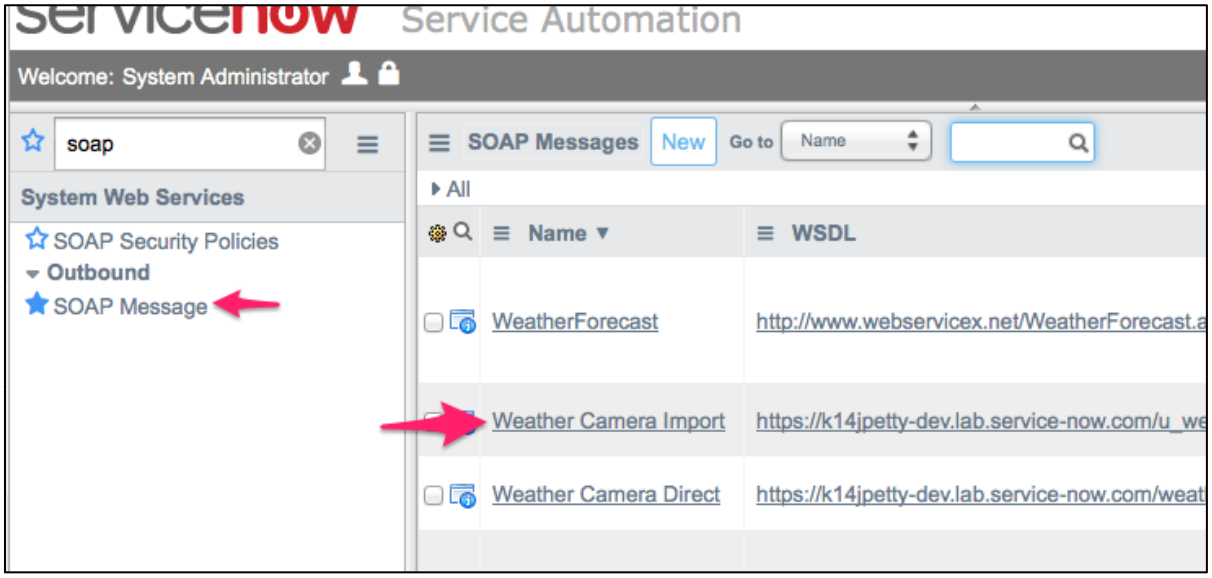
13. The response should contain a status of “skipped” since the reference field value for location did not exist in the “location” table in ServiceNow.



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Test the Web Service Import Set for the "Ignore" case on Status

1. Go back to the SOAP Message record we created earlier by navigating to **System Web Services > Outbound > SOAP Message**, and choosing the "Weather Camera Import" record.



2. Click the "insert" **SOAP Message Function**



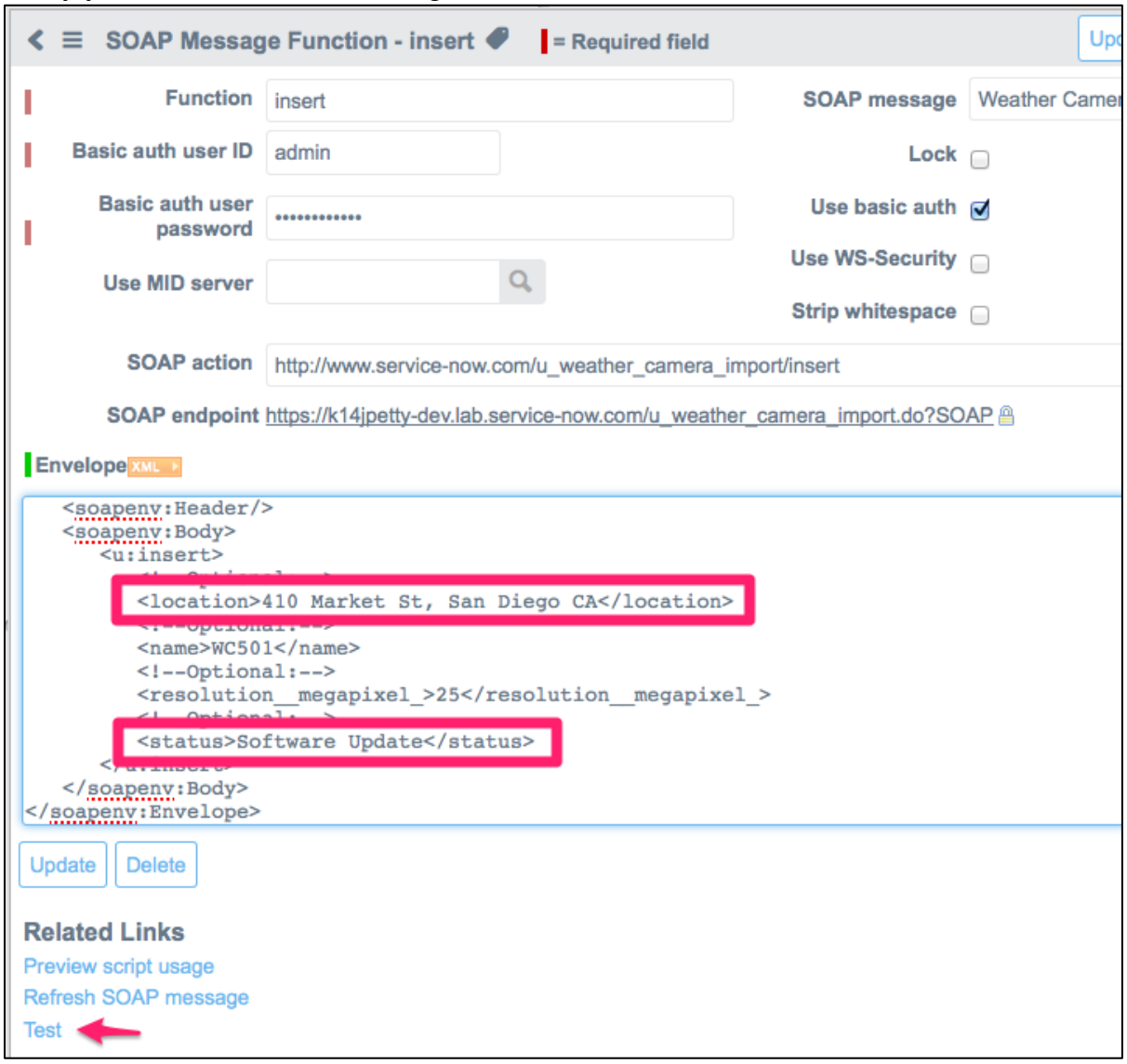
3. Replace the "4888 W Ranch Hill Road, Shelley, ID" location value with this new value that is a valid location:

    - 410 Market St, San Diego CA

4. Replace the "Live" status with something that is not a valid choice, such as "Software Update"

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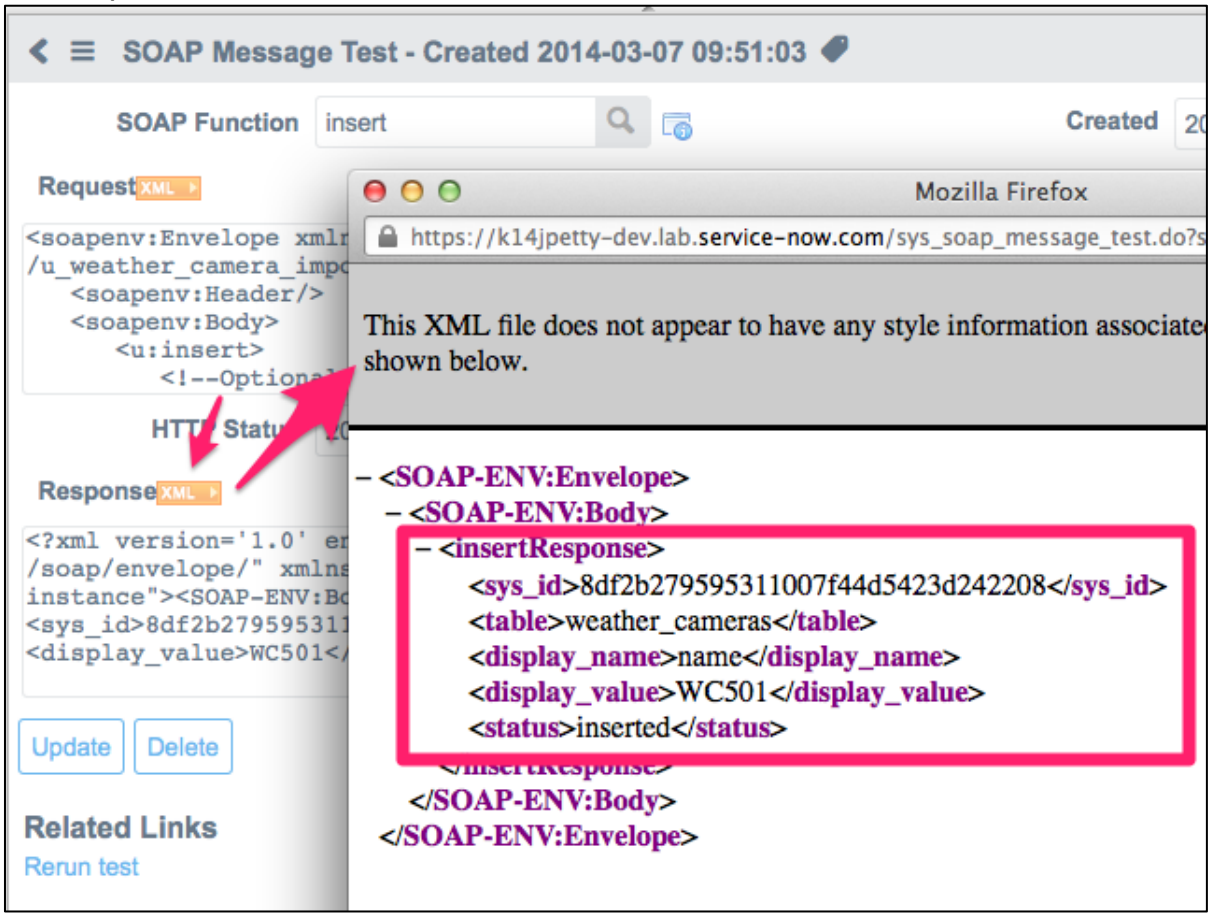
5. Verify your data with the following screenshot, and then click **Test**



