

---

# PyTan Documentation

*Release 2.0.0*

**Jim Olsen**

August 07, 2015



## CONTENTS

<b>1</b>	<b>Table of Contents</b>	<b>1</b>
1.1	PyTan Introduction . . . . .	1
1.2	pytan package . . . . .	3
1.3	taniumpy package . . . . .	333
1.4	xmldict module . . . . .	345
1.5	ddt module . . . . .	346
1.6	threaded_http module . . . . .	347
1.7	requests package . . . . .	348
<b>2</b>	<b>Indices and tables</b>	<b>349</b>
	<b>Python Module Index</b>	<b>351</b>
	<b>Index</b>	<b>353</b>



## TABLE OF CONTENTS

### 1.1 PyTan Introduction

#### 1.1.1 Description

This is a set of packages and scripts that provides a simple way for programmatically interfacing with Tanium's SOAP API. It is comprised of four parts:

- **Tanium Server SOAP API: The SOAP server embedded into the Tanium server itself.**
  - For Tanium version 6.2: The SOAP servers listens on port 444 but is also available via port 443
  - For Tanium version 6.5: The SOAP servers listens on port 443, and is not available on port 444
- **TaniumPy Python Package (:mod:'taniumpy')**: A python package comprised of a set of python objects automatically generated from the WSDL file that describes the Tanium SOAP API. These python objects handle the serialization and deserialization of XML to and from the Tanium Server SOAP API. Located in `lib/taniumpy`
- **PyTan Python Package (:mod:'pytan')**: A python package that provides a set of methods to make interfacing with TaniumPy more human friendly. Located in `lib/pytan`
- **PyTan Command Line Scripts**: A set of command line scripts that utilize the PyTan Package (`pytan`) to make it easy for non-programmers to create/get/delete/ask/deploy objects via the Tanium Server SOAP API.

#### 1.1.2 Why it was created

This was created to solve for the following needs:

- Create a python package (`pytan`) to provide a set of methods for making it easier to programmatically interface with Tanium via the SOAP API.
- Create a set of command line scripts utilizing the `pytan` package that handle the argument parsing, thereby providing non-programmers with command line access to the functionality therein.
- Provide a way to ask questions and get results via Python and/or the command line.
- Provide a way to deploy actions and get results via Python and/or the command line.
- Provide a way to export/import objects in JSON via Python and/or the command line.

#### 1.1.3 Requirements

- Python 2.7: To date PyTan has only been qualified against 2.7.6 and 2.7.9 on Mac/Linux/Windows.

- A working install of the Tanium Platform.

### 1.1.4 Tanium Versions Validated Against

PyTan has been fully tested against the following versions of the Tanium Platform:

- 6.2.314.3315
- 6.2.314.3321
- 6.5.314.4254
- 6.5.314.4268
- 6.5.314.4275

### 1.1.5 Installation

#### Windows Installation

- Download Python 2.7.9 from <https://www.python.org/downloads/windows/>
- Install Python 2.7.9 – if you accept the default paths it will install to C:\Python27
- Copy PyTan from github to your local machine somewhere
- If you did not accept the default install path for Python 2.7, edit `pytan\winbin\CONFIG.bat` to change the `PYTHON-` variable to point to the full path of `*python.exe`

#### OS X Installation

- OS X 10.8 and higher come with Python 2.7.6 out of the box
- Copy PyTan from github to your local machine somewhere

#### Linux Installation

- Ensure Python 2.7.9 is installed
- Ensure the first python binary in your path points to your Python 2.7 installation
- Copy PyTan from github to your local machine somewhere

### 1.1.6 Usage

- For command line usage, refer to Command Line Help Index
- For API Examples, refer to the *PyTan API examples*
- For in depth API Documentation, refer to the *pytan package*, especially the *pytan.handler module*

### 1.1.7 Directory Layout

- **EXAMPLES/ directory:** contains a set of example python files that show how to use the various methods exposed by (`pytan`)
- **BUILD/ directory:** contains the scripts that build the HTML and PDF documentation in `doc/`, generate the (`taniumpy`), generate the python examples in `EXAMPLES/`, generate some of the command line scripts in `bin/`, and generate all of the documentation for the command line scripts in `doc/_static/bin_doc`

- **bin/ directory:** contains all of the command line scripts that utilize the (`pytan`)
- **doc/ directory:** contains the HTML and PDF documentation
- **lib/ directory:** contains the python libraries (`pytan`) and (`taniumpy`), as well as other python libraries
- **test/ directory:** contains the unit and functional tests for (`pytan`)
- **winbin/ directory:** contains the Windows batch scripts which wrap around the python command line scripts in bin/
- **ZIP\_DIST/ directory:** contains standalone windows executables for certain tools, created by batch files in BUILD/STATICWINBUILD/

## 1.2 pytan package

A python package that makes using (`taniumpy`) more human friendly.

```
pytan.__version__ = '2.0.0'
    Version of PyTan

pytan.__copyright__ = 'Copyright 2015 Tanium'
    Copyright for PyTan

pytan.__license__ = 'MIT'
    License for PyTan

pytan.__author__ = 'Jim Olsen <jim.olsen@tanium.com>'
    Author of Pytan
```

### 1.2.1 PyTan API examples

#### Pytan api basic handler example

Here is an example for how to instantiate a `pytan.Handler` object.

The username, password, host, and maybe port as well need to be provided on a per Tanium server basis.

#### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
```

```
17         sys.path.append(aa)
18
19
20     # connection info for Tanium Server
21     USERNAME = "Tanium User"
22     PASSWORD = "T@n!um"
23     HOST = "172.16.31.128"
24     PORT = "443"
25
26     # Logging conrols
27     LOGLEVEL = 2
28     DEBUGFORMAT = False
29
30     import tempfile
31
32     import pytan
33     handler = pytan.Handler(
34         username=USERNAME,
35         password=PASSWORD,
36         host=HOST,
37         port=PORT,
38         loglevel=LOGLEVEL,
39         debugformat=DEBUGFORMAT,
40     )
41
42     print handler
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
```

## PyTan API Valid Saved Question Examples

### Ask saved question refresh data

Ask a saved question and refresh the data for the saved question (asks a new question)

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
```



```

14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["refresh_data"] = True
47 kwargs["qtype"] = u'saved'
48 kwargs["name"] = u'Installed Applications'
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 response = handler.ask(**kwargs)
52 import pprint, io
53
54 print ""
55 print "Type of response: ", type(response)
56
57 print ""
58 print "Pretty print of response:"
59 print pprint.pformat(response)
60
61 print ""
62 print "Equivalent Question if it were to be asked in the Tanium Console: "
63 print response['question_object'].query_text
64
65 # create an IO stream to store CSV results to
66 out = io.BytesIO()
67
68 # call the write_csv() method to convert response to CSV and store it in out
69 response['question_results'].write_csv(out, response['question_results'])
70
71 print ""

```

```

72 print "CSV Results of response: "
73 out = out.getvalue()
74 if len(out.splitlines()) > 15:
75     out = out.splitlines()[0:15]
76     out.append('..trimmed for brevity..')
77     out = '\n'.join(out)
78 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:37:49,991 DEBUG pytan.handler.QuestionPoller: ID 1279: id resolved to 1279
3 2015-08-07 19:37:49,991 DEBUG pytan.handler.QuestionPoller: ID 1279: expiration resolved to 2015-
4 2015-08-07 19:37:49,991 DEBUG pytan.handler.QuestionPoller: ID 1279: query_text resolved to Get m
5 2015-08-07 19:37:49,991 DEBUG pytan.handler.QuestionPoller: ID 1279: id resolved to 1279
6 2015-08-07 19:37:49,991 DEBUG pytan.handler.QuestionPoller: ID 1279: Object Info resolved to Ques
7 2015-08-07 19:37:49,997 DEBUG pytan.handler.QuestionPoller: ID 1279: Progress: Tested: 0, Passed:
8 2015-08-07 19:37:49,997 DEBUG pytan.handler.QuestionPoller: ID 1279: Timing: Started: 2015-08-07
9 2015-08-07 19:37:49,997 INFO pytan.handler.QuestionPoller: ID 1279: Progress Changed 0% (0 of 2)
10 2015-08-07 19:37:55,007 DEBUG pytan.handler.QuestionPoller: ID 1279: Progress: Tested: 2, Passed:
11 2015-08-07 19:37:55,008 DEBUG pytan.handler.QuestionPoller: ID 1279: Timing: Started: 2015-08-07
12 2015-08-07 19:37:55,008 INFO pytan.handler.QuestionPoller: ID 1279: Progress Changed 100% (2 of
13 2015-08-07 19:37:55,008 INFO pytan.handler.QuestionPoller: ID 1279: Reached Threshold of 99% (2
14
15 Type of response: <type 'dict'>
16
17 Pretty print of response:
18 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a6c0410>,
19  'poller_success': True,
20  'question_object': <taniumpy.object_types.question.Question object at 0x10a7e7f50>,
21  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a808190>,
22  'saved_question_object': <taniumpy.object_types.saved_question.SavedQuestion object at 0x10a7ecb90>
23
24 Equivalent Question if it were to be asked in the Tanium Console:
25 Get number of machines
26
27 CSV Results of response:
28 Name,Silent Uninstall String,Uninstallable,Version
29 Image Capture Extension,nothing,Not Uninstallable,10.2
30 Dictation,nothing,Not Uninstallable,1.6.1
31 Wish,nothing,Not Uninstallable,8.5.9
32 Uninstall AnyConnect,nothing,Not Uninstallable,3.1.08009
33 Time Machine,nothing,Not Uninstallable,1.3
34 AppleGraphicsWarning,nothing,Not Uninstallable,2.3.0
35 soagent,nothing,Not Uninstallable,7.0
36 Feedback Assistant,nothing,Not Uninstallable,4.1.3
37 AinuIM,nothing,Not Uninstallable,1.0
38 vpndownloader,nothing,Not Uninstallable,3.1.08009
39 Pass Viewer,nothing,Not Uninstallable,1.0
40 ARDAgent,nothing,Not Uninstallable,3.8.4
41 OBEXAgent,nothing,Not Uninstallable,4.3.5
42 PressAndHold,nothing,Not Uninstallable,1.2
43 ..trimmed for brevity..

```

## Ask saved question by name

Ask a saved question by referencing the name of a saved question in a string.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["qtype"] = u'saved'
47 kwargs["name"] = u'Installed Applications'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52

```

```
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <type 'dict'>
4
5 Pretty print of response:
6 {'poller_object': None,
7  'poller_success': None,
8  'question_object': <taniumpy.object_types.question.Question object at 0x10a80a150>,
9  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a810c10>,
10 'saved_question_object': <taniumpy.object_types.saved_question.SavedQuestion object at 0x10a810a50>
11
12 Equivalent Question if it were to be asked in the Tanium Console:
13 Get Installed Applications from all machines
14
15 CSV Results of response:
16 Name,Silent Uninstall String,Uninstallable,Version
17 Image Capture Extension,nothing,Not Uninstallable,10.2
18 Dictation,nothing,Not Uninstallable,1.6.1
19 Wish,nothing,Not Uninstallable,8.5.9
20 Uninstall AnyConnect,nothing,Not Uninstallable,3.1.08009
21 Time Machine,nothing,Not Uninstallable,1.3
22 AppleGraphicsWarning,nothing,Not Uninstallable,2.3.0
23 soagent,nothing,Not Uninstallable,7.0
24 Feedback Assistant,nothing,Not Uninstallable,4.1.3
25 AinuIM,nothing,Not Uninstallable,1.0
26 vpngdownloader,nothing,Not Uninstallable,3.1.08009
27 Pass Viewer,nothing,Not Uninstallable,1.0
28 ARDAgent,nothing,Not Uninstallable,3.8.4
29 OBEXAgent,nothing,Not Uninstallable,4.3.5
```

```

30 | PressAndHold,nothing,Not Uninstallable,1.2
31 | ..trimmed for brevity..

```

### Ask saved question by name in list

Ask a saved question by referencing the name of a saved question in a list of strings.

### Example Python Code

```

1 | import os
2 | import sys
3 | sys.dont_write_bytecode = True
4 |
5 | # Determine our script name, script dir
6 | my_file = os.path.abspath(sys.argv[0])
7 | my_dir = os.path.dirname(my_file)
8 |
9 | # determine the pytan lib dir and add it to the path
10 | parent_dir = os.path.dirname(my_dir)
11 | pytan_root_dir = os.path.dirname(parent_dir)
12 | lib_dir = os.path.join(pytan_root_dir, 'lib')
13 | path_adds = [lib_dir]
14 |
15 | for aa in path_adds:
16 |     if aa not in sys.path:
17 |         sys.path.append(aa)
18 |
19 |
20 | # connection info for Tanium Server
21 | USERNAME = "Tanium User"
22 | PASSWORD = "T@n!um"
23 | HOST = "172.16.31.128"
24 | PORT = "443"
25 |
26 | # Logging conrols
27 | LOGLEVEL = 2
28 | DEBUGFORMAT = False
29 |
30 | import tempfile
31 |
32 | import pytan
33 | handler = pytan.Handler(
34 |     username=USERNAME,
35 |     password=PASSWORD,
36 |     host=HOST,
37 |     port=PORT,
38 |     loglevel=LOGLEVEL,
39 |     debugformat=DEBUGFORMAT,
40 | )
41 |
42 | print handler
43 |
44 | # setup the arguments for the handler method
45 | kwargs = {}
46 | kwargs["qtype"] = u'saved'

```

```
47 kwargs["name"] = [u'Installed Applications']
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <type 'dict'>
4
5 Pretty print of response:
6 {'poller_object': None,
7  'poller_success': None,
8  'question_object': <taniumpy.object_types.question.Question object at 0x10a613d90>,
9  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a6c0410>,
10 'saved_question_object': <taniumpy.object_types.saved_question.SavedQuestion object at 0x10a808b10>
11
12 Equivalent Question if it were to be asked in the Tanium Console:
13 Get Installed Applications from all machines
14
15 CSV Results of response:
16 Name,Silent Uninstall String,Uninstallable,Version
17 Image Capture Extension,nothing,Not Uninstallable,10.2
18 Dictation,nothing,Not Uninstallable,1.6.1
19 Wish,nothing,Not Uninstallable,8.5.9
20 Uninstall AnyConnect,nothing,Not Uninstallable,3.1.08009
21 Time Machine,nothing,Not Uninstallable,1.3
22 AppleGraphicsWarning,nothing,Not Uninstallable,2.3.0
23 soagent,nothing,Not Uninstallable,7.0
```

```

24 Feedback Assistant,nothing,Not Uninstallable,4.1.3
25 AinuIM,nothing,Not Uninstallable,1.0
26 vpngdownloader,nothing,Not Uninstallable,3.1.08009
27 Pass Viewer,nothing,Not Uninstallable,1.0
28 ARDAgent,nothing,Not Uninstallable,3.8.4
29 OBEXAgent,nothing,Not Uninstallable,4.3.5
30 PressAndHold,nothing,Not Uninstallable,1.2
31 ..trimmed for brevity..

```

## PyTan API Valid Question Examples

### Ask manual question simple multiple sensors

Ask a manual question using human strings by referencing the name of multiple sensors in a list.

No sensor filters, sensor parameters, sensor filter options, question filters, or question options supplied.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,

```

```

37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = [u'Computer Name', u'Installed Applications']
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:37:55,255 DEBUG pytan.handler.QuestionPoller: ID 1280: id resolved to 1280
3 2015-08-07 19:37:55,255 DEBUG pytan.handler.QuestionPoller: ID 1280: expiration resolved to 2015-
4 2015-08-07 19:37:55,255 DEBUG pytan.handler.QuestionPoller: ID 1280: query_text resolved to Get C
5 2015-08-07 19:37:55,255 DEBUG pytan.handler.QuestionPoller: ID 1280: id resolved to 1280
6 2015-08-07 19:37:55,255 DEBUG pytan.handler.QuestionPoller: ID 1280: Object Info resolved to Ques
7 2015-08-07 19:37:55,260 DEBUG pytan.handler.QuestionPoller: ID 1280: Progress: Tested: 0, Passed:
8 2015-08-07 19:37:55,260 DEBUG pytan.handler.QuestionPoller: ID 1280: Timing: Started: 2015-08-07
9 2015-08-07 19:37:55,260 INFO pytan.handler.QuestionPoller: ID 1280: Progress Changed 0% (0 of 2)
10 2015-08-07 19:38:00,263 DEBUG pytan.handler.QuestionPoller: ID 1280: Progress: Tested: 1, Passed:
11 2015-08-07 19:38:00,263 DEBUG pytan.handler.QuestionPoller: ID 1280: Timing: Started: 2015-08-07
12 2015-08-07 19:38:00,264 INFO pytan.handler.QuestionPoller: ID 1280: Progress Changed 50% (1 of 2)
13 2015-08-07 19:38:05,271 DEBUG pytan.handler.QuestionPoller: ID 1280: Progress: Tested: 1, Passed:

```



```

14 2015-08-07 19:38:05,271 DEBUG      pytan.handler.QuestionPoller: ID 1280: Timing: Started: 2015-08-07
15 2015-08-07 19:38:10,277 DEBUG      pytan.handler.QuestionPoller: ID 1280: Progress: Tested: 2, Passed:
16 2015-08-07 19:38:10,277 DEBUG      pytan.handler.QuestionPoller: ID 1280: Timing: Started: 2015-08-07
17 2015-08-07 19:38:10,277 INFO       pytan.handler.QuestionPoller: ID 1280: Progress Changed 100% (2 of
18 2015-08-07 19:38:10,277 INFO       pytan.handler.QuestionPoller: ID 1280: Reached Threshold of 99% (2
19
20 Type of response: <type 'dict'>
21
22 Pretty print of response:
23 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a808810>,
24  'poller_success': True,
25  'question_object': <taniumpy.object_types.question.Question object at 0x10a810650>,
26  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a6c0410>}
27
28 Equivalent Question if it were to be asked in the Tanium Console:
29 Get Computer Name and Installed Applications from all machines
30
31 CSV Results of response:
32 Computer Name,Name,Silent Uninstall String,Uninstallable,Version
33 Casus-Belli.local,"Image Capture Extension
34 Dictation
35 Wish
36 Uninstall AnyConnect
37 Time Machine
38 AppleGraphicsWarning
39 soagent
40 Feedback Assistant
41 AinuIM
42 vpngdownloader
43 Pass Viewer
44 ARDAgent
45 OBEXAgent
46 PressAndHold
47 ..trimmed for brevity..

```

### Ask manual question simple single sensor

Ask a manual question using human strings by referencing the name of a single sensor in a string.

No sensor filters, sensor parameters, sensor filter options, question filters, or question options supplied.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]

```

```
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Computer Name'
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
```

```

72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:38:10,340 DEBUG pytan.handler.QuestionPoller: ID 1281: id resolved to 1281
3 2015-08-07 19:38:10,340 DEBUG pytan.handler.QuestionPoller: ID 1281: expiration resolved to 2015-
4 2015-08-07 19:38:10,340 DEBUG pytan.handler.QuestionPoller: ID 1281: query_text resolved to Get C
5 2015-08-07 19:38:10,340 DEBUG pytan.handler.QuestionPoller: ID 1281: id resolved to 1281
6 2015-08-07 19:38:10,340 DEBUG pytan.handler.QuestionPoller: ID 1281: Object Info resolved to Ques
7 2015-08-07 19:38:10,343 DEBUG pytan.handler.QuestionPoller: ID 1281: Progress: Tested: 0, Passed:
8 2015-08-07 19:38:10,343 DEBUG pytan.handler.QuestionPoller: ID 1281: Timing: Started: 2015-08-07
9 2015-08-07 19:38:10,343 INFO pytan.handler.QuestionPoller: ID 1281: Progress Changed 0% (0 of 2)
10 2015-08-07 19:38:15,351 DEBUG pytan.handler.QuestionPoller: ID 1281: Progress: Tested: 1, Passed:
11 2015-08-07 19:38:15,351 DEBUG pytan.handler.QuestionPoller: ID 1281: Timing: Started: 2015-08-07
12 2015-08-07 19:38:15,351 INFO pytan.handler.QuestionPoller: ID 1281: Progress Changed 50% (1 of 2)
13 2015-08-07 19:38:20,357 DEBUG pytan.handler.QuestionPoller: ID 1281: Progress: Tested: 2, Passed:
14 2015-08-07 19:38:20,357 DEBUG pytan.handler.QuestionPoller: ID 1281: Timing: Started: 2015-08-07
15 2015-08-07 19:38:20,357 INFO pytan.handler.QuestionPoller: ID 1281: Progress Changed 100% (2 of
16 2015-08-07 19:38:20,357 INFO pytan.handler.QuestionPoller: ID 1281: Reached Threshold of 99% (2
17
18 Type of response: <type 'dict'>
19
20 Pretty print of response:
21 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a7ecb90>,
22  'poller_success': True,
23  'question_object': <taniumpy.object_types.question.Question object at 0x10a808290>,
24  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a6133d0>}
25
26 Equivalent Question if it were to be asked in the Tanium Console:
27 Get Computer Name from all machines
28
29 CSV Results of response:
30 Computer Name
31 Casus-Belli.local
32 JTANIUM1.localdomain

```

### Ask manual question multiple sensors identified by name

Ask a manual question using human strings by referencing the name of multiple sensors and providing a selector that tells pytan explicitly that we are providing a name of a sensor.

No sensor filters, sensor parameters, sensor filter options, question filters, or question options supplied.

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True

```

```
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = [u'name:Computer Name', u'name:Installed Applications']
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
```

```

62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:38:20,411 DEBUG pytan.handler.QuestionPoller: ID 1282: id resolved to 1282
3 2015-08-07 19:38:20,411 DEBUG pytan.handler.QuestionPoller: ID 1282: expiration resolved to 2015-
4 2015-08-07 19:38:20,411 DEBUG pytan.handler.QuestionPoller: ID 1282: query_text resolved to Get C
5 2015-08-07 19:38:20,411 DEBUG pytan.handler.QuestionPoller: ID 1282: id resolved to 1282
6 2015-08-07 19:38:20,411 DEBUG pytan.handler.QuestionPoller: ID 1282: Object Info resolved to Ques
7 2015-08-07 19:38:20,414 DEBUG pytan.handler.QuestionPoller: ID 1282: Progress: Tested: 0, Passed:
8 2015-08-07 19:38:20,414 DEBUG pytan.handler.QuestionPoller: ID 1282: Timing: Started: 2015-08-07
9 2015-08-07 19:38:20,414 INFO pytan.handler.QuestionPoller: ID 1282: Progress Changed 0% (0 of 2)
10 2015-08-07 19:38:25,422 DEBUG pytan.handler.QuestionPoller: ID 1282: Progress: Tested: 2, Passed:
11 2015-08-07 19:38:25,422 DEBUG pytan.handler.QuestionPoller: ID 1282: Timing: Started: 2015-08-07
12 2015-08-07 19:38:25,423 INFO pytan.handler.QuestionPoller: ID 1282: Progress Changed 100% (2 of
13 2015-08-07 19:38:25,423 INFO pytan.handler.QuestionPoller: ID 1282: Reached Threshold of 99% (2
14
15 Type of response: <type 'dict'>
16
17 Pretty print of response:
18 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a7ecc10>,
19  'poller_success': True,
20  'question_object': <taniumpy.object_types.question.Question object at 0x10a7ec090>,
21  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a7ecc90>}
22
23 Equivalent Question if it were to be asked in the Tanium Console:
24 Get Computer Name and Installed Applications from all machines
25
26 CSV Results of response:
27 Computer Name,Name,Silent Uninstall String,Uninstallable,Version
28 Casus-Belli.local,"Image Capture Extension
29 Dictation
30 Wish
31 Uninstall AnyConnect
32 Time Machine
33 AppleGraphicsWarning
34 soagent
35 Feedback Assistant
36 AinuIM
37 vpngdownloader
38 Pass Viewer

```

```
39 ARDAgent
40 OBEXAgent
41 PressAndHold
42 ..trimmed for brevity..
```

### Ask manual question sensor with parameters and some supplied parameters

Ask a manual question using human strings by referencing the name of a single sensor that takes parameters, but supplying only two of the four parameters that are used by the sensor (and letting pytan automatically determine the appropriate default value for those parameters which require a value and none was supplied).

No sensor filters, sensor parameters, sensor filter options, question filters, or question options supplied.

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
```

```

41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Folder Name Search with RegEx Match{dirname=Program Files,regex=Microsoft.*}'
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:38:25,510 DEBUG pytan.handler.QuestionPoller: ID 1283: id resolved to 1283
3 2015-08-07 19:38:25,510 DEBUG pytan.handler.QuestionPoller: ID 1283: expiration resolved to 2015-
4 2015-08-07 19:38:25,510 DEBUG pytan.handler.QuestionPoller: ID 1283: query_text resolved to Get F
5 2015-08-07 19:38:25,510 DEBUG pytan.handler.QuestionPoller: ID 1283: id resolved to 1283
6 2015-08-07 19:38:25,510 DEBUG pytan.handler.QuestionPoller: ID 1283: Object Info resolved to Ques
7 2015-08-07 19:38:25,513 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
8 2015-08-07 19:38:25,513 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
9 2015-08-07 19:38:25,513 INFO pytan.handler.QuestionPoller: ID 1283: Progress Changed 0% (0 of 2)
10 2015-08-07 19:38:30,521 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
11 2015-08-07 19:38:30,521 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
12 2015-08-07 19:38:35,526 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
13 2015-08-07 19:38:35,526 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
14 2015-08-07 19:38:40,532 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
15 2015-08-07 19:38:40,532 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
16 2015-08-07 19:38:45,536 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
17 2015-08-07 19:38:45,536 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07

```

```

18 2015-08-07 19:38:50,539 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
19 2015-08-07 19:38:50,539 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
20 2015-08-07 19:38:55,543 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
21 2015-08-07 19:38:55,543 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
22 2015-08-07 19:39:00,547 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
23 2015-08-07 19:39:00,547 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
24 2015-08-07 19:39:05,554 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
25 2015-08-07 19:39:05,554 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
26 2015-08-07 19:39:10,558 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
27 2015-08-07 19:39:10,558 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
28 2015-08-07 19:39:15,561 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
29 2015-08-07 19:39:15,561 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
30 2015-08-07 19:39:20,566 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
31 2015-08-07 19:39:20,566 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
32 2015-08-07 19:39:25,571 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
33 2015-08-07 19:39:25,571 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
34 2015-08-07 19:39:30,577 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
35 2015-08-07 19:39:30,577 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
36 2015-08-07 19:39:35,581 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
37 2015-08-07 19:39:35,581 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
38 2015-08-07 19:39:40,585 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
39 2015-08-07 19:39:40,585 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
40 2015-08-07 19:39:45,588 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
41 2015-08-07 19:39:45,588 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
42 2015-08-07 19:39:50,592 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
43 2015-08-07 19:39:50,592 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
44 2015-08-07 19:39:55,597 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
45 2015-08-07 19:39:55,597 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
46 2015-08-07 19:40:00,603 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
47 2015-08-07 19:40:00,603 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
48 2015-08-07 19:40:05,612 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 0, Passed:
49 2015-08-07 19:40:05,613 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
50 2015-08-07 19:40:10,618 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 1, Passed:
51 2015-08-07 19:40:10,618 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
52 2015-08-07 19:40:10,618 INFO pytan.handler.QuestionPoller: ID 1283: Progress Changed 50% (1 of 2)
53 2015-08-07 19:40:15,626 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 1, Passed:
54 2015-08-07 19:40:15,626 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
55 2015-08-07 19:40:20,631 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 1, Passed:
56 2015-08-07 19:40:20,631 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
57 2015-08-07 19:40:25,635 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 1, Passed:
58 2015-08-07 19:40:25,635 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
59 2015-08-07 19:40:30,639 DEBUG pytan.handler.QuestionPoller: ID 1283: Progress: Tested: 2, Passed:
60 2015-08-07 19:40:30,639 DEBUG pytan.handler.QuestionPoller: ID 1283: Timing: Started: 2015-08-07
61 2015-08-07 19:40:30,639 INFO pytan.handler.QuestionPoller: ID 1283: Progress Changed 100% (2 of 2)
62 2015-08-07 19:40:30,639 INFO pytan.handler.QuestionPoller: ID 1283: Reached Threshold of 99% (2 of 2)
63
64 Type of response: <type 'dict'>
65
66 Pretty print of response:
67 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a613090>,
68  'poller_success': True,
69  'question_object': <taniumpy.object_types.question.Question object at 0x10a613cd0>,
70  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a810650>}
71
72 Equivalent Question if it were to be asked in the Tanium Console:
73 Get Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*] from all machines
74
75 CSV Results of response:

```



```

76 "Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*]"
77 C:\Program Files\VMware\VMware Tools\plugins\vmSvc
78 C:\Program Files\Common Files\Microsoft Shared\VS7Debug
79 C:\Program Files\Tanium\Tanium Server\http\taniumjs\sensor-query\src
80 C:\Program Files\Microsoft SQL Server\110\LocalDB\Binn\Resources\1033
81 C:\Program Files\Tanium\Tanium Server\http\tux\spin\src
82 C:\Program Files\Tanium\Tanium Server\http\taniumjs\archived-question\src
83 C:\Program Files\Tanium\Tanium Module Server\plugins\content
84 C:\Program Files\Tanium\Tanium Server\http\libraries\kendoui\styles\Moonlight
85 C:\Program Files\Common Files\VMware\Drivers\vmci\sockets\include
86 C:\Program Files\Tanium\Tanium Server\http\taniumjs\plugin
87 C:\Program Files\Common Files\Microsoft Shared\ink\ar-SA
88 C:\Program Files\Tanium\Tanium Server\plugins\console\WorkbenchesManager
89 C:\Program Files\Tanium\Tanium Module Server\logs
90 C:\Program Files\Common Files\SpeechEngines\Microsoft
91 ..trimmed for brevity..

```

### Ask manual question multiple sensors with parameters and some supplied parameters

Ask a manual question using human strings by referencing the name of multiple sensors, one that takes parameters, but supplying only two of the four parameters that are used by the sensor (and letting pytan automatically determine the appropriate default value for those parameters which require a value and none was supplied), and one that does not take parameters.

No sensor filters, question filters, or question options supplied.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2

```

```
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = [u'Folder Name Search with RegEx Match{dirname=Program Files,regex=Microsoft.*}']
47     u'Computer Name']
48 kwargs["qtype"] = u'manual'
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 response = handler.ask(**kwargs)
52 import pprint, io
53
54 print ""
55 print "Type of response: ", type(response)
56
57 print ""
58 print "Pretty print of response:"
59 print pprint.pformat(response)
60
61 print ""
62 print "Equivalent Question if it were to be asked in the Tanium Console: "
63 print response['question_object'].query_text
64
65 # create an IO stream to store CSV results to
66 out = io.BytesIO()
67
68 # call the write_csv() method to convert response to CSV and store it in out
69 response['question_results'].write_csv(out, response['question_results'])
70
71 print ""
72 print "CSV Results of response: "
73 out = out.getvalue()
74 if len(out.splitlines()) > 15:
75     out = out.splitlines()[0:15]
76     out.append('..trimmed for brevity..')
77     out = '\n'.join(out)
78 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:40:30,754 DEBUG      pytan.handler.QuestionPoller: ID 1284: id resolved to 1284
3 2015-08-07 19:40:30,754 DEBUG      pytan.handler.QuestionPoller: ID 1284: expiration resolved to 2015-
```

```

4 2015-08-07 19:40:30,754 DEBUG pytan.handler.QuestionPoller: ID 1284: query_text resolved to Get F
5 2015-08-07 19:40:30,754 DEBUG pytan.handler.QuestionPoller: ID 1284: id resolved to 1284
6 2015-08-07 19:40:30,754 DEBUG pytan.handler.QuestionPoller: ID 1284: Object Info resolved to Ques
7 2015-08-07 19:40:30,757 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
8 2015-08-07 19:40:30,757 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
9 2015-08-07 19:40:30,757 INFO pytan.handler.QuestionPoller: ID 1284: Progress Changed 0% (0 of 2)
10 2015-08-07 19:40:35,761 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
11 2015-08-07 19:40:35,761 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
12 2015-08-07 19:40:40,766 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
13 2015-08-07 19:40:40,766 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
14 2015-08-07 19:40:45,773 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
15 2015-08-07 19:40:45,773 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
16 2015-08-07 19:40:50,777 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
17 2015-08-07 19:40:50,777 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
18 2015-08-07 19:40:55,782 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
19 2015-08-07 19:40:55,782 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
20 2015-08-07 19:41:00,790 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
21 2015-08-07 19:41:00,790 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
22 2015-08-07 19:41:05,798 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
23 2015-08-07 19:41:05,798 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
24 2015-08-07 19:41:10,805 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
25 2015-08-07 19:41:10,805 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
26 2015-08-07 19:41:15,809 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
27 2015-08-07 19:41:15,809 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
28 2015-08-07 19:41:20,813 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 0, Passed:
29 2015-08-07 19:41:20,813 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
30 2015-08-07 19:41:25,817 DEBUG pytan.handler.QuestionPoller: ID 1284: Progress: Tested: 2, Passed:
31 2015-08-07 19:41:25,817 DEBUG pytan.handler.QuestionPoller: ID 1284: Timing: Started: 2015-08-07
32 2015-08-07 19:41:25,817 INFO pytan.handler.QuestionPoller: ID 1284: Progress Changed 100% (2 of
33 2015-08-07 19:41:25,817 INFO pytan.handler.QuestionPoller: ID 1284: Reached Threshold of 99% (2
34
35 Type of response: <type 'dict'>
36
37 Pretty print of response:
38 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a614b50>,
39  'poller_success': True,
40  'question_object': <taniumpy.object_types.question.Question object at 0x10a5f51d0>,
41  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a614f10>}
42
43 Equivalent Question if it were to be asked in the Tanium Console:
44 Get Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*] and Computer Name from
45
46 CSV Results of response:
47 Computer Name,"Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*]"
48 Casus-Belli.local,Windows Only
49 JTANIUM1.localdomain,"C:\Program Files\VMware\VMware Tools\plugins\vmssvc
50 C:\Program Files\Common Files\Microsoft Shared\VS7Debug
51 C:\Program Files\tanium\tanium Server\http\taniumjs\sensor-query\src
52 C:\Program Files\Microsoft SQL Server\110\LocalDB\Binn\Resources\1033
53 C:\Program Files\tanium\tanium Server\http\tux\spin\src
54 C:\Program Files\tanium\tanium Server\http\taniumjs\archived-question\src
55 C:\Program Files\tanium\tanium Module Server\plugins\content
56 C:\Program Files\tanium\tanium Server\http\libraries\kendoui\styles\Moonlight
57 C:\Program Files\Common Files\VMware\Drivers\vmci\sockets\include
58 C:\Program Files\tanium\tanium Server\http\taniumjs\plugin
59 C:\Program Files\Common Files\Microsoft Shared\ink\ar-SA
60 C:\Program Files\tanium\tanium Server\plugins\console\WorkbenchesManager
61 C:\Program Files\tanium\tanium Module Server\logs

```

```
62 | ..trimmed for brevity..
```

### Ask manual question sensor without parameters and supplied parameters

Ask a manual question using human strings by referencing the name of a single sensor that does NOT take parameters, but supplying parameters anyways (which will be ignored since the sensor does not take parameters).