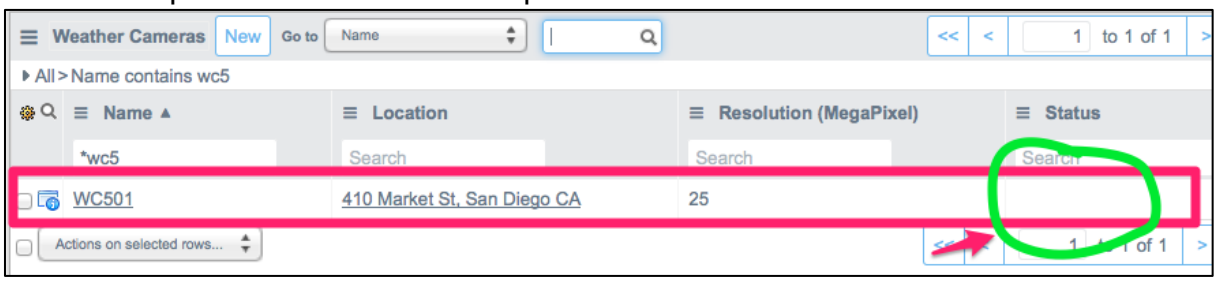
6. You should then be shown the response of the SOAP Request. You can view the formatted response by clicking the **XML** icon

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7. The response should contain a status of “inserted”.



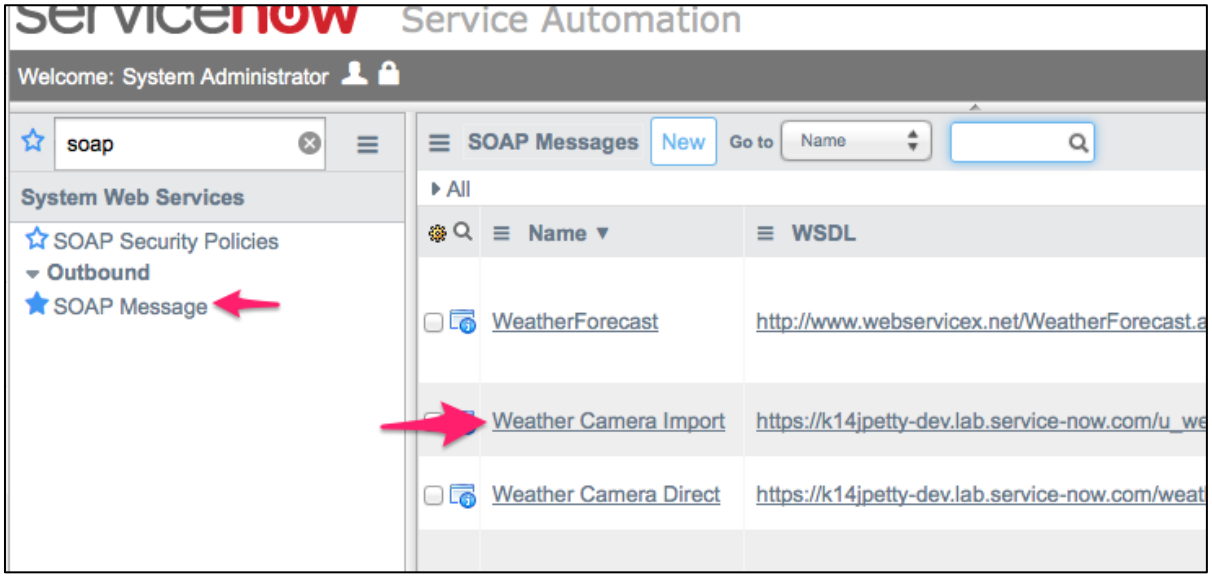
8. Verify that the record now exists in the weather camera table by navigating to **Weather Cameras > Weather Cameras**. Filter if needed to see any cameras whose name starts with “WC5”. Verify that the record exists, but that no Status is set on the camera since “Software Update” is not one of the options in that choice field



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Update the WC501 camera by importing a valid status value

1. Go back to the SOAP Message record we created earlier by navigating to **System Web Services > Outbound > SOAP Message**, and choosing the “Weather Camera Import” record.



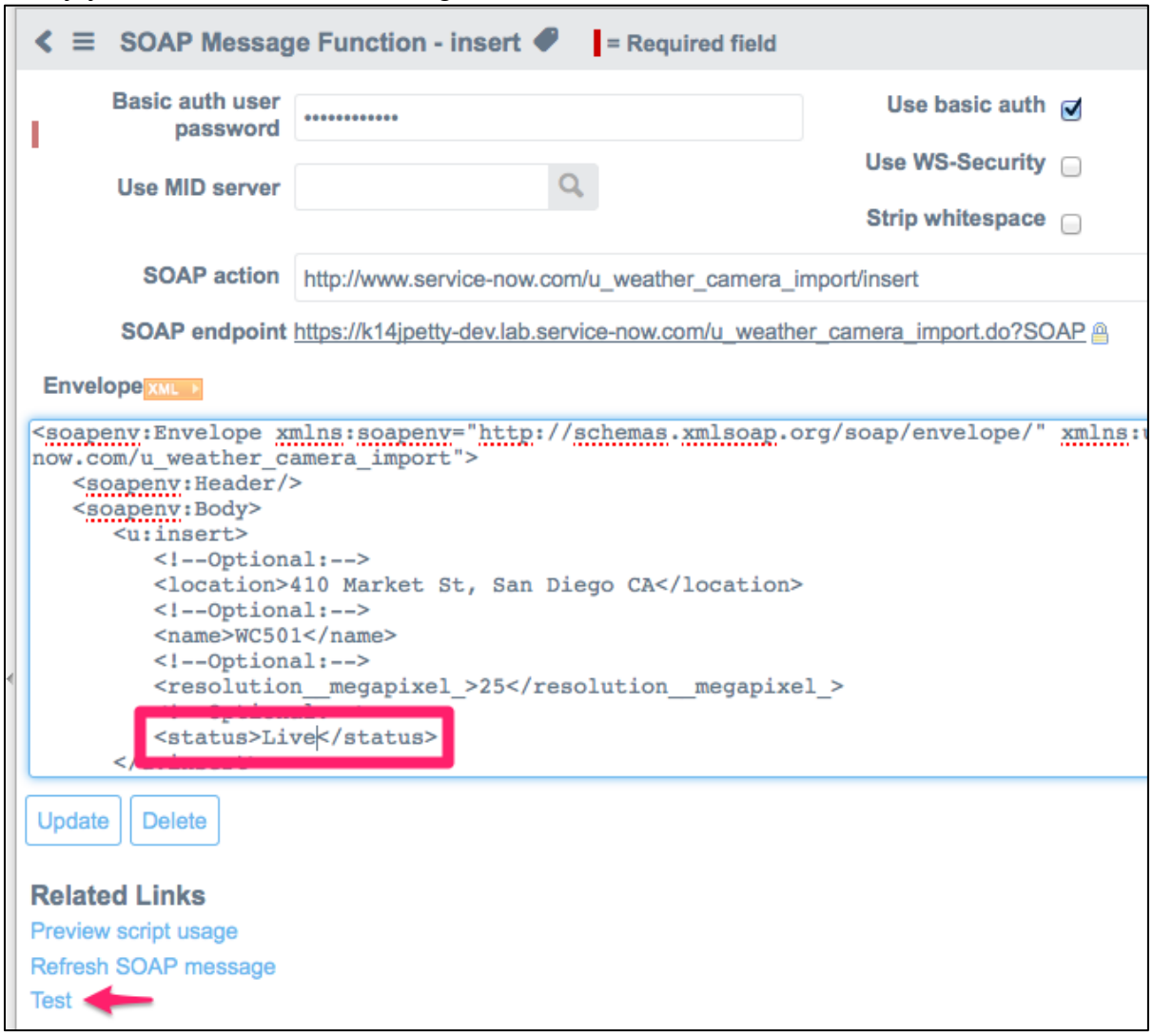
2. Click the “insert” **SOAP Message Function**



3. Replace the “Software Update” status with a valid choice, such as “Live”

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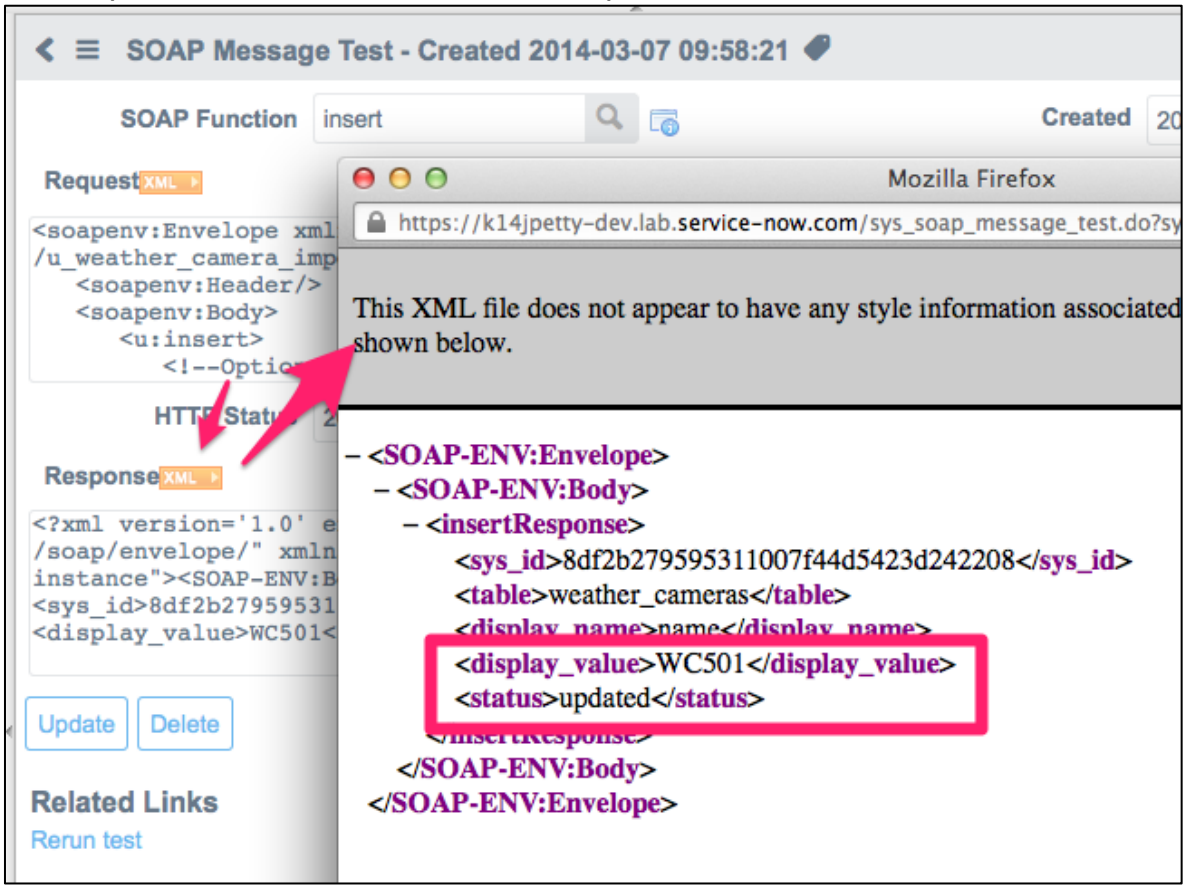
4. Verify your data with the following screenshot, and then click **Test**



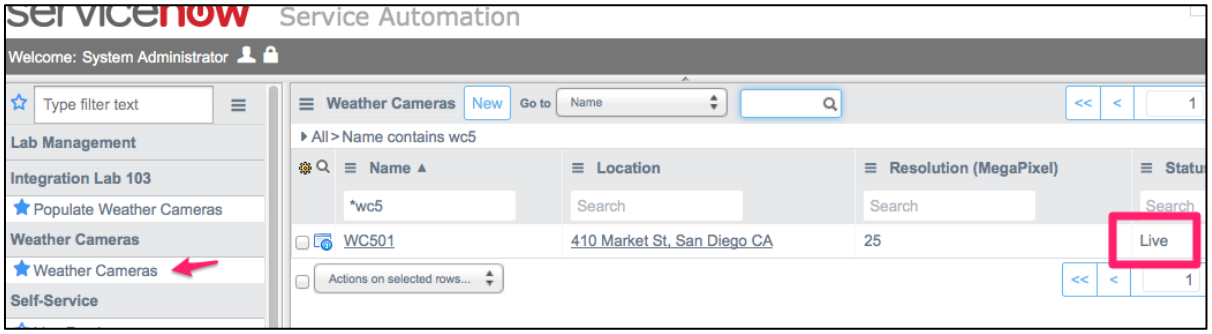
5. You should then be shown the response of the SOAP Request. You can view the formatted response by clicking the **XML** icon

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6. The response should contain a status of “updated”.



7. Verify that the record was updated with the correct status in the weather camera table by navigating to **Weather Cameras > Weather Cameras**. Filter if needed to see any cameras whose name starts with “WC5”. Ensure that the record exists, but that the Status value has changed to “Live”



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Mark your completion of this lab

1. Navigate to the **Lab Management > Report Lab Progress** module in the navigation pane
2. Click on the **I'm Done** button to notify your instructor that you are done with the lab exercise

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JSON Web Service

- Commonly used as ServiceNow's REST API
- JSONv2 Processor is there by default
- More info in the Integration 102: Discover the Power of REST lab

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The JSON Web service is available as a plug-in that can easily be enabled on your instance. This web service is the second most popular web service interface provided by ServiceNow. It is through this mechanism that you are able to perform rest-based API calls into the ServiceNow instance.

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CSV Web Service

- URL Parameter: CSV
- Formatted Data
- Large data exports
- Utilize views to control exported fields
- No sys_id or sorting

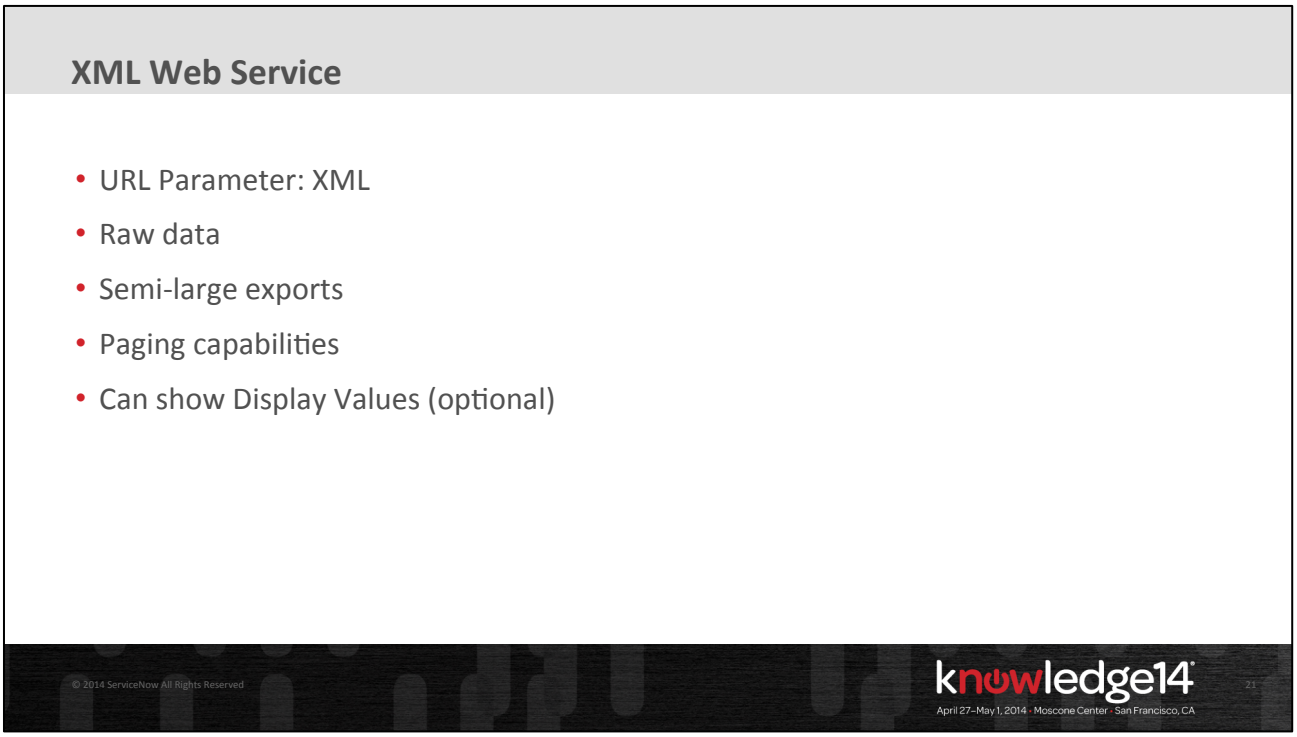
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knowledge14
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The CSV web service allows third-party clients to pull data from ServiceNow in a common separated format. It is often used for large data exports from ServiceNow.

This web service allows you to utilize form views in the system to control which fields are exported on the table.

One drawback to this Web service is that there are no system IDs that are returned with the records. Also, you are unable to sort the data that is exported.

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The XML Web service is similar to the CSV web service in its basic nature, in that it exports data from ServiceNow tables in XML format rather than CSV.

The data available through this web service, however is a bit more detailed. You can get the raw data as it is stored in the database, including the system IDs of each record.

Since XML is more verbose than CSV, it is typically used for semi-large exports rather than the larger exports that are supported by CSV.

This Web service does provide for paging capabilities that allows you to break up the export into chunks.

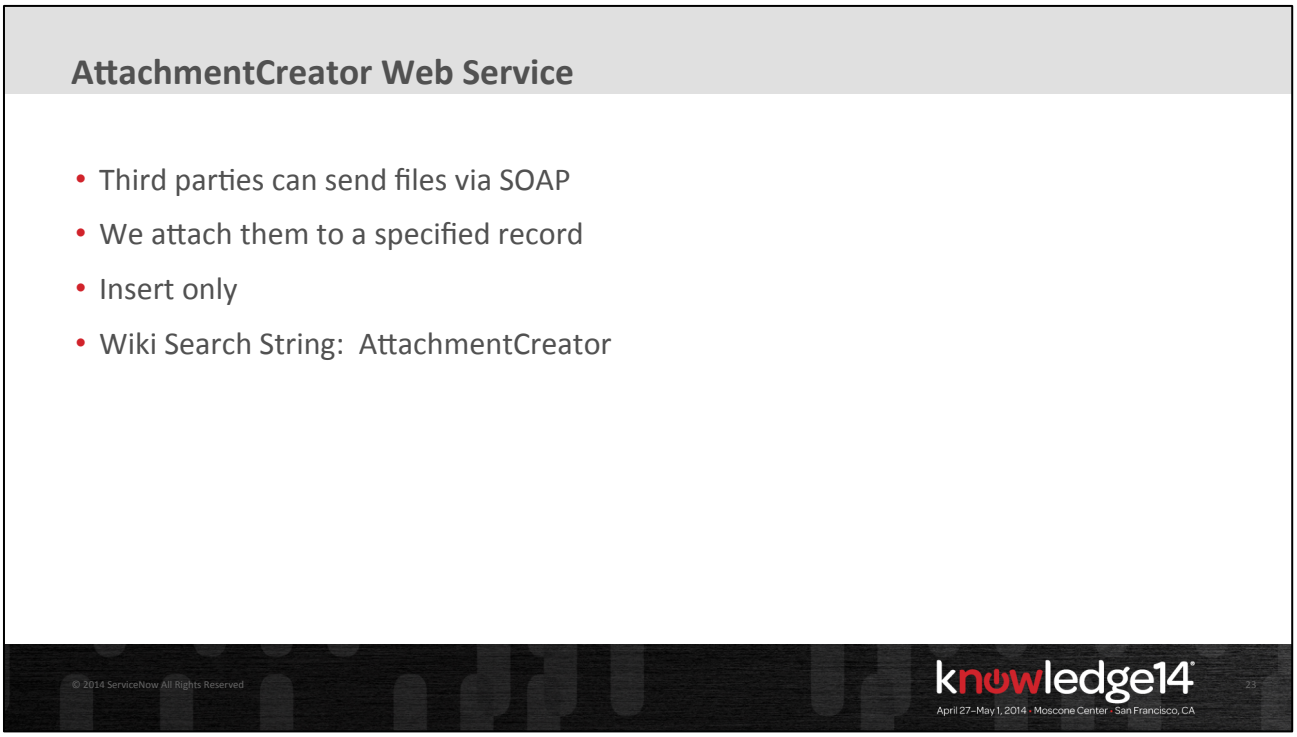
Finally, despite the fact that only raw data is exported with the service, there are optional keywords that tell the system to export display values as well as the raw values.