No sensor filters, sensor filter options, question filters, or question options supplied.

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
```

```

46 kwargs["sensors"] = u'Computer Name{fake=Dweedle}'
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:41:25,887 DEBUG pytan.handler.QuestionPoller: ID 1286: id resolved to 1286
3 2015-08-07 19:41:25,887 DEBUG pytan.handler.QuestionPoller: ID 1286: expiration resolved to 2015-
4 2015-08-07 19:41:25,887 DEBUG pytan.handler.QuestionPoller: ID 1286: query_text resolved to Get C
5 2015-08-07 19:41:25,887 DEBUG pytan.handler.QuestionPoller: ID 1286: id resolved to 1286
6 2015-08-07 19:41:25,887 DEBUG pytan.handler.QuestionPoller: ID 1286: Object Info resolved to Ques
7 2015-08-07 19:41:25,892 DEBUG pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 0, Passed:
8 2015-08-07 19:41:25,892 DEBUG pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
9 2015-08-07 19:41:25,892 INFO pytan.handler.QuestionPoller: ID 1286: Progress Changed 0% (0 of 2)
10 2015-08-07 19:41:30,900 DEBUG pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 0, Passed:
11 2015-08-07 19:41:30,900 DEBUG pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
12 2015-08-07 19:41:35,905 DEBUG pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 0, Passed:
13 2015-08-07 19:41:35,905 DEBUG pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
14 2015-08-07 19:41:40,908 DEBUG pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 0, Passed:
15 2015-08-07 19:41:40,908 DEBUG pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
16 2015-08-07 19:41:45,915 DEBUG pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 0, Passed:
17 2015-08-07 19:41:45,915 DEBUG pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
18 2015-08-07 19:41:50,919 DEBUG pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 0, Passed:
19 2015-08-07 19:41:50,919 DEBUG pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
20 2015-08-07 19:41:55,923 DEBUG pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 1, Passed:
21 2015-08-07 19:41:55,924 DEBUG pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
22 2015-08-07 19:41:55,924 INFO pytan.handler.QuestionPoller: ID 1286: Progress Changed 50% (1 of 2)

```

```
23 2015-08-07 19:42:00,928 DEBUG      pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 1, Passed:
24 2015-08-07 19:42:00,929 DEBUG      pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
25 2015-08-07 19:42:05,933 DEBUG      pytan.handler.QuestionPoller: ID 1286: Progress: Tested: 2, Passed:
26 2015-08-07 19:42:05,933 DEBUG      pytan.handler.QuestionPoller: ID 1286: Timing: Started: 2015-08-07
27 2015-08-07 19:42:05,933 INFO       pytan.handler.QuestionPoller: ID 1286: Progress Changed 100% (2 of
28 2015-08-07 19:42:05,933 INFO       pytan.handler.QuestionPoller: ID 1286: Reached Threshold of 99% (2
29
30 Type of response: <type 'dict'>
31
32 Pretty print of response:
33 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a614e10>,
34  'poller_success': True,
35  'question_object': <taniumpy.object_types.question.Question object at 0x10a613450>,
36  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a614490>}
37
38 Equivalent Question if it were to be asked in the Tanium Console:
39 Get Computer Name[Dweedle] from all machines
40
41 CSV Results of response:
42 Computer Name[Dweedle]
43 [no results]
44 JTANIUM1
```

### Ask manual question sensor with parameters and no supplied parameters

Ask a manual question using human strings by referencing the name of a single sensor that takes parameters, but not supplying any parameters (and letting pytan automatically determine the appropriate default value for those parameters which require a value).

No sensor filters, sensor parameters, sensor filter options, question filters, or question options supplied.

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
```

```

23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Folder Name Search with RegEx Match'
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:42:06,009 DEBUG pytan.handler.QuestionPoller: ID 1288: id resolved to 1288
3 2015-08-07 19:42:06,010 DEBUG pytan.handler.QuestionPoller: ID 1288: expiration resolved to 2015-
4 2015-08-07 19:42:06,010 DEBUG pytan.handler.QuestionPoller: ID 1288: query_text resolved to Get F
5 2015-08-07 19:42:06,010 DEBUG pytan.handler.QuestionPoller: ID 1288: id resolved to 1288
6 2015-08-07 19:42:06,010 DEBUG pytan.handler.QuestionPoller: ID 1288: Object Info resolved to Ques
7 2015-08-07 19:42:06,013 DEBUG pytan.handler.QuestionPoller: ID 1288: Progress: Tested: 0, Passed:
8 2015-08-07 19:42:06,013 DEBUG pytan.handler.QuestionPoller: ID 1288: Timing: Started: 2015-08-07
9 2015-08-07 19:42:06,013 INFO pytan.handler.QuestionPoller: ID 1288: Progress Changed 0% (0 of 2)
10 2015-08-07 19:42:11,021 DEBUG pytan.handler.QuestionPoller: ID 1288: Progress: Tested: 0, Passed:
11 2015-08-07 19:42:11,021 DEBUG pytan.handler.QuestionPoller: ID 1288: Timing: Started: 2015-08-07
12 2015-08-07 19:42:16,025 DEBUG pytan.handler.QuestionPoller: ID 1288: Progress: Tested: 0, Passed:
13 2015-08-07 19:42:16,025 DEBUG pytan.handler.QuestionPoller: ID 1288: Timing: Started: 2015-08-07
14 2015-08-07 19:42:21,032 DEBUG pytan.handler.QuestionPoller: ID 1288: Progress: Tested: 0, Passed:
15 2015-08-07 19:42:21,032 DEBUG pytan.handler.QuestionPoller: ID 1288: Timing: Started: 2015-08-07
16 2015-08-07 19:42:26,037 DEBUG pytan.handler.QuestionPoller: ID 1288: Progress: Tested: 2, Passed:
17 2015-08-07 19:42:26,037 DEBUG pytan.handler.QuestionPoller: ID 1288: Timing: Started: 2015-08-07
18 2015-08-07 19:42:26,038 INFO pytan.handler.QuestionPoller: ID 1288: Progress Changed 100% (2 of
19 2015-08-07 19:42:26,038 INFO pytan.handler.QuestionPoller: ID 1288: Reached Threshold of 99% (2
20
21 Type of response: <type 'dict'>
22
23 Pretty print of response:
24 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a6147d0>,
25  'poller_success': True,
26  'question_object': <taniumpy.object_types.question.Question object at 0x10a613790>,
27  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a5f5190>}
28
29 Equivalent Question if it were to be asked in the Tanium Console:
30 Get Folder Name Search with RegEx Match[, , No, No] from all machines
31
32 CSV Results of response:
33 Count,"Folder Name Search with RegEx Match[, , No, No]"
34 24705,[too many results]
35 1,C:\Windows\winsxs\amd64_microsoft-windows-s..structure.resources_31bf3856ad364e35_6.1.7600.16385_e
36 1,C:\Windows\winsxs\x86_microsoft-windows-e..host-authenticator_31bf3856ad364e35_6.1.7601.17514_non
37 1,C:\Windows\winsxs\amd64_microsoft-windows-ocspsvc_31bf3856ad364e35_6.1.7601.22807_none_3bfeae72930
38 1,C:\Windows\winsxs\amd64_microsoft-windows-c..ityclient.resources_31bf3856ad364e35_6.1.7601.22865_e
39 1,C:\Windows\assembly\NativeImages_v2.0.50727_64\System.Xml
40 1,C:\Windows\winsxs\amd64_microsoft-windows-winsetupui_31bf3856ad364e35_6.1.7601.18804_none_bd3cf1bb
41 1,C:\Windows\winsxs\amd64_microsoft-windows-scripting.resources_31bf3856ad364e35_6.1.7600.16385_en-u
42 1,C:\Windows\winsxs\x86_microsoft-windows-mlang.resources_31bf3856ad364e35_6.1.7600.16385_ru-ru_cf3a
43 1,C:\Windows\winsxs\x86_microsoft-windows-minkernelapinamespace_31bf3856ad364e35_6.1.7601.21728_none
44 1,C:\Users\Jim Olsen\AppData\Local\Google
45 1,C:\Windows\winsxs\x86_microsoft-windows-e..nt-client.resources_31bf3856ad364e35_6.1.7600.16385_en-
46 1,C:\Windows\winsxs\amd64_microsoft-windows-d..e-eashared-kjshared_31bf3856ad364e35_6.1.7600.16385_n
47 1,C:\Windows\assembly\NativeImages_v4.0.30319_32\RadLangSvc
48 ..trimmed for brevity..

```

### Ask manual question sensor with parameters and filter

Ask a manual question using human strings by referencing the name of a single sensor that takes parameters, but supplying only two of the four parameters that are used by the sensor.

Also supply a sensor filter that limits the column data that is shown to values that match the regex `.*Shared.*`.



No sensor filter options, question filters, or question options supplied.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Folder Name Search with RegEx Match(dirname=Program Files,regex=Microsoft.*)',
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)

```

```

55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:42:26,175 DEBUG pytan.handler.QuestionPoller: ID 1289: id resolved to 1289
3 2015-08-07 19:42:26,175 DEBUG pytan.handler.QuestionPoller: ID 1289: expiration resolved to 2015-
4 2015-08-07 19:42:26,175 DEBUG pytan.handler.QuestionPoller: ID 1289: query_text resolved to Get F
5 2015-08-07 19:42:26,175 DEBUG pytan.handler.QuestionPoller: ID 1289: id resolved to 1289
6 2015-08-07 19:42:26,175 DEBUG pytan.handler.QuestionPoller: ID 1289: Object Info resolved to Ques
7 2015-08-07 19:42:26,178 DEBUG pytan.handler.QuestionPoller: ID 1289: Progress: Tested: 0, Passed:
8 2015-08-07 19:42:26,178 DEBUG pytan.handler.QuestionPoller: ID 1289: Timing: Started: 2015-08-07
9 2015-08-07 19:42:26,178 INFO pytan.handler.QuestionPoller: ID 1289: Progress Changed 0% (0 of 2)
10 2015-08-07 19:42:31,183 DEBUG pytan.handler.QuestionPoller: ID 1289: Progress: Tested: 0, Passed:
11 2015-08-07 19:42:31,183 DEBUG pytan.handler.QuestionPoller: ID 1289: Timing: Started: 2015-08-07
12 2015-08-07 19:42:36,189 DEBUG pytan.handler.QuestionPoller: ID 1289: Progress: Tested: 1, Passed:
13 2015-08-07 19:42:36,189 DEBUG pytan.handler.QuestionPoller: ID 1289: Timing: Started: 2015-08-07
14 2015-08-07 19:42:36,189 INFO pytan.handler.QuestionPoller: ID 1289: Progress Changed 50% (1 of 2)
15 2015-08-07 19:42:41,193 DEBUG pytan.handler.QuestionPoller: ID 1289: Progress: Tested: 1, Passed:
16 2015-08-07 19:42:41,194 DEBUG pytan.handler.QuestionPoller: ID 1289: Timing: Started: 2015-08-07
17 2015-08-07 19:42:46,197 DEBUG pytan.handler.QuestionPoller: ID 1289: Progress: Tested: 1, Passed:
18 2015-08-07 19:42:46,197 DEBUG pytan.handler.QuestionPoller: ID 1289: Timing: Started: 2015-08-07
19 2015-08-07 19:42:51,202 DEBUG pytan.handler.QuestionPoller: ID 1289: Progress: Tested: 1, Passed:
20 2015-08-07 19:42:51,202 DEBUG pytan.handler.QuestionPoller: ID 1289: Timing: Started: 2015-08-07
21 2015-08-07 19:42:56,207 DEBUG pytan.handler.QuestionPoller: ID 1289: Progress: Tested: 2, Passed:
22 2015-08-07 19:42:56,207 DEBUG pytan.handler.QuestionPoller: ID 1289: Timing: Started: 2015-08-07
23 2015-08-07 19:42:56,207 INFO pytan.handler.QuestionPoller: ID 1289: Progress Changed 100% (2 of
24 2015-08-07 19:42:56,207 INFO pytan.handler.QuestionPoller: ID 1289: Reached Threshold of 99% (2
25
26 Type of response: <type 'dict'>
27
28 Pretty print of response:
29 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a614f50>,
30  'poller_success': True,
31  'question_object': <taniumpy.object_types.question.Question object at 0x10a5f5190>,

```

```

32 | 'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a615c10>}
33 |
34 | Equivalent Question if it were to be asked in the Tanium Console:
35 | Get Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*] containing "Shared" fr
36 |
37 | CSV Results of response:
38 | "Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*]"
39 | [no results]
40 | C:\Program Files\Common Files\Microsoft Shared\VS7Debug
41 | C:\Program Files\Common Files\Microsoft Shared\ink\ar-SA
42 | C:\Program Files\Common Files\Microsoft Shared\ink\ru-RU
43 | C:\Program Files\Common Files\Microsoft Shared\ink\fsdefinitions\keypad
44 | C:\Program Files\Common Files\Microsoft Shared\ink
45 | C:\Program Files\Common Files\Microsoft Shared\ink\sv-SE
46 | C:\Program Files\Common Files\Microsoft Shared\ink\uk-UA
47 | C:\Program Files\Common Files\Microsoft Shared\ink\sl-SI
48 | C:\Program Files\Common Files\Microsoft Shared\ink\hu-HU
49 | C:\Program Files\Common Files\Microsoft Shared\ink\zh-TW
50 | C:\Program Files\Common Files\Microsoft Shared\ink\zh-CN
51 | C:\Program Files\Common Files\Microsoft Shared\ink\fi-FI
52 | C:\Program Files\Common Files\Microsoft Shared
53 | ..trimmed for brevity..

```

### Ask manual question sensor with filter and 2 options

Ask a manual question using human strings by referencing the name of a single sensor.

Also supply a sensor filter that limits the column data that is shown to values that contain Windows (which is short hand for regex match against `*Windows.*`).

Also supply filter options that re-fetches any cached data that is older than 3600 seconds and treats the values as type string.

No question filters or question options supplied.

### Example Python Code

```

1 | import os
2 | import sys
3 | sys.dont_write_bytecode = True
4 |
5 | # Determine our script name, script dir
6 | my_file = os.path.abspath(sys.argv[0])
7 | my_dir = os.path.dirname(my_file)
8 |
9 | # determine the pytan lib dir and add it to the path
10 | parent_dir = os.path.dirname(my_dir)
11 | pytan_root_dir = os.path.dirname(parent_dir)
12 | lib_dir = os.path.join(pytan_root_dir, 'lib')
13 | path_adds = [lib_dir]
14 |
15 | for aa in path_adds:
16 |     if aa not in sys.path:
17 |         sys.path.append(aa)
18 |
19 |

```

```
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Operating System, that contains:Windows, opt:max_data_age:3600, opt:value_type
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76 out = '\n'.join(out)
```

```
77 print out
```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:42:56,259 DEBUG pytan.handler.QuestionPoller: ID 1290: id resolved to 1290
3 2015-08-07 19:42:56,259 DEBUG pytan.handler.QuestionPoller: ID 1290: expiration resolved to 2015-
4 2015-08-07 19:42:56,259 DEBUG pytan.handler.QuestionPoller: ID 1290: query_text resolved to Get C
5 2015-08-07 19:42:56,259 DEBUG pytan.handler.QuestionPoller: ID 1290: id resolved to 1290
6 2015-08-07 19:42:56,259 DEBUG pytan.handler.QuestionPoller: ID 1290: Object Info resolved to Ques
7 2015-08-07 19:42:56,262 DEBUG pytan.handler.QuestionPoller: ID 1290: Progress: Tested: 0, Passed:
8 2015-08-07 19:42:56,262 DEBUG pytan.handler.QuestionPoller: ID 1290: Timing: Started: 2015-08-07
9 2015-08-07 19:42:56,262 INFO pytan.handler.QuestionPoller: ID 1290: Progress Changed 0% (0 of 2)
10 2015-08-07 19:43:01,266 DEBUG pytan.handler.QuestionPoller: ID 1290: Progress: Tested: 1, Passed:
11 2015-08-07 19:43:01,266 DEBUG pytan.handler.QuestionPoller: ID 1290: Timing: Started: 2015-08-07
12 2015-08-07 19:43:01,266 INFO pytan.handler.QuestionPoller: ID 1290: Progress Changed 50% (1 of 2)
13 2015-08-07 19:43:06,271 DEBUG pytan.handler.QuestionPoller: ID 1290: Progress: Tested: 2, Passed:
14 2015-08-07 19:43:06,271 DEBUG pytan.handler.QuestionPoller: ID 1290: Timing: Started: 2015-08-07
15 2015-08-07 19:43:06,271 INFO pytan.handler.QuestionPoller: ID 1290: Progress Changed 100% (2 of
16 2015-08-07 19:43:06,271 INFO pytan.handler.QuestionPoller: ID 1290: Reached Threshold of 99% (2
17
18 Type of response: <type 'dict'>
19
20 Pretty print of response:
21 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a5f5f90>,
22  'poller_success': True,
23  'question_object': <taniumpy.object_types.question.Question object at 0x10a613b10>,
24  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a5b9cd0>}}
25
26 Equivalent Question if it were to be asked in the Tanium Console:
27 Get Operating System containing "Windows" from all machines
28
29 CSV Results of response:
30 Operating System
31 [no results]
32 Windows Server 2008 R2 Standard

```

### Ask manual question sensor with filter

Ask a manual question using human strings by referencing the name of a single sensor.

Also supply a sensor filter that limits the column data that is shown to values that contain Windows (which is short hand for regex match against `.*Windows.*`).

No sensor parameters, sensor filter options, question filters or question options supplied.

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)

```

```
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Operating System, that contains:Windows'
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
```

```

66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:43:06,319 DEBUG pytan.handler.QuestionPoller: ID 1291: id resolved to 1291
3 2015-08-07 19:43:06,319 DEBUG pytan.handler.QuestionPoller: ID 1291: expiration resolved to 2015-
4 2015-08-07 19:43:06,319 DEBUG pytan.handler.QuestionPoller: ID 1291: query_text resolved to Get O
5 2015-08-07 19:43:06,319 DEBUG pytan.handler.QuestionPoller: ID 1291: id resolved to 1291
6 2015-08-07 19:43:06,319 DEBUG pytan.handler.QuestionPoller: ID 1291: Object Info resolved to Ques
7 2015-08-07 19:43:06,322 DEBUG pytan.handler.QuestionPoller: ID 1291: Progress: Tested: 0, Passed:
8 2015-08-07 19:43:06,322 DEBUG pytan.handler.QuestionPoller: ID 1291: Timing: Started: 2015-08-07
9 2015-08-07 19:43:06,322 INFO pytan.handler.QuestionPoller: ID 1291: Progress Changed 0% (0 of 2)
10 2015-08-07 19:43:11,327 DEBUG pytan.handler.QuestionPoller: ID 1291: Progress: Tested: 1, Passed:
11 2015-08-07 19:43:11,327 DEBUG pytan.handler.QuestionPoller: ID 1291: Timing: Started: 2015-08-07
12 2015-08-07 19:43:11,327 INFO pytan.handler.QuestionPoller: ID 1291: Progress Changed 50% (1 of 2)
13 2015-08-07 19:43:16,332 DEBUG pytan.handler.QuestionPoller: ID 1291: Progress: Tested: 2, Passed:
14 2015-08-07 19:43:16,332 DEBUG pytan.handler.QuestionPoller: ID 1291: Timing: Started: 2015-08-07
15 2015-08-07 19:43:16,333 INFO pytan.handler.QuestionPoller: ID 1291: Progress Changed 100% (2 of
16 2015-08-07 19:43:16,333 INFO pytan.handler.QuestionPoller: ID 1291: Reached Threshold of 99% (2
17
18 Type of response: <type 'dict'>
19
20 Pretty print of response:
21 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a614dd0>,
22  'poller_success': True,
23  'question_object': <taniumpy.object_types.question.Question object at 0x10a614190>,
24  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a5b9cd0>}
25
26 Equivalent Question if it were to be asked in the Tanium Console:
27 Get Operating System containing "Windows" from all machines
28
29 CSV Results of response:
30 Operating System
31 [no results]
32 Windows Server 2008 R2 Standard

```

### Ask manual question sensor with parameters and filter and options

Ask a manual question using human strings by referencing the name of a single sensor that takes parameters, but supplying only two of the four parameters that are used by the sensor.

Also supply a sensor filter that limits the column data that is shown to values that match the regex `‘.*Shared.*’`, and a sensor filter option that re-fetches any cached data that is older than 3600 seconds.

No question filters or question options supplied.

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Folder Name Search with RegEx Match(dirname=Program Files,regex=Microsoft.*)',
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
```



```

55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')
76     out = '\n'.join(out)
77 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:43:16,405 DEBUG pytan.handler.QuestionPoller: ID 1294: id resolved to 1294
3 2015-08-07 19:43:16,405 DEBUG pytan.handler.QuestionPoller: ID 1294: expiration resolved to 2015-
4 2015-08-07 19:43:16,405 DEBUG pytan.handler.QuestionPoller: ID 1294: query_text resolved to Get F
5 2015-08-07 19:43:16,405 DEBUG pytan.handler.QuestionPoller: ID 1294: id resolved to 1294
6 2015-08-07 19:43:16,405 DEBUG pytan.handler.QuestionPoller: ID 1294: Object Info resolved to Ques
7 2015-08-07 19:43:16,408 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 0, Passed:
8 2015-08-07 19:43:16,408 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
9 2015-08-07 19:43:16,408 INFO pytan.handler.QuestionPoller: ID 1294: Progress Changed 0% (0 of 2)
10 2015-08-07 19:43:21,414 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 0, Passed:
11 2015-08-07 19:43:21,414 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
12 2015-08-07 19:43:26,420 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 0, Passed:
13 2015-08-07 19:43:26,420 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
14 2015-08-07 19:43:31,424 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 0, Passed:
15 2015-08-07 19:43:31,424 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
16 2015-08-07 19:43:36,428 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 1, Passed:
17 2015-08-07 19:43:36,428 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
18 2015-08-07 19:43:36,428 INFO pytan.handler.QuestionPoller: ID 1294: Progress Changed 50% (1 of 2)
19 2015-08-07 19:43:41,432 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 1, Passed:
20 2015-08-07 19:43:41,432 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
21 2015-08-07 19:43:46,441 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 1, Passed:
22 2015-08-07 19:43:46,442 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
23 2015-08-07 19:43:51,449 DEBUG pytan.handler.QuestionPoller: ID 1294: Progress: Tested: 2, Passed:
24 2015-08-07 19:43:51,449 DEBUG pytan.handler.QuestionPoller: ID 1294: Timing: Started: 2015-08-07
25 2015-08-07 19:43:51,449 INFO pytan.handler.QuestionPoller: ID 1294: Progress Changed 100% (2 of
26 2015-08-07 19:43:51,449 INFO pytan.handler.QuestionPoller: ID 1294: Reached Threshold of 99% (2
27
28 Type of response: <type 'dict'>
29
30 Pretty print of response:
31 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a615f10>,

```

```

32 'poller_success': True,
33 'question_object': <taniumpy.object_types.question.Question object at 0x10a5f57d0>,
34 'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a5b9a10>}
35
36 Equivalent Question if it were to be asked in the Tanium Console:
37 Get Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*] containing "Shared" fr
38
39 CSV Results of response:
40 "Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*]"
41 [no results]
42 C:\Program Files\Common Files\Microsoft Shared\VS7Debug
43 C:\Program Files\Common Files\Microsoft Shared\ink\ar-SA
44 C:\Program Files\Common Files\Microsoft Shared\ink\ru-RU
45 C:\Program Files\Common Files\Microsoft Shared\ink\fsdefinitions\keypad
46 C:\Program Files\Common Files\Microsoft Shared\ink
47 C:\Program Files\Common Files\Microsoft Shared\ink\sv-SE
48 C:\Program Files\Common Files\Microsoft Shared\ink\uk-UA
49 C:\Program Files\Common Files\Microsoft Shared\ink\sl-SI
50 C:\Program Files\Common Files\Microsoft Shared\ink\hu-HU
51 C:\Program Files\Common Files\Microsoft Shared\ink\zh-TW
52 C:\Program Files\Common Files\Microsoft Shared\ink\zh-CN
53 C:\Program Files\Common Files\Microsoft Shared\ink\fi-FI
54 C:\Program Files\Common Files\Microsoft Shared
55 ..trimmed for brevity..

```

### Ask manual question sensor with filter and 3 options

Ask a manual question using human strings by referencing the name of a single sensor.

Also supply a sensor filter that limits the column data that is shown to values that contain Windows (which is short hand for regex match against `*Windows.*`).

Also supply filter options that re-fetches any cached data that is older than 3600 seconds, matches all values supplied in the filter, and ignores case for any value match of the filter.