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ServiceNow also provides a few more Web services that are similar to the CSV and XML Web service but are not used as often. These web services include exporting data in Excel format, exporting a record in PDF format, and exporting lists of records in RSS format.

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Some web service integrations require the capability of not only transferring data fields between the two systems but also to send file attachments as well.

The attachment creator web service allows soap-based clients to send files over the soap protocol. The client needs to encode the file as a base 64 encoded string and pass it into a payload that indicates the table and record system ID that should receive the attachment.

This Web service will only perform inserts of new attachments and will not update existing attachments.

For more information on the attachment creator web service, browse to the ServiceNow wiki and search for "AttachmentCreator".

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Exercise 3

Learn how to pull CSV and XML data from a ServiceNow Instance using basic HTTP calls with URL parameters.

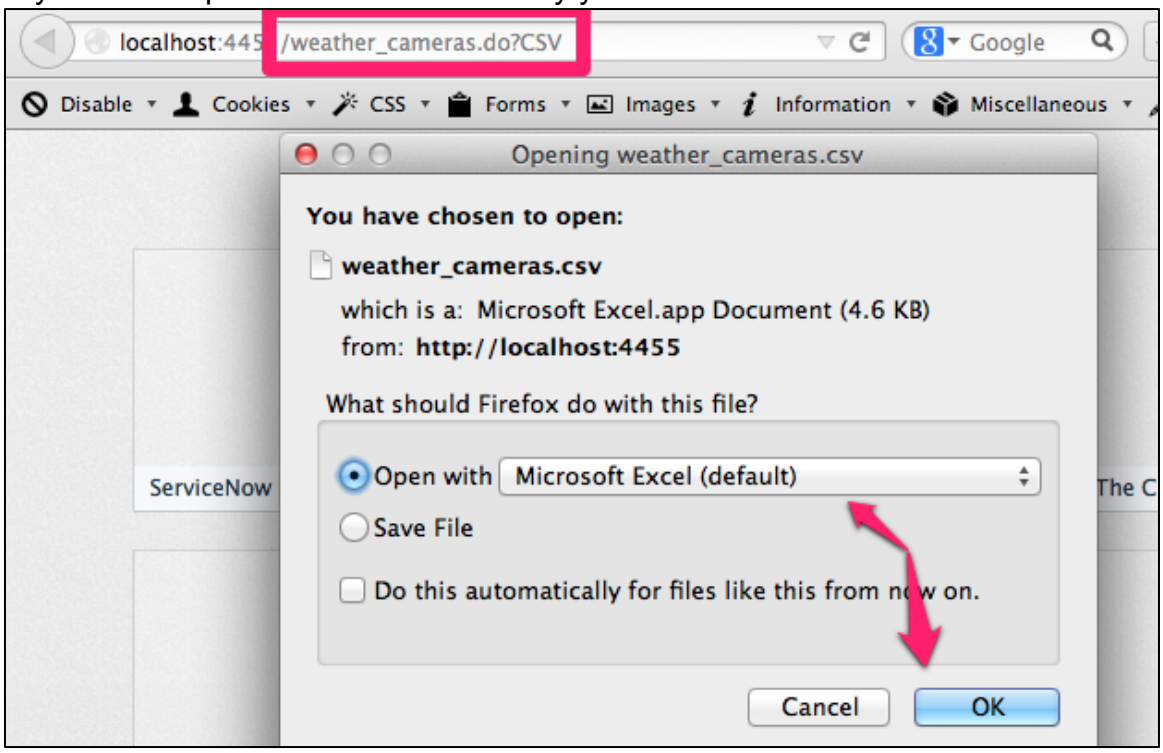
In this exercise, you will leverage the built in CSV and XML Export Web services to bring filtered data from the ServiceNow Instance.

Other Standard Web Services

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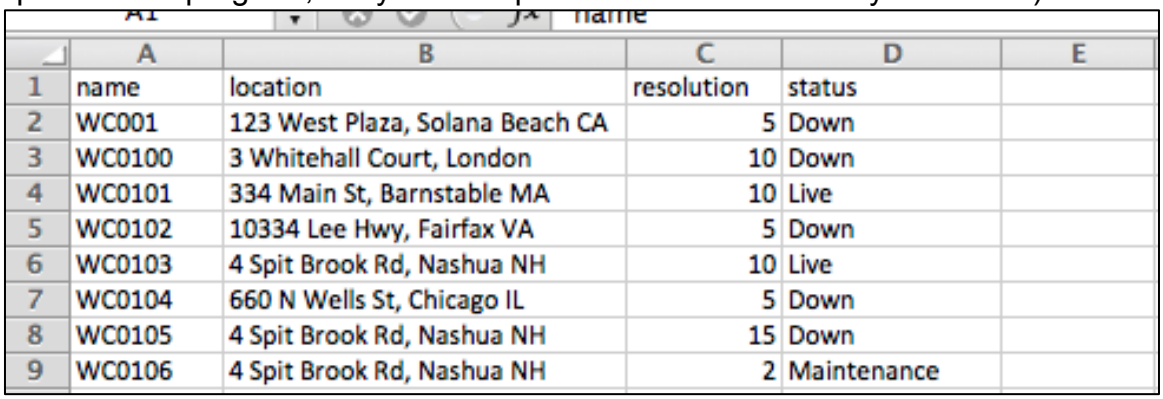
Do a basic CSV export of the Weather Cameras table

1. Open up the browser of your choice
2. In the address bar, type in the URL of the Weather Cameras table and add a URL parameter of CSV: ***https://MYINSTANCE/weather_cameras.do?CSV*** and hit the **Enter** key. Save or open the file as directed by your browser.



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3. If you open up the resulting file, you should have about 90+ rows of camera data with four columns per row (note, since I have a spreadsheet, I opted to open my CSV file with the spreadsheet program, but you can open it with a text editor if you choose).



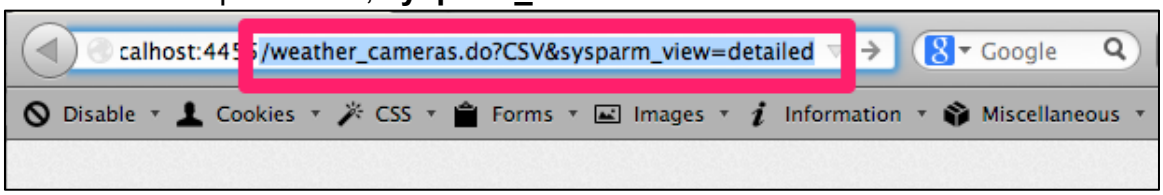
	A	B	C	D	E
1	name	location	resolution	status	
2	WC001	123 West Plaza, Solana Beach CA	5	Down	
3	WC0100	3 Whitehall Court, London	10	Down	
4	WC0101	334 Main St, Barnstable MA	10	Live	
5	WC0102	10334 Lee Hwy, Fairfax VA	5	Down	
6	WC0103	4 Spit Brook Rd, Nashua NH	10	Live	
7	WC0104	660 N Wells St, Chicago IL	5	Down	
8	WC0105	4 Spit Brook Rd, Nashua NH	15	Down	
9	WC0106	4 Spit Brook Rd, Nashua NH	2	Maintenance	

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Pull the data with detailed location and system information in CSV format

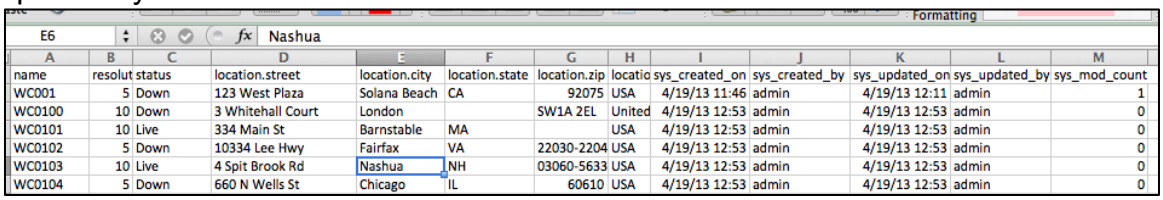
1. The Weather Cameras table has an optional view configured in ServiceNow that breaks down the Location information into Street, City, State, Zipcode, and Country information. It also includes information such as the creation and update meta data. This custom view has a name of “detailed”. We will use this view to export the data in question.

2. In the browser of your choice, enter in the same URL as before, but this time add an additional URL parameter, **sysparm_view** and set that to “detailed”.



3. Save the resulting file and open it in the supported application of your choice.

4. This time, your CSV file should list all of the records, but there should be about 13 columns per record. The location information should be split up into appropriate columns as well as specific system meta data.



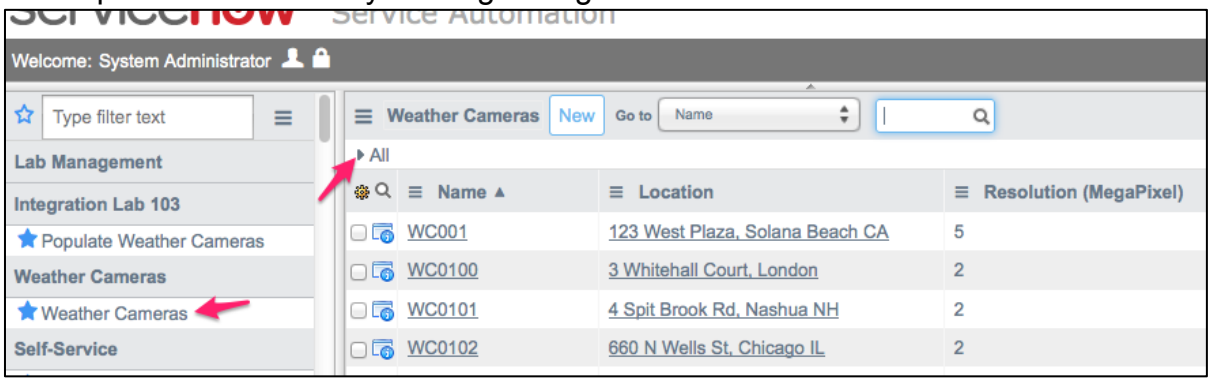
	A	B	C	D	E	F	G	H	I	J	K	L	M
	name	resolut	status	location.street	location.city	location.state	location.zip	locatio	sys_created_on	sys_created_by	sys_updated_on	sys_updated_by	sys_mod_count
	WC001	5	Down	123 West Plaza	Solana Beach	CA	92075	USA	4/19/13 11:46	admin	4/19/13 12:11	admin	1
	WC0100	10	Down	3 Whitehall Court	London		SW1A 2EL	United	4/19/13 12:53	admin	4/19/13 12:53	admin	0
	WC0101	10	Live	334 Main St	Barnstable	MA		USA	4/19/13 12:53	admin	4/19/13 12:53	admin	0
	WC0102	5	Down	10334 Lee Hwy	Fairfax	VA	22030-2204	USA	4/19/13 12:53	admin	4/19/13 12:53	admin	0
	WC0103	10	Live	4 Spit Brook Rd	Nashua	NH	03060-5633	USA	4/19/13 12:53	admin	4/19/13 12:53	admin	0
	WC0104	5	Down	660 N Wells St	Chicago	IL	60610	USA	4/19/13 12:53	admin	4/19/13 12:53	admin	0

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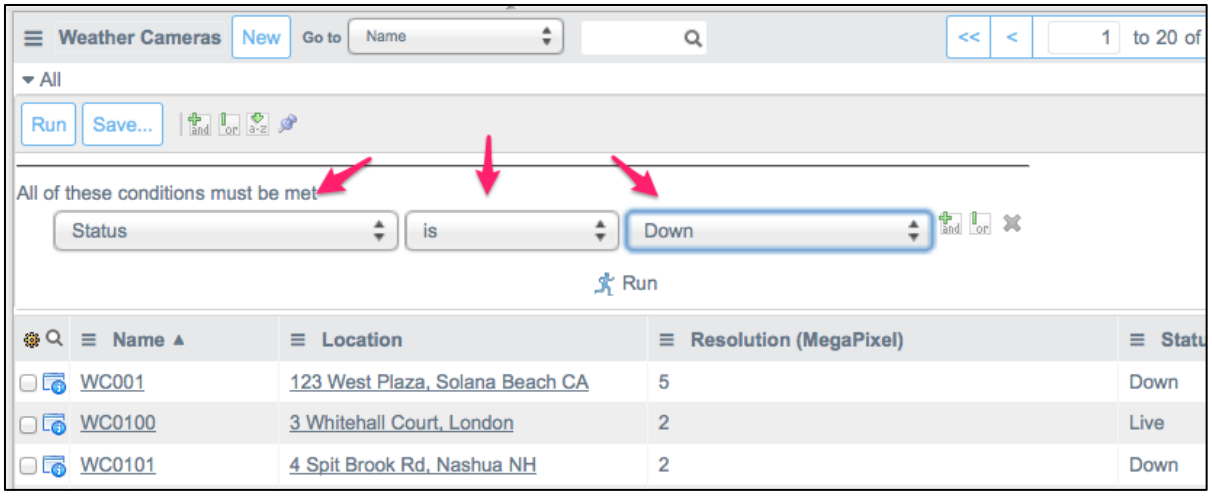
Export all cameras in Virginia listed as being Down

5. In order to filter the results before they are executed, we will want to build an encoded query. While this could be done manually, we will build the query through the UI first and then apply it in our export process.

6. Within your ServiceNow instance, navigate to **Weather Cameras > Weather Cameras** and expand the list filter by clicking the right arrow next to the "All" filter

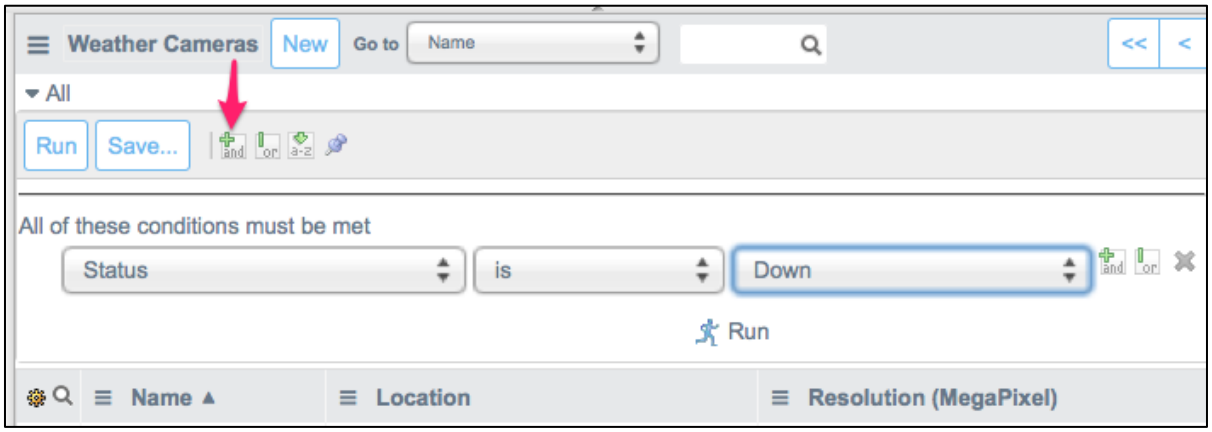


7. Choose **Status : is : Down**

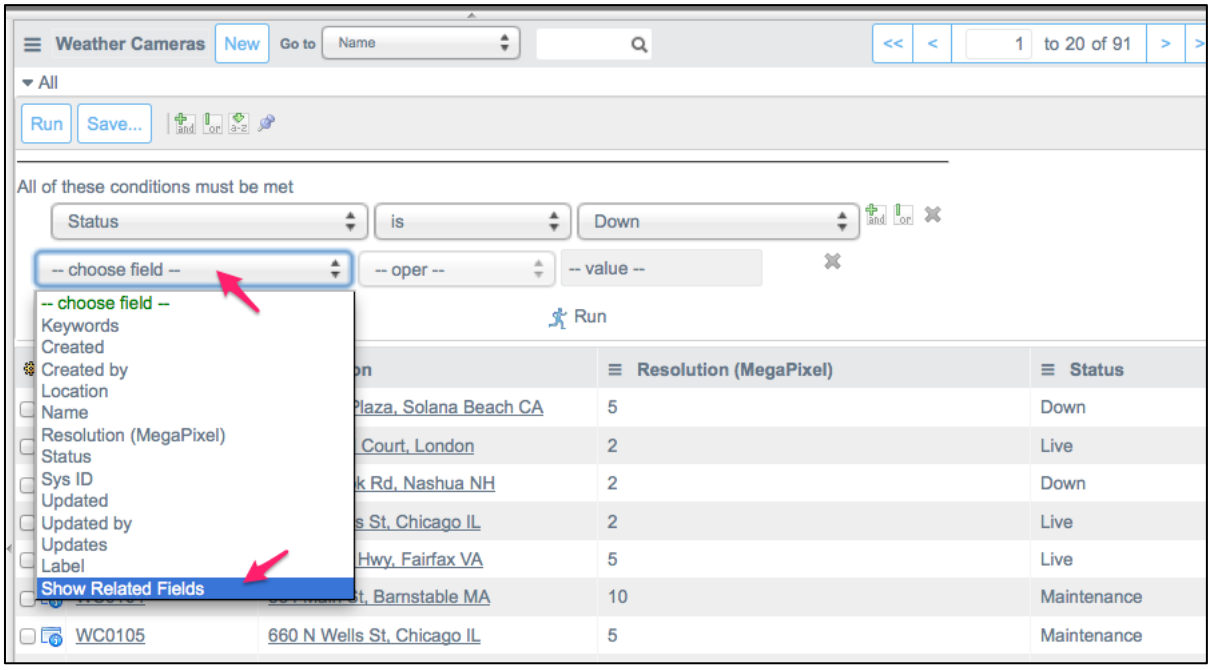


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8. Click the Add filter button to enter another criterion