No sensor paramaters, question filters, or question options supplied.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)

```

```

18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Operating System, that contains:Windows, opt:match_all_values, opt:ignore_case
47 kwargs["qtype"] = u'manual'
48
49 # call the handler with the ask method, passing in kwargs for arguments
50 response = handler.ask(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Equivalent Question if it were to be asked in the Tanium Console: "
62 print response['question_object'].query_text
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # call the write_csv() method to convert response to CSV and store it in out
68 response['question_results'].write_csv(out, response['question_results'])
69
70 print ""
71 print "CSV Results of response: "
72 out = out.getvalue()
73 if len(out.splitlines()) > 15:
74     out = out.splitlines()[0:15]
75     out.append('..trimmed for brevity..')

```

```

76         out = '\n'.join(out)
77     print out

```

### Output from Python Code

```

1  Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2  2015-08-07 19:43:51,504 DEBUG      pytan.handler.QuestionPoller: ID 1295: id resolved to 1295
3  2015-08-07 19:43:51,504 DEBUG      pytan.handler.QuestionPoller: ID 1295: expiration resolved to 2015-
4  2015-08-07 19:43:51,504 DEBUG      pytan.handler.QuestionPoller: ID 1295: query_text resolved to Get C
5  2015-08-07 19:43:51,504 DEBUG      pytan.handler.QuestionPoller: ID 1295: id resolved to 1295
6  2015-08-07 19:43:51,504 DEBUG      pytan.handler.QuestionPoller: ID 1295: Object Info resolved to Ques
7  2015-08-07 19:43:51,508 DEBUG      pytan.handler.QuestionPoller: ID 1295: Progress: Tested: 0, Passed:
8  2015-08-07 19:43:51,508 DEBUG      pytan.handler.QuestionPoller: ID 1295: Timing: Started: 2015-08-07
9  2015-08-07 19:43:51,508 INFO       pytan.handler.QuestionPoller: ID 1295: Progress Changed 0% (0 of 2)
10 2015-08-07 19:43:56,512 DEBUG      pytan.handler.QuestionPoller: ID 1295: Progress: Tested: 0, Passed:
11 2015-08-07 19:43:56,512 DEBUG      pytan.handler.QuestionPoller: ID 1295: Timing: Started: 2015-08-07
12 2015-08-07 19:44:01,520 DEBUG      pytan.handler.QuestionPoller: ID 1295: Progress: Tested: 2, Passed:
13 2015-08-07 19:44:01,520 DEBUG      pytan.handler.QuestionPoller: ID 1295: Timing: Started: 2015-08-07
14 2015-08-07 19:44:01,520 INFO       pytan.handler.QuestionPoller: ID 1295: Progress Changed 100% (2 of
15 2015-08-07 19:44:01,520 INFO       pytan.handler.QuestionPoller: ID 1295: Reached Threshold of 99% (2
16
17 Type of response: <type 'dict'>
18
19 Pretty print of response:
20 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a5b98d0>,
21  'poller_success': True,
22  'question_object': <taniumpy.object_types.question.Question object at 0x10a5b9810>,
23  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a615710>}
24
25 Equivalent Question if it were to be asked in the Tanium Console:
26 Get Operating System containing "Windows" from all machines
27
28 CSV Results of response:
29 Operating System
30 [no results]
31 Windows Server 2008 R2 Standard

```

### Ask manual question complex query1

Ask a manual question using human strings by referencing the name of a two sensors sensor.

Supply 3 parameters for the second sensor, one of which is not a valid parameter (and will be ignored).

Supply one option to the second sensor.

Supply two question filters that limit the rows returned in the result to computers that match the sensor Operating System that contains Windows and does not contain Windows.

Supply two question options that 'or' the two question filters and ignore the case of any values while matching the question filters.

### Example Python Code

```

1  import os
2  import sys

```

```

3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["question_filters"] = [u'Operating System, that contains:Windows',
47     u'Operating System, that does not contain:Windows']
48 kwargs["sensors"] = [u'Computer Name',
49     u'Folder Name Search with RegEx Match{dirname=Program Files,regex=Microsoft.*, invalidparam=test}',
50 kwargs["question_options"] = [u'ignore_case', u'or']
51 kwargs["qtype"] = u'manual'
52
53 # call the handler with the ask method, passing in kwargs for arguments
54 response = handler.ask(**kwargs)
55 import pprint, io
56
57 print ""
58 print "Type of response: ", type(response)
59
60 print ""

```

```

61 print "Pretty print of response:"
62 pprint.pprint(response)
63
64 print ""
65 print "Equivalent Question if it were to be asked in the Tanium Console: "
66 print response['question_object'].query_text
67
68 # create an IO stream to store CSV results to
69 out = io.BytesIO()
70
71 # call the write_csv() method to convert response to CSV and store it in out
72 response['question_results'].write_csv(out, response['question_results'])
73
74 print ""
75 print "CSV Results of response: "
76 out = out.getvalue()
77 if len(out.splitlines()) > 15:
78     out = out.splitlines()[0:15]
79     out.append('..trimmed for brevity..')
80     out = '\n'.join(out)
81 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:44:01,651 DEBUG pytan.handler.QuestionPoller: ID 1296: id resolved to 1296
3 2015-08-07 19:44:01,651 DEBUG pytan.handler.QuestionPoller: ID 1296: expiration resolved to 2015-
4 2015-08-07 19:44:01,651 DEBUG pytan.handler.QuestionPoller: ID 1296: query_text resolved to Get C
5 2015-08-07 19:44:01,651 DEBUG pytan.handler.QuestionPoller: ID 1296: id resolved to 1296
6 2015-08-07 19:44:01,651 DEBUG pytan.handler.QuestionPoller: ID 1296: Object Info resolved to Ques
7 2015-08-07 19:44:01,655 DEBUG pytan.handler.QuestionPoller: ID 1296: Progress: Tested: 0, Passed:
8 2015-08-07 19:44:01,655 DEBUG pytan.handler.QuestionPoller: ID 1296: Timing: Started: 2015-08-07
9 2015-08-07 19:44:01,655 INFO pytan.handler.QuestionPoller: ID 1296: Progress Changed 0% (0 of 2)
10 2015-08-07 19:44:06,659 DEBUG pytan.handler.QuestionPoller: ID 1296: Progress: Tested: 0, Passed:
11 2015-08-07 19:44:06,659 DEBUG pytan.handler.QuestionPoller: ID 1296: Timing: Started: 2015-08-07
12 2015-08-07 19:44:11,666 DEBUG pytan.handler.QuestionPoller: ID 1296: Progress: Tested: 0, Passed:
13 2015-08-07 19:44:11,667 DEBUG pytan.handler.QuestionPoller: ID 1296: Timing: Started: 2015-08-07
14 2015-08-07 19:44:16,670 DEBUG pytan.handler.QuestionPoller: ID 1296: Progress: Tested: 0, Passed:
15 2015-08-07 19:44:16,670 DEBUG pytan.handler.QuestionPoller: ID 1296: Timing: Started: 2015-08-07
16 2015-08-07 19:44:21,677 DEBUG pytan.handler.QuestionPoller: ID 1296: Progress: Tested: 1, Passed:
17 2015-08-07 19:44:21,677 DEBUG pytan.handler.QuestionPoller: ID 1296: Timing: Started: 2015-08-07
18 2015-08-07 19:44:21,677 INFO pytan.handler.QuestionPoller: ID 1296: Progress Changed 50% (1 of 2)
19 2015-08-07 19:44:26,687 DEBUG pytan.handler.QuestionPoller: ID 1296: Progress: Tested: 1, Passed:
20 2015-08-07 19:44:26,687 DEBUG pytan.handler.QuestionPoller: ID 1296: Timing: Started: 2015-08-07
21 2015-08-07 19:44:31,691 DEBUG pytan.handler.QuestionPoller: ID 1296: Progress: Tested: 2, Passed:
22 2015-08-07 19:44:31,692 DEBUG pytan.handler.QuestionPoller: ID 1296: Timing: Started: 2015-08-07
23 2015-08-07 19:44:31,692 INFO pytan.handler.QuestionPoller: ID 1296: Progress Changed 100% (2 of
24 2015-08-07 19:44:31,692 INFO pytan.handler.QuestionPoller: ID 1296: Reached Threshold of 99% (2
25
26 Type of response: <type 'dict'>
27
28 Pretty print of response:
29 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a5c9690>,
30  'poller_success': True,
31  'question_object': <taniumpy.object_types.question.Question object at 0x10a5e1610>,
32  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a615510>}
33

```

```

34 Equivalent Question if it were to be asked in the Tanium Console:
35 Get Computer Name and Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*, test]
36
37 CSV Results of response:
38 Computer Name,"Folder Name Search with RegEx Match[Program Files, , No, No, Microsoft.*, test]"
39 Casus-Belli.local,[no results]
40 JTANIUM1.localdomain,"C:\Program Files\Common Files\Microsoft Shared\VS7Debug
41 C:\Program Files\Common Files\Microsoft Shared\ink\ar-SA
42 C:\Program Files\Common Files\Microsoft Shared\ink\ru-RU
43 C:\Program Files\Common Files\Microsoft Shared\ink\fsdefinitions\keypad
44 C:\Program Files\Common Files\Microsoft Shared\ink
45 C:\Program Files\Common Files\Microsoft Shared\ink\sv-SE
46 C:\Program Files\Common Files\Microsoft Shared\ink\uk-UA
47 C:\Program Files\Common Files\Microsoft Shared\ink\sl-SI
48 C:\Program Files\Common Files\Microsoft Shared\ink\hu-HU
49 C:\Program Files\Common Files\Microsoft Shared\ink\zh-TW
50 C:\Program Files\Common Files\Microsoft Shared\ink\zh-CN
51 C:\Program Files\Common Files\Microsoft Shared\ink\fi-FI
52 C:\Program Files\Common Files\Microsoft Shared
53 ..trimmed for brevity..

```

### Ask manual question complex query2

This is another complex query that gets the Computer Name and Last Logged in User and Installed Applications that contains Google Search or Google Chrome and limits the rows that are displayed to computers that contain the Installed Applications of Google Search or Google Chrome

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols

```

```
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["question_filters"] = [u'Installed Applications, that regex match:.*Google (Search|Chrome).*']
47 kwargs["sensors"] = [u'Computer Name',
48     u'Last Logged In User',
49     u'Installed Applications, that regex match:.*Google (Search|Chrome).*']
50 kwargs["question_options"] = [u'ignore_case', u'or']
51 kwargs["qtype"] = u'manual'
52
53 # call the handler with the ask method, passing in kwargs for arguments
54 response = handler.ask(**kwargs)
55 import pprint, io
56
57 print ""
58 print "Type of response: ", type(response)
59
60 print ""
61 print "Pretty print of response:"
62 print pprint.pformat(response)
63
64 print ""
65 print "Equivalent Question if it were to be asked in the Tanium Console: "
66 print response['question_object'].query_text
67
68 # create an IO stream to store CSV results to
69 out = io.BytesIO()
70
71 # call the write_csv() method to convert response to CSV and store it in out
72 response['question_results'].write_csv(out, response['question_results'])
73
74 print ""
75 print "CSV Results of response: "
76 out = out.getvalue()
77 if len(out.splitlines()) > 15:
78     out = out.splitlines()[0:15]
79     out.append('..trimmed for brevity..')
80     out = '\n'.join(out)
81 print out
```

## Output from Python Code



```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:44:31,762 DEBUG pytan.handler.QuestionPoller: ID 1297: id resolved to 1297
3 2015-08-07 19:44:31,763 DEBUG pytan.handler.QuestionPoller: ID 1297: expiration resolved to 2015-
4 2015-08-07 19:44:31,763 DEBUG pytan.handler.QuestionPoller: ID 1297: query_text resolved to Get C
5 2015-08-07 19:44:31,763 DEBUG pytan.handler.QuestionPoller: ID 1297: id resolved to 1297
6 2015-08-07 19:44:31,763 DEBUG pytan.handler.QuestionPoller: ID 1297: Object Info resolved to Ques
7 2015-08-07 19:44:31,766 DEBUG pytan.handler.QuestionPoller: ID 1297: Progress: Tested: 0, Passed:
8 2015-08-07 19:44:31,766 DEBUG pytan.handler.QuestionPoller: ID 1297: Timing: Started: 2015-08-07
9 2015-08-07 19:44:31,766 INFO pytan.handler.QuestionPoller: ID 1297: Progress Changed 0% (0 of 2)
10 2015-08-07 19:44:36,774 DEBUG pytan.handler.QuestionPoller: ID 1297: Progress: Tested: 0, Passed:
11 2015-08-07 19:44:36,774 DEBUG pytan.handler.QuestionPoller: ID 1297: Timing: Started: 2015-08-07
12 2015-08-07 19:44:41,779 DEBUG pytan.handler.QuestionPoller: ID 1297: Progress: Tested: 1, Passed:
13 2015-08-07 19:44:41,779 DEBUG pytan.handler.QuestionPoller: ID 1297: Timing: Started: 2015-08-07
14 2015-08-07 19:44:41,779 INFO pytan.handler.QuestionPoller: ID 1297: Progress Changed 50% (1 of 2)
15 2015-08-07 19:44:46,783 DEBUG pytan.handler.QuestionPoller: ID 1297: Progress: Tested: 2, Passed:
16 2015-08-07 19:44:46,783 DEBUG pytan.handler.QuestionPoller: ID 1297: Timing: Started: 2015-08-07
17 2015-08-07 19:44:46,783 INFO pytan.handler.QuestionPoller: ID 1297: Progress Changed 100% (2 of
18 2015-08-07 19:44:46,783 INFO pytan.handler.QuestionPoller: ID 1297: Reached Threshold of 99% (2
19
20 Type of response: <type 'dict'>
21
22 Pretty print of response:
23 {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a615950>,
24  'poller_success': True,
25  'question_object': <taniumpy.object_types.question.Question object at 0x10a5e1bd0>,
26  'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a5e1d90>}
27
28 Equivalent Question if it were to be asked in the Tanium Console:
29 Get Computer Name and Last Logged In User and Installed Applications containing "Google (Search|Chro
30
31 CSV Results of response:
32 Computer Name,Last Logged In User,Name,Silent Uninstall String,Uninstallable,Version
33 JTANIUM1.localdomain,Uninitialized - waiting for login,Google Chrome,"""C:\Program Files (x86)\Googl
34 Casus-Belli.local,jolsen,"Google Search
35 Google Search
36 Google Chrome","nothing
37 nothing
38 nothing","Not Uninstallable
39 Not Uninstallable
40 Not Uninstallable","42.0.2311.90
41 41.0.2272.104
42 44.0.2403.130"

```

## ask manual question sensor complex

This provides an example for asking a manual question without using human strings.

It uses the Computer Name and Folder Name Search with RegEx Match sensors.

The second sensor has a single parameter, `dirname`, with a value of `'Program Files'`.

The second sensor also has 3 sensor filter options that set the max data age to 3600 seconds, does NOT ignore case, and treats all values as string.

There is also a question filter supplied that limits the rows that are displayed to computers that match an Operating System that contains Windows, and has 3 question filter options supplied that set the max data age to 3600 seconds, does NOT ignore case, and uses `'and'` to join all question filters.

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["question_filter_defs"] = [{u'filter': {u'not_flag': 0,
47     u'operator': u'RegexMatch',
48     u'value': u'.*Windows.*'},
49     u'name': u'Operating System'}]
50 kwargs["sensor_defs"] = [u'Computer Name',
51     {u'filter': {u'not_flag': 0,
52     u'operator': u'RegexMatch',
53     u'value': u'.*Shared.*'},
54     u'name': u'Folder Name Search with RegEx Match',
55     u'options': {u'ignore_case_flag': 0,
56     u'max_age_seconds': 3600,
57     u'value_type': u'string'}},
```

```

58     u'params': {u'dirname': u'Program Files'}}}]
59     kwargs["question_option_defs"] = {u'and_flag': 0, u'ignore_case_flag': 0, u'max_age_seconds': 3600}
60     kwargs["qtype"] = u'_manual'
61
62     # call the handler with the ask method, passing in kwargs for arguments
63     response = handler.ask(**kwargs)
64     import pprint, io
65
66     print ""
67     print "Type of response: ", type(response)
68
69     print ""
70     print "Pretty print of response:"
71     print pprint.pformat(response)
72
73     print ""
74     print "Equivalent Question if it were to be asked in the Tanium Console: "
75     print response['question_object'].query_text
76
77     # create an IO stream to store CSV results to
78     out = io.BytesIO()
79
80     # call the write_csv() method to convert response to CSV and store it in out
81     response['question_results'].write_csv(out, response['question_results'])
82
83     print ""
84     print "CSV Results of response: "
85     out = out.getvalue()
86     if len(out.splitlines()) > 15:
87         out = out.splitlines()[0:15]
88         out.append('..trimmed for brevity..')
89         out = '\n'.join(out)
90     print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:44:46,869 DEBUG pytan.handler.QuestionPoller: ID 1298: id resolved to 1298
3 2015-08-07 19:44:46,869 DEBUG pytan.handler.QuestionPoller: ID 1298: expiration resolved to 2015-
4 2015-08-07 19:44:46,869 DEBUG pytan.handler.QuestionPoller: ID 1298: query_text resolved to Get C
5 2015-08-07 19:44:46,869 DEBUG pytan.handler.QuestionPoller: ID 1298: id resolved to 1298
6 2015-08-07 19:44:46,869 DEBUG pytan.handler.QuestionPoller: ID 1298: Object Info resolved to Ques
7 2015-08-07 19:44:46,872 DEBUG pytan.handler.QuestionPoller: ID 1298: Progress: Tested: 0, Passed:
8 2015-08-07 19:44:46,873 DEBUG pytan.handler.QuestionPoller: ID 1298: Timing: Started: 2015-08-07
9 2015-08-07 19:44:46,873 INFO pytan.handler.QuestionPoller: ID 1298: Progress Changed 0% (0 of 2)
10 2015-08-07 19:44:51,877 DEBUG pytan.handler.QuestionPoller: ID 1298: Progress: Tested: 1, Passed:
11 2015-08-07 19:44:51,877 DEBUG pytan.handler.QuestionPoller: ID 1298: Timing: Started: 2015-08-07
12 2015-08-07 19:44:51,877 INFO pytan.handler.QuestionPoller: ID 1298: Progress Changed 50% (1 of 2)
13 2015-08-07 19:44:56,881 DEBUG pytan.handler.QuestionPoller: ID 1298: Progress: Tested: 1, Passed:
14 2015-08-07 19:44:56,881 DEBUG pytan.handler.QuestionPoller: ID 1298: Timing: Started: 2015-08-07
15 2015-08-07 19:45:01,885 DEBUG pytan.handler.QuestionPoller: ID 1298: Progress: Tested: 1, Passed:
16 2015-08-07 19:45:01,885 DEBUG pytan.handler.QuestionPoller: ID 1298: Timing: Started: 2015-08-07
17 2015-08-07 19:45:06,890 DEBUG pytan.handler.QuestionPoller: ID 1298: Progress: Tested: 2, Passed:
18 2015-08-07 19:45:06,890 DEBUG pytan.handler.QuestionPoller: ID 1298: Timing: Started: 2015-08-07
19 2015-08-07 19:45:06,890 INFO pytan.handler.QuestionPoller: ID 1298: Progress Changed 100% (2 of
20 2015-08-07 19:45:06,890 INFO pytan.handler.QuestionPoller: ID 1298: Reached Threshold of 99% (2
21

```

```
22 | Type of response: <type 'dict'>
23 |
24 | Pretty print of response:
25 | {'poller_object': <pytan.pollers.QuestionPoller object at 0x10a5c9c90>,
26 |   'poller_success': True,
27 |   'question_object': <taniumpy.object_types.question.Question object at 0x10a5b98d0>,
28 |   'question_results': <taniumpy.object_types.result_set.ResultSet object at 0x10a5e1410>}
29 |
30 | Equivalent Question if it were to be asked in the Tanium Console:
31 | Get Computer Name and Folder Name Search with RegEx Match[Program Files, , No, No] containing "Share
32 |
33 | CSV Results of response:
34 | Computer Name,"Folder Name Search with RegEx Match[Program Files, , No, No]"
35 | JTANIUM1.localdomain,"C:\Program Files\Common Files\Microsoft Shared\VS7Debug
36 | C:\Program Files\Common Files\Microsoft Shared\ink\ar-SA
37 | C:\Program Files\Common Files\Microsoft Shared\ink\ru-RU
38 | C:\Program Files\Common Files\Microsoft Shared\ink\fsdefinitions\keypad
39 | C:\Program Files\Common Files\Microsoft Shared\ink
40 | C:\Program Files\Common Files\Microsoft Shared\ink\sv-SE
41 | C:\Program Files\Common Files\Microsoft Shared\ink\uk-UA
42 | C:\Program Files\Common Files\Microsoft Shared\ink\sl-SI
43 | C:\Program Files\Common Files\Microsoft Shared\ink\hu-HU
44 | C:\Program Files\Common Files\Microsoft Shared\ink\zh-TW
45 | C:\Program Files\Common Files\Microsoft Shared\ink\zh-CN
46 | C:\Program Files\Common Files\Microsoft Shared\ink\fi-FI
47 | C:\Program Files\Common Files\Microsoft Shared
48 | C:\Program Files\Common Files\Microsoft Shared\ink\da-DK
49 | ..trimmed for brevity..
```

## PyTan API Invalid Question Examples

### Invalid ask manual question sensor help

Have ask\_manual() return the help for sensors

### Example Python Code

```
1 | import os
2 | import sys
3 | sys.dont_write_bytecode = True
4 |
5 | # Determine our script name, script dir
6 | my_file = os.path.abspath(sys.argv[0])
7 | my_dir = os.path.dirname(my_file)
8 |
9 | # determine the pytan lib dir and add it to the path
10 | parent_dir = os.path.dirname(my_dir)
11 | pytan_root_dir = os.path.dirname(parent_dir)
12 | lib_dir = os.path.join(pytan_root_dir, 'lib')
13 | path_adds = [lib_dir]
14 |
15 | for aa in path_adds:
16 |     if aa not in sys.path:
17 |         sys.path.append(aa)
18 |
```

```

19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["qtype"] = u'manual'
47 kwargs["sensors_help"] = True
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.PytanHelp
52 import traceback
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 271, in ask_manual
7     raise pytan.exceptions.PytanHelp(pytan.help.help_sensors())
8 PytanHelp:
9 Sensors Help
10 =====
11
12 Supplying sensors controls what columns will be showed when you ask a
13 question.
14
15 A sensor string is a human string that describes, at a minimum, a sensor.
16 It can also optionally define a selector for the sensor, parameters for

```

the sensor, a filter for the sensor, and options for the filter for the sensor. Sensors can be provided as a string or a list of strings.

Examples for basic sensors

Supplying a single sensor:

```
'Computer Name'
```

Supplying two sensors in a list of strings:

```
['Computer Name', 'IP Route Details']
```

Supplying multiple sensors with selectors (name is the default selector if none is supplied):

```
[
    'Computer Name',
    'name:Computer Name',
    'id:1',
    'hash:123456789',
]
```

Sensor Parameters

Supplying parameters to a sensor can control the arguments that are supplied to a sensor, if that sensor takes any arguments.

Sensor parameters must be surrounded with curly braces '{}', and must have a key and value specified that is separated by an equals '='. Multiple parameters must be separated by a comma ','. The key should match up to a valid parameter key for the sensor in question.

If a parameter is supplied and the sensor doesn't have a corresponding key name, it will be ignored. If the sensor has parameters and a parameter is NOT supplied then one of two paths will be taken:

- \* if the parameter does not require a default value, the parameter is left blank and not supplied.
- \* if the parameter does require a value (pull downs, for example), a default value is derived (for pull downs, the first value available as a pull down entry is used).

Examples for sensors with parameters

Supplying a single sensor with a single parameter 'dirname':

```
'Sensor With Params{dirname=Program Files}'
```

Supplying a single sensor with two parameters, 'param1' and 'param2':

```
'Sensor With Params{param1=value1,param2=value2}'
```

## Sensor Filters

Supplying a filter to a sensor controls what data will be shown in those columns (sensors) you've provided.

Sensor filters can be supplied by adding ', that FILTER:VALUE', where FILTER is a valid filter string, and VALUE is the string that you want FILTER to match on.

See filter help for a list of all possible FILTER strings.

See options help for a list of options that can control how the filter works.

### Examples for sensors with filters

Supplying a sensor with a filter that limits the results to only show column data that matches the regular expression '.\*Windows.\*' (Tanium does a case insensitive match by default):

```
'Computer Name, that contains:Windows'
```

Supplying a sensor with a filter that limits the results to only show column data that matches the regular expression 'Microsoft.\*':

```
'Computer Name, that starts with:Microsoft'
```

Supply a sensor with a filter that limits the results to only show column data that has a version greater or equal to '39.0.0.0'. Since this sensor uses Version as its default result type, there is no need to change the value type using filter options.

```
'Installed Application Version' \
'{Application Name=Google Chrome}, that >=:39.0.0.0'
```

## Sensor Options

Supplying options to a sensor can change how the filter for that sensor works.

Sensor options can be supplied by adding ', opt:OPTION' or ', opt:OPTION:VALUE' for those options that require values, where OPTION is a valid option string, and VALUE is the appropriate value required by accordant OPTION.

See options help for a list of options that can control how the filter works.

### Examples for sensors with options

Supplying a sensor with an option that forces tanium to

```
133 re-fetch any cached column data that is older than 1 minute:
134
135     'Computer Name, opt:max_data_age:60'
136
137 Supplying a sensor with filter and an option that causes
138 Tanium to match case for the filter value:
139
140     'Computer Name, that contains:Windows, opt:match_case'
141
142 Supplying a sensor with a filter and an option that causes
143 Tanium to match all values supplied:
144
145     'Computer Name, that contains:Windows, opt:match_all_values'
146
147 Supplying a sensor with a filter and a set of options that
148 causes Tanium to recognize the value type as String (which is
149 the default type for most sensors), re-fetch data older than
150 10 minutes, match any values, and match case:
151
152     'Computer Name', that contains:Windows, ' \
153     opt:value_type:string, opt:max_data_age:600, ' \
154     'opt:match_any_value, opt:match_case'
```

### Invalid ask manual question filter help

Have ask\_manual() return the help for filters

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
```



```

27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["filters_help"] = True
47 kwargs["qtype"] = u'manual'
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.PytanHelp
52 import traceback
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 274, in ask_manual
7     raise pytan.exceptions.PytanHelp(pytan.help.help_filters())
8 PytanHelp:
9 Filters Help
10 =====
11
12 Filters are used generously throughout pytan. When used as part of a
13 sensor string, they control what data is shown for the columns that
14 the sensor returns. When filters are used for whole question filters,
15 they control what rows will be returned. They are used by Groups to
16 define group membership, deploy actions to determine which machines
17 should have the action deployed to it, and more.
18
19 A filter string is a human string that describes, a sensor followed
20 by ', that FILTER:VALUE', where FILTER is a valid filter string,
21 and VALUE is the string that you want FILTER to match on.
22
23 Valid Filters
24 -----

```

```
25
26 '<'
27     Help: Filter for less than VALUE
28     Example: "Sensor1, that <:VALUE"
29
30 'less'
31     Help: Filter for less than VALUE
32     Example: "Sensor1, that less:VALUE"
33
34 'lt'
35     Help: Filter for less than VALUE
36     Example: "Sensor1, that lt:VALUE"
37
38 'less than'
39     Help: Filter for less than VALUE
40     Example: "Sensor1, that less than:VALUE"
41
42 '!<'
43     Help: Filter for not less than VALUE
44     Example: "Sensor1, that !<:VALUE"
45
46 'notless'
47     Help: Filter for not less than VALUE
48     Example: "Sensor1, that notless:VALUE"
49
50 'not less'
51     Help: Filter for not less than VALUE
52     Example: "Sensor1, that not less:VALUE"
53
54 'not less than'
55     Help: Filter for not less than VALUE
56     Example: "Sensor1, that not less than:VALUE"
57
58 '<='
59     Help: Filter for less than or equal to VALUE
60     Example: "Sensor1, that <=:VALUE"
61
62 'less equal'
63     Help: Filter for less than or equal to VALUE
64     Example: "Sensor1, that less equal:VALUE"
65
66 'lessequal'
67     Help: Filter for less than or equal to VALUE
68     Example: "Sensor1, that lessequal:VALUE"
69
70 'le'
71     Help: Filter for less than or equal to VALUE
72     Example: "Sensor1, that le:VALUE"
73
74 '!<='
75     Help: Filter for not less than or equal to VALUE
76     Example: "Sensor1, that !<=:VALUE"
77
78 'not less equal'
79     Help: Filter for not less than or equal to VALUE
80     Example: "Sensor1, that not less equal:VALUE"
81
82 'not lessequal'
```

```

83         Help: Filter for not less than or equal to VALUE
84         Example: "Sensor1, that not lessequal:VALUE"
85
86     '>'
87         Help: Filter for greater than VALUE
88         Example: "Sensor1, that >:VALUE"
89
90     'greater'
91         Help: Filter for greater than VALUE
92         Example: "Sensor1, that greater:VALUE"
93
94     'gt'
95         Help: Filter for greater than VALUE
96         Example: "Sensor1, that gt:VALUE"
97
98     'greater than'
99         Help: Filter for greater than VALUE
100        Example: "Sensor1, that greater than:VALUE"
101
102     '!>'
103         Help: Filter for not greater than VALUE
104         Example: "Sensor1, that !>:VALUE"
105
106     'not greater'
107         Help: Filter for not greater than VALUE
108         Example: "Sensor1, that not greater:VALUE"
109
110     'notgreater'
111         Help: Filter for not greater than VALUE
112         Example: "Sensor1, that notgreater:VALUE"
113
114     'not greater than'
115         Help: Filter for not greater than VALUE
116         Example: "Sensor1, that not greater than:VALUE"
117
118     '=>'
119         Help: Filter for greater than or equal to VALUE
120         Example: "Sensor1, that =>:VALUE"
121
122     'greater equal'
123         Help: Filter for greater than or equal to VALUE
124         Example: "Sensor1, that greater equal:VALUE"
125
126     'greaterequal'
127         Help: Filter for greater than or equal to VALUE
128         Example: "Sensor1, that greaterequal:VALUE"
129
130     'ge'
131         Help: Filter for greater than or equal to VALUE
132         Example: "Sensor1, that ge:VALUE"
133
134     '!>='
135         Help: Filter for not greater than VALUE
136         Example: "Sensor1, that !>=:VALUE"
137
138     'not greater equal'
139         Help: Filter for not greater than VALUE
140         Example: "Sensor1, that not greater equal:VALUE"

```

```
141 'notgreaterequal'
142     Help: Filter for not greater than VALUE
143     Example: "Sensor1, that notgreaterequal:VALUE"
144
145
146 '='
147     Help: Filter for equals to VALUE
148     Example: "Sensor1, that =:VALUE"
149
150 'equal'
151     Help: Filter for equals to VALUE
152     Example: "Sensor1, that equal:VALUE"
153
154 'equals'
155     Help: Filter for equals to VALUE
156     Example: "Sensor1, that equals:VALUE"
157
158 'eq'
159     Help: Filter for equals to VALUE
160     Example: "Sensor1, that eq:VALUE"
161
162 '!='
163     Help: Filter for not equals to VALUE
164     Example: "Sensor1, that !=:VALUE"
165
166 'not equal'
167     Help: Filter for not equals to VALUE
168     Example: "Sensor1, that not equal:VALUE"
169
170 'notequal'
171     Help: Filter for not equals to VALUE
172     Example: "Sensor1, that notequal:VALUE"
173
174 'not equals'
175     Help: Filter for not equals to VALUE
176     Example: "Sensor1, that not equals:VALUE"
177
178 'notequals'
179     Help: Filter for not equals to VALUE
180     Example: "Sensor1, that notequals:VALUE"
181
182 'ne'
183     Help: Filter for not equals to VALUE
184     Example: "Sensor1, that ne:VALUE"
185
186 'contains'
187     Help: Filter for contains VALUE (adds .* before and after VALUE)
188     Example: "Sensor1, that contains:VALUE"
189
190 'does not contain'
191     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
192     Example: "Sensor1, that does not contain:VALUE"
193
194 'doesnotcontain'
195     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
196     Example: "Sensor1, that doesnotcontain:VALUE"
197
198 'not contains'
```

```

199     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
200     Example: "Sensor1, that not contains:VALUE"
201
202     'notcontains'
203     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
204     Example: "Sensor1, that notcontains:VALUE"
205
206     'starts with'
207     Help: Filter for starts with VALUE (adds .* after VALUE)
208     Example: "Sensor1, that starts with:VALUE"
209
210     'startswith'
211     Help: Filter for starts with VALUE (adds .* after VALUE)
212     Example: "Sensor1, that startswith:VALUE"
213
214     'does not start with'
215     Help: Filter for does not start with VALUE (adds .* after VALUE)
216     Example: "Sensor1, that does not start with:VALUE"
217
218     'doesnotstartswith'
219     Help: Filter for does not start with VALUE (adds .* after VALUE)
220     Example: "Sensor1, that doesnotstartswith:VALUE"
221
222     'not starts with'
223     Help: Filter for does not start with VALUE (adds .* after VALUE)
224     Example: "Sensor1, that not starts with:VALUE"
225
226     'notstartswith'
227     Help: Filter for does not start with VALUE (adds .* after VALUE)
228     Example: "Sensor1, that notstartswith:VALUE"
229
230     'ends with'
231     Help: Filter for ends with VALUE (adds .* before VALUE)
232     Example: "Sensor1, that ends with:VALUE"
233
234     'endswith'
235     Help: Filter for ends with VALUE (adds .* before VALUE)
236     Example: "Sensor1, that endswith:VALUE"
237
238     'does not end with'
239     Help: Filter for does bit end with VALUE (adds .* before VALUE)
240     Example: "Sensor1, that does not end with:VALUE"
241
242     'doesnotendwith'
243     Help: Filter for does bit end with VALUE (adds .* before VALUE)
244     Example: "Sensor1, that doesnotendwith:VALUE"
245
246     'not ends with'
247     Help: Filter for does bit end with VALUE (adds .* before VALUE)
248     Example: "Sensor1, that not ends with:VALUE"
249
250     'notstartswith'
251     Help: Filter for does bit end with VALUE (adds .* before VALUE)
252     Example: "Sensor1, that notstartswith:VALUE"
253
254     'is not'
255     Help: Filter for non regular expression match for VALUE
256     Example: "Sensor1, that is not:VALUE"

```

```
257     'not regex'
258         Help: Filter for non regular expression match for VALUE
259         Example: "Sensor1, that not regex:VALUE"
260
261     'notregex'
262         Help: Filter for non regular expression match for VALUE
263         Example: "Sensor1, that notregex:VALUE"
264
265     'not regex match'
266         Help: Filter for non regular expression match for VALUE
267         Example: "Sensor1, that not regex match:VALUE"
268
269     'notregexmatch'
270         Help: Filter for non regular expression match for VALUE
271         Example: "Sensor1, that notregexmatch:VALUE"
272
273     'nre'
274         Help: Filter for non regular expression match for VALUE
275         Example: "Sensor1, that nre:VALUE"
276
277     'is'
278         Help: Filter for regular expression match for VALUE
279         Example: "Sensor1, that is:VALUE"
280
281     'regex'
282         Help: Filter for regular expression match for VALUE
283         Example: "Sensor1, that regex:VALUE"
284
285     'regex match'
286         Help: Filter for regular expression match for VALUE
287         Example: "Sensor1, that regex match:VALUE"
288
289     'regexmatch'
290         Help: Filter for regular expression match for VALUE
291         Example: "Sensor1, that regexmatch:VALUE"
292
293     're'
294         Help: Filter for regular expression match for VALUE
295         Example: "Sensor1, that re:VALUE"
296
```

### Invalid ask manual question option help

Have ask\_manual() return the help for options

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
```

```

9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["options_help"] = True
47 kwargs["qtype"] = u'manual'
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.PytanHelp
52 import traceback
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 277, in ask_manual

```

```
7         raise pytan.exceptions.PytanHelp(pytan.help.help_options())
8 PytanHelp:
9 Options Help
10 =====
11
12 Options are used for controlling how filters act. When options are
13 used as part of a sensor string, they change how the filters
14 supplied as part of that sensor operate. When options are used for
15 whole question options, they change how all of the question filters
16 operate.
17
18 When options are supplied for a sensor string, they must be
19 supplied as ', opt:OPTION' or ', opt:OPTION:VALUE' for options
20 that require a value.
21
22 When options are supplied for question options, they must be
23 supplied as 'OPTION' or 'OPTION:VALUE' for options that require
24 a value.
25
26 Options can be used on 'filter' or 'group', where 'group' pertains
27 to group filters or question filters. All 'filter' options are also
28 applicable to 'group' for question options.
29
30 Valid Options
31 -----
32
33     'ignore_case'
34         Help: Make the filter do a case insensitive match
35         Usable on: filter
36         Example for sensor: "Sensor1, opt:ignore_case"
37         Example for question: "ignore_case"
38
39     'match_case'
40         Help: Make the filter do a case sensitive match
41         Usable on: filter
42         Example for sensor: "Sensor1, opt:match_case"
43         Example for question: "match_case"
44
45     'match_any_value'
46         Help: Make the filter match any value
47         Usable on: filter
48         Example for sensor: "Sensor1, opt:match_any_value"
49         Example for question: "match_any_value"
50
51     'match_all_values'
52         Help: Make the filter match all values
53         Usable on: filter
54         Example for sensor: "Sensor1, opt:match_all_values"
55         Example for question: "match_all_values"
56
57     'max_data_age'
58         Help: Re-fetch cached values older than N seconds
59         Usable on: filter
60         VALUE description and type: seconds, <type 'int'>
61         Example for sensor: "Sensor1, opt:max_data_age:seconds"
62         Example for question: "max_data_age:seconds"
63
64     'value_type'
```



```

65         Help: Make the filter consider the value type as VALUE_TYPE
66         Usable on: filter
67         VALUE description and type: value_type, <type 'str'>
68         Example for sensor: "Sensor1, opt:value_type:value_type"
69         Example for question: "value_type:value_type"
70
71     'and'
72         Help: Use 'and' for all of the filters supplied
73         Usable on: group
74         Example for sensor: "Sensor1, opt:and"
75         Example for question: "and"
76
77     'or'
78         Help: Use 'or' for all of the filters supplied
79         Usable on: group
80         Example for sensor: "Sensor1, opt:or"
81         Example for question: "or"

```

### Invalid ask manual question sensor

Ask a question using a sensor that does not exist

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31

```

```
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Dweedle Dee and Dum'
47 kwargs["qtype"] = u'manual'
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.HandlerError
52 import traceback
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 305, in ask_manual
7     **kwargs
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
9     ret = f(*args, **kwargs)
10  File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1882, in _ask_manual
11    sensor_defs = self._get_sensor_defs(sensor_defs)
12  File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1418, in _get_sensor_defs
13    d['sensor_obj'] = self.get('sensor', **def_search)[0]
14  File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
15    ret = f(*args, **kwargs)
16  File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1250, in get
17    return self._get_multi(obj_map, **kwargs)
18  File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1363, in _get_multi
19    found = self._find(api_obj_multi, **kwargs)
20  File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
21    ret = f(*args, **kwargs)
22  File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1327, in _find
23    raise pytan.exceptions.HandlerError(err(search_str))
24 HandlerError: No results found searching for Sensor, name: u'Dweedle Dee and Dum'!!
```

## Invalid ask manual question filter

Ask a question using an invalid filter.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Computer name, that does not meet:little'
47 kwargs["qtype"] = u'manual'
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.HumanParserError
52 import traceback

```

```
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 297, in ask_manual
7     sensor_defs = pytan.utils.dehumanize_sensors(sensors)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1478, in dehumanize_sensors
9     s, parsed_filter = extract_filter(s)
10   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1846, in extract_filter
11     raise pytan.exceptions.HumanParserError(err(split_filter[1]))
12 HumanParserError: Filter u' does not meet:little' is not a valid filter!
```

### Invalid ask manual question paramater too many

Ask a question that supplies too many parameter blocks ({}).

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
```

```

29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*}{}'
47 kwargs["qtype"] = u'manual'
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.HumanParserError
52 import traceback
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 297, in ask_manual
7     sensor_defs = pytan.utils.dehumanize_sensors(sensors)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1476, in dehumanize_sensors
9     s, parsed_params = extract_params(s)
10    File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1646, in extract_params
11        raise pytan.exceptions.HumanParserError(err(s))
12 HumanParserError: More than one parameter ({} ) passed in u'Folder Name Search with RegEx Match{dirna

```

### Invalid ask manual question option

Ask a question using an invalid option.