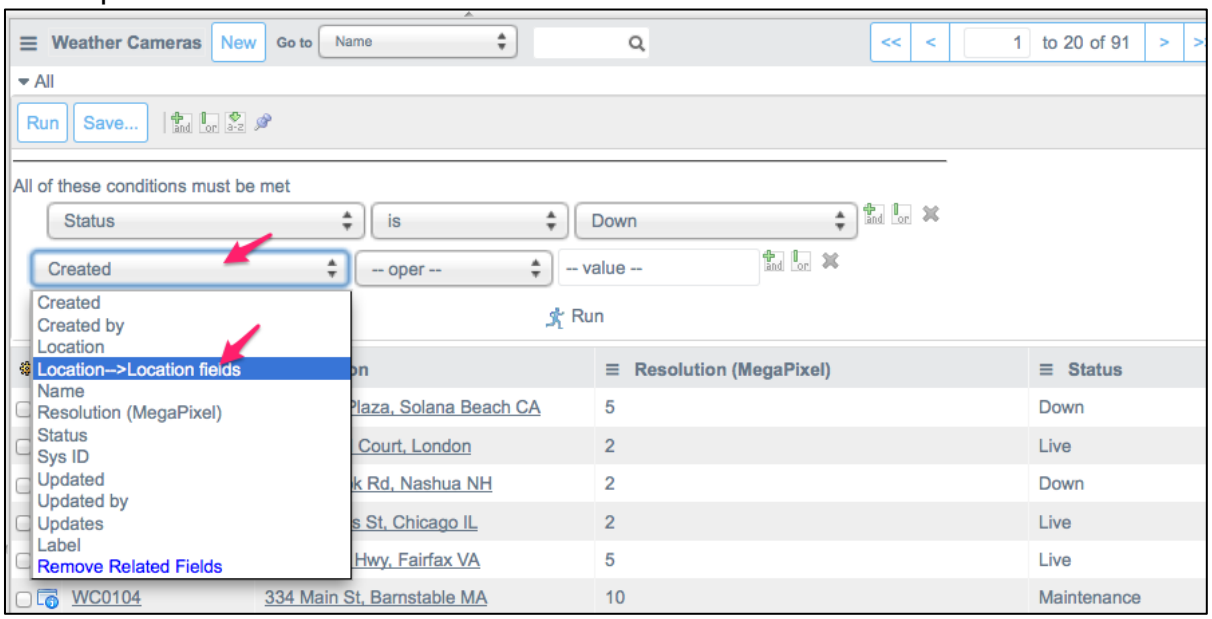


9. On the second filter row we want to select the Location's state. However, in order to do this we need to show the related fields so that we can have our filter drill down into the related table. To do this, select **Show Related Fields**



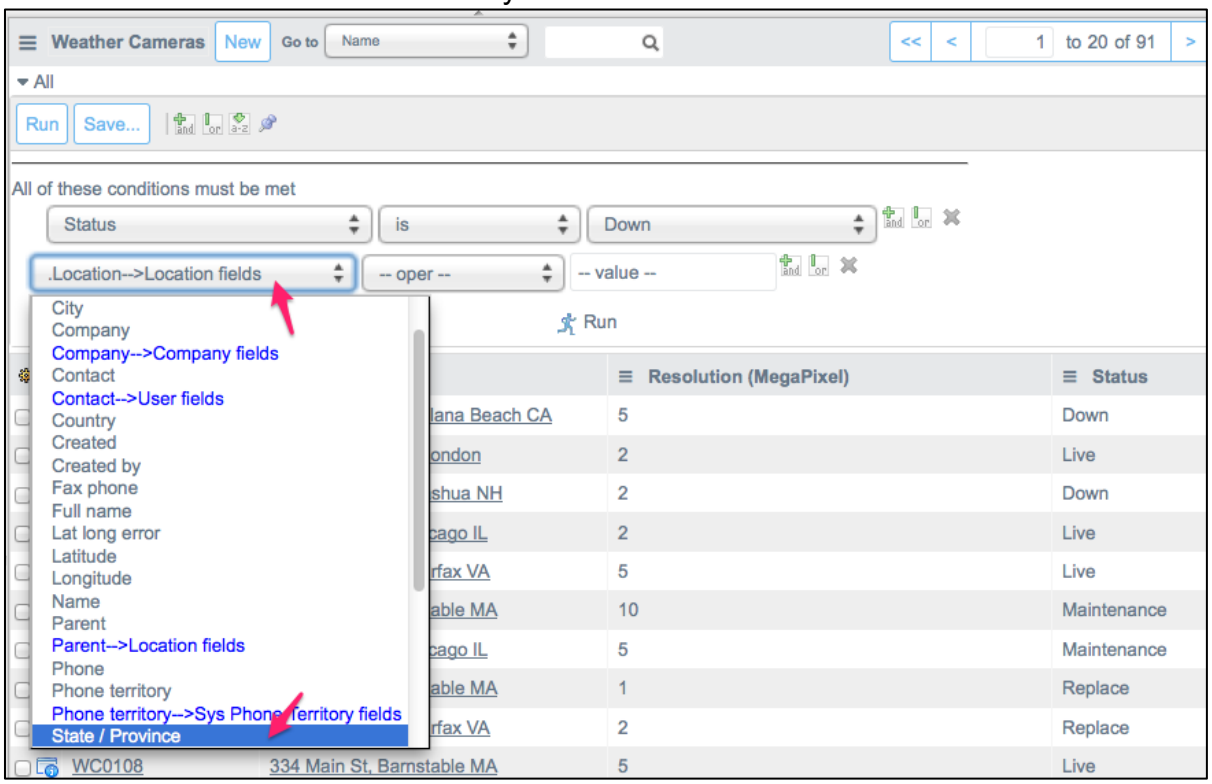
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10. On the second filter row, open the first drop down again and you will notice a new entry in the drop down list. Click **Location → Location fields**

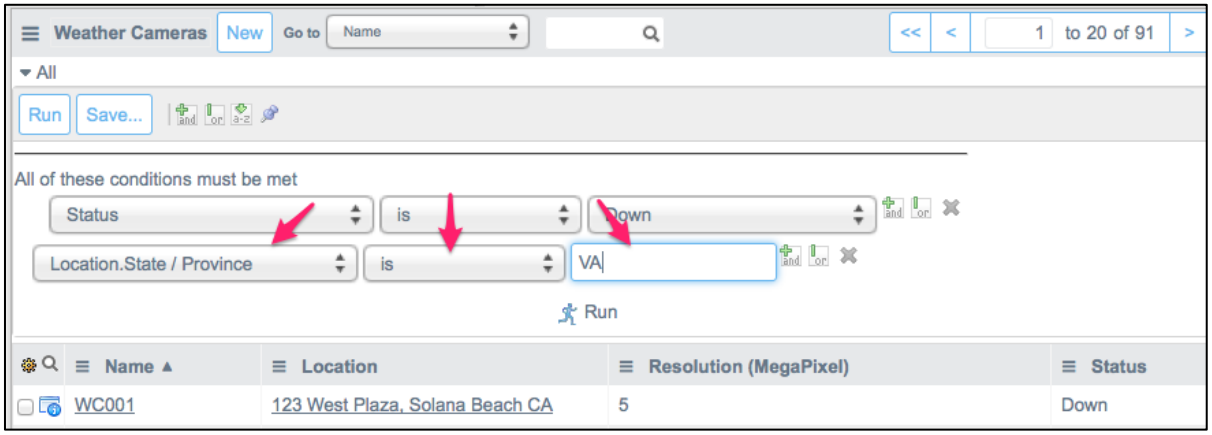


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11. Again, on the second filter row, open the first drop down and you will now see all of the Location fields that are available to you. Select **State / Province**

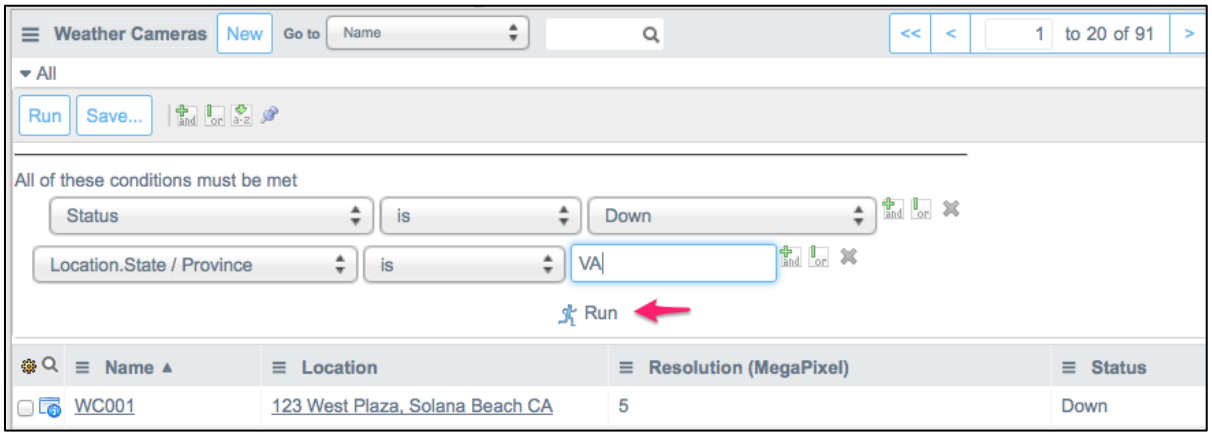


12. Finish up your second row of the filter with the following settings: **Location.State / Province : is : VA**

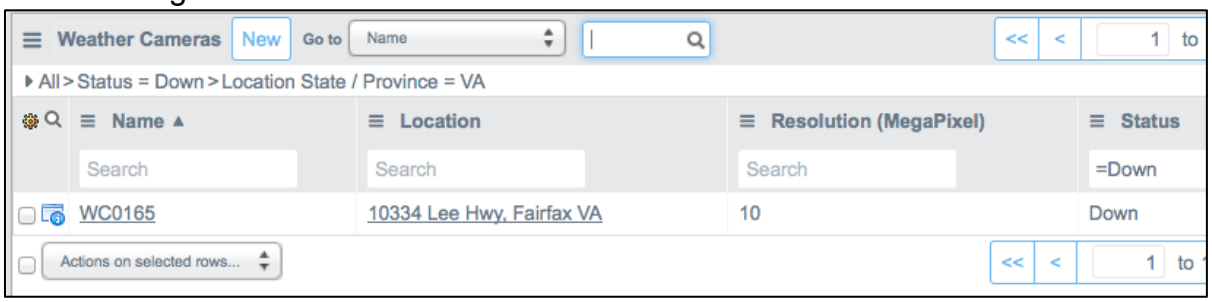


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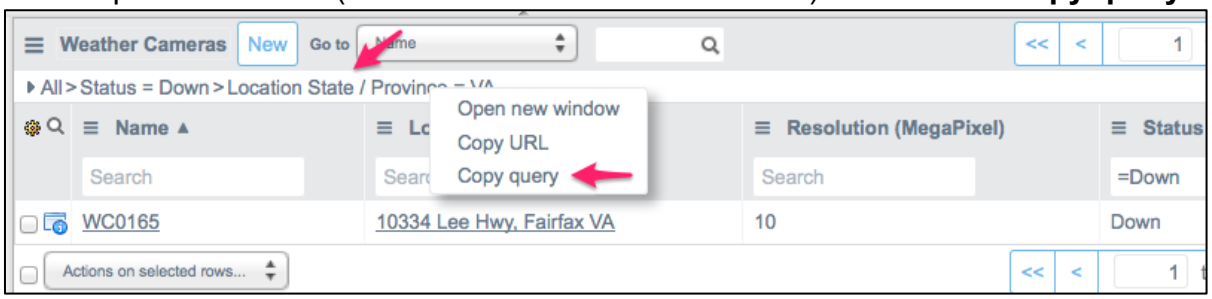
13. Click **Run**