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4

```

```
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Operating system, opt:bad'
47 kwargs["qtype"] = u'manual'
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.HumanParserError
52 import traceback
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
```

```

3 File "<string>", line 55, in <module>
4 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 297, in ask_manual
7     sensor_defs = pytan.utils.dehumanize_sensors(sensors)
8 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1477, in dehumanize_sensors
9     s, parsed_options = extract_options(s)
10 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1721, in extract_options
11     parsed_options = map_options(parsed_options, ['filter'])
12 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1751, in map_options
13     raise pytan.exceptions.HumanParserError(err(option))
14 HumanParserError: Option u'bad' is not a valid option!

```

### Invalid ask manual question parameter split

Ask a question with parameters that are missing a splitter (=) to designate the key from value.

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,

```

```
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["sensors"] = u'Computer Name{Dweedle}'
47 kwargs["qtype"] = u'manual'
48
49
50 # call the handler with the ask method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.HumanParserError
52 import traceback
53 try:
54     handler.ask(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 130, in ask
5     result = getattr(self, q_obj_map['handler'])(**kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 297, in ask_manual
7     sensor_defs = pytan.utils.dehumanize_sensors(sensors)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1476, in dehumanize_sensors
9     s, parsed_params = extract_params(s)
10  File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1664, in extract_params
11     raise pytan.exceptions.HumanParserError(err(sp, pytan.constants.PARAM_KEY_SPLIT))
12 HumanParserError: Parameter Dweedle missing key/value seperator (=)
```

## PyTan API Valid Get Object Examples

### Get action by id

Get an action by id

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
```



```

11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'action'
47 kwargs["id"] = 1
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')

```

```
69     out = '\n'.join(out)
70
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.action_list.ActionList'>
4
5 print of response:
6 ActionList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "action",
14     "action_group": {
15         "_type": "group",
16         "id": 0,
17         "name": "Default"
18     },
19     "approver": {
20         "_type": "user",
21         "id": 1,
22         "name": "Jim Olsen"
23     },
24     "comment": "Distribute Tanium Standard Utilities",
25     "creation_time": "2015-08-07T13:22:26",
26     "distribute_seconds": 3200,
27     ..trimmed for brevity..
```

### Get question by id

Get a question by id

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
```

```

15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'question'
47 kwargs["id"] = 1
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

## Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.question_list.QuestionList'>
4
5 print of response:
6 QuestionList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "question",
14     "action_tracking_flag": 0,
15     "context_group": {
16         "_type": "group",
17         "id": 0
18     },
19     "expiration": "2015-08-07T13:31:47",
20     "expire_seconds": 0,
21     "force_computer_id_flag": 1,
22     "hidden_flag": 0,
23     "id": 1,
24     "management_rights_group": {
25         "_type": "group",
26         "id": 0
27     }
28 }
29 ..trimmed for brevity..
```

## Get saved question by names

Get two saved questions by name

## Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
```

```

21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'saved_question'
47 kwargs["name"] = [u'Installed Applications', u'Computer Name']
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.saved_question_list.SavedQuestionList'>

```

```
4
5 print of response:
6 SavedQuestionList, len: 2
7
8 length of response (number of objects returned):
9 2
10
11 print the first object returned in JSON format:
12 {
13     "_type": "saved_question",
14     "action_tracking_flag": 0,
15     "archive_enabled_flag": 0,
16     "archive_owner": {
17         "_type": "user"
18     },
19     "expire_seconds": 600,
20     "hidden_flag": 0,
21     "id": 64,
22     "issue_seconds": 120,
23     "issue_seconds_never_flag": 0,
24     "keep_seconds": 0,
25     "metadata": {
26         "_type": "metadata",
27     ..trimmed for brevity..
```

### Get userrole by id

Get a user role by id.

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
```

```

25
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'userrole'
47 kwargs["id"] = 1
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.user_role_list.UserRoleList'>
4
5 print of response:
6 UserRoleList, len: 1
7

```

```
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "role",
14     "description": "Administrators can perform all functions in the system, including creating other u
15     "id": 1,
16     "name": "Administrator",
17     "permissions": {
18         "_type": "permissions",
19         "permission": [
20             "admin",
21             "sensor_read",
22             "sensor_write",
23             "question_read",
24             "question_write",
25             "action_read",
26             "action_write",
27 ..trimmed for brevity..
```

### Get leader clients

Get all clients that are Leader status

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
```



```

29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'client'
47 kwargs["status"] = u'Leader'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response:  <class 'taniumpy.object_types.system_status_list.SystemStatusList'>
4
5 print of response:
6 SystemStatusList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:

```

```
12 {
13     "_type": "client_status",
14     "cache_row_id": 1,
15     "computer_id": "3741604154",
16     "full_version": "6.0.314.1195",
17     "host_name": "JTANIUM1.localdomain",
18     "ipaddress_client": "172.16.31.128",
19     "ipaddress_server": "172.16.31.128",
20     "last_registration": "2015-08-07T19:45:00",
21     "port_number": 17473,
22     "protocol_version": 314,
23     "public_key_valid": 1,
24     "receive_state": "Previous Only",
25     "send_state": "Backward Only",
26     "status": "Leader"
27     ..trimmed for brevity..
```

## Get setting by name

Get a system setting by name

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
```

```

33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'setting'
47 kwargs["name"] = u'control_address'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.system_setting_list.SystemSettingList'>
4
5 print of response:
6 SystemSettingList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "system_setting",
14     "default_value": "512:17473:127.0.0.1",
15     "hidden_flag": 0,

```

```
16     "id": 58,
17     "name": "control_address",
18     "read_only_flag": 0,
19     "setting_type": "Server",
20     "value": "512:17473:127.0.0.1",
21     "value_type": "Text"
22 }
```

## Get user by name

Get a user by name

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
```

```

42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'user'
47 kwargs["name"] = u'Tanium User'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.user_list.UserList'>
4
5 print of response:
6 UserList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "user",
14     "deleted_flag": 0,
15     "group_id": 0,
16     "id": 2,
17     "last_login": "2015-08-07T19:45:07",
18     "local_admin_flag": 1,
19     "name": "Tanium User",
20     "permissions": {
21         "_type": "permissions",
22         "permission": [
23             "admin",
24             "sensor_read",

```

```
25     "sensor_write",
26     "question_read",
27     ..trimmed for brevity..
```

## Get sensor by id

Get a sensor by id

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
```

```

46 kwargs["objtype"] = u'sensor'
47 kwargs["id"] = 1
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.sensor_list.SensorList'>
4
5 print of response:
6 SensorList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "sensor",
14     "category": "Reserved",
15     "description": "The recorded state of each action a client has taken recently in the form of id:st
16     "exclude_from_parse_flag": 1,
17     "hash": 1792443391,
18     "hidden_flag": 0,
19     "id": 1,
20     "ignore_case_flag": 1,
21     "max_age_seconds": 3600,
22     "name": "Action Statuses",
23     "queries": {
24         "_type": "queries",
25         "query": [
26             {
27 ..trimmed for brevity..

```

## Get sensor by mixed

Get multiple sensors by id, name, and hash

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'sensor'
47 kwargs["hash"] = [u'322086833']
48 kwargs["name"] = [u'Computer Name']
49 kwargs["id"] = [1, 2]
50
51 # call the handler with the get method, passing in kwargs for arguments
52 response = handler.get(**kwargs)
```



```

53
54 print ""
55 print "Type of response: ", type(response)
56
57 print ""
58 print "print of response:"
59 print response
60
61 print ""
62 print "length of response (number of objects returned): "
63 print len(response)
64
65 print ""
66 print "print the first object returned in JSON format:"
67 out = response.to_json(response[0])
68 if len(out.splitlines()) > 15:
69     out = out.splitlines()[0:15]
70     out.append('..trimmed for brevity..')
71     out = '\n'.join(out)
72
73 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.sensor_list.SensorList'>
4
5 print of response:
6 SensorList, len: 4
7
8 length of response (number of objects returned):
9 4
10
11 print the first object returned in JSON format:
12 {
13     "_type": "sensor",
14     "category": "Reserved",
15     "description": "The recorded state of each download a client has made recently in the form of hash
16     "exclude_from_parse_flag": 0,
17     "hash": 322086833,
18     "hidden_flag": 0,
19     "id": 4,
20     "ignore_case_flag": 1,
21     "max_age_seconds": 900,
22     "name": "Download Statuses",
23     "queries": {
24         "_type": "queries",
25         "query": [
26             {
27                 ..trimmed for brevity..

```

### Get whitelisted url by id

Get a whitelisted url by id

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'whitelisted_url'
47 kwargs["id"] = 1
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
```

```

58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.white_listed_url_list.WhiteListedUrlList'>
4
5 print of response:
6 WhiteListedUrlList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "white_listed_url",
14     "download_seconds": 86400,
15     "id": 1,
16     "url_regex": "test1"
17 }

```

### Get group by name

Get a group by name

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]

```

```
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'group'
47 kwargs["name"] = u'All Computers'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
```

```
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.group_list.GroupList'>
4
5 print of response:
6 GroupList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "group",
14     "and_flag": 0,
15     "deleted_flag": 0,
16     "filters": {
17         "_type": "filters",
18         "filter": []
19     },
20     "id": 64,
21     "name": "All Computers",
22     "not_flag": 0,
23     "sub_groups": {
24         "_type": "groups",
25         "group": []
26     },
27     ..trimmed for brevity..
```

### Get sensor by hash

Get a sensor by hash

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
```

```
17         sys.path.append(aa)
18
19
20     # connection info for Tanium Server
21     USERNAME = "Tanium User"
22     PASSWORD = "T@n!um"
23     HOST = "172.16.31.128"
24     PORT = "443"
25
26     # Logging conrols
27     LOGLEVEL = 2
28     DEBUGFORMAT = False
29
30     import tempfile
31
32     import pytan
33     handler = pytan.Handler(
34         username=USERNAME,
35         password=PASSWORD,
36         host=HOST,
37         port=PORT,
38         loglevel=LOGLEVEL,
39         debugformat=DEBUGFORMAT,
40     )
41
42     print handler
43
44     # setup the arguments for the handler method
45     kwargs = {}
46     kwargs["objtype"] = u'sensor'
47     kwargs["hash"] = u'322086833'
48
49     # call the handler with the get method, passing in kwargs for arguments
50     response = handler.get(**kwargs)
51
52     print ""
53     print "Type of response: ", type(response)
54
55     print ""
56     print "print of response:"
57     print response
58
59     print ""
60     print "length of response (number of objects returned): "
61     print len(response)
62
63     print ""
64     print "print the first object returned in JSON format:"
65     out = response.to_json(response[0])
66     if len(out.splitlines()) > 15:
67         out = out.splitlines()[0:15]
68         out.append('..trimmed for brevity..')
69         out = '\n'.join(out)
70
71     print out
```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.sensor_list.SensorList'>
4
5 print of response:
6 SensorList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "sensor",
14     "category": "Reserved",
15     "description": "The recorded state of each download a client has made recently in the form of hash",
16     "exclude_from_parse_flag": 0,
17     "hash": 322086833,
18     "hidden_flag": 0,
19     "id": 4,
20     "ignore_case_flag": 1,
21     "max_age_seconds": 900,
22     "name": "Download Statuses",
23     "queries": {
24         "_type": "queries",
25         "query": [
26             {
27                 ..trimmed for brevity..

```

## Get package by name

Get a package by name

## Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"

```

```
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'package'
47 kwargs["name"] = u'Distribute Tanium Standard Utilities'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response:  <class 'taniumpy.object_types.package_spec_list.PackageSpecList'>
4
```



```

5 print of response:
6 PackageSpecList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "package_spec",
14     "available_time": "2015-08-07T13:23:22",
15     "command": "cmd /c cscript install-standard-utils.vbs \"Tools\\StdUtils\\\"",
16     "command_timeout": 2700,
17     "creation_time": "2015-08-07T13:22:19",
18     "deleted_flag": 0,
19     "display_name": "Distribute Tanium Standard Utilities",
20     "expire_seconds": 3300,
21     "files": {
22         "_type": "package_files",
23         "file": [
24             {
25                 "_type": "file",
26                 "bytes_downloaded": 0,
27                 ..trimmed for brevity..

```

### Get sensor by names

Get multiple sensors by name

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25

```

```
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'sensor'
47 kwargs["name"] = [u'Computer Name', u'Action Statuses']
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.sensor_list.SensorList'>
4
5 print of response:
6 SensorList, len: 2
7
8 length of response (number of objects returned):
```

```

9 | 2
10 |
11 | print the first object returned in JSON format:
12 | {
13 |     "_type": "sensor",
14 |     "category": "Reserved",
15 |     "description": "The assigned name of the client machine.\nExample: workstation-1.company.com",
16 |     "exclude_from_parse_flag": 0,
17 |     "hash": 3409330187,
18 |     "hidden_flag": 0,
19 |     "id": 3,
20 |     "ignore_case_flag": 1,
21 |     "max_age_seconds": 86400,
22 |     "name": "Computer Name",
23 |     "queries": {
24 |         "_type": "queries",
25 |         "query": [
26 |             {
27 | ..trimmed for brevity..

```

### Get saved question by name

Get saved question by name

### Example Python Code

```

1 | import os
2 | import sys
3 | sys.dont_write_bytecode = True
4 |
5 | # Determine our script name, script dir
6 | my_file = os.path.abspath(sys.argv[0])
7 | my_dir = os.path.dirname(my_file)
8 |
9 | # determine the pytan lib dir and add it to the path
10 | parent_dir = os.path.dirname(my_dir)
11 | pytan_root_dir = os.path.dirname(parent_dir)
12 | lib_dir = os.path.join(pytan_root_dir, 'lib')
13 | path_adds = [lib_dir]
14 |
15 | for aa in path_adds:
16 |     if aa not in sys.path:
17 |         sys.path.append(aa)
18 |
19 |
20 | # connection info for Tanium Server
21 | USERNAME = "Tanium User"
22 | PASSWORD = "T@n!um"
23 | HOST = "172.16.31.128"
24 | PORT = "443"
25 |
26 | # Logging conrols
27 | LOGLEVEL = 2
28 | DEBUGFORMAT = False
29 |

```

```
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'saved_question'
47 kwargs["name"] = u'Installed Applications'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.saved_question_list.SavedQuestionList'>
4
5 print of response:
6 SavedQuestionList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
```

```

13  "_type": "saved_question",
14  "action_tracking_flag": 0,
15  "archive_enabled_flag": 0,
16  "archive_owner": {
17      "_type": "user"
18  },
19  "expire_seconds": 600,
20  "hidden_flag": 0,
21  "id": 64,
22  "issue_seconds": 120,
23  "issue_seconds_never_flag": 0,
24  "keep_seconds": 0,
25  "metadata": {
26      "_type": "metadata",
27  ..trimmed for brevity..

```

### Get user by id

Get a user by id

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(

```

```
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'user'
47 kwargs["id"] = 1
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.user_list.UserList'>
4
5 print of response:
6 UserList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "user",
14     "deleted_flag": 0,
15     "group_id": 0,
16     "id": 1,
```

```

17 "last_login": "2015-08-07T13:21:59",
18 "local_admin_flag": -1,
19 "name": "Jim Olsen",
20 "permissions": {
21     "_type": "permissions",
22     "permission": [
23         "admin",
24         "sensor_read",
25         "sensor_write",
26         "question_read",
27 ..trimmed for brevity..

```

## Get sensor by name

Get a sensor by name

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,

```

```
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'sensor'
47 kwargs["name"] = u'Computer Name'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.sensor_list.SensorList'>
4
5 print of response:
6 SensorList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "sensor",
14     "category": "Reserved",
15     "description": "The assigned name of the client machine.\nExample: workstation-1.company.com",
16     "exclude_from_parse_flag": 0,
17     "hash": 3409330187,
18     "hidden_flag": 0,
19     "id": 3,
20     "ignore_case_flag": 1,
```



```

21     "max_age_seconds": 86400,
22     "name": "Computer Name",
23     "queries": {
24         "_type": "queries",
25         "query": [
26             {
27                 ..trimmed for brevity..

```

## Get saved action by name

Get a saved action by name

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41

```

```
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'saved_action'
47 kwargs["name"] = u'Distribute Tanium Standard Utilities'
48
49 # call the handler with the get method, passing in kwargs for arguments
50 response = handler.get(**kwargs)
51
52 print ""
53 print "Type of response: ", type(response)
54
55 print ""
56 print "print of response:"
57 print response
58
59 print ""
60 print "length of response (number of objects returned): "
61 print len(response)
62
63 print ""
64 print "print the first object returned in JSON format:"
65 out = response.to_json(response[0])
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.saved_action_list.SavedActionList'>
4
5 print of response:
6 SavedActionList, len: 1
7
8 length of response (number of objects returned):
9 1
10
11 print the first object returned in JSON format:
12 {
13     "_type": "saved_action",
14     "action_group_id": 0,
15     "approved_flag": 1,
16     "approver": {
17         "_type": "user",
18         "id": 1
19     },
20     "comment": "Distribute Tanium Standard Utilities",
21     "creation_time": "2015-08-07T13:22:26",
22     "distribute_seconds": 3200,
23     "end_time": "Never",
24     "expire_seconds": 3300,
```

```

25     "id": 1,
26     "issue_count": 0,
27     ..trimmed for brevity..

```

## Get all users

Get all users

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}

```

```
46 kwargs["objtype"] = u'user'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.user_list.UserList'>
4
5 print of response:
6 UserList, len: 6
7
8 length of response (number of objects returned):
9 6
10
11 print the first object returned in JSON format:
12 {
13     "_type": "user",
14     "deleted_flag": 0,
15     "group_id": 0,
16     "id": 1,
17     "last_login": "2015-08-07T13:21:59",
18     "local_admin_flag": -1,
19     "name": "Jim Olsen",
20     "permissions": {
21         "_type": "permissions",
22         "permission": [
23             "admin",
24             "sensor_read",
25             "sensor_write",
26             "question_read",
27             ..trimmed for brevity..
```

## Get all saved actions

Get all saved actions

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'saved_action'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)

```

```
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.saved_action_list.SavedActionList'>
4
5 print of response:
6 SavedActionList, len: 4
7
8 length of response (number of objects returned):
9 4
10
11 print the first object returned in JSON format:
12 {
13     "_type": "saved_action",
14     "action_group_id": 0,
15     "approved_flag": 1,
16     "approver": {
17         "_type": "user",
18         "id": 1
19     },
20     "cache_row_id": 0,
21     "comment": "Distribute Tanium Standard Utilities",
22     "creation_time": "2015-08-07T13:22:26",
23     "distribute_seconds": 3200,
24     "end_time": "Never",
25     "expire_seconds": 3300,
26     "id": 1,
27     ..trimmed for brevity..
```

### Get all settings

Get all system settings

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'setting'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""

```

```
59 print "length of response (number of objects returned): "  
60 print len(response)  
61  
62 print ""  
63 print "print the first object returned in JSON format:"  
64 out = response.to_json(response[0])  
65 if len(out.splitlines()) > 15:  
66     out = out.splitlines()[0:15]  
67     out.append('..trimmed for brevity..')  
68     out = '\n'.join(out)  
69  
70 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!  
2  
3 Type of response: <class 'taniumpy.object_types.system_setting_list.SystemSettingList'>  
4  
5 print of response:  
6 SystemSettingList, len: 91  
7  
8 length of response (number of objects returned):  
9 91  
10  
11 print the first object returned in JSON format:  
12 {  
13     "_type": "system_setting",  
14     "audit_data": {  
15         "_type": "audit_data",  
16         "creation_time": "2015-08-07T13:22:35",  
17         "last_modified_by": "Jim Olsen",  
18         "modification_time": "2015-08-07T13:22:35"  
19     },  
20     "cache_row_id": 0,  
21     "default_value": "0",  
22     "hidden_flag": 0,  
23     "id": 1,  
24     "name": "load_initial_content",  
25     "read_only_flag": 0,  
26     "setting_type": "Server",  
27     ..trimmed for brevity..
```

### Get all saved questions

Get all saved questions

### Example Python Code

```
1 import os  
2 import sys  
3 sys.dont_write_bytecode = True  
4  
5 # Determine our script name, script dir
```



```

6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'saved_question'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"

```

```
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.saved_question_list.SavedQuestionList'>
4
5 print of response:
6 SavedQuestionList, len: 107
7
8 length of response (number of objects returned):
9 107
10
11 print the first object returned in JSON format:
12 {
13     "_type": "saved_question",
14     "action_tracking_flag": 0,
15     "archive_enabled_flag": 0,
16     "archive_owner": {
17         "_type": "user"
18     },
19     "cache_row_id": 0,
20     "expire_seconds": 600,
21     "hidden_flag": 0,
22     "id": 1,
23     "issue_seconds": 120,
24     "issue_seconds_never_flag": 0,
25     "keep_seconds": 0,
26     "mod_time": "2015-08-07T13:22:22",
27     ..trimmed for brevity..
```

### Get all userroles

Get all user roles

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
```

```

11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'userrole'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68 out = '\n'.join(out)

```

```
print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.user_role_list.UserRoleList'>
4
5 print of response:
6 UserRoleList, len: 9
7
8 length of response (number of objects returned):
9 9
10
11 print the first object returned in JSON format:
12 {
13     "_type": "role",
14     "description": "Administrators can perform all functions in the system, including creating other u
15     "id": 1,
16     "name": "Administrator",
17     "permissions": {
18         "_type": "permissions",
19         "permission": [
20             "admin",
21             "sensor_read",
22             "sensor_write",
23             "question_read",
24             "question_write",
25             "action_read",
26             "action_write",
27     ..trimmed for brevity..
```

### Get all questions

Get all questions

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
```

```

16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20     # connection info for Tanium Server
21     USERNAME = "Tanium User"
22     PASSWORD = "T@n!um"
23     HOST = "172.16.31.128"
24     PORT = "443"
25
26     # Logging conrols
27     LOGLEVEL = 2
28     DEBUGFORMAT = False
29
30     import tempfile
31
32     import pytan
33     handler = pytan.Handler(
34         username=USERNAME,
35         password=PASSWORD,
36         host=HOST,
37         port=PORT,
38         loglevel=LOGLEVEL,
39         debugformat=DEBUGFORMAT,
40     )
41
42     print handler
43
44     # setup the arguments for the handler method
45     kwargs = {}
46     kwargs["objtype"] = u'question'
47
48     # call the handler with the get_all method, passing in kwargs for arguments
49     response = handler.get_all(**kwargs)
50
51     print ""
52     print "Type of response: ", type(response)
53
54     print ""
55     print "print of response:"
56     print response
57
58     print ""
59     print "length of response (number of objects returned): "
60     print len(response)
61
62     print ""
63     print "print the first object returned in JSON format:"
64     out = response.to_json(response[0])
65     if len(out.splitlines()) > 15:
66         out = out.splitlines()[0:15]
67         out.append('..trimmed for brevity..')
68         out = '\n'.join(out)
69
70     print out

```

## Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.question_list.QuestionList'>
4
5 print of response:
6 QuestionList, len: 174
7
8 length of response (number of objects returned):
9 174
10
11 print the first object returned in JSON format:
12 {
13     "_type": "question",
14     "action_tracking_flag": 0,
15     "cache_row_id": 1,
16     "context_group": {
17         "_type": "group",
18         "id": 0
19     },
20     "expiration": "2015-08-07T13:32:29",
21     "expire_seconds": 600,
22     "hidden_flag": 0,
23     "id": 104,
24     "management_rights_group": {
25         "_type": "group",
26         "id": 0
27     }
28 }
29 ..trimmed for brevity..
```

## Get all groups

Get all groups

## Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
```

```

22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'group'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.group_list.GroupList'>
4
5 print of response:

```

```
6  GroupList, len: 2
7
8  length of response (number of objects returned):
9  2
10
11 print the first object returned in JSON format:
12 {
13     "_type": "group",
14     "and_flag": 0,
15     "deleted_flag": 0,
16     "filters": {
17         "_type": "filters",
18         "filter": []
19     },
20     "id": 64,
21     "name": "All Computers",
22     "not_flag": 0,
23     "sub_groups": {
24         "_type": "groups",
25         "group": []
26     },
27     ..trimmed for brevity..
```

## Get all sensors

Get all sensors

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
```



```

27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'sensor'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response:  <class 'taniumpy.object_types.sensor_list.SensorList'>
4
5 print of response:
6 SensorList, len: 419
7
8 length of response (number of objects returned):
9 419
10

```

```
11 print the first object returned in JSON format:
12 {
13     "_type": "sensor",
14     "cache_row_id": 0,
15     "category": "Reserved",
16     "description": "The recorded state of each action a client has taken recently in the form of id:st
17     "exclude_from_parse_flag": 1,
18     "hash": 1792443391,
19     "hidden_flag": 0,
20     "id": 1,
21     "ignore_case_flag": 1,
22     "max_age_seconds": 3600,
23     "name": "Action Statuses",
24     "queries": {
25         "_type": "queries",
26         "query": [
27 ..trimmed for brevity..
```

## Get all whitelisted urls

Get all whitelisted urls

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
```

```

32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'whitelisted_url'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.white_listed_url_list.WhiteListedUrlList'>
4
5 print of response:
6 WhiteListedUrlList, len: 46
7
8 length of response (number of objects returned):
9 46
10
11 print the first object returned in JSON format:
12 {
13     "_type": "white_listed_url",
14     "download_seconds": 86400,
15     "id": 1,

```

```
16 | "url_regex": "test1"
17 | }
```

## Get all clients

Get all clients

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'client'
```

```

47 # call the handler with the get_all method, passing in kwargs for arguments
48 response = handler.get_all(**kwargs)
49
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.system_status_list.SystemStatusList'>
4
5 print of response:
6 SystemStatusList, len: 2
7
8 length of response (number of objects returned):
9 2
10
11 print the first object returned in JSON format:
12 {
13     "_type": "client_status",
14     "cache_row_id": 0,
15     "computer_id": "3888017885",
16     "full_version": "5.1.314.7724",
17     "host_name": "Casus-Belli.local",
18     "ipaddress_client": "172.16.31.1",
19     "ipaddress_server": "172.16.31.1",
20     "last_registration": "2015-08-07T19:44:58",
21     "port_number": 17472,
22     "protocol_version": 314,
23     "public_key_valid": 1,
24     "send_state": "Forward Only",
25     "status": "Leader, Slow Link Behind"
26 }

```

## Get all packages

Get all packages

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'package'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
```

```

53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.package_spec_list.PackageSpecList'>
4
5 print of response:
6 PackageSpecList, len: 72
7
8 length of response (number of objects returned):
9 72
10
11 print the first object returned in JSON format:
12 {
13     "_type": "package_spec",
14     "available_time": "2015-08-07T13:22:50",
15     "cache_row_id": 0,
16     "command": "cmd /c cscript //T:900 java-installer.vbs /KillAppsUsingJava:Yes /RebootIfNeeded:Yes /
17     "command_timeout": 900,
18     "creation_time": "2015-08-07T13:22:16",
19     "deleted_flag": 0,
20     "display_name": "Update Java 64-bit - Kill / Reboot",
21     "expire_seconds": 1500,
22     "files": {
23         "_type": "package_files",
24         "file": [
25             {
26                 "_type": "file",
27                 ..trimmed for brevity..

```

### Get all actions

Get all actions

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'action'
47
48 # call the handler with the get_all method, passing in kwargs for arguments
49 response = handler.get_all(**kwargs)
50
51 print ""
52 print "Type of response: ", type(response)
53
54 print ""
55 print "print of response:"
56 print response
57
58 print ""
```



```

59 print "length of response (number of objects returned): "
60 print len(response)
61
62 print ""
63 print "print the first object returned in JSON format:"
64 out = response.to_json(response[0])
65 if len(out.splitlines()) > 15:
66     out = out.splitlines()[0:15]
67     out.append('..trimmed for brevity..')
68     out = '\n'.join(out)
69
70 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 Type of response: <class 'taniumpy.object_types.action_list.ActionList'>
4
5 print of response:
6 ActionList, len: 38
7
8 length of response (number of objects returned):
9 38
10
11 print the first object returned in JSON format:
12 {
13     "_type": "action",
14     "action_group": {
15         "_type": "group",
16         "id": 0,
17         "name": "Default"
18     },
19     "approver": {
20         "_type": "user",
21         "id": 2,
22         "name": "Tanium User"
23     },
24     "cache_row_id": 0,
25     "comment": "Distribute Tanium Standard Utilities",
26     "creation_time": "2015-08-07T13:26:19",
27     ..trimmed for brevity..