14. Verify that your results only contain records that are listed as “Down” and have a location based in Virginia

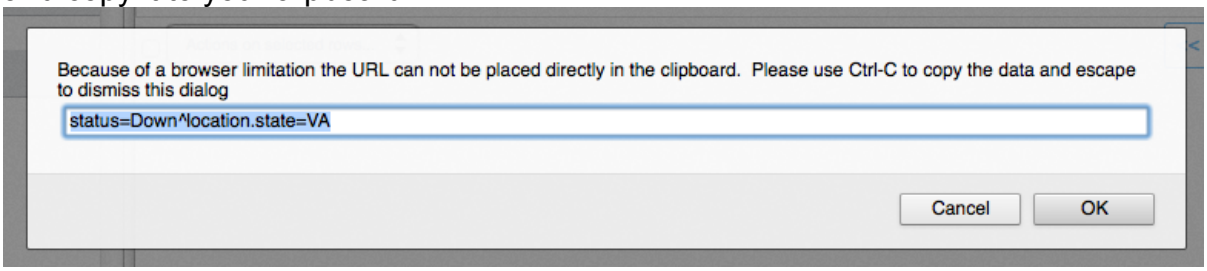


15. Now we want to copy the query string for the filter we just created. To do this, right click on the last part of the filter (**Location State / Province = VA**) and click on **Copy query**



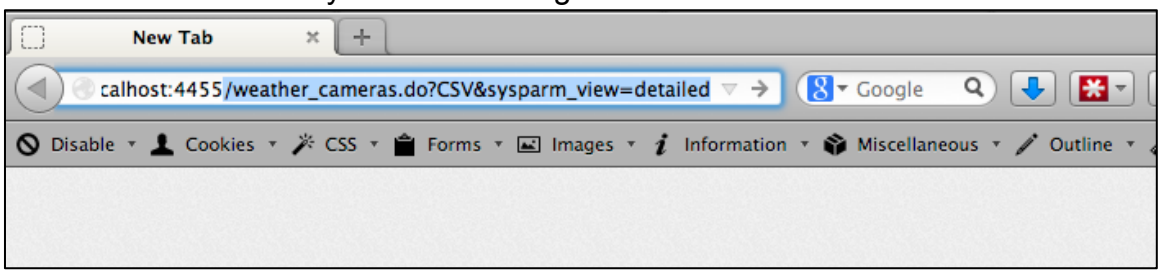
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16. A popup dialog should appear with the query embedded in a text field. Highlight the query and copy it to your clipboard



17. Click **OK**

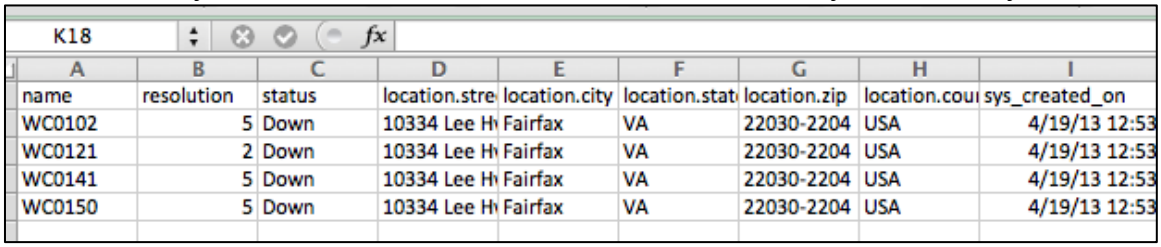
18. In another browser window or tab, enter in the table URL and set the query parameters to include CSV and that system view string that we had set before



19. Add an additional parameter to the URL. The parameter name will be **sysparm_query** and the value should be your encoded query that you copied earlier. Your new URL should look something like:

    - https://MYINSTANCE.lab.service-now.com/weather_cameras.do?CSV&sysparm_view=detailed&sysparm_query=status=Down^location.state=VA

20. Save the file and open it into the editor/program of your choice. Verify that there is the same data in your file as there was in the filtered list when you created your filter



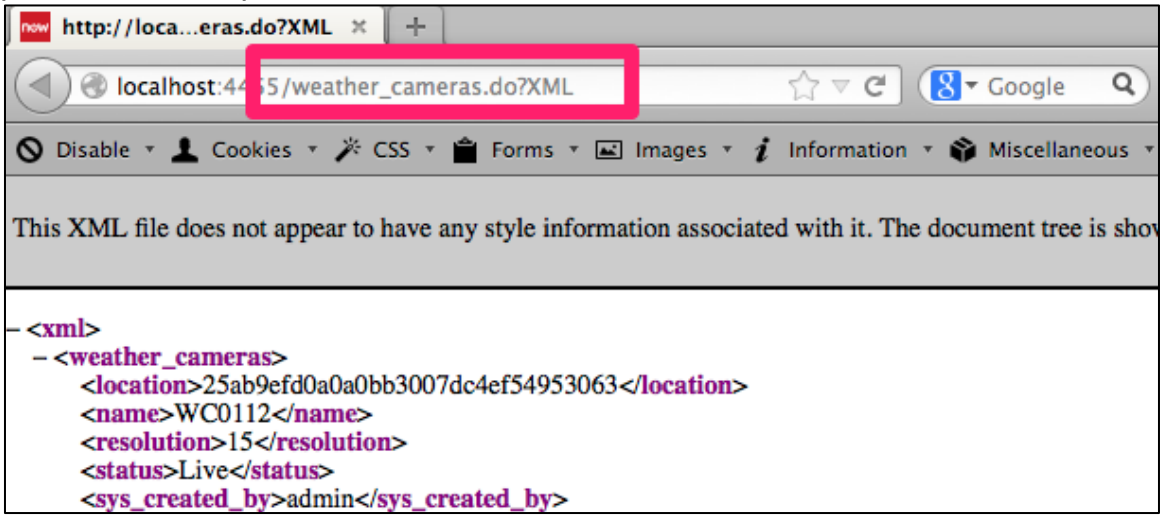
K18

	A	B	C	D	E	F	G	H	I
	name	resolution	status	location.stre	location.city	location.stat	location.zip	location.cou	sys_created_on
	WC0102	5	Down	10334 Lee H	Fairfax	VA	22030-2204	USA	4/19/13 12:53
	WC0121	2	Down	10334 Lee H	Fairfax	VA	22030-2204	USA	4/19/13 12:53
	WC0141	5	Down	10334 Lee H	Fairfax	VA	22030-2204	USA	4/19/13 12:53
	WC0150	5	Down	10334 Lee H	Fairfax	VA	22030-2204	USA	4/19/13 12:53

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Download all Weather Camera records in XML format

1. In a browser window of your choice. Enter the URL to the Weather Cameras table and provide the URL parameter of XML to download the data in XML format



2. How does this default export of data differ from the CSV exported data?

_____

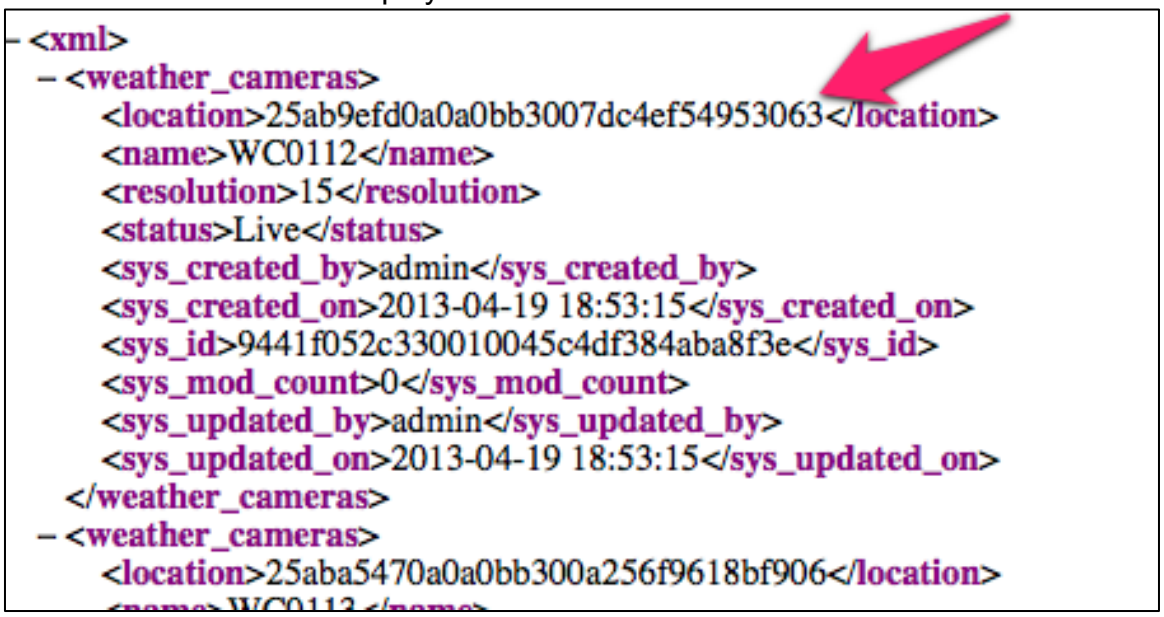
_____

_____

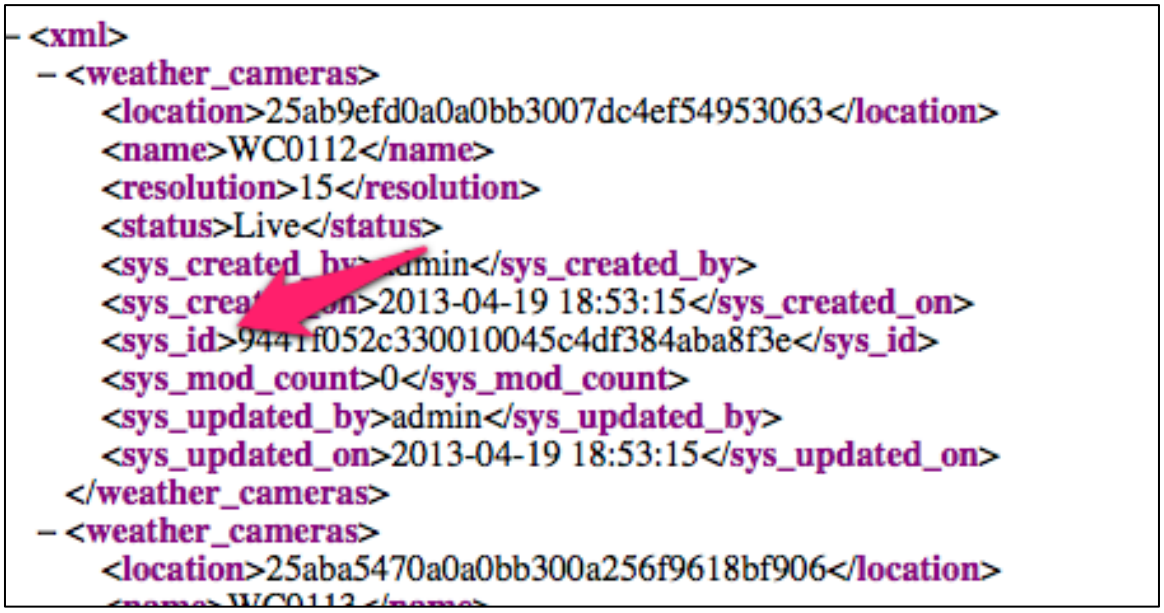
_____

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3. Notice that with this format you get the sys_id of the reference fields (eg. Location) instead of the human readable “display name”



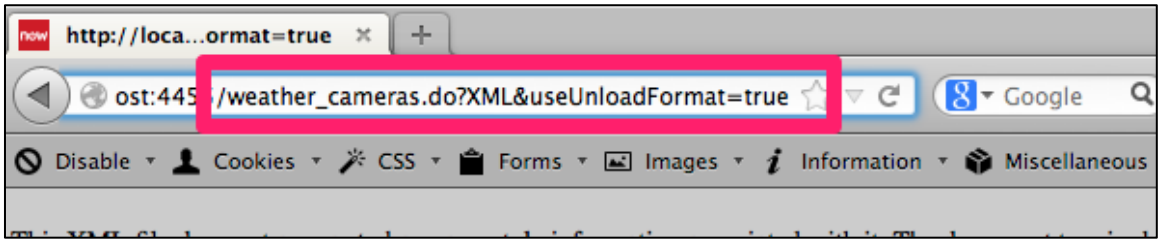
4. Also notice that you get the sys_id of the record whereas with the CSV format, you cannot get this value



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Export the XML data so that display values are also included

1. In the browser of your choice, enter the URL to the Weather Cameras table. Include a URL parameter to export XML data. Also, include the URL parameter of **useUnloadFormat** and set it to **true**



2. Notice how the XML data now contains a “display_value” attribute on reference fields



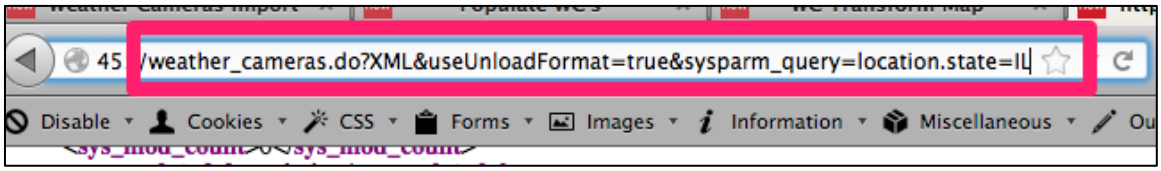
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Export all weather cameras from Illinois in XML format with display values

1. In the browser of your choice, enter the URL that you used before, but this time add an encoded query to select all cameras from Illinois. To do this, the following will be your URL parameters

    - XML
    - useUnloadFormat=true
    - sysparm_query=location.state=IL

2. Your URL should look similar to:



3. Verify that the XML results only contain records of cameras in Illinois

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Download all Weather Camera records in JSONv2 format

4. In a browser window of your choice. Enter the URL to the Weather Cameras table and provide the URL parameter of JSONv2 to download the data in JSONv2 format



5. To get just one record use the following URL parameters:

   sysparm_action=get

   sysparm_sys_id=***pick a sys_id of one of the weather camera records***

   Example URL:
   https://*instance*/weather_cameras.do?JSONv2&sysparm_action=get&sysparm_sys_id=17f33c0bec83d500e5e38d1c4bef1bdb

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6. Get all the weather cameras in New Hampshire by replacing the parameters with the following URL parameters:

   sysparm_action=getRecords

   sysparm_query=location.state=NH



{"records":
[{"__status":"success","status":"Maintenance","location":"25ab9efd0a0a0bb3007dc4ef54953063","
d_on":"2014-02-26 19:33:03","sys_id":"13f33c0bec83d500e5e38d1c4bef1bdc","sys_mod_count":"0","
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Maintenance","location":"25ab9efd0a0a0bb3007dc4ef54953063","s
_on":"2014-02-26 19:33:03","sys_id":"13f3700bec83d500e5e38d1c4bef1ba1","sys_mod_count":"0","s
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Replace","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_u
:"2014-02-26 19:33:03","sys_id":"1bf3700bec83d500e5e38d1c4bef1ba1","sys_mod_count":"0","sys_c
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Live","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_upda
014-02-26 19:33:03","sys_id":"1ff3700bec83d500e5e38d1c4bef1b9f","sys_mod_count":"0","sys_crea
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Down","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_upda
014-02-26 19:33:03","sys_id":"53f33c0bec83d500e5e38d1c4bef1bdc","sys_mod_count":"0","sys_crea
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Live","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_upda
014-02-26 19:33:03","sys_id":"57f3700bec83d500e5e38d1c4bef1ba0","sys_mod_count":"0","sys_crea
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Live","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_upda
014-02-26 19:33:03","sys_id":"5bf3700bec83d500e5e38d1c4bef1b9f","sys_mod_count":"0","sys_crea
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Live","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_upda
014-02-26 19:33:03","sys_id":"5ff3700bec83d500e5e38d1c4bef1b9e","sys_mod_count":"0","sys_crea
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Down","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_upda
014-02-26 19:33:03","sys_id":"5ff3700bec83d500e5e38d1c4bef1b9f","sys_mod_count":"0","sys_crea
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},
{"__status":"success","status":"Live","location":"25ab9efd0a0a0bb3007dc4ef54953063","sys_upda
014-02-26 19:33:03","sys_id":"5ff3700bec83d500e5e38d1c4bef1ba1","sys_mod_count":"0","sys_crea
19:33:03","resolution__megapixel_":"","sys_created_by":"Administrator"},

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Export all weather cameras from New Hampshire in JSONv2 format with display values

7. In the browser of your choice, enter the URL that you used before, but this time add an encoded query to select all cameras from New Hampshire. To do this, the following will be your URL parameters

   JSONv2

   sysparm_action=getRecords

   displayvalue=true

   sysparm_query=location.state=NH

8. Your URL should look similar to: https://*instancename*/weather_cameras.do?JSONv2&sysparm_action=getRecords&displayvalue=true&sysparm_query=location.state=NH



   NOTE: displayvalue can have three values, true, false, and all. Try them and see what they do.

9. Verify that the JSONv2 results only contain records of cameras in New Hampshire

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Mark your completion of this lab

1. Navigate to the **Lab Management > Report Lab Progress** module in the navigation pane
2. Click on the **I'm Done** button to notify your instructor that you are done with the lab exercise

Challenge

If you complete this lab ahead of the group, please take the time to do the following exercise(s) on your own. Feel free to review it with the instructor.

XML results are limited to a maximum number of rows that can be returned using the XML web service. Please explain what mechanism you would use to still retrieve all records should the table size exceed the maximum number of rows that are returned in the XML web service call.

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Additional Resources

Direct Web Services Wiki Documentation
http://wiki.servicenow.com/index.php?title=Direct_Web_Services

Web Service Import Set Wiki Documentation
http://wiki.servicenow.com/index.php?title=Web_Service_Import_Sets

SOAP Web Service Wiki Documentation
http://wiki.servicenow.com/index.php?title=SOAP_Web_Service

JSONv2 Web Service Wiki Documentation
http://wiki.servicenow.com/index.php?title=JSONv2_Web_Service

CSV Web Service Wiki Documentation
http://wiki.servicenow.com/index.php?title=CSV_Web_Service

EXCEL Web Service Wiki Documentation
http://wiki.servicenow.com/index.php?title=EXCEL_Web_Service

XML Web Service Wiki Documentation
http://wiki.servicenow.com/index.php?title=XML_Web_Service

PDF Web Service Wiki Documentation
http://wiki.servicenow.com/index.php?title=PDF_Web_Service

RSS Web Service Wiki Documentation
http://wiki.servicenow.com/index.php?title=RSS_Feed_Generator

Exporting data with custom delimiters
http://www.john-james-andersen.com/blog/service-now/beyond-the-comma-file-export-delimiters.html

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