```

## PyTan API Invalid Get Object Examples

### Invalid get action single by name

Get an action by name (name is not a supported selector for action)

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True

```

```
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'action'
47 kwargs["name"] = u'Distribute Tanium Standard Utilities'
48
49
50 # call the handler with the get method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.HandlerError
52 import traceback
53 try:
54     handler.get(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1245, in get
7     raise pytan.exceptions.HandlerError(err(objtype, api_attrs))
8 HandlerError: Getting a action requires at least one filter: ['id']

```

### Invalid get question by name

Get a question by name (name is not a supported selector for question)

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )

```

```
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["objtype"] = u'question'
47 kwargs["name"] = u'dweedle'
48
49
50 # call the handler with the get method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.HandlerError
52 import traceback
53 try:
54     handler.get(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1245, in get
7     raise pytan.exceptions.HandlerError(err(objtype, api_attrs))
8 HandlerError: Getting a question requires at least one filter: ['id']
```

## PyTan API Valid Deploy Action Examples

### Deploy action simple

Deploy an action against all computers using human strings.

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
```

```

19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["run"] = True
47 kwargs["package"] = u'Distribute Tanium Standard Utilities'
48
49 # call the handler with the deploy_action method, passing in kwargs for arguments
50 response = handler.deploy_action(**kwargs)
51 import pprint, io
52
53 print ""
54 print "Type of response: ", type(response)
55
56 print ""
57 print "Pretty print of response:"
58 print pprint.pformat(response)
59
60 print ""
61 print "Print of action object: "
62 print response['action_object']
63
64 # create an IO stream to store CSV results to
65 out = io.BytesIO()
66
67 # if results were returned (i.e. get_results=True was one of the kwargs passed in):
68 if response['action_results']:
69     # call the write_csv() method to convert response to CSV and store it in out
70     response['action_results'].write_csv(out, response['action_results'])
71
72     print ""
73     print "CSV Results of response: "
74     print out.getvalue()

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:45:08,345 DEBUG pytan.handler.ActionPoller: ID 56: id resolved to 56
3 2015-08-07 19:45:08,345 DEBUG pytan.handler.ActionPoller: ID 56: package_spec resolved to Package
4 2015-08-07 19:45:08,353 DEBUG pytan.handler.ActionPoller: ID 56: target_group resolved to Group,
5 2015-08-07 19:45:08,353 DEBUG pytan.handler.ActionPoller: ID 56: Result Map resolved to {'failed':
6 2015-08-07 19:45:08,353 DEBUG pytan.handler.ActionPoller: ID 56: expiration_time resolved to 2015-
7 2015-08-07 19:45:08,353 DEBUG pytan.handler.ActionPoller: ID 56: status resolved to Open
8 2015-08-07 19:45:08,353 DEBUG pytan.handler.ActionPoller: ID 56: stopped_flag resolved to 0
9 2015-08-07 19:45:08,353 DEBUG pytan.handler.ActionPoller: ID 56: Object Info resolved to ID 56: P
10 2015-08-07 19:45:08,353 DEBUG pytan.handler.ActionPoller: ID 56: Adding Question to derive passed
11 2015-08-07 19:45:08,365 DEBUG pytan.handler.QuestionPoller: ID 1299: id resolved to 1299
12 2015-08-07 19:45:08,365 DEBUG pytan.handler.QuestionPoller: ID 1299: expiration resolved to 2015-
13 2015-08-07 19:45:08,365 DEBUG pytan.handler.QuestionPoller: ID 1299: query_text resolved to Get m
14 2015-08-07 19:45:08,365 DEBUG pytan.handler.QuestionPoller: ID 1299: id resolved to 1299
15 2015-08-07 19:45:08,365 DEBUG pytan.handler.QuestionPoller: ID 1299: Object Info resolved to Ques
16 2015-08-07 19:45:08,368 DEBUG pytan.handler.QuestionPoller: ID 1299: Progress: Tested: 0, Passed:
17 2015-08-07 19:45:08,368 DEBUG pytan.handler.QuestionPoller: ID 1299: Timing: Started: 2015-08-07
18 2015-08-07 19:45:08,368 INFO pytan.handler.QuestionPoller: ID 1299: Progress Changed 0% (0 of 2)
19 2015-08-07 19:45:13,372 DEBUG pytan.handler.QuestionPoller: ID 1299: Progress: Tested: 1, Passed:
20 2015-08-07 19:45:13,372 DEBUG pytan.handler.QuestionPoller: ID 1299: Timing: Started: 2015-08-07
21 2015-08-07 19:45:13,372 INFO pytan.handler.QuestionPoller: ID 1299: Progress Changed 50% (1 of 2)
22 2015-08-07 19:45:18,379 DEBUG pytan.handler.QuestionPoller: ID 1299: Progress: Tested: 2, Passed:
23 2015-08-07 19:45:18,379 DEBUG pytan.handler.QuestionPoller: ID 1299: Timing: Started: 2015-08-07
24 2015-08-07 19:45:18,380 INFO pytan.handler.QuestionPoller: ID 1299: Progress Changed 100% (2 of
25 2015-08-07 19:45:18,380 INFO pytan.handler.QuestionPoller: ID 1299: Reached Threshold of 99% (2
26 2015-08-07 19:45:18,380 DEBUG pytan.handler.ActionPoller: ID 56: Passed Count resolved to 2
27 2015-08-07 19:45:18,390 DEBUG pytan.handler.ActionPoller: ID 56: Progress: Seen Action: 0, Expect
28 2015-08-07 19:45:18,390 DEBUG pytan.handler.ActionPoller: ID 56: Timing: Started: 2015-08-07 19:4
29 2015-08-07 19:45:18,390 INFO pytan.handler.ActionPoller: ID 56: Progress Changed for Seen Count
30 2015-08-07 19:45:18,397 DEBUG pytan.handler.ActionPoller: ID 56: stopped_flag resolved to 0
31 2015-08-07 19:45:18,397 DEBUG pytan.handler.ActionPoller: ID 56: status resolved to Open
32 2015-08-07 19:45:23,411 DEBUG pytan.handler.ActionPoller: ID 56: Progress: Seen Action: 1, Expect
33 2015-08-07 19:45:23,411 DEBUG pytan.handler.ActionPoller: ID 56: Timing: Started: 2015-08-07 19:4
34 2015-08-07 19:45:23,411 INFO pytan.handler.ActionPoller: ID 56: Progress Changed for Seen Count
35 2015-08-07 19:45:23,417 DEBUG pytan.handler.ActionPoller: ID 56: stopped_flag resolved to 0
36 2015-08-07 19:45:23,417 DEBUG pytan.handler.ActionPoller: ID 56: status resolved to Open
37 2015-08-07 19:45:28,427 DEBUG pytan.handler.ActionPoller: ID 56: Progress: Seen Action: 2, Expect
38 2015-08-07 19:45:28,427 DEBUG pytan.handler.ActionPoller: ID 56: Timing: Started: 2015-08-07 19:4
39 2015-08-07 19:45:28,427 INFO pytan.handler.ActionPoller: ID 56: Progress Changed for Seen Count
40 2015-08-07 19:45:28,433 DEBUG pytan.handler.ActionPoller: ID 56: stopped_flag resolved to 0
41 2015-08-07 19:45:28,433 DEBUG pytan.handler.ActionPoller: ID 56: status resolved to Open
42 2015-08-07 19:45:28,433 INFO pytan.handler.ActionPoller: ID 56: Reached Threshold for Seen Count
43 2015-08-07 19:45:28,443 DEBUG pytan.handler.ActionPoller: ID 56: failed: 0, finished: 2, running:
44 2015-08-07 19:45:28,443 DEBUG pytan.handler.ActionPoller: ID 56: Timing: Started: 2015-08-07 19:4
45 2015-08-07 19:45:28,443 INFO pytan.handler.ActionPoller: ID 56: Progress Changed for Finished Co
46 2015-08-07 19:45:28,448 DEBUG pytan.handler.ActionPoller: ID 56: stopped_flag resolved to 0
47 2015-08-07 19:45:28,448 DEBUG pytan.handler.ActionPoller: ID 56: status resolved to Open
48 2015-08-07 19:45:28,448 INFO pytan.handler.ActionPoller: ID 56: Reached Threshold for Finished Co
49
50 Type of response: <type 'dict'>
51
52 Pretty print of response:
53 {'action_info': <taniumpy.object_types.result_info.ResultInfo object at 0x10c063810>,
54  'action_object': <taniumpy.object_types.action.Action object at 0x10c063a50>,
55  'action_result_map': {'failed': ['56:Expired.': []],
56                           '56:Failed.': [],
57                           '56:NotSucceeded.': []],

```

```

58         '56:Stopped.': [],
59         'total': 0},
60     'finished': {'56:Completed.': ['Casus-Belli.local',
61                                   'JTANIUM1.localdomain'],
62                 '56:Expired.': [],
63                 '56:Failed.': [],
64                 '56:NotSucceeded.': [],
65                 '56:Stopped.': [],
66                 '56:Succeeded.': [],
67                 '56:Verified.': [],
68                 'total': 2},
69     'running': {'56:Copying.': [],
70                 '56:Downloading.': [],
71                 '56:PendingVerification.': [],
72                 '56:Running.': [],
73                 '56:Waiting.': [],
74                 'total': 0},
75     'success': {'56:Completed.': ['Casus-Belli.local',
76                                   'JTANIUM1.localdomain'],
77                 '56:Verified.': [],
78                 'total': 2},
79     'unknown': {'total': 0}},
80     'action_results': <taniumpy.object_types.result_set.ResultSet object at 0x11acb14d0>,
81     'group_object': None,
82     'package_object': <taniumpy.object_types.package_spec.PackageSpec object at 0x10c03d0d0>,
83     'poller_object': <pytan.pollers.ActionPoller object at 0x10c063b10>,
84     'poller_success': True,
85     'saved_action_object': <taniumpy.object_types.saved_action.SavedAction object at 0x10bf69750>}
86
87 Print of action object:
88 Action, name: 'API Deploy Distribute Tanium Standard Utilities', id: 56
89
90 CSV Results of response:
91 Action Statuses,Computer Name
92 56:Completed.,Casus-Belli.local
93 56:Completed.,JTANIUM1.localdomain

```

### Deploy action simple without results

Deploy an action against all computers using human strings, but do not get the completed results of the job – return right away with the deploy action object.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)

```

```
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["get_results"] = False
47 kwargs["run"] = True
48 kwargs["package"] = u'Distribute Tanium Standard Utilities'
49
50 # call the handler with the deploy_action method, passing in kwargs for arguments
51 response = handler.deploy_action(**kwargs)
52 import pprint, io
53
54 print ""
55 print "Type of response: ", type(response)
56
57 print ""
58 print "Pretty print of response:"
59 print pprint.pformat(response)
60
61 print ""
62 print "Print of action object: "
63 print response['action_object']
64
65 # create an IO stream to store CSV results to
66 out = io.BytesIO()
67
68 # if results were returned (i.e. get_results=True was one of the kwargs passed in):
69 if response['action_results']:
```



```

70     # call the write_csv() method to convert response to CSV and store it in out
71     response['action_results'].write_csv(out, response['action_results'])
72
73     print ""
74     print "CSV Results of response: "
75     print out.getvalue()

```

### Output from Python Code

```

1  Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2  2015-08-07 19:45:28,497 DEBUG      pytan.handler.ActionPoller: ID 57: id resolved to 57
3  2015-08-07 19:45:28,497 DEBUG      pytan.handler.ActionPoller: ID 57: package_spec resolved to Package
4  2015-08-07 19:45:28,503 DEBUG      pytan.handler.ActionPoller: ID 57: target_group resolved to Group,
5  2015-08-07 19:45:28,504 DEBUG      pytan.handler.ActionPoller: ID 57: Result Map resolved to {'failed'
6  2015-08-07 19:45:28,504 DEBUG      pytan.handler.ActionPoller: ID 57: expiration_time resolved to 2015
7  2015-08-07 19:45:28,504 DEBUG      pytan.handler.ActionPoller: ID 57: status resolved to Open
8  2015-08-07 19:45:28,504 DEBUG      pytan.handler.ActionPoller: ID 57: stopped_flag resolved to 0
9  2015-08-07 19:45:28,504 DEBUG      pytan.handler.ActionPoller: ID 57: Object Info resolved to ID 57: P
10
11  Type of response:  <type 'dict'>
12
13  Pretty print of response:
14  {'action_info': <taniumpy.object_types.result_info.ResultInfo object at 0x10be950d0>,
15   'action_object': <taniumpy.object_types.action.Action object at 0x10bf70fd0>,
16   'action_result_map': None,
17   'action_results': None,
18   'group_object': None,
19   'package_object': <taniumpy.object_types.package_spec.PackageSpec object at 0x11aae6050>,
20   'poller_object': <pytan.pollers.ActionPoller object at 0x11aae6090>,
21   'poller_success': None,
22   'saved_action_object': <taniumpy.object_types.saved_action.SavedAction object at 0x10c063a50>}
23
24  Print of action object:
25  Action, name: 'API Deploy Distribute Tanium Standard Utilities', id: 57

```

### Deploy action simple against windows computers

Deploy an action against only windows computers using human strings. This requires passing in an action filter

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]

```

```
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["run"] = True
47 kwargs["action_filters"] = u'Operating System, that contains:Windows'
48 kwargs["package"] = u'Distribute Tanium Standard Utilities'
49
50 # call the handler with the deploy_action method, passing in kwargs for arguments
51 response = handler.deploy_action(**kwargs)
52 import pprint, io
53
54 print ""
55 print "Type of response: ", type(response)
56
57 print ""
58 print "Pretty print of response:"
59 pprint.pprint(response)
60
61 print ""
62 print "Print of action object: "
63 print response['action_object']
64
65 # create an IO stream to store CSV results to
66 out = io.BytesIO()
67
68 # if results were returned (i.e. get_results=True was one of the kwargs passed in):
69 if response['action_results']:
70     # call the write_csv() method to convert response to CSV and store it in out
71     response['action_results'].write_csv(out, response['action_results'])
```

```

72     print ""
73     print "CSV Results of response: "
74     print out.getvalue()
75

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:45:28,560 DEBUG pytan.handler.ActionPoller: ID 58: id resolved to 58
3 2015-08-07 19:45:28,561 DEBUG pytan.handler.ActionPoller: ID 58: package_spec resolved to Package
4 2015-08-07 19:45:28,567 DEBUG pytan.handler.ActionPoller: ID 58: target_group resolved to Group,
5 2015-08-07 19:45:28,583 DEBUG pytan.handler.ActionPoller: ID 58: Result Map resolved to {'failed'
6 2015-08-07 19:45:28,583 DEBUG pytan.handler.ActionPoller: ID 58: expiration_time resolved to 2015
7 2015-08-07 19:45:28,583 DEBUG pytan.handler.ActionPoller: ID 58: status resolved to Open
8 2015-08-07 19:45:28,584 DEBUG pytan.handler.ActionPoller: ID 58: stopped_flag resolved to 0
9 2015-08-07 19:45:28,584 DEBUG pytan.handler.ActionPoller: ID 58: Object Info resolved to ID 58: P
10 2015-08-07 19:45:28,584 DEBUG pytan.handler.ActionPoller: ID 58: Adding Question to derive passed
11 2015-08-07 19:45:28,615 DEBUG pytan.handler.QuestionPoller: ID 1302: id resolved to 1302
12 2015-08-07 19:45:28,615 DEBUG pytan.handler.QuestionPoller: ID 1302: expiration resolved to 2015-
13 2015-08-07 19:45:28,615 DEBUG pytan.handler.QuestionPoller: ID 1302: query_text resolved to Get n
14 2015-08-07 19:45:28,615 DEBUG pytan.handler.QuestionPoller: ID 1302: id resolved to 1302
15 2015-08-07 19:45:28,615 DEBUG pytan.handler.QuestionPoller: ID 1302: Object Info resolved to Ques
16 2015-08-07 19:45:28,618 DEBUG pytan.handler.QuestionPoller: ID 1302: Progress: Tested: 0, Passed:
17 2015-08-07 19:45:28,618 DEBUG pytan.handler.QuestionPoller: ID 1302: Timing: Started: 2015-08-07
18 2015-08-07 19:45:28,618 INFO pytan.handler.QuestionPoller: ID 1302: Progress Changed 0% (0 of 2)
19 2015-08-07 19:45:33,623 DEBUG pytan.handler.QuestionPoller: ID 1302: Progress: Tested: 1, Passed:
20 2015-08-07 19:45:33,623 DEBUG pytan.handler.QuestionPoller: ID 1302: Timing: Started: 2015-08-07
21 2015-08-07 19:45:33,623 INFO pytan.handler.QuestionPoller: ID 1302: Progress Changed 50% (1 of 2)
22 2015-08-07 19:45:38,626 DEBUG pytan.handler.QuestionPoller: ID 1302: Progress: Tested: 2, Passed:
23 2015-08-07 19:45:38,626 DEBUG pytan.handler.QuestionPoller: ID 1302: Timing: Started: 2015-08-07
24 2015-08-07 19:45:38,626 INFO pytan.handler.QuestionPoller: ID 1302: Progress Changed 100% (2 of
25 2015-08-07 19:45:38,626 INFO pytan.handler.QuestionPoller: ID 1302: Reached Threshold of 99% (2
26 2015-08-07 19:45:38,626 DEBUG pytan.handler.ActionPoller: ID 58: Passed Count resolved to 1
27 2015-08-07 19:45:38,638 DEBUG pytan.handler.ActionPoller: ID 58: Progress: Seen Action: 0, Expect
28 2015-08-07 19:45:38,638 DEBUG pytan.handler.ActionPoller: ID 58: Timing: Started: 2015-08-07 19:4
29 2015-08-07 19:45:38,638 INFO pytan.handler.ActionPoller: ID 58: Progress Changed for Seen Count
30 2015-08-07 19:45:38,645 DEBUG pytan.handler.ActionPoller: ID 58: stopped_flag resolved to 0
31 2015-08-07 19:45:38,645 DEBUG pytan.handler.ActionPoller: ID 58: status resolved to Open
32 2015-08-07 19:45:43,660 DEBUG pytan.handler.ActionPoller: ID 58: Progress: Seen Action: 0, Expect
33 2015-08-07 19:45:43,660 DEBUG pytan.handler.ActionPoller: ID 58: Timing: Started: 2015-08-07 19:4
34 2015-08-07 19:45:43,667 DEBUG pytan.handler.ActionPoller: ID 58: stopped_flag resolved to 0
35 2015-08-07 19:45:43,667 DEBUG pytan.handler.ActionPoller: ID 58: status resolved to Open
36 2015-08-07 19:45:48,677 DEBUG pytan.handler.ActionPoller: ID 58: Progress: Seen Action: 1, Expect
37 2015-08-07 19:45:48,677 DEBUG pytan.handler.ActionPoller: ID 58: Timing: Started: 2015-08-07 19:4
38 2015-08-07 19:45:48,677 INFO pytan.handler.ActionPoller: ID 58: Progress Changed for Seen Count
39 2015-08-07 19:45:48,684 DEBUG pytan.handler.ActionPoller: ID 58: stopped_flag resolved to 0
40 2015-08-07 19:45:48,684 DEBUG pytan.handler.ActionPoller: ID 58: status resolved to Open
41 2015-08-07 19:45:48,684 INFO pytan.handler.ActionPoller: ID 58: Reached Threshold for Seen Count
42 2015-08-07 19:45:48,692 DEBUG pytan.handler.ActionPoller: ID 58: failed: 0, finished: 1, running:
43 2015-08-07 19:45:48,692 DEBUG pytan.handler.ActionPoller: ID 58: Timing: Started: 2015-08-07 19:4
44 2015-08-07 19:45:48,692 INFO pytan.handler.ActionPoller: ID 58: Progress Changed for Finished Co
45 2015-08-07 19:45:48,698 DEBUG pytan.handler.ActionPoller: ID 58: stopped_flag resolved to 0
46 2015-08-07 19:45:48,698 DEBUG pytan.handler.ActionPoller: ID 58: status resolved to Open
47 2015-08-07 19:45:48,698 INFO pytan.handler.ActionPoller: ID 58: Reached Threshold for Finished C
48
49 Type of response: <type 'dict'>
50

```

```
51 Pretty print of response:
52 {'action_info': <taniumpy.object_types.result_info.ResultInfo object at 0x11aadbcd0>,
53  'action_object': <taniumpy.object_types.action.Action object at 0x11aae6090>,
54  'action_result_map': {'failed': {'58:Expired.': [],
55                                   '58:Failed.': [],
56                                   '58:NotSucceeded.': [],
57                                   '58:Stopped.': [],
58                                   'total': 0},
59                           'finished': {'58:Completed.': ['JTANIUM1.localdomain'],
60                                         '58:Expired.': [],
61                                         '58:Failed.': [],
62                                         '58:NotSucceeded.': [],
63                                         '58:Stopped.': [],
64                                         '58:Succeeded.': [],
65                                         '58:Verified.': [],
66                                         'total': 1},
67                           'running': {'58:Copying.': [],
68                                        '58:Downloading.': [],
69                                        '58:PendingVerification.': [],
70                                        '58:Running.': [],
71                                        '58:Waiting.': [],
72                                        'total': 0},
73                           'success': {'58:Completed.': ['JTANIUM1.localdomain'],
74                                        '58:Verified.': [],
75                                        'total': 1},
76                           'unknown': {'total': 0}},
77  'action_results': <taniumpy.object_types.result_set.ResultSet object at 0x11ac77c90>,
78  'group_object': <taniumpy.object_types.group.Group object at 0x10c03db90>,
79  'package_object': <taniumpy.object_types.package_spec.PackageSpec object at 0x11aae6050>,
80  'poller_object': <pytan.pollers.ActionPoller object at 0x10bea6950>,
81  'poller_success': True,
82  'saved_action_object': <taniumpy.object_types.saved_action.SavedAction object at 0x11acb14d0>}
83
84 Print of action object:
85 Action, name: 'API Deploy Distribute Tanium Standard Utilities', id: 58
86
87 CSV Results of response:
88 Action Statuses,Computer Name
89 58:Completed.,JTANIUM1.localdomain
```

## Deploy action with params against windows computers

Deploy an action with parameters against only windows computers using human strings.

This will use the Package ‘Custom Tagging - Add Tags’ and supply two parameters. The second parameter will be ignored because the package in question only requires one parameter.

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
```

```

8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs["run"] = True
47 kwargs["action_filters"] = u'Operating System, that contains:Windows'
48 kwargs["package"] = u'Custom Tagging - Add Tags{$1=tag_should_be_added,$2=tag_should_be_ignore}'
49
50 # call the handler with the deploy_action method, passing in kwargs for arguments
51 response = handler.deploy_action(**kwargs)
52 import pprint, io
53
54 print ""
55 print "Type of response: ", type(response)
56
57 print ""
58 print "Pretty print of response:"
59 print pprint.pformat(response)
60
61 print ""
62 print "Print of action object: "
63 print response['action_object']
64
65 # create an IO stream to store CSV results to

```

```

66 out = io.BytesIO()
67
68 # if results were returned (i.e. get_results=True was one of the kwargs passed in):
69 if response['action_results']:
70     # call the write_csv() method to convert response to CSV and store it in out
71     response['action_results'].write_csv(out, response['action_results'])
72
73     print ""
74     print "CSV Results of response: "
75     print out.getvalue()

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:45:48,755 DEBUG pytan.handler.ActionPoller: ID 59: id resolved to 59
3 2015-08-07 19:45:48,755 DEBUG pytan.handler.ActionPoller: ID 59: package_spec resolved to Package
4 2015-08-07 19:45:48,759 DEBUG pytan.handler.ActionPoller: ID 59: target_group resolved to Group,
5 2015-08-07 19:45:48,773 DEBUG pytan.handler.ActionPoller: ID 59: Result Map resolved to {'failed'
6 2015-08-07 19:45:48,773 DEBUG pytan.handler.ActionPoller: ID 59: expiration_time resolved to 2015
7 2015-08-07 19:45:48,773 DEBUG pytan.handler.ActionPoller: ID 59: status resolved to Open
8 2015-08-07 19:45:48,773 DEBUG pytan.handler.ActionPoller: ID 59: stopped_flag resolved to 0
9 2015-08-07 19:45:48,773 DEBUG pytan.handler.ActionPoller: ID 59: Object Info resolved to ID 59: P
10 2015-08-07 19:45:48,773 DEBUG pytan.handler.ActionPoller: ID 59: Adding Question to derive passed
11 2015-08-07 19:45:48,802 DEBUG pytan.handler.QuestionPoller: ID 1303: id resolved to 1303
12 2015-08-07 19:45:48,802 DEBUG pytan.handler.QuestionPoller: ID 1303: expiration resolved to 2015-
13 2015-08-07 19:45:48,802 DEBUG pytan.handler.QuestionPoller: ID 1303: query_text resolved to Get n
14 2015-08-07 19:45:48,802 DEBUG pytan.handler.QuestionPoller: ID 1303: id resolved to 1303
15 2015-08-07 19:45:48,802 DEBUG pytan.handler.QuestionPoller: ID 1303: Object Info resolved to Ques
16 2015-08-07 19:45:48,805 DEBUG pytan.handler.QuestionPoller: ID 1303: Progress: Tested: 0, Passed:
17 2015-08-07 19:45:48,805 DEBUG pytan.handler.QuestionPoller: ID 1303: Timing: Started: 2015-08-07
18 2015-08-07 19:45:48,805 INFO pytan.handler.QuestionPoller: ID 1303: Progress Changed 0% (0 of 2)
19 2015-08-07 19:45:53,809 DEBUG pytan.handler.QuestionPoller: ID 1303: Progress: Tested: 2, Passed:
20 2015-08-07 19:45:53,809 DEBUG pytan.handler.QuestionPoller: ID 1303: Timing: Started: 2015-08-07
21 2015-08-07 19:45:53,809 INFO pytan.handler.QuestionPoller: ID 1303: Progress Changed 100% (2 of
22 2015-08-07 19:45:53,809 INFO pytan.handler.QuestionPoller: ID 1303: Reached Threshold of 99% (2
23 2015-08-07 19:45:53,809 DEBUG pytan.handler.ActionPoller: ID 59: Passed Count resolved to 1
24 2015-08-07 19:45:53,819 DEBUG pytan.handler.ActionPoller: ID 59: Progress: Seen Action: 0, Expect
25 2015-08-07 19:45:53,819 DEBUG pytan.handler.ActionPoller: ID 59: Timing: Started: 2015-08-07 19:4
26 2015-08-07 19:45:53,819 INFO pytan.handler.ActionPoller: ID 59: Progress Changed for Seen Count
27 2015-08-07 19:45:53,824 DEBUG pytan.handler.ActionPoller: ID 59: stopped_flag resolved to 0
28 2015-08-07 19:45:53,824 DEBUG pytan.handler.ActionPoller: ID 59: status resolved to Open
29 2015-08-07 19:45:58,837 DEBUG pytan.handler.ActionPoller: ID 59: Progress: Seen Action: 1, Expect
30 2015-08-07 19:45:58,837 DEBUG pytan.handler.ActionPoller: ID 59: Timing: Started: 2015-08-07 19:4
31 2015-08-07 19:45:58,837 INFO pytan.handler.ActionPoller: ID 59: Progress Changed for Seen Count
32 2015-08-07 19:45:58,843 DEBUG pytan.handler.ActionPoller: ID 59: stopped_flag resolved to 0
33 2015-08-07 19:45:58,844 DEBUG pytan.handler.ActionPoller: ID 59: status resolved to Open
34 2015-08-07 19:45:58,844 INFO pytan.handler.ActionPoller: ID 59: Reached Threshold for Seen Count
35 2015-08-07 19:45:58,852 DEBUG pytan.handler.ActionPoller: ID 59: failed: 0, finished: 0, running:
36 2015-08-07 19:45:58,852 DEBUG pytan.handler.ActionPoller: ID 59: Timing: Started: 2015-08-07 19:4
37 2015-08-07 19:45:58,852 INFO pytan.handler.ActionPoller: ID 59: Progress Changed for Finished Co
38 2015-08-07 19:45:58,858 DEBUG pytan.handler.ActionPoller: ID 59: stopped_flag resolved to 0
39 2015-08-07 19:45:58,858 DEBUG pytan.handler.ActionPoller: ID 59: status resolved to Open
40 2015-08-07 19:46:03,873 DEBUG pytan.handler.ActionPoller: ID 59: failed: 0, finished: 0, running:
41 2015-08-07 19:46:03,873 DEBUG pytan.handler.ActionPoller: ID 59: Timing: Started: 2015-08-07 19:4
42 2015-08-07 19:46:03,879 DEBUG pytan.handler.ActionPoller: ID 59: stopped_flag resolved to 0
43 2015-08-07 19:46:03,879 DEBUG pytan.handler.ActionPoller: ID 59: status resolved to Open
44 2015-08-07 19:46:08,892 DEBUG pytan.handler.ActionPoller: ID 59: failed: 0, finished: 1, running:

```

```

45 2015-08-07 19:46:08,892 DEBUG    pytan.handler.ActionPoller: ID 59: Timing: Started: 2015-08-07 19:46:08,892
46 2015-08-07 19:46:08,892 INFO     pytan.handler.ActionPoller: ID 59: Progress Changed for Finished Co
47 2015-08-07 19:46:08,898 DEBUG    pytan.handler.ActionPoller: ID 59: stopped_flag resolved to 0
48 2015-08-07 19:46:08,898 DEBUG    pytan.handler.ActionPoller: ID 59: status resolved to Open
49 2015-08-07 19:46:08,898 INFO     pytan.handler.ActionPoller: ID 59: Reached Threshold for Finished Co
50
51 Type of response: <type 'dict'>
52
53 Pretty print of response:
54 {'action_info': <taniumpy.object_types.result_info.ResultInfo object at 0x10c063090>,
55  'action_object': <taniumpy.object_types.action.Action object at 0x10c17ecd0>,
56  'action_result_map': {'failed': {'59:Expired.': [],
57                                   '59:Failed.': [],
58                                   '59:NotSucceeded.': [],
59                                   '59:Stopped.': [],
60                                   'total': 0},
61                        'finished': {'59:Completed.': ['JTANIUM1.localdomain'],
62                                     '59:Expired.': [],
63                                     '59:Failed.': [],
64                                     '59:NotSucceeded.': [],
65                                     '59:Stopped.': [],
66                                     '59:Succeeded.': [],
67                                     '59:Verified.': [],
68                                     'total': 1},
69                        'running': {'59:Copying.': [],
70                                    '59:Downloading.': ['JTANIUM1.localdomain'],
71                                    '59:PendingVerification.': [],
72                                    '59:Running.': [],
73                                    '59:Waiting.': [],
74                                    'total': 1},
75                        'success': {'59:Completed.': ['JTANIUM1.localdomain'],
76                                    '59:Verified.': [],
77                                    'total': 1},
78                        'unknown': {'total': 0}},
79  'action_results': <taniumpy.object_types.result_set.ResultSet object at 0x10c17ec10>,
80  'group_object': <taniumpy.object_types.group.Group object at 0x10c03d210>,
81  'package_object': <taniumpy.object_types.package_spec.PackageSpec object at 0x10bf69dd0>,
82  'poller_object': <pytan.pollers.ActionPoller object at 0x10c063250>,
83  'poller_success': True,
84  'saved_action_object': <taniumpy.object_types.saved_action.SavedAction object at 0x10c03ddd0>}
85
86 Print of action object:
87 Action, name: 'API Deploy Custom Tagging - Add Tags', id: 59
88
89 CSV Results of response:
90 Action Statuses,Computer Name
91 59:Completed.,JTANIUM1.localdomain

```

## PyTan API Invalid Deploy Action Examples

### Invalid deploy action run false

Deploy an action without `run=True`, which will only run the pre-deploy action question that matches `action_filters`, export the results to a file, and raise a `RunFalse` exception

## Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs['report_dir'] = tempfile.gettempdir()
47 kwargs["package"] = u'Distribute Tanium Standard Utilities'
48
49
50 # call the handler with the deploy_action method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.RunFalse
52 import traceback
53 try:
54     handler.deploy_action(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```



## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:08,957 DEBUG pytan.handler.QuestionPoller: ID 1304: id resolved to 1304
3 2015-08-07 19:46:08,957 DEBUG pytan.handler.QuestionPoller: ID 1304: expiration resolved to 2015-
4 2015-08-07 19:46:08,957 DEBUG pytan.handler.QuestionPoller: ID 1304: query_text resolved to Get C
5 2015-08-07 19:46:08,957 DEBUG pytan.handler.QuestionPoller: ID 1304: id resolved to 1304
6 2015-08-07 19:46:08,957 DEBUG pytan.handler.QuestionPoller: ID 1304: Object Info resolved to Ques
7 2015-08-07 19:46:08,962 DEBUG pytan.handler.QuestionPoller: ID 1304: Progress: Tested: 0, Passed:
8 2015-08-07 19:46:08,962 DEBUG pytan.handler.QuestionPoller: ID 1304: Timing: Started: 2015-08-07
9 2015-08-07 19:46:08,962 INFO pytan.handler.QuestionPoller: ID 1304: Progress Changed 0% (0 of 2)
10 2015-08-07 19:46:13,969 DEBUG pytan.handler.QuestionPoller: ID 1304: Progress: Tested: 2, Passed:
11 2015-08-07 19:46:13,969 DEBUG pytan.handler.QuestionPoller: ID 1304: Timing: Started: 2015-08-07
12 2015-08-07 19:46:13,969 INFO pytan.handler.QuestionPoller: ID 1304: Progress Changed 100% (2 of
13 2015-08-07 19:46:13,969 INFO pytan.handler.QuestionPoller: ID 1304: Reached Threshold of 99% (2
14 2015-08-07 19:46:13,974 INFO pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
15
16 Traceback (most recent call last):
17   File "<string>", line 55, in <module>
18   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 404, in deploy_action
19     **kwargs
20   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
21     ret = f(*args, **kwargs)
22   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1662, in _deploy_action
23     raise pytan.exceptions.RunFalse(m(report_path, len(result)))
24 RunFalse: 'Run' is not True!!
25 View and verify the contents of /var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c40000gn/T/VERIFY_BEFORE_DEPLO
Re-run this deploy action with run=True after verifying

```

## Invalid deploy action package help

Have `deploy_action()` return the help for package

## Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"

```

```
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs['report_dir'] = tempfile.gettempdir()
47 kwargs["package_help"] = True
48
49
50 # call the handler with the deploy_action method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.PytanHelp
52 import traceback
53 try:
54     handler.deploy_action(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4     File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 374, in deploy_action
5         raise pytan.exceptions.PytanHelp(pytan.help.help_package())
6 PytanHelp:
7 Package Help
8 =====
9
10 Supplying package defines what package will be deployed as part of the
11 action.
12
13 A package string is a human string that describes, at a minimum, a
14 package. It can also optionally define a selector for the package,
15 and/or parameters for the package. A package must be provided as a string.
16
17 Examples for package
18 -----
19
20 Supplying a package:
```

```

21     'Distribute Tanium Standard Utilities'
22
23
24 Supplying a package by id:
25
26     'id:1'
27
28 Supplying a package by hash:
29
30     'hash:123456789'
31
32 Supplying a package by name:
33
34     'name:Distribute Tanium Standard Utilities'
35
36 Package Parameters
37 -----
38
39 Supplying parameters to a package can control the arguments
40 that are supplied to a package, if that package takes any arguments.
41
42 Package parameters must be surrounded with curly braces '{}',
43 and must have a key and value specified that is separated by
44 an equals '='. Multiple parameters must be seperated by
45 a comma ','. The key should match up to a valid parameter key
46 for the package in question.
47
48 If a parameter is supplied and the package doesn't have a
49 corresponding key name, it will be ignored. If the package has
50 parameters and a parameter is NOT supplied then an exception
51 will be raised, printing out the JSON of the missing paramater
52 for the package in question.
53
54 Examples for package with parameters
55 -----
56
57 Supplying a package with a single parameter '$1':
58
59     'Package With Params{$1=value1}'
60
61 Supplying a package with two parameters, '$1' and '$2':
62
63     'Package With Params{$1=value1,$2=value2}'

```

### Invalid deploy action package

Deploy an action using a non-existing package.

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir

```

```
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs['report_dir'] = tempfile.gettempdir()
47 kwargs["run"] = True
48 kwargs["package"] = u'Invalid Package'
49
50
51 # call the handler with the deploy_action method, passing in kwargs for arguments
52 # this should throw an exception: pytan.exceptions.HandlerError
53 import traceback
54 try:
55     handler.deploy_action(**kwargs)
56 except Exception as e:
57     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
```

```

3 File "<string>", line 56, in <module>
4 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 404, in deploy_action
5     **kwargs
6 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
7     ret = f(*args, **kwargs)
8 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1611, in _deploy_action
9     package_def = self._get_package_def(package_def)
10 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1430, in _get_package_def
11     d['package_obj'] = self.get('package', **def_search)[0]
12 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
13     ret = f(*args, **kwargs)
14 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1255, in get
15     return self._get_single(obj_map, **kwargs)
16 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1390, in _get_single
17     for x in self._single_find(obj_map, k, v, **kwargs):
18 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1400, in _single_find
19     obj_ret = self._find(api_obj_single, **kwargs)
20 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
21     ret = f(*args, **kwargs)
22 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1327, in _find
23     raise pytan.exceptions.HandlerError(err(search_str))
24 HandlerError: No results found searching for PackageSpec, name: u'Invalid Package'!!

```

### Invalid deploy action options help

Have `deploy_action()` return the help for options

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols

```

```
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs['report_dir'] = tempfile.gettempdir()
47 kwargs["options_help"] = True
48
49
50 # call the handler with the deploy_action method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.PytanHelp
52 import traceback
53 try:
54     handler.deploy_action(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)
```

## Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 380, in deploy_action
5     raise pytan.exceptions.PytanHelp(pytan.help.help_options())
6 PytanHelp:
7 Options Help
8 =====
9
10 Options are used for controlling how filters act. When options are
11 used as part of a sensor string, they change how the filters
12 supplied as part of that sensor operate. When options are used for
13 whole question options, they change how all of the question filters
14 operate.
15
16 When options are supplied for a sensor string, they must be
17 supplied as ', opt:OPTION' or ', opt:OPTION:VALUE' for options
18 that require a value.
19
20 When options are supplied for question options, they must be
21 supplied as 'OPTION' or 'OPTION:VALUE' for options that require
22 a value.
23
24 Options can be used on 'filter' or 'group', where 'group' pertains
```

to group filters or question filters. All 'filter' options are also applicable to 'group' for question options.

#### Valid Options

-----

```
'ignore_case'
    Help: Make the filter do a case insensitive match
    Usable on: filter
    Example for sensor: "Sensor1, opt:ignore_case"
    Example for question: "ignore_case"

'match_case'
    Help: Make the filter do a case sensitive match
    Usable on: filter
    Example for sensor: "Sensor1, opt:match_case"
    Example for question: "match_case"

'match_any_value'
    Help: Make the filter match any value
    Usable on: filter
    Example for sensor: "Sensor1, opt:match_any_value"
    Example for question: "match_any_value"

'match_all_values'
    Help: Make the filter match all values
    Usable on: filter
    Example for sensor: "Sensor1, opt:match_all_values"
    Example for question: "match_all_values"

'max_data_age'
    Help: Re-fetch cached values older than N seconds
    Usable on: filter
    VALUE description and type: seconds, <type 'int'>
    Example for sensor: "Sensor1, opt:max_data_age:seconds"
    Example for question: "max_data_age:seconds"

'value_type'
    Help: Make the filter consider the value type as VALUE_TYPE
    Usable on: filter
    VALUE description and type: value_type, <type 'str'>
    Example for sensor: "Sensor1, opt:value_type:value_type"
    Example for question: "value_type:value_type"

'and'
    Help: Use 'and' for all of the filters supplied
    Usable on: group
    Example for sensor: "Sensor1, opt:and"
    Example for question: "and"

'or'
    Help: Use 'or' for all of the filters supplied
    Usable on: group
    Example for sensor: "Sensor1, opt:or"
    Example for question: "or"

'ignore_case'
    Help: Make the filter do a case insensitive match
```

```
83         Usable on: filter
84         Example for sensor: "Sensor1, opt:ignore_case"
85         Example for question: "ignore_case"
86
87     'match_case'
88         Help: Make the filter do a case sensitive match
89         Usable on: filter
90         Example for sensor: "Sensor1, opt:match_case"
91         Example for question: "match_case"
92
93     'match_any_value'
94         Help: Make the filter match any value
95         Usable on: filter
96         Example for sensor: "Sensor1, opt:match_any_value"
97         Example for question: "match_any_value"
98
99     'match_all_values'
100         Help: Make the filter match all values
101         Usable on: filter
102         Example for sensor: "Sensor1, opt:match_all_values"
103         Example for question: "match_all_values"
104
105     'max_data_age'
106         Help: Re-fetch cached values older than N seconds
107         Usable on: filter
108         VALUE description and type: seconds, <type 'int'>
109         Example for sensor: "Sensor1, opt:max_data_age:seconds"
110         Example for question: "max_data_age:seconds"
111
112     'value_type'
113         Help: Make the filter consider the value type as VALUE_TYPE
114         Usable on: filter
115         VALUE description and type: value_type, <type 'str'>
116         Example for sensor: "Sensor1, opt:value_type:value_type"
117         Example for question: "value_type:value_type"
118
119     'and'
120         Help: Use 'and' for all of the filters supplied
121         Usable on: group
122         Example for sensor: "Sensor1, opt:and"
123         Example for question: "and"
124
125     'or'
126         Help: Use 'or' for all of the filters supplied
127         Usable on: group
128         Example for sensor: "Sensor1, opt:or"
129         Example for question: "or"
```

### Invalid deploy action empty package

Deploy an action using an empty package string.

### Example Python Code



```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs['report_dir'] = tempfile.gettempdir()
47 kwargs["run"] = True
48 kwargs["package"] = u''
49
50
51 # call the handler with the deploy_action method, passing in kwargs for arguments
52 # this should throw an exception: pytan.exceptions.HumanParserError
53 import traceback
54 try:
55     handler.deploy_action(**kwargs)
56 except Exception as e:
57     traceback.print_exc(file=sys.stdout)

```

## Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 56, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 398, in deploy_action
5     package_def = pytan.utils.dehumanize_package(package)
6   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 1508, in dehumanize_package
7     raise pytan.exceptions.HumanParserError(err(package))
8 HumanParserError: u'' must be a string supplied as 'package'
```

## Invalid deploy action filters help

Have `deploy_action()` return the help for filters

## Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
```

```

40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs['report_dir'] = tempfile.gettempdir()
47 kwargs["filters_help"] = True
48
49
50 # call the handler with the deploy_action method, passing in kwargs for arguments
51 # this should throw an exception: pytan.exceptions.PytanHelp
52 import traceback
53 try:
54     handler.deploy_action(**kwargs)
55 except Exception as e:
56     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 55, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 377, in deploy_action
5     raise pytan.exceptions.PytanHelp(pytan.help.help_filters())
6 PytanHelp:
7 Filters Help
8 =====
9
10 Filters are used generously throughout pytan. When used as part of a
11 sensor string, they control what data is shown for the columns that
12 the sensor returns. When filters are used for whole question filters,
13 they control what rows will be returned. They are used by Groups to
14 define group membership, deploy actions to determine which machines
15 should have the action deployed to it, and more.
16
17 A filter string is a human string that describes, a sensor followed
18 by ', that FILTER:VALUE', where FILTER is a valid filter string,
19 and VALUE is the string that you want FILTER to match on.
20
21 Valid Filters
22 -----
23
24     '<'
25         Help: Filter for less than VALUE
26         Example: "Sensor1, that <:VALUE"
27
28     'less'
29         Help: Filter for less than VALUE
30         Example: "Sensor1, that less:VALUE"
31
32     'lt'
33         Help: Filter for less than VALUE
34         Example: "Sensor1, that lt:VALUE"
35
36     'less than'
37         Help: Filter for less than VALUE

```

```
38         Example: "Sensor1, that less than:VALUE"
39
40     '<'
41         Help: Filter for not less than VALUE
42         Example: "Sensor1, that !<:VALUE"
43
44     'notless'
45         Help: Filter for not less than VALUE
46         Example: "Sensor1, that notless:VALUE"
47
48     'not less'
49         Help: Filter for not less than VALUE
50         Example: "Sensor1, that not less:VALUE"
51
52     'not less than'
53         Help: Filter for not less than VALUE
54         Example: "Sensor1, that not less than:VALUE"
55
56     '<='
57         Help: Filter for less than or equal to VALUE
58         Example: "Sensor1, that <=:VALUE"
59
60     'less equal'
61         Help: Filter for less than or equal to VALUE
62         Example: "Sensor1, that less equal:VALUE"
63
64     'lessequal'
65         Help: Filter for less than or equal to VALUE
66         Example: "Sensor1, that lessequal:VALUE"
67
68     'le'
69         Help: Filter for less than or equal to VALUE
70         Example: "Sensor1, that le:VALUE"
71
72     '!<='
73         Help: Filter for not less than or equal to VALUE
74         Example: "Sensor1, that !<=:VALUE"
75
76     'not less equal'
77         Help: Filter for not less than or equal to VALUE
78         Example: "Sensor1, that not less equal:VALUE"
79
80     'not lessequal'
81         Help: Filter for not less than or equal to VALUE
82         Example: "Sensor1, that not lessequal:VALUE"
83
84     '>'
85         Help: Filter for greater than VALUE
86         Example: "Sensor1, that >:VALUE"
87
88     'greater'
89         Help: Filter for greater than VALUE
90         Example: "Sensor1, that greater:VALUE"
91
92     'gt'
93         Help: Filter for greater than VALUE
94         Example: "Sensor1, that gt:VALUE"
95
```

```

96     'greater than'
97         Help: Filter for greater than VALUE
98         Example: "Sensor1, that greater than:VALUE"
99
100     '!>'
101         Help: Filter for not greater than VALUE
102         Example: "Sensor1, that !>:VALUE"
103
104     'not greater'
105         Help: Filter for not greater than VALUE
106         Example: "Sensor1, that not greater:VALUE"
107
108     'notgreater'
109         Help: Filter for not greater than VALUE
110         Example: "Sensor1, that notgreater:VALUE"
111
112     'not greater than'
113         Help: Filter for not greater than VALUE
114         Example: "Sensor1, that not greater than:VALUE"
115
116     '=>'
117         Help: Filter for greater than or equal to VALUE
118         Example: "Sensor1, that =>:VALUE"
119
120     'greater equal'
121         Help: Filter for greater than or equal to VALUE
122         Example: "Sensor1, that greater equal:VALUE"
123
124     'greaterequal'
125         Help: Filter for greater than or equal to VALUE
126         Example: "Sensor1, that greaterequal:VALUE"
127
128     'ge'
129         Help: Filter for greater than or equal to VALUE
130         Example: "Sensor1, that ge:VALUE"
131
132     '!>='
133         Help: Filter for not greater than VALUE
134         Example: "Sensor1, that !>=:VALUE"
135
136     'not greater equal'
137         Help: Filter for not greater than VALUE
138         Example: "Sensor1, that not greater equal:VALUE"
139
140     'notgreaterequal'
141         Help: Filter for not greater than VALUE
142         Example: "Sensor1, that notgreaterequal:VALUE"
143
144     '='
145         Help: Filter for equals to VALUE
146         Example: "Sensor1, that =:VALUE"
147
148     'equal'
149         Help: Filter for equals to VALUE
150         Example: "Sensor1, that equal:VALUE"
151
152     'equals'
153         Help: Filter for equals to VALUE

```

```
154         Example: "Sensor1, that equals:VALUE"
155
156     'eq'
157         Help: Filter for equals to VALUE
158         Example: "Sensor1, that eq:VALUE"
159
160     '!='
161         Help: Filter for not equals to VALUE
162         Example: "Sensor1, that !=:VALUE"
163
164     'not equal'
165         Help: Filter for not equals to VALUE
166         Example: "Sensor1, that not equal:VALUE"
167
168     'notequal'
169         Help: Filter for not equals to VALUE
170         Example: "Sensor1, that notequal:VALUE"
171
172     'not equals'
173         Help: Filter for not equals to VALUE
174         Example: "Sensor1, that not equals:VALUE"
175
176     'notequals'
177         Help: Filter for not equals to VALUE
178         Example: "Sensor1, that notequals:VALUE"
179
180     'ne'
181         Help: Filter for not equals to VALUE
182         Example: "Sensor1, that ne:VALUE"
183
184     'contains'
185         Help: Filter for contains VALUE (adds .* before and after VALUE)
186         Example: "Sensor1, that contains:VALUE"
187
188     'does not contain'
189         Help: Filter for does not contain VALUE (adds .* before and after VALUE)
190         Example: "Sensor1, that does not contain:VALUE"
191
192     'doesnotcontain'
193         Help: Filter for does not contain VALUE (adds .* before and after VALUE)
194         Example: "Sensor1, that doesnotcontain:VALUE"
195
196     'not contains'
197         Help: Filter for does not contain VALUE (adds .* before and after VALUE)
198         Example: "Sensor1, that not contains:VALUE"
199
200     'notcontains'
201         Help: Filter for does not contain VALUE (adds .* before and after VALUE)
202         Example: "Sensor1, that notcontains:VALUE"
203
204     'starts with'
205         Help: Filter for starts with VALUE (adds .* after VALUE)
206         Example: "Sensor1, that starts with:VALUE"
207
208     'startswith'
209         Help: Filter for starts with VALUE (adds .* after VALUE)
210         Example: "Sensor1, that startswith:VALUE"
211
```

```

212 'does not start with'
213     Help: Filter for does not start with VALUE (adds .* after VALUE)
214     Example: "Sensor1, that does not start with:VALUE"
215
216 'doesnotstartwith'
217     Help: Filter for does not start with VALUE (adds .* after VALUE)
218     Example: "Sensor1, that doesnotstartwith:VALUE"
219
220 'not starts with'
221     Help: Filter for does not start with VALUE (adds .* after VALUE)
222     Example: "Sensor1, that not starts with:VALUE"
223
224 'notstartswith'
225     Help: Filter for does not start with VALUE (adds .* after VALUE)
226     Example: "Sensor1, that notstartswith:VALUE"
227
228 'ends with'
229     Help: Filter for ends with VALUE (adds .* before VALUE)
230     Example: "Sensor1, that ends with:VALUE"
231
232 'endswith'
233     Help: Filter for ends with VALUE (adds .* before VALUE)
234     Example: "Sensor1, that endswith:VALUE"
235
236 'does not end with'
237     Help: Filter for does bit end with VALUE (adds .* before VALUE)
238     Example: "Sensor1, that does not end with:VALUE"
239
240 'doesnotendwith'
241     Help: Filter for does bit end with VALUE (adds .* before VALUE)
242     Example: "Sensor1, that doesnotendwith:VALUE"
243
244 'not ends with'
245     Help: Filter for does bit end with VALUE (adds .* before VALUE)
246     Example: "Sensor1, that not ends with:VALUE"
247
248 'notstartswith'
249     Help: Filter for does bit end with VALUE (adds .* before VALUE)
250     Example: "Sensor1, that notstartswith:VALUE"
251
252 'is not'
253     Help: Filter for non regular expression match for VALUE
254     Example: "Sensor1, that is not:VALUE"
255
256 'not regex'
257     Help: Filter for non regular expression match for VALUE
258     Example: "Sensor1, that not regex:VALUE"
259
260 'notregex'
261     Help: Filter for non regular expression match for VALUE
262     Example: "Sensor1, that notregex:VALUE"
263
264 'not regex match'
265     Help: Filter for non regular expression match for VALUE
266     Example: "Sensor1, that not regex match:VALUE"
267
268 'notregexmatch'
269     Help: Filter for non regular expression match for VALUE

```

```
270         Example: "Sensor1, that notregexmatch:VALUE"
271
272     'nre'
273         Help: Filter for non regular expression match for VALUE
274         Example: "Sensor1, that nre:VALUE"
275
276     'is'
277         Help: Filter for regular expression match for VALUE
278         Example: "Sensor1, that is:VALUE"
279
280     'regex'
281         Help: Filter for regular expression match for VALUE
282         Example: "Sensor1, that regex:VALUE"
283
284     'regex match'
285         Help: Filter for regular expression match for VALUE
286         Example: "Sensor1, that regex match:VALUE"
287
288     'regexmatch'
289         Help: Filter for regular expression match for VALUE
290         Example: "Sensor1, that regexmatch:VALUE"
291
292     're'
293         Help: Filter for regular expression match for VALUE
294         Example: "Sensor1, that re:VALUE"
295
296     '<'
297         Help: Filter for less than VALUE
298         Example: "Sensor1, that <:VALUE"
299
300     'less'
301         Help: Filter for less than VALUE
302         Example: "Sensor1, that less:VALUE"
303
304     'lt'
305         Help: Filter for less than VALUE
306         Example: "Sensor1, that lt:VALUE"
307
308     'less than'
309         Help: Filter for less than VALUE
310         Example: "Sensor1, that less than:VALUE"
311
312     '!<'
313         Help: Filter for not less than VALUE
314         Example: "Sensor1, that !<:VALUE"
315
316     'notless'
317         Help: Filter for not less than VALUE
318         Example: "Sensor1, that notless:VALUE"
319
320     'not less'
321         Help: Filter for not less than VALUE
322         Example: "Sensor1, that not less:VALUE"
323
324     'not less than'
325         Help: Filter for not less than VALUE
326         Example: "Sensor1, that not less than:VALUE"
327
```



```

328     '<='
329         Help: Filter for less than or equal to VALUE
330         Example: "Sensor1, that <=:VALUE"
331
332     'less equal'
333         Help: Filter for less than or equal to VALUE
334         Example: "Sensor1, that less equal:VALUE"
335
336     'lessequal'
337         Help: Filter for less than or equal to VALUE
338         Example: "Sensor1, that lessequal:VALUE"
339
340     'le'
341         Help: Filter for less than or equal to VALUE
342         Example: "Sensor1, that le:VALUE"
343
344     '!<='
345         Help: Filter for not less than or equal to VALUE
346         Example: "Sensor1, that !<=:VALUE"
347
348     'not less equal'
349         Help: Filter for not less than or equal to VALUE
350         Example: "Sensor1, that not less equal:VALUE"
351
352     'not lessequal'
353         Help: Filter for not less than or equal to VALUE
354         Example: "Sensor1, that not lessequal:VALUE"
355
356     '>'
357         Help: Filter for greater than VALUE
358         Example: "Sensor1, that >:VALUE"
359
360     'greater'
361         Help: Filter for greater than VALUE
362         Example: "Sensor1, that greater:VALUE"
363
364     'gt'
365         Help: Filter for greater than VALUE
366         Example: "Sensor1, that gt:VALUE"
367
368     'greater than'
369         Help: Filter for greater than VALUE
370         Example: "Sensor1, that greater than:VALUE"
371
372     '!>'
373         Help: Filter for not greater than VALUE
374         Example: "Sensor1, that !>:VALUE"
375
376     'not greater'
377         Help: Filter for not greater than VALUE
378         Example: "Sensor1, that not greater:VALUE"
379
380     'notgreater'
381         Help: Filter for not greater than VALUE
382         Example: "Sensor1, that notgreater:VALUE"
383
384     'not greater than'
385         Help: Filter for not greater than VALUE

```

```
386         Example: "Sensor1, that not greater than:VALUE"
387
388     '>='
389         Help: Filter for greater than or equal to VALUE
390         Example: "Sensor1, that >=:VALUE"
391
392     'greater equal'
393         Help: Filter for greater than or equal to VALUE
394         Example: "Sensor1, that greater equal:VALUE"
395
396     'greaterequal'
397         Help: Filter for greater than or equal to VALUE
398         Example: "Sensor1, that greaterequal:VALUE"
399
400     'ge'
401         Help: Filter for greater than or equal to VALUE
402         Example: "Sensor1, that ge:VALUE"
403
404     '!=>'
405         Help: Filter for not greater than VALUE
406         Example: "Sensor1, that !=>:VALUE"
407
408     'not greater equal'
409         Help: Filter for not greater than VALUE
410         Example: "Sensor1, that not greater equal:VALUE"
411
412     'notgreaterequal'
413         Help: Filter for not greater than VALUE
414         Example: "Sensor1, that notgreaterequal:VALUE"
415
416     '='
417         Help: Filter for equals to VALUE
418         Example: "Sensor1, that =:VALUE"
419
420     'equal'
421         Help: Filter for equals to VALUE
422         Example: "Sensor1, that equal:VALUE"
423
424     'equals'
425         Help: Filter for equals to VALUE
426         Example: "Sensor1, that equals:VALUE"
427
428     'eq'
429         Help: Filter for equals to VALUE
430         Example: "Sensor1, that eq:VALUE"
431
432     '!= '
433         Help: Filter for not equals to VALUE
434         Example: "Sensor1, that !=:VALUE"
435
436     'not equal'
437         Help: Filter for not equals to VALUE
438         Example: "Sensor1, that not equal:VALUE"
439
440     'notequal'
441         Help: Filter for not equals to VALUE
442         Example: "Sensor1, that notequal:VALUE"
443
```

```

444 'not equals'
445     Help: Filter for not equals to VALUE
446     Example: "Sensor1, that not equals:VALUE"
447
448 'notequals'
449     Help: Filter for not equals to VALUE
450     Example: "Sensor1, that notequals:VALUE"
451
452 'ne'
453     Help: Filter for not equals to VALUE
454     Example: "Sensor1, that ne:VALUE"
455
456 'contains'
457     Help: Filter for contains VALUE (adds .* before and after VALUE)
458     Example: "Sensor1, that contains:VALUE"
459
460 'does not contain'
461     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
462     Example: "Sensor1, that does not contain:VALUE"
463
464 'doesnotcontain'
465     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
466     Example: "Sensor1, that doesnotcontain:VALUE"
467
468 'not contains'
469     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
470     Example: "Sensor1, that not contains:VALUE"
471
472 'notcontains'
473     Help: Filter for does not contain VALUE (adds .* before and after VALUE)
474     Example: "Sensor1, that notcontains:VALUE"
475
476 'starts with'
477     Help: Filter for starts with VALUE (adds .* after VALUE)
478     Example: "Sensor1, that starts with:VALUE"
479
480 'startswith'
481     Help: Filter for starts with VALUE (adds .* after VALUE)
482     Example: "Sensor1, that startswith:VALUE"
483
484 'does not start with'
485     Help: Filter for does not start with VALUE (adds .* after VALUE)
486     Example: "Sensor1, that does not start with:VALUE"
487
488 'doesnotstartswith'
489     Help: Filter for does not start with VALUE (adds .* after VALUE)
490     Example: "Sensor1, that doesnotstartswith:VALUE"
491
492 'not starts with'
493     Help: Filter for does not start with VALUE (adds .* after VALUE)
494     Example: "Sensor1, that not starts with:VALUE"
495
496 'notstartswith'
497     Help: Filter for does not start with VALUE (adds .* after VALUE)
498     Example: "Sensor1, that notstartswith:VALUE"
499
500 'ends with'
501     Help: Filter for ends with VALUE (adds .* before VALUE)

```

```
502     Example: "Sensor1, that ends with:VALUE"
503
504 'endswith'
505     Help: Filter for ends with VALUE (adds .* before VALUE)
506     Example: "Sensor1, that endswith:VALUE"
507
508 'does not end with'
509     Help: Filter for does bit end with VALUE (adds .* before VALUE)
510     Example: "Sensor1, that does not end with:VALUE"
511
512 'doesnotendwith'
513     Help: Filter for does bit end with VALUE (adds .* before VALUE)
514     Example: "Sensor1, that doesnotendwith:VALUE"
515
516 'not ends with'
517     Help: Filter for does bit end with VALUE (adds .* before VALUE)
518     Example: "Sensor1, that not ends with:VALUE"
519
520 'notstartswith'
521     Help: Filter for does bit end with VALUE (adds .* before VALUE)
522     Example: "Sensor1, that notstartswith:VALUE"
523
524 'is not'
525     Help: Filter for non regular expression match for VALUE
526     Example: "Sensor1, that is not:VALUE"
527
528 'not regex'
529     Help: Filter for non regular expression match for VALUE
530     Example: "Sensor1, that not regex:VALUE"
531
532 'notregex'
533     Help: Filter for non regular expression match for VALUE
534     Example: "Sensor1, that notregex:VALUE"
535
536 'not regex match'
537     Help: Filter for non regular expression match for VALUE
538     Example: "Sensor1, that not regex match:VALUE"
539
540 'notregexmatch'
541     Help: Filter for non regular expression match for VALUE
542     Example: "Sensor1, that notregexmatch:VALUE"
543
544 'nre'
545     Help: Filter for non regular expression match for VALUE
546     Example: "Sensor1, that nre:VALUE"
547
548 'is'
549     Help: Filter for regular expression match for VALUE
550     Example: "Sensor1, that is:VALUE"
551
552 'regex'
553     Help: Filter for regular expression match for VALUE
554     Example: "Sensor1, that regex:VALUE"
555
556 'regex match'
557     Help: Filter for regular expression match for VALUE
558     Example: "Sensor1, that regex match:VALUE"
559
```

```

560     'regexmatch'
561         Help: Filter for regular expression match for VALUE
562         Example: "Sensor1, that regexmatch:VALUE"
563
564     're'
565         Help: Filter for regular expression match for VALUE
566         Example: "Sensor1, that re:VALUE"

```

### Invalid deploy action missing parameters

Deploy an action using a package that requires parameters but do not supply any parameters.

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41

```

```

42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46 kwargs['report_dir'] = tempfile.gettempdir()
47 kwargs["run"] = True
48 kwargs["package"] = u'Custom Tagging - Add Tags'
49
50
51 # call the handler with the deploy_action method, passing in kwargs for arguments
52 # this should throw an exception: pytan.exceptions.HandlerError
53 import traceback
54 try:
55     handler.deploy_action(**kwargs)
56 except Exception as e:
57     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 56, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 404, in deploy_action
5     **kwargs
6   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
7     ret = f(*args, **kwargs)
8   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1670, in _deploy_action
9     empty_ok=False,
10    File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2329, in build_param_objlist
11        raise pytan.exceptions.HandlerError(err(obj_name, p_key, jsonify(obj_param)))
12 HandlerError: PackageSpec, name: 'Custom Tagging - Add Tags', id: 27 parameter key '$1' requires a v
13 {
14     "defaultValue": "",
15     "helpString": "Enter tags space-delimited.",
16     "key": "$1",
17     "label": "Add tags (space-delimited)",
18     "maxChars": 0,
19     "model": "com.tanium.components.parameters::TextInputParameter",
20     "parameterType": "com.tanium.components.parameters::TextInputParameter",
21     "promptText": "e.g. PCI DMZ Decomm",
22     "restrict": null,
23     "validationExpressions": [
24         {
25             "expression": "\\S",
26             "flags": "",
27             "helpString": "You must enter a value",
28             "model": "com.tanium.models::ValidationExpression",
29             "parameterType": "com.tanium.models::ValidationExpression"
30         }
31     ],
32     "value": ""
33 }

```

## PyTan API Valid Create Object Examples

### Create user

Create a user called API Test User

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the delete method (to remove the package in case it exists)
45 delete_kwargs = {}
46 delete_kwargs["objtype"] = 'user'
47 delete_kwargs["name"] = 'API Test User'
48
49

```

```
50 # setup the arguments for the handler method
51 kwargs = {}
52 kwargs["username"] = u'API Test User'
53 kwargs["rolename"] = u'Administrator'
54 kwargs["properties"] = [[u'property1', u'value1']]
55
56 # delete the object in case it already exists
57 try:
58     handler.delete(**delete_kwargs)
59 except Exception as e:
60     print e
61
62 # call the handler with the create_user method, passing in kwargs for arguments
63 response = handler.create_user(**kwargs)
64
65
66 print ""
67 print "Type of response: ", type(response)
68
69 print ""
70 print "print of response:"
71 print response
72
73 print ""
74 print "print the object returned in JSON format:"
75 print response.to_json(response)
76
77 # delete the object, we are done with it now
78 try:
79     handler.delete(**delete_kwargs)
80 except Exception as e:
81     print e
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 No results found searching for user with {'name': 'API Test User'}!!
3 2015-08-07 19:46:14,085 INFO      pytan.handler: New user 'API Test User' created with ID 15, roles:
4
5 Type of response:  <class 'taniumpy.object_types.user.User'>
6
7 print of response:
8 User, name: 'API Test User', id: 15
9
10 print the object returned in JSON format:
11 {
12     "_type": "user",
13     "deleted_flag": 0,
14     "group_id": 0,
15     "id": 15,
16     "last_login": "2001-01-01T00:00:00",
17     "local_admin_flag": -1,
18     "metadata": {
19         "_type": "metadata",
20         "item": [
21             {
22                 "_type": "item",
```



```

23         "admin_flag": 0,
24         "name": "TConsole.User.Property.property1",
25         "value": "value1"
26     }
27 ]
28 },
29 "name": "API Test User",
30 "permissions": {
31     "_type": "permissions",
32     "permission": [
33         "admin",
34         "sensor_read",
35         "sensor_write",
36         "question_read",
37         "question_write",
38         "action_read",
39         "action_write",
40         "action_approval",
41         "notification_write",
42         "clients_read",
43         "question_log_read",
44         "content_admin"
45     ]
46 },
47 "roles": {
48     "_type": "roles",
49     "role": [
50         {
51             "_type": "role",
52             "description": "Administrators can perform all functions in the system, including creating c
53             "id": 1,
54             "name": "Administrator",
55             "permissions": {
56                 "_type": "permissions",
57                 "permission": [
58                     "admin",
59                     "sensor_read",
60                     "sensor_write",
61                     "question_read",
62                     "question_write",
63                     "action_read",
64                     "action_write",
65                     "action_approval",
66                     "notification_write",
67                     "clients_read",
68                     "question_log_read",
69                     "content_admin"
70                 ]
71             }
72         }
73     ]
74 }
75 }
76 2015-08-07 19:46:14,099 INFO      pytan.handler: Deleted "User, name: 'API Test User', id: 15"

```

## Create package

Create a package called package49

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the delete method (to remove the package in case it exists)
45 delete_kwargs = {}
46 delete_kwargs["objtype"] = 'package'
47 delete_kwargs["name"] = 'package49'
48
49
50 # setup the arguments for the handler method
51 kwargs = {}
52 kwargs["expire_seconds"] = 1500
```

```

53 kwargs["display_name"] = u'package49 API test'
54 kwargs["name"] = u'package49'
55 kwargs["parameters_json_file"] = u'../doc/example_of_all_package_parameters.json'
56 kwargs["verify_expire_seconds"] = 3600
57 kwargs["command"] = u'package49 $1 $2 $3 $4 $5 $6 $7 $8'
58 kwargs["file_urls"] = [u'3600::testing.vbs|https://content.tanium.com/files/initialcontent/bundles/
59 kwargs["verify_filter_options"] = [u'and']
60 kwargs["verify_filters"] = [u'Custom Tags, that contains:tag']
61 kwargs["command_timeout_seconds"] = 9999
62
63 # delete the object in case it already exists
64 try:
65     handler.delete(**delete_kwargs)
66 except Exception as e:
67     print e
68
69 # call the handler with the create_package method, passing in kwargs for arguments
70 response = handler.create_package(**kwargs)
71
72
73 print ""
74 print "Type of response: ", type(response)
75
76 print ""
77 print "print of response:"
78 print response
79
80 print ""
81 print "print the object returned in JSON format:"
82 print response.to_json(response)
83
84 # delete the object, we are done with it now
85 try:
86     handler.delete(**delete_kwargs)
87 except Exception as e:
88     print e

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 No results found searching for PackageSpec, name: 'package49'!!
3 2015-08-07 19:46:14,165 INFO      pytan.handler: New package 'package49' created with ID 82, command:
4
5 Type of response:  <class 'taniumpy.object_types.package_spec.PackageSpec'>
6
7 print of response:
8 PackageSpec, name: 'package49', id: 82
9
10 print the object returned in JSON format:
11 {
12     "_type": "package_spec",
13     "available_time": "2001-01-01T00:00:00",
14     "command": "package49 $1 $2 $3 $4 $5 $6 $7 $8",
15     "command_timeout": 9999,
16     "creation_time": "2001-01-01T00:00:00",
17     "deleted_flag": 0,
18     "display_name": "package49 API test",

```

```
19 "expire_seconds": 1500,
20 "files": {
21     "_type": "package_files",
22     "file": [
23         {
24             "_type": "file",
25             "bytes_downloaded": 0,
26             "bytes_total": 0,
27             "download_seconds": 3600,
28             "file_status": {
29                 "_type": "file_status",
30                 "status": [
31                     {
32                         "_type": "status",
33                         "bytes_downloaded": 0,
34                         "bytes_total": 0,
35                         "cache_status": "Processing",
36                         "server_id": 1,
37                         "server_name": "JTANIUM1.localdomain:17472",
38                         "status": 0
39                     }
40                 ]
41             },
42             "id": 184,
43             "name": "testing.vbs",
44             "size": 0,
45             "source": "https://content.tanium.com/files/initialcontent/bundles/2014-10-01_11-32-15-7844/"
46             "status": 0
47         }
48     ]
49 },
50 "hidden_flag": 0,
51 "id": 82,
52 "last_update": "2001-01-01T00:00:00",
53 "modification_time": "2001-01-01T00:00:00",
54 "name": "package49",
55 "parameter_definition": "{\"parameterType\": \"com.tanium.components.parameters::ParametersArray\"",
56 "skip_lock_flag": 0,
57 "source_id": 0,
58 "verify_expire_seconds": 3600,
59 "verify_group": {
60     "_type": "group",
61     "id": 211
62 },
63 "verify_group_id": 211
64 }
65 2015-08-07 19:46:14,174 INFO      pytan.handler: Deleted 'PackageSpec, id: 82'
```

## Create group

Create a group called All Windows Computers API Test

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the delete method (to remove the package in case it exists)
45 delete_kwargs = {}
46 delete_kwargs["objtype"] = 'group'
47 delete_kwargs["name"] = 'All Windows Computers API Test'
48
49
50 # setup the arguments for the handler method
51 kwargs = {}
52 kwargs["groupname"] = u'All Windows Computers API Test'
53 kwargs["filters"] = [u'Operating System, that contains:Windows']
54 kwargs["filter_options"] = [u'and']
55
56 # delete the object in case it already exists
57 try:
58     handler.delete(**delete_kwargs)

```

```
59 except Exception as e:
60     print e
61
62 # call the handler with the create_group method, passing in kwargs for arguments
63 response = handler.create_group(**kwargs)
64
65
66 print ""
67 print "Type of response: ", type(response)
68
69 print ""
70 print "print of response:"
71 print response
72
73 print ""
74 print "print the object returned in JSON format:"
75 print response.to_json(response)
76
77 # delete the object, we are done with it now
78 try:
79     handler.delete(**delete_kwargs)
80 except Exception as e:
81     print e
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 No results found searching for Group, name: 'All Windows Computers API Test'!!
3 2015-08-07 19:46:14,211 INFO      pytan.handler: New group 'All Windows Computers API Test' created w
4
5 Type of response:  <class 'taniumpy.object_types.group.Group'>
6
7 print of response:
8 Group, name: 'All Windows Computers API Test', id: 212
9
10 print the object returned in JSON format:
11 {
12     "_type": "group",
13     "and_flag": 1,
14     "deleted_flag": 0,
15     "filters": {
16         "_type": "filters",
17         "filter": [
18             {
19                 "_type": "filter",
20                 "all_times_flag": 0,
21                 "all_values_flag": 0,
22                 "delimiter_index": 0,
23                 "ignore_case_flag": 1,
24                 "max_age_seconds": 0,
25                 "not_flag": 0,
26                 "operator": "RegexMatch",
27                 "sensor": {
28                     "_type": "sensor",
29                     "hash": 45421433
30                 },
31                 "substring_flag": 0,
```

```

32         "substring_length": 0,
33         "substring_start": 0,
34         "utf8_flag": 0,
35         "value": ".*Windows.*",
36         "value_type": "String"
37     }
38 ]
39 },
40 "id": 212,
41 "name": "All Windows Computers API Test",
42 "not_flag": 0,
43 "sub_groups": {
44     "_type": "groups",
45     "group": []
46 },
47 "text": " Operating System containing \"Windows\"",
48 "type": 0
49 }
50 2015-08-07 19:46:14,219 INFO      pytan.handler: Deleted 'Group, id: 212'

```

## Create whitelisted url

Create a whitelisted url

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29

```

```
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the delete method (to remove the package in case it exists)
45 delete_kwargs = {}
46 delete_kwargs["objtype"] = 'whitelisted_url'
47 delete_kwargs["url_regex"] = 'regex:http://test.com/.API_Test.*URL'
48
49
50 # setup the arguments for the handler method
51 kwargs = {}
52 kwargs["url"] = u'http://test.com/.API_Test.*URL'
53 kwargs["regex"] = True
54 kwargs["properties"] = [[u'property1', u'value1']]
55 kwargs["download_seconds"] = 3600
56
57 # delete the object in case it already exists
58 try:
59     handler.delete(**delete_kwargs)
60 except Exception as e:
61     print e
62
63 # call the handler with the create_whitelisted_url method, passing in kwargs for arguments
64 response = handler.create_whitelisted_url(**kwargs)
65
66
67 print ""
68 print "Type of response: ", type(response)
69
70 print ""
71 print "print of response:"
72 print response
73
74 print ""
75 print "print the object returned in JSON format:"
76 print response.to_json(response)
77
78 # delete the object, we are done with it now
79 try:
80     handler.delete(**delete_kwargs)
81 except Exception as e:
82     print e
```

## Output from Python Code



```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 No results found searching for whitelisted_url with {'url_regex': 'regex:http://test.com/*.API_Test.'}
3 2015-08-07 19:46:14,252 INFO      pytan.handler: New Whitelisted URL 'regex:http://test.com/*.API_Test.'
4
5 Type of response: <class 'taniumpy.object_types.white_listed_url.WhiteListedUrl'>
6
7 print of response:
8 WhiteListedUrl, id: 52
9
10 print the object returned in JSON format:
11 {
12     "_type": "white_listed_url",
13     "download_seconds": 3600,
14     "id": 52,
15     "metadata": {
16         "_type": "metadata",
17         "item": [
18             {
19                 "_type": "item",
20                 "admin_flag": 0,
21                 "name": "TConsole.WhitelistedURL.property1",
22                 "value": "value1"
23             }
24         ]
25     },
26     "url_regex": "regex:http://test.com/*.API_Test.*URL"
27 }
28 2015-08-07 19:46:14,263 INFO      pytan.handler: Deleted 'WhiteListedUrl, id: 52'

```

## PyTan API Invalid Create Object Examples

### Invalid create sensor

Create a sensor (Unsupported!)

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18

```

```
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for the handler method
45 kwargs = {}
46
47
48 # call the handler with the create_sensor method, passing in kwargs for arguments
49 # this should throw an exception: pytan.exceptions.HandlerError
50 import traceback
51 try:
52     handler.create_sensor(**kwargs)
53 except Exception as e:
54     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 53, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 708, in create_sensor
5     raise pytan.exceptions.HandlerError(m)
6 HandlerError: Sensor creation not supported via PyTan as of yet, too complex
7 Use create_sensor_from_json() instead!
```

## PyTan API Valid Create Object From JSON Examples

### Create package from json

Export a package object to a JSON file, adding ‘API TEST’ to the name of the package before exporting the JSON file and deleting any pre-existing package with the same (new) name, then create a new package object from the exported JSON file

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = "name"
46 attr_add = " API TEST"
47
48 # delete object before creating it?
49 delete = True
50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'package'
54 get_kwargs["id"] = 31
55
56
57 # get objects to use as an export to JSON file

```

```

58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'package'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'package', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87
88
89 print ""
90 print "Type of response: ", type(response)
91
92 print ""
93 print "print of response:"
94 print response
95
96 print ""
97 print "print the object returned in JSON format:"
98 print response.to_json(response)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,304 INFO      pytan.handler: Deleted 'PackageSpec, id: 76'
3 2015-08-07 19:46:14,305 INFO      pytan.handler: Report file '/var/folders/dk/vjr1r_c53yx6k6gzp2bbt_c
4 2015-08-07 19:46:14,337 INFO      pytan.handler: New PackageSpec, name: 'Disable Java Auto Update API
5
6 Type of response:  <class 'taniumpy.object_types.package_spec_list.PackageSpecList'>
7
8 print of response:
9 PackageSpecList, len: 1
10
11 print the object returned in JSON format:
12 {
13     "_type": "package_specs",

```

```

14 "package_spec": [
15     {
16         "_type": "package_spec",
17         "available_time": "2015-08-07T13:22:40",
18         "command": "cmd /c cscript //T:60 disable-java-auto-update.vbs",
19         "command_timeout": 60,
20         "creation_time": "2001-01-01T00:00:00",
21         "deleted_flag": 0,
22         "display_name": "Disable Java Auto Update",
23         "expire_seconds": 660,
24         "files": {
25             "_type": "package_files",
26             "file": [
27                 {
28                     "_type": "file",
29                     "bytes_downloaded": 0,
30                     "bytes_total": 0,
31                     "cache_status": "CACHED",
32                     "download_seconds": 0,
33                     "file_status": {
34                         "_type": "file_status",
35                         "status": [
36                             {
37                                 "_type": "status",
38                                 "bytes_downloaded": 0,
39                                 "bytes_total": 0,
40                                 "cache_status": "Processing",
41                                 "server_id": 1,
42                                 "server_name": "JTANIUM1.localdomain:17472",
43                                 "status": 0
44                             }
45                         ]
46                     },
47                     "hash": "9e36208ce643c767ad76ef2ad6a69141fbb5a59a607b8eb8065db09e3a153c0d",
48                     "id": 43,
49                     "name": "disable-java-auto-update.vbs",
50                     "size": 11377,
51                     "source": "https://content.tanium.com/files/published/InitialContent/2015-06-04_18-59-45",
52                     "status": 0
53                 }
54             ]
55         },
56         "hidden_flag": 0,
57         "id": 83,
58         "last_update": "2001-01-01T00:00:00",
59         "metadata": {
60             "_type": "metadata",
61             "item": [
62                 {
63                     "_type": "item",
64                     "admin_flag": 0,
65                     "name": "defined",
66                     "value": "Tanium"
67                 },
68                 {
69                     "_type": "item",
70                     "admin_flag": 0,
71                     "name": "category",

```

```
72         "value": "Tanium"
73     }
74 ]
75 },
76 "modification_time": "2001-01-01T00:00:00",
77 "name": "Disable Java Auto Update API TEST",
78 "skip_lock_flag": 0,
79 "source_id": 0,
80 "verify_expire_seconds": 600,
81 "verify_group": {
82     "_type": "group",
83     "id": 0
84 },
85 "verify_group_id": 0
86 }
87 ]
88 }
```

### Create user from json

Export a user object to a JSON file, adding ‘ API TEST’ to the name of the user before exporting the JSON file and deleting any pre-existing user with the same (new) name, then create a new user object from the exported JSON file

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
```

```

31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = "name"
46 attr_add = " API TEST"
47
48 # delete object before creating it?
49 delete = True
50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'user'
54 get_kwargs["id"] = 1
55
56
57 # get objects to use as an export to JSON file
58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'user'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'user', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87
88

```

```
89 print ""
90 print "Type of response: ", type(response)
91
92 print ""
93 print "print of response:"
94 print response
95
96 print ""
97 print "print the object returned in JSON format:"
98 print response.to_json(response)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,358 INFO      pytan.handler: Deleted "User, name: 'Jim Olsen API TEST', id: 12"
3 2015-08-07 19:46:14,359 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
4 2015-08-07 19:46:14,380 INFO      pytan.handler: New User, name: 'Jim Olsen API TEST', id: 16 (ID: 16)
5
6 Type of response: <class 'taniumpy.object_types.user_list.UserList'>
7
8 print of response:
9 UserList, len: 1
10
11 print the object returned in JSON format:
12 {
13     "_type": "users",
14     "user": [
15         {
16             "_type": "user",
17             "deleted_flag": 0,
18             "group_id": 0,
19             "id": 16,
20             "last_login": "2001-01-01T00:00:00",
21             "local_admin_flag": -1,
22             "name": "Jim Olsen API TEST",
23             "permissions": {
24                 "_type": "permissions",
25                 "permission": [
26                     "admin",
27                     "sensor_read",
28                     "sensor_write",
29                     "question_read",
30                     "question_write",
31                     "action_read",
32                     "action_write",
33                     "action_approval",
34                     "notification_write",
35                     "clients_read",
36                     "question_log_read",
37                     "content_admin"
38                 ]
39             },
40             "roles": {
41                 "_type": "roles",
42                 "role": [
43                     {
44                         "_type": "role",
```



```

45         "description": "Administrators can perform all functions in the system, including creati
46         "id": 1,
47         "name": "Administrator",
48         "permissions": {
49             "_type": "permissions",
50             "permission": [
51                 "admin",
52                 "sensor_read",
53                 "sensor_write",
54                 "question_read",
55                 "question_write",
56                 "action_read",
57                 "action_write",
58                 "action_approval",
59                 "notification_write",
60                 "clients_read",
61                 "question_log_read",
62                 "content_admin"
63             ]
64         }
65     }
66 ]
67 }
68 }
69 ]
70 }

```

### Create saved question from json

Export a saved question object to a JSON file, adding ' API TEST' to the name of the saved question before exporting the JSON file and deleting any pre-existing saved question with the same (new) name, then create a new saved question object from the exported JSON file

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server

```

```
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = "name"
46 attr_add = " API TEST"
47
48 # delete object before creating it?
49 delete = True
50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'saved_question'
54 get_kwargs["id"] = 1
55
56
57 # get objects to use as an export to JSON file
58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'saved_question'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
```

```

79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'saved_question', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87
88
89 print ""
90 print "Type of response: ", type(response)
91
92 print ""
93 print "print of response:"
94 print response
95
96 print ""
97 print "print the object returned in JSON format:"
98 print response.to_json(response)

```

### Output from Python Code

```

1  Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2  2015-08-07 19:46:14,432 INFO      pytan.handler: Deleted 'SavedQuestion, id: 109'
3  2015-08-07 19:46:14,433 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
4  2015-08-07 19:46:14,460 INFO      pytan.handler: New SavedQuestion, name: 'Has Tanium Standard Utilit
5
6  Type of response:  <class 'taniumpy.object_types.saved_question_list.SavedQuestionList'>
7
8  print of response:
9  SavedQuestionList, len: 1
10
11 print the object returned in JSON format:
12 {
13     "_type": "saved_questions",
14     "saved_question": [
15         {
16             "_type": "saved_question",
17             "action_tracking_flag": 0,
18             "archive_enabled_flag": 0,
19             "archive_owner": {
20                 "_type": "user"
21             },
22             "expire_seconds": 600,
23             "hidden_flag": 0,
24             "id": 111,
25             "issue_seconds": 120,
26             "issue_seconds_never_flag": 0,
27             "keep_seconds": 0,
28             "mod_time": "2015-08-07T19:46:14",
29             "mod_user": {
30                 "_type": "user",
31                 "name": "Tanium User"
32             },
33             "most_recent_question_id": 1256,
34             "name": "Has Tanium Standard Utilities API TEST",

```

```
35     "packages": {
36         "_type": "package_specs",
37         "package_spec": [
38             {
39                 "_type": "package_spec",
40                 "id": 20,
41                 "name": "Distribute Tanium Standard Utilities"
42             }
43         ]
44     },
45     "public_flag": 1,
46     "query_text": "Get Has Tanium Standard Utilities from all machines",
47     "question": {
48         "_type": "question",
49         "action_tracking_flag": 0,
50         "expiration": "2015-08-07T19:32:37",
51         "expire_seconds": 0,
52         "force_computer_id_flag": 0,
53         "hidden_flag": 0,
54         "id": 1256,
55         "management_rights_group": {
56             "_type": "group",
57             "id": 0
58         },
59         "query_text": "Get Has Tanium Standard Utilities from all machines",
60         "saved_question": {
61             "_type": "saved_question",
62             "id": 110
63         },
64         "selects": {
65             "_type": "selects",
66             "select": [
67                 {
68                     "_type": "select",
69                     "filter": {
70                         "_type": "filter",
71                         "all_times_flag": 0,
72                         "all_values_flag": 0,
73                         "delimiter_index": 0,
74                         "end_time": "2001-01-01T00:00:00",
75                         "ignore_case_flag": 1,
76                         "max_age_seconds": 0,
77                         "not_flag": 0,
78                         "operator": "Less",
79                         "start_time": "2001-01-01T00:00:00",
80                         "substring_flag": 0,
81                         "substring_length": 0,
82                         "substring_start": 0,
83                         "utf8_flag": 0,
84                         "value_type": "String"
85                     },
86                     "sensor": {
87                         "_type": "sensor",
88                         "category": "Tanium",
89                         "creation_time": "2015-08-07T13:22:09",
90                         "delimiter": ",",
91                         "description": "Returns whether a machine has the Tanium Standard Utilities\nExample",
92                         "exclude_from_parse_flag": 1,
```

```

93         "hash": 1782389954,
94         "hidden_flag": 0,
95         "id": 194,
96         "ignore_case_flag": 1,
97         "last_modified_by": "Jim Olsen",
98         "max_age_seconds": 900,
99         "modification_time": "2015-08-07T13:22:09",
100        "name": "Has Tanium Standard Utilities",
101        "queries": {
102            "_type": "queries",
103            "query": [
104                {
105                    "_type": "query",
106                    "platform": "Windows",
107                    "script": "&#039;=====\n&#039;; Has Tanium S
108                    "script_type": "VBScript"
109                },
110                {
111                    "_type": "query",
112                    "platform": "Linux",
113                    "script": "#!/bin/sh\n\n# THIS IS A STUB - NOT INTENDED AS FUNCTIONAL - NA\n#
114                    "script_type": "UnixShell"
115                },
116                {
117                    "_type": "query",
118                    "platform": "Mac",
119                    "script": "#!/bin/sh\n\n# THIS IS A STUB - NOT INTENDED AS FUNCTIONAL - NA\n#
120                    "script_type": "UnixShell"
121                },
122                {
123                    "_type": "query",
124                    "platform": "Solaris",
125                    "script": "#!/bin/sh\n\n# THIS IS A STUB - NOT INTENDED AS FUNCTIONAL - NA\n#
126                    "script_type": "UnixShell"
127                },
128                {
129                    "_type": "query",
130                    "platform": "AIX",
131                    "script": "#!/bin/sh\n\n# THIS IS A STUB - NOT INTENDED AS FUNCTIONAL - NA\n#
132                    "script_type": "UnixShell"
133                }
134            ]
135        },
136        "source_id": 0,
137        "string_count": 16,
138        "value_type": "String"
139    }
140}
141]
142},
143"skip_lock_flag": 0,
144"user": {
145    "_type": "user",
146    "id": 1,
147    "name": "Jim Olsen"
148}
149},
150"row_count_flag": 0,

```

```
151     "sort_column": 0,
152     "user": {
153         "_type": "user",
154         "id": 2,
155         "name": "Tanium User"
156     }
157 }
158 ]
159 }
```

### Create action from json

Export an action object to a JSON file, then create a new action object from the exported JSON file. Actions can not be deleted, so do not delete it. This will, in effect, ‘re-deploy’ an action.

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
```

```

39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = ""
46 attr_add = ""
47
48 # delete object before creating it?
49 delete = False
50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'action'
54 get_kwargs["id"] = 1
55
56
57 # get objects to use as an export to JSON file
58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'action'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'action', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87
88
89 print ""
90 print "Type of response: ", type(response)
91
92 print ""
93 print "print of response:"
94 print response
95
96 print ""

```

```
97 print "print the object returned in JSON format:"
98 print response.to_json(response)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,474 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
3 2015-08-07 19:46:14,496 INFO      pytan.handler: New Action, name: 'Distribute Tanium Standard Utilit
4
5 Type of response:  <class 'taniumpy.object_types.action_list.ActionList'>
6
7 print of response:
8 ActionList, len: 1
9
10 print the object returned in JSON format:
11 {
12     "_type": "actions",
13     "action": [
14         {
15             "_type": "action",
16             "action_group": {
17                 "_type": "group",
18                 "id": 0,
19                 "name": "Default"
20             },
21             "approver": {
22                 "_type": "user",
23                 "id": 2,
24                 "name": "Tanium User"
25             },
26             "comment": "Distribute Tanium Standard Utilities",
27             "creation_time": "2015-08-07T19:46:14",
28             "distribute_seconds": 3200,
29             "expiration_time": "2015-08-07T20:41:16",
30             "expire_seconds": 3300,
31             "history_saved_question": {
32                 "_type": "saved_question",
33                 "id": 102
34             },
35             "id": 60,
36             "name": "Distribute Tanium Standard Utilities",
37             "package_spec": {
38                 "_type": "package_spec",
39                 "command": "cmd /c cscript install-standard-utils.vbs \"%Tools\\StdUtils\\\"",
40                 "id": 20,
41                 "name": "Distribute Tanium Standard Utilities"
42             },
43             "saved_action": {
44                 "_type": "saved_action",
45                 "id": 46
46             },
47             "skip_lock_flag": 0,
48             "start_time": "2015-08-07T19:46:16",
49             "status": "Open",
50             "stopped_flag": 0,
51             "target_group": {
52                 "_type": "group",
```



```

53         "id": 37,
54         "name": "Default"
55     },
56     "user": {
57         "_type": "user",
58         "group_id": 0,
59         "id": 2,
60         "last_login": "2015-08-07T19:46:14",
61         "name": "Tanium User"
62     }
63 }
64 ]
65 }

```

### Create sensor from json

Export a sensor object to a JSON file, adding ‘ API TEST’ to the name of the sensor before exporting the JSON file and deleting any pre-existing sensor with the same (new) name, then create a new sensor object from the exported JSON file

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(

```

```
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = "name"
46 attr_add = " API TEST"
47
48 # delete object before creating it?
49 delete = True
50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'sensor'
54 get_kwargs["id"] = 381
55
56
57 # get objects to use as an export to JSON file
58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'sensor'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'sensor', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87
88
89 print ""
90 print "Type of response: ", type(response)
91
```

```

92 print ""
93 print "print of response:"
94 print response
95
96 print ""
97 print "print the object returned in JSON format:"
98 print response.to_json(response)

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,551 INFO      pytan.handler: Deleted 'Sensor, id: 639'
3 2015-08-07 19:46:14,551 INFO      pytan.handler: Report file '/var/folders/dk/vjr1r_c53yx6k6gzp2bbt_c
4 2015-08-07 19:46:14,577 INFO      pytan.handler: New Sensor, name: 'Is Mac API TEST', id: 642 (ID: 64
5
6 Type of response: <class 'taniumpy.object_types.sensor_list.SensorList'>
7
8 print of response:
9 SensorList, len: 1
10
11 print the object returned in JSON format:
12 {
13     "_type": "sensors",
14     "sensor": [
15         {
16             "_type": "sensor",
17             "category": "Operating System",
18             "creation_time": "2015-08-07T19:46:14",
19             "delimiter": ",",
20             "description": "Returns whether the machine is a Mac.  True if so, False if not.\nExample: Tru
21             "exclude_from_parse_flag": 0,
22             "hash": 2387245230,
23             "hidden_flag": 0,
24             "id": 642,
25             "ignore_case_flag": 1,
26             "last_modified_by": "Tanium User",
27             "max_age_seconds": 86400,
28             "modification_time": "2015-08-07T19:46:14",
29             "name": "Is Mac API TEST",
30             "queries": {
31                 "_type": "queries",
32                 "query": [
33                     {
34                         "_type": "query",
35                         "platform": "Windows",
36                         "script": "&#039;=====\\n&#039; Is Mac\\n&#039;=====
37                         "script_type": "VBScript"
38                     },
39                     {
40                         "_type": "query",
41                         "platform": "Linux",
42                         "script": "#!/bin/bash\\necho False\\n",
43                         "script_type": "UnixShell"
44                     },
45                     {
46                         "_type": "query",
47                         "platform": "Mac",

```

```
48         "script": "#!/bin/bash\nnecho True\n",
49         "script_type": "UnixShell"
50     },
51     {
52         "_type": "query",
53         "platform": "Solaris",
54         "script": "#!/bin/sh\n\n# THIS IS A STUB - NOT INTENDED AS FUNCTIONAL - NA\n\n# \n\nnecho",
55         "script_type": "UnixShell"
56     },
57     {
58         "_type": "query",
59         "platform": "AIX",
60         "script": "#!/bin/sh\n\n# THIS IS A STUB - NOT INTENDED AS FUNCTIONAL - NA\n\n# \n\nnecho",
61         "script_type": "UnixShell"
62     }
63 ]
64 },
65 "source_id": 0,
66 "string_count": 0,
67 "value_type": "String"
68 }
69 ]
70 }
```

### Create question from json

Export a question object to a JSON file, then create a new question object from the exported JSON file. Questions can not be deleted, so do not delete it. This will, in effect, ‘re-ask’ a question.

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
```

```

25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = ""
46 attr_add = ""
47
48 # delete object before creating it?
49 delete = False
50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'question'
54 get_kwargs["id"] = 1
55
56
57 # get objects to use as an export to JSON file
58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'question'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )

```

```
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'question', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87
88
89 print ""
90 print "Type of response: ", type(response)
91
92 print ""
93 print "print of response:"
94 print response
95
96 print ""
97 print "print the object returned in JSON format:"
98 print response.to_json(response)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,608 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
3 2015-08-07 19:46:14,640 INFO      pytan.handler: New Question, id: 1305 (ID: 1305) created successful
4
5 Type of response:  <class 'taniumpy.object_types.question_list.QuestionList'>
6
7 print of response:
8 QuestionList, len: 1
9
10 print the object returned in JSON format:
11 {
12     "_type": "questions",
13     "question": [
14         {
15             "_type": "question",
16             "action_tracking_flag": 0,
17             "context_group": {
18                 "_type": "group",
19                 "id": 0
20             },
21             "expiration": "2015-08-07T19:56:14",
22             "expire_seconds": 0,
23             "force_computer_id_flag": 1,
24             "hidden_flag": 0,
25             "id": 1305,
26             "management_rights_group": {
27                 "_type": "group",
28                 "id": 0
29             },
30             "query_text": "Get Action Statuses matching \"Nil\" from all machines",
31             "saved_question": {
32                 "_type": "saved_question",
33                 "id": 0
34             },
35             "selects": {
36                 "_type": "selects",
37                 "select": [
38                     {
```

```

39         "_type": "select",
40         "filter": {
41             "_type": "filter",
42             "all_times_flag": 0,
43             "all_values_flag": 1,
44             "delimiter_index": 0,
45             "end_time": "2001-01-01T00:00:00",
46             "ignore_case_flag": 1,
47             "max_age_seconds": 0,
48             "not_flag": 0,
49             "operator": "RegexMatch",
50             "start_time": "2001-01-01T00:00:00",
51             "substring_flag": 0,
52             "substring_length": 0,
53             "substring_start": 0,
54             "utf8_flag": 0,
55             "value": "Nil",
56             "value_type": "String"
57         },
58         "sensor": {
59             "_type": "sensor",
60             "category": "Reserved",
61             "description": "The recorded state of each action a client has taken recently in the f
62             "exclude_from_parse_flag": 1,
63             "hash": 1792443391,
64             "hidden_flag": 0,
65             "id": 1,
66             "ignore_case_flag": 1,
67             "max_age_seconds": 3600,
68             "name": "Action Statuses",
69             "queries": {
70                 "_type": "queries",
71                 "query": [
72                     {
73                         "_type": "query",
74                         "platform": "Windows",
75                         "script": "Reserved",
76                         "script_type": "WMIQuery"
77                     }
78                 ]
79             },
80             "source_id": 0,
81             "string_count": 238,
82             "value_type": "String"
83         }
84     }
85 ]
86 },
87 "skip_lock_flag": 0,
88 "user": {
89     "_type": "user",
90     "id": 2,
91     "name": "Tanium User"
92 }
93 }
94 ]
95 }

```

### Create whitelisted url from json

Export a whitelisted url object to a JSON file, adding 'test1' to the url\_regex of the whitelisted url before exporting the JSON file and deleting any pre-existing whitelisted url with the same (new) name, then create a new whitelisted url object from the exported JSON file

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = "url_regex"
46 attr_add = " API TEST"
47
48 # delete object before creating it?
49 delete = True
```



```

50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'whitelisted_url'
54 get_kwargs["url_regex"] = u'test1'
55
56
57 # get objects to use as an export to JSON file
58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'whitelisted_url'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'whitelisted_url', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87
88
89 print ""
90 print "Type of response: ", type(response)
91
92 print ""
93 print "print of response:"
94 print response
95
96 print ""
97 print "print the object returned in JSON format:"
98 print response.to_json(response)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,685 INFO      pytan.handler: Deleted 'WhiteListedUrl, id: 27'
3 2015-08-07 19:46:14,686 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
4 2015-08-07 19:46:14,695 INFO      pytan.handler: New WhiteListedUrl, id: 53 (ID: 53) created successf
5

```

```
6 Type of response: <class 'taniumpy.object_types.white_listed_url_list.WhiteListedUrlList'>
7
8 print of response:
9 WhiteListedUrlList, len: 1
10
11 print the object returned in JSON format:
12 {
13     "_type": "white_listed_urls",
14     "white_listed_url": [
15         {
16             "_type": "white_listed_url",
17             "download_seconds": 86400,
18             "id": 53,
19             "url_regex": "test1 API TEST"
20         }
21     ]
22 }
```

### Create group from json

Export a group object to a JSON file, adding ‘ API TEST’ to the name of the group before exporting the JSON file and deleting any pre-existing group with the same (new) name, then create a new group object from the exported JSON file

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
```

```

30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # set the attribute name and value we want to add to the original object (if any)
45 attr_name = "name"
46 attr_add = " API TEST"
47
48 # delete object before creating it?
49 delete = True
50
51 # setup the arguments for getting an object to export as json file
52 get_kwargs = {}
53 get_kwargs["objtype"] = u'group'
54 get_kwargs["name"] = u'All Computers'
55
56
57 # get objects to use as an export to JSON file
58 orig_objs = handler.get(**get_kwargs)
59
60 # if attr_name and attr_add exists, modify the orig_objs to add attr_add to the attribute
61 # attr_name
62 if attr_name:
63     for x in orig_objs:
64         new_attr = getattr(x, attr_name)
65         new_attr += attr_add
66         setattr(x, attr_name, new_attr)
67         if delete:
68             # delete the object in case it already exists
69             del_kwargs = {}
70             del_kwargs[attr_name] = new_attr
71             del_kwargs['objtype'] = u'group'
72             try:
73                 handler.delete(**del_kwargs)
74             except Exception as e:
75                 print e
76
77 # export orig_objs to a json file
78 json_file, results = handler.export_to_report_file(
79     obj=orig_objs,
80     export_format='json',
81     report_dir=tempfile.gettempdir(),
82 )
83
84 # create the object from the exported JSON file
85 create_kwargs = {'objtype': u'group', 'json_file': json_file}
86 response = handler.create_from_json(**create_kwargs)
87

```

```
88
89 print ""
90 print "Type of response: ", type(response)
91
92 print ""
93 print "print of response:"
94 print response
95
96 print ""
97 print "print the object returned in JSON format:"
98 print response.to_json(response)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,746 INFO      pytan.handler: Deleted 'Group, id: 157'
3 2015-08-07 19:46:14,747 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
4 2015-08-07 19:46:14,769 INFO      pytan.handler: New Group, name: 'All Computers API TEST', id: 213 (
5
6 Type of response:  <class 'taniumpy.object_types.group_list.GroupList'>
7
8 print of response:
9 GroupList, len: 1
10
11 print the object returned in JSON format:
12 {
13     "_type": "groups",
14     "group": [
15         {
16             "_type": "group",
17             "and_flag": 0,
18             "deleted_flag": 0,
19             "filters": {
20                 "_type": "filters",
21                 "filter": []
22             },
23             "id": 213,
24             "name": "All Computers API TEST",
25             "not_flag": 0,
26             "sub_groups": {
27                 "_type": "groups",
28                 "group": []
29             },
30             "type": 0
31         }
32     ]
33 }
```

## PyTan API Invalid Create Object From JSON Examples

### Invalid create saved action from json

Create a saved action from json (not supported!)

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for getting an object to export as json file
45 get_kwargs = {}
46 get_kwargs["objtype"] = u'saved_action'
47 get_kwargs["name"] = u'Distribute Tanium Standard Utilities'
48
49 # get objects to use as an export to JSON file
50 orig_objs = handler.get(**get_kwargs)
51
52 # export orig_objs to a json file
53 json_file, results = handler.export_to_report_file(
54     obj=orig_objs,
55     export_format='json',
56     report_dir=tempfile.gettempdir(),
57 )

```

```
58
59 # call the handler with the create_from_json method, passing in kwargs for arguments
60 # this should throw an exception: pytan.exceptions.HandlerError
61 import traceback
62
63 # create the object from the exported JSON file
64 create_kwargs = {'objtype': u'saved_action', 'json_file': json_file}
65 try:
66     response = handler.create_from_json(**create_kwargs)
67 except Exception as e:
68     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,794 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
3 Traceback (most recent call last):
4   File "<string>", line 67, in <module>
5   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 546, in create_from_json
6     raise pytan.exceptions.HandlerError(m(objtype, json_createable))
7 HandlerError: saved_action is not a json createable object! Supported objects: user, whitelisted_url
```

### Invalid create client from json

Create a client from json (not supported!)

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
```

```

27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for getting an object to export as json file
45 get_kwargs = {}
46 get_kwargs["objtype"] = u'client'
47 get_kwargs["status"] = u'Leader'
48
49 # get objects to use as an export to JSON file
50 orig_objs = handler.get(**get_kwargs)
51
52 # export orig_objs to a json file
53 json_file, results = handler.export_to_report_file(
54     obj=orig_objs,
55     export_format='json',
56     report_dir=tempfile.gettempdir(),
57 )
58
59 # call the handler with the create_from_json method, passing in kwargs for arguments
60 # this should throw an exception: pytan.exceptions.HandlerError
61 import traceback
62
63 # create the object from the exported JSON file
64 create_kwargs = {'objtype': u'client', 'json_file': json_file}
65 try:
66     response = handler.create_from_json(**create_kwargs)
67 except Exception as e:
68     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,805 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
3 Traceback (most recent call last):
4   File "<string>", line 67, in <module>
5   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 546, in create_from_json
6     raise pytan.exceptions.HandlerError(m(objtype, json_createable))
7 HandlerError: client is not a json createable object! Supported objects: user, whitelisted_url, save

```

## Invalid create userrole from json

Create a user role from json (not supported!)

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for getting an object to export as json file
45 get_kwargs = {}
46 get_kwargs["objtype"] = u'userrole'
47 get_kwargs["name"] = u'Administrator'
48
49 # get objects to use as an export to JSON file
50 orig_objs = handler.get(**get_kwargs)
51
52 # export orig_objs to a json file
```



```

53 | json_file, results = handler.export_to_report_file(
54 |     obj=orig_objs,
55 |     export_format='json',
56 |     report_dir=tempfile.gettempdir(),
57 | )
58 |
59 | # call the handler with the create_from_json method, passing in kwargs for arguments
60 | # this should throw an exception: pytan.exceptions.HandlerError
61 | import traceback
62 |
63 | # create the object from the exported JSON file
64 | create_kwargs = {'objtype': u'userrole', 'json_file': json_file}
65 | try:
66 |     response = handler.create_from_json(**create_kwargs)
67 | except Exception as e:
68 |     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 | Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 | 2015-08-07 19:46:14,815 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
3 | Traceback (most recent call last):
4 |   File "<string>", line 67, in <module>
5 |   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 546, in create_from_json
6 |     raise pytan.exceptions.HandlerError(m(objtype, json_createable))
7 | HandlerError: userrole is not a json createable object! Supported objects: user, whitelisted_url, sa

```

### Invalid create setting from json

Create a setting from json (not supported!)

### Example Python Code

```

1 | import os
2 | import sys
3 | sys.dont_write_bytecode = True
4 |
5 | # Determine our script name, script dir
6 | my_file = os.path.abspath(sys.argv[0])
7 | my_dir = os.path.dirname(my_file)
8 |
9 | # determine the pytan lib dir and add it to the path
10 | parent_dir = os.path.dirname(my_dir)
11 | pytan_root_dir = os.path.dirname(parent_dir)
12 | lib_dir = os.path.join(pytan_root_dir, 'lib')
13 | path_adds = [lib_dir]
14 |
15 | for aa in path_adds:
16 |     if aa not in sys.path:
17 |         sys.path.append(aa)
18 |
19 |
20 | # connection info for Tanium Server
21 | USERNAME = "Tanium User"

```

```
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the arguments for getting an object to export as json file
45 get_kwargs = {}
46 get_kwargs["objtype"] = u'setting'
47 get_kwargs["id"] = 1
48
49 # get objects to use as an export to JSON file
50 orig_objs = handler.get(**get_kwargs)
51
52 # export orig_objs to a json file
53 json_file, results = handler.export_to_report_file(
54     obj=orig_objs,
55     export_format='json',
56     report_dir=tempfile.gettempdir(),
57 )
58
59 # call the handler with the create_from_json method, passing in kwargs for arguments
60 # this should throw an exception: pytan.exceptions.HandlerError
61 import traceback
62
63 # create the object from the exported JSON file
64 create_kwargs = {'objtype': u'setting', 'json_file': json_file}
65 try:
66     response = handler.create_from_json(**create_kwargs)
67 except Exception as e:
68     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,843 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
3 Traceback (most recent call last):
4   File "<string>", line 67, in <module>
5   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 546, in create_from_json
6     raise pytan.exceptions.HandlerError(m(objtype, json_createable))
```

```
7 | HandlerError: setting is not a json createable object! Supported objects: user, whitelisted_url, sav
```

## PyTan API Valid Export ResultSet Examples

### Export resultset csv default options

Export a ResultSet from asking a question as CSV with the default options

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
```

```

46 export_kwargs["export_format"] = u'csv'
47
48 # ask the question that will provide the resultset that we want to use
49 ask_kwargs = {
50     'qtype': 'manual',
51     'sensors': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
54     ],
55 }
56 response = handler.ask(**ask_kwargs)
57
58 # export the object to a string
59 # (we could just as easily export to a file using export_to_report_file)
60 export_kwargs['obj'] = response['question_results']
61 export_str = handler.export_obj(**export_kwargs)
62
63
64 print ""
65 print "print the export_str returned from export_obj():"
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: id resolved to 1306
3 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: expiration resolved to 2015-
4 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: query_text resolved to Get C
5 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: id resolved to 1306
6 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: Object Info resolved to Ques
7 2015-08-07 19:46:14,933 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
8 2015-08-07 19:46:14,933 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
9 2015-08-07 19:46:14,933 INFO pytan.handler.QuestionPoller: ID 1306: Progress Changed 0% (0 of 2)
10 2015-08-07 19:46:19,940 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
11 2015-08-07 19:46:19,940 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
12 2015-08-07 19:46:24,944 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
13 2015-08-07 19:46:24,944 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
14 2015-08-07 19:46:29,951 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
15 2015-08-07 19:46:29,951 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
16 2015-08-07 19:46:34,955 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
17 2015-08-07 19:46:34,955 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
18 2015-08-07 19:46:39,959 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 1, Passed:
19 2015-08-07 19:46:39,959 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
20 2015-08-07 19:46:39,959 INFO pytan.handler.QuestionPoller: ID 1306: Progress Changed 50% (1 of 2)
21 2015-08-07 19:46:44,964 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 1, Passed:
22 2015-08-07 19:46:44,965 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
23 2015-08-07 19:46:49,971 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 2, Passed:
24 2015-08-07 19:46:49,971 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
25 2015-08-07 19:46:49,971 INFO pytan.handler.QuestionPoller: ID 1306: Progress Changed 100% (2 of
26 2015-08-07 19:46:49,971 INFO pytan.handler.QuestionPoller: ID 1306: Reached Threshold of 99% (2
27
28 print the export_str returned from export_obj():

```

```

29 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
30 2015-08-07 19:46:14,843 INFO      pytan.handler: Report file '/var/folders/dk/vjrlr_c53yx6k6gzp2bbt_c
31 Traceback (most recent call last):
32   File "<string>", line 67, in <module>
33   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 546, in create_from_json
34     raise pytan.exceptions.HandlerError(m(objtype, json_createable))
35 HandlerError: setting is not a json createable object! Supported objects: user, whitelisted_url, sav

```

### Export resultset csv expand false

Export a ResultSet from asking a question as CSV with false for expand\_grouped\_columns

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41

```

```

42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["expand_grouped_columns"] = False
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: id resolved to 1307
3 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: expiration resolved to 2015-
4 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: query_text resolved to Get C
5 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: id resolved to 1307
6 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: Object Info resolved to Ques
7 2015-08-07 19:46:50,083 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 0, Passed:
8 2015-08-07 19:46:50,083 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
9 2015-08-07 19:46:50,083 INFO pytan.handler.QuestionPoller: ID 1307: Progress Changed 0% (0 of 2)
10 2015-08-07 19:46:55,088 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 1, Passed:
11 2015-08-07 19:46:55,088 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
12 2015-08-07 19:46:55,088 INFO pytan.handler.QuestionPoller: ID 1307: Progress Changed 50% (1 of 2)
13 2015-08-07 19:47:00,092 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 1, Passed:
14 2015-08-07 19:47:00,092 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
15 2015-08-07 19:47:05,096 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 1, Passed:
16 2015-08-07 19:47:05,096 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
17 2015-08-07 19:47:10,102 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 2, Passed:
18 2015-08-07 19:47:10,102 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
19 2015-08-07 19:47:10,102 INFO pytan.handler.QuestionPoller: ID 1307: Progress Changed 100% (2 of
20 2015-08-07 19:47:10,102 INFO pytan.handler.QuestionPoller: ID 1307: Reached Threshold of 99% (2
21
22 print the export_str returned from export_obj():
23 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!

```

```

24 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: id resolved to 1306
25 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: expiration resolved to 2015-
26 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: query_text resolved to Get C
27 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: id resolved to 1306
28 2015-08-07 19:46:14,930 DEBUG pytan.handler.QuestionPoller: ID 1306: Object Info resolved to Ques
29 2015-08-07 19:46:14,933 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
30 2015-08-07 19:46:14,933 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
31 2015-08-07 19:46:14,933 INFO pytan.handler.QuestionPoller: ID 1306: Progress Changed 0% (0 of 2)
32 2015-08-07 19:46:19,940 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
33 2015-08-07 19:46:19,940 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
34 2015-08-07 19:46:24,944 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
35 2015-08-07 19:46:24,944 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
36 2015-08-07 19:46:29,951 DEBUG pytan.handler.QuestionPoller: ID 1306: Progress: Tested: 0, Passed:
37 2015-08-07 19:46:29,951 DEBUG pytan.handler.QuestionPoller: ID 1306: Timing: Started: 2015-08-07
38 ..trimmed for brevity..

```

### Export resultset csv expand true

Export a ResultSet from asking a question as CSV with true for expand\_grouped\_columns

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(

```

```
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["expand_grouped_columns"] = True
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: id resolved to 1309
3 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: expiration resolved to 2015-
4 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: query_text resolved to Get C
5 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: id resolved to 1309
6 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: Object Info resolved to Ques
7 2015-08-07 19:47:10,231 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 0, Passed:
8 2015-08-07 19:47:10,231 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
9 2015-08-07 19:47:10,231 INFO pytan.handler.QuestionPoller: ID 1309: Progress Changed 0% (0 of 2)
10 2015-08-07 19:47:15,235 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 0, Passed:
11 2015-08-07 19:47:15,235 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
12 2015-08-07 19:47:20,239 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 1, Passed:
13 2015-08-07 19:47:20,239 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
14 2015-08-07 19:47:20,239 INFO pytan.handler.QuestionPoller: ID 1309: Progress Changed 50% (1 of 2)
15 2015-08-07 19:47:25,243 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 1, Passed:
```



```

16 2015-08-07 19:47:25,243 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
17 2015-08-07 19:47:30,250 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 1, Passed:
18 2015-08-07 19:47:30,250 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
19 2015-08-07 19:47:35,255 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 1, Passed:
20 2015-08-07 19:47:35,255 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
21 2015-08-07 19:47:40,259 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 2, Passed:
22 2015-08-07 19:47:40,259 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
23 2015-08-07 19:47:40,259 INFO pytan.handler.QuestionPoller: ID 1309: Progress Changed 100% (2 of
24 2015-08-07 19:47:40,259 INFO pytan.handler.QuestionPoller: ID 1309: Reached Threshold of 99% (2
25
26 print the export_str returned from export_obj():
27 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
28 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: id resolved to 1307
29 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: expiration resolved to 2015-
30 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: query_text resolved to Get C
31 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: id resolved to 1307
32 2015-08-07 19:46:50,080 DEBUG pytan.handler.QuestionPoller: ID 1307: Object Info resolved to Ques
33 2015-08-07 19:46:50,083 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 0, Passed:
34 2015-08-07 19:46:50,083 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
35 2015-08-07 19:46:50,083 INFO pytan.handler.QuestionPoller: ID 1307: Progress Changed 0% (0 of 2)
36 2015-08-07 19:46:55,088 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 1, Passed:
37 2015-08-07 19:46:55,088 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
38 2015-08-07 19:46:55,088 INFO pytan.handler.QuestionPoller: ID 1307: Progress Changed 50% (1 of 2)
39 2015-08-07 19:47:00,092 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 1, Passed:
40 2015-08-07 19:47:00,092 DEBUG pytan.handler.QuestionPoller: ID 1307: Timing: Started: 2015-08-07
41 2015-08-07 19:47:05,096 DEBUG pytan.handler.QuestionPoller: ID 1307: Progress: Tested: 1, Passed:
42 ..trimmed for brevity..

```

### Export resultset csv all options

Export a ResultSet from asking a question as CSV with true for header\_add\_sensor, true for header\_add\_type, true for header\_sort, and true for expand\_grouped\_columns

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server

```

```
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["header_sort"] = True
47 export_kwargs["export_format"] = u'csv'
48 export_kwargs["header_add_type"] = True
49 export_kwargs["expand_grouped_columns"] = True
50 export_kwargs["header_add_sensor"] = True
51
52 # ask the question that will provide the resultset that we want to use
53 ask_kwargs = {
54     'qtype': 'manual',
55     'sensors': [
56         "Computer Name", "IP Route Details", "IP Address",
57         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
58     ],
59 }
60 response = handler.ask(**ask_kwargs)
61
62 # export the object to a string
63 # (we could just as easily export to a file using export_to_report_file)
64 export_kwargs['obj'] = response['question_results']
65 export_str = handler.export_obj(**export_kwargs)
66
67
68 print ""
69 print "print the export_str returned from export_obj():"
70 if len(out.splitlines()) > 15:
71     out = out.splitlines()[0:15]
72     out.append('..trimmed for brevity..')
73     out = '\n'.join(out)
74
75 print out
```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:47:40,405 DEBUG pytan.handler.QuestionPoller: ID 1310: id resolved to 1310
3 2015-08-07 19:47:40,405 DEBUG pytan.handler.QuestionPoller: ID 1310: expiration resolved to 2015-
4 2015-08-07 19:47:40,405 DEBUG pytan.handler.QuestionPoller: ID 1310: query_text resolved to Get C
5 2015-08-07 19:47:40,405 DEBUG pytan.handler.QuestionPoller: ID 1310: id resolved to 1310
6 2015-08-07 19:47:40,405 DEBUG pytan.handler.QuestionPoller: ID 1310: Object Info resolved to Ques
7 2015-08-07 19:47:40,408 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
8 2015-08-07 19:47:40,408 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
9 2015-08-07 19:47:40,408 INFO pytan.handler.QuestionPoller: ID 1310: Progress Changed 0% (0 of 2)
10 2015-08-07 19:47:45,417 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
11 2015-08-07 19:47:45,417 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
12 2015-08-07 19:47:50,421 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
13 2015-08-07 19:47:50,421 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
14 2015-08-07 19:47:55,425 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
15 2015-08-07 19:47:55,425 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
16 2015-08-07 19:48:00,431 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
17 2015-08-07 19:48:00,431 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
18 2015-08-07 19:48:05,435 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
19 2015-08-07 19:48:05,435 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
20 2015-08-07 19:48:10,440 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
21 2015-08-07 19:48:10,440 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
22 2015-08-07 19:48:15,444 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
23 2015-08-07 19:48:15,444 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
24 2015-08-07 19:48:20,449 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
25 2015-08-07 19:48:20,449 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
26 2015-08-07 19:48:25,453 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
27 2015-08-07 19:48:25,453 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
28 2015-08-07 19:48:30,459 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
29 2015-08-07 19:48:30,459 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
30 2015-08-07 19:48:35,467 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
31 2015-08-07 19:48:35,467 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
32 2015-08-07 19:48:40,473 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
33 2015-08-07 19:48:40,473 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
34 2015-08-07 19:48:45,481 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
35 2015-08-07 19:48:45,481 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
36 2015-08-07 19:48:50,489 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
37 2015-08-07 19:48:50,489 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
38 2015-08-07 19:48:55,493 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 1, Passed:
39 2015-08-07 19:48:55,493 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
40 2015-08-07 19:48:55,493 INFO pytan.handler.QuestionPoller: ID 1310: Progress Changed 50% (1 of 2)
41 2015-08-07 19:49:00,497 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 1, Passed:
42 2015-08-07 19:49:00,497 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
43 2015-08-07 19:49:05,502 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 1, Passed:
44 2015-08-07 19:49:05,502 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
45 2015-08-07 19:49:10,508 DEBUG pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 2, Passed:
46 2015-08-07 19:49:10,508 DEBUG pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
47 2015-08-07 19:49:10,508 INFO pytan.handler.QuestionPoller: ID 1310: Progress Changed 100% (2 of 2)
48 2015-08-07 19:49:10,508 INFO pytan.handler.QuestionPoller: ID 1310: Reached Threshold of 99% (2
49
50 print the export_str returned from export_obj():
51 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
52 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: id resolved to 1309
53 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: expiration resolved to 2015-
54 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: query_text resolved to Get C
55 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: id resolved to 1309
56 2015-08-07 19:47:10,227 DEBUG pytan.handler.QuestionPoller: ID 1309: Object Info resolved to Ques
57 2015-08-07 19:47:10,231 DEBUG pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 0, Passed:
58 2015-08-07 19:47:10,231 DEBUG pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07

```

```
59 | 2015-08-07 19:47:10,231 INFO      pytan.handler.QuestionPoller: ID 1309: Progress Changed 0% (0 of 2)
60 | 2015-08-07 19:47:15,235 DEBUG    pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 0, Passed:
61 | 2015-08-07 19:47:15,235 DEBUG    pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
62 | 2015-08-07 19:47:20,239 DEBUG    pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 1, Passed:
63 | 2015-08-07 19:47:20,239 DEBUG    pytan.handler.QuestionPoller: ID 1309: Timing: Started: 2015-08-07
64 | 2015-08-07 19:47:20,239 INFO      pytan.handler.QuestionPoller: ID 1309: Progress Changed 50% (1 of 2)
65 | 2015-08-07 19:47:25,243 DEBUG    pytan.handler.QuestionPoller: ID 1309: Progress: Tested: 1, Passed:
66 | ..trimmed for brevity..
```

## Export resultset json

Export a ResultSet from asking a question as JSON with the default options

## Example Python Code

```
1 | import os
2 | import sys
3 | sys.dont_write_bytecode = True
4 |
5 | # Determine our script name, script dir
6 | my_file = os.path.abspath(sys.argv[0])
7 | my_dir = os.path.dirname(my_file)
8 |
9 | # determine the pytan lib dir and add it to the path
10 | parent_dir = os.path.dirname(my_dir)
11 | pytan_root_dir = os.path.dirname(parent_dir)
12 | lib_dir = os.path.join(pytan_root_dir, 'lib')
13 | path_adds = [lib_dir]
14 |
15 | for aa in path_adds:
16 |     if aa not in sys.path:
17 |         sys.path.append(aa)
18 |
19 |
20 | # connection info for Tanium Server
21 | USERNAME = "Tanium User"
22 | PASSWORD = "T@n!um"
23 | HOST = "172.16.31.128"
24 | PORT = "443"
25 |
26 | # Logging conrols
27 | LOGLEVEL = 2
28 | DEBUGFORMAT = False
29 |
30 | import tempfile
31 |
32 | import pytan
33 | handler = pytan.Handler(
34 |     username=USERNAME,
35 |     password=PASSWORD,
36 |     host=HOST,
37 |     port=PORT,
38 |     loglevel=LOGLEVEL,
39 |     debugformat=DEBUGFORMAT,
40 | )
```

```

41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47
48 # ask the question that will provide the resultset that we want to use
49 ask_kwargs = {
50     'qtype': 'manual',
51     'sensors': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
54     ],
55 }
56 response = handler.ask(**ask_kwargs)
57
58 # export the object to a string
59 # (we could just as easily export to a file using export_to_report_file)
60 export_kwargs['obj'] = response['question_results']
61 export_str = handler.export_obj(**export_kwargs)
62
63
64 print ""
65 print "print the export_str returned from export_obj():"
66 if len(out.splitlines()) > 15:
67     out = out.splitlines()[0:15]
68     out.append('..trimmed for brevity..')
69     out = '\n'.join(out)
70
71 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: id resolved to 1311
3 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: expiration resolved to 2015-
4 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: query_text resolved to Get C
5 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: id resolved to 1311
6 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: Object Info resolved to Ques
7 2015-08-07 19:49:10,713 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
8 2015-08-07 19:49:10,713 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
9 2015-08-07 19:49:10,713 INFO pytan.handler.QuestionPoller: ID 1311: Progress Changed 0% (0 of 2)
10 2015-08-07 19:49:15,721 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
11 2015-08-07 19:49:15,721 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
12 2015-08-07 19:49:20,725 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
13 2015-08-07 19:49:20,726 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
14 2015-08-07 19:49:25,730 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
15 2015-08-07 19:49:25,730 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
16 2015-08-07 19:49:30,739 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 1, Passed:
17 2015-08-07 19:49:30,739 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
18 2015-08-07 19:49:30,739 INFO pytan.handler.QuestionPoller: ID 1311: Progress Changed 50% (1 of 2)
19 2015-08-07 19:49:35,743 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 1, Passed:
20 2015-08-07 19:49:35,744 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
21 2015-08-07 19:49:40,751 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 2, Passed:
22 2015-08-07 19:49:40,751 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
23 2015-08-07 19:49:40,751 INFO pytan.handler.QuestionPoller: ID 1311: Progress Changed 100% (2 of

```

```

24 2015-08-07 19:49:40,751 INFO      pytan.handler.QuestionPoller: ID 1311: Reached Threshold of 99% (2
25
26 print the export_str returned from export_obj():
27 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
28 2015-08-07 19:47:40,405 DEBUG      pytan.handler.QuestionPoller: ID 1310: id resolved to 1310
29 2015-08-07 19:47:40,405 DEBUG      pytan.handler.QuestionPoller: ID 1310: expiration resolved to 2015-
30 2015-08-07 19:47:40,405 DEBUG      pytan.handler.QuestionPoller: ID 1310: query_text resolved to Get C
31 2015-08-07 19:47:40,405 DEBUG      pytan.handler.QuestionPoller: ID 1310: id resolved to 1310
32 2015-08-07 19:47:40,405 DEBUG      pytan.handler.QuestionPoller: ID 1310: Object Info resolved to Ques
33 2015-08-07 19:47:40,408 DEBUG      pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
34 2015-08-07 19:47:40,408 DEBUG      pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
35 2015-08-07 19:47:40,408 INFO      pytan.handler.QuestionPoller: ID 1310: Progress Changed 0% (0 of 2)
36 2015-08-07 19:47:45,417 DEBUG      pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
37 2015-08-07 19:47:45,417 DEBUG      pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
38 2015-08-07 19:47:50,421 DEBUG      pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
39 2015-08-07 19:47:50,421 DEBUG      pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
40 2015-08-07 19:47:55,425 DEBUG      pytan.handler.QuestionPoller: ID 1310: Progress: Tested: 0, Passed:
41 2015-08-07 19:47:55,425 DEBUG      pytan.handler.QuestionPoller: ID 1310: Timing: Started: 2015-08-07
42 ..trimmed for brevity..

```

### Export resultset csv sort empty

Export a ResultSet from asking a question as CSV with an empty list for header\_sort

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29

```

```

30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = []
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: id resolved to 1312
3 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: expiration resolved to 2015-
4 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: query_text resolved to Get C
5 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: id resolved to 1312
6 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: Object Info resolved to Ques
7 2015-08-07 19:49:40,853 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
8 2015-08-07 19:49:40,853 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
9 2015-08-07 19:49:40,854 INFO pytan.handler.QuestionPoller: ID 1312: Progress Changed 0% (0 of 2)
10 2015-08-07 19:49:45,859 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
11 2015-08-07 19:49:45,859 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07

```

```

12 2015-08-07 19:49:50,863 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
13 2015-08-07 19:49:50,863 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
14 2015-08-07 19:49:55,870 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
15 2015-08-07 19:49:55,870 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
16 2015-08-07 19:50:00,877 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
17 2015-08-07 19:50:00,877 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
18 2015-08-07 19:50:05,881 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
19 2015-08-07 19:50:05,881 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
20 2015-08-07 19:50:10,886 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
21 2015-08-07 19:50:10,886 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
22 2015-08-07 19:50:15,891 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
23 2015-08-07 19:50:15,891 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
24 2015-08-07 19:50:20,896 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
25 2015-08-07 19:50:20,896 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
26 2015-08-07 19:50:25,901 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
27 2015-08-07 19:50:25,901 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
28 2015-08-07 19:50:30,906 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
29 2015-08-07 19:50:30,906 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
30 2015-08-07 19:50:35,910 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
31 2015-08-07 19:50:35,910 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
32 2015-08-07 19:50:40,915 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
33 2015-08-07 19:50:40,915 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
34 2015-08-07 19:50:45,919 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
35 2015-08-07 19:50:45,919 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
36 2015-08-07 19:50:50,923 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
37 2015-08-07 19:50:50,923 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
38 2015-08-07 19:50:55,928 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
39 2015-08-07 19:50:55,928 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
40 2015-08-07 19:51:00,934 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
41 2015-08-07 19:51:00,935 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
42 2015-08-07 19:51:05,939 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
43 2015-08-07 19:51:05,939 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
44 2015-08-07 19:51:10,947 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 2, Passed:
45 2015-08-07 19:51:10,947 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
46 2015-08-07 19:51:10,947 INFO pytan.handler.QuestionPoller: ID 1312: Progress Changed 100% (2 of
47 2015-08-07 19:51:10,947 INFO pytan.handler.QuestionPoller: ID 1312: Reached Threshold of 99% (2
48
49 print the export_str returned from export_obj():
50 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
51 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: id resolved to 1311
52 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: expiration resolved to 2015-
53 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: query_text resolved to Get C
54 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: id resolved to 1311
55 2015-08-07 19:49:10,709 DEBUG pytan.handler.QuestionPoller: ID 1311: Object Info resolved to Ques
56 2015-08-07 19:49:10,713 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
57 2015-08-07 19:49:10,713 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
58 2015-08-07 19:49:10,713 INFO pytan.handler.QuestionPoller: ID 1311: Progress Changed 0% (0 of 2)
59 2015-08-07 19:49:15,721 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
60 2015-08-07 19:49:15,721 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
61 2015-08-07 19:49:20,725 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
62 2015-08-07 19:49:20,726 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
63 2015-08-07 19:49:25,730 DEBUG pytan.handler.QuestionPoller: ID 1311: Progress: Tested: 0, Passed:
64 2015-08-07 19:49:25,730 DEBUG pytan.handler.QuestionPoller: ID 1311: Timing: Started: 2015-08-07
65 ..trimmed for brevity..

```



## Export resultset csv sort true

Export a ResultSet from asking a question as CSV with true for header\_sort

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = True
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [

```

```

53     "Computer Name", "IP Route Details", "IP Address",
54     'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55 ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: id resolved to 1313
3 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: expiration resolved to 2015-
4 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: query_text resolved to Get C
5 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: id resolved to 1313
6 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: Object Info resolved to Ques
7 2015-08-07 19:51:11,066 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
8 2015-08-07 19:51:11,066 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
9 2015-08-07 19:51:11,066 INFO pytan.handler.QuestionPoller: ID 1313: Progress Changed 0% (0 of 2)
10 2015-08-07 19:51:16,074 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
11 2015-08-07 19:51:16,074 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
12 2015-08-07 19:51:21,079 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
13 2015-08-07 19:51:21,079 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
14 2015-08-07 19:51:26,083 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
15 2015-08-07 19:51:26,083 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
16 2015-08-07 19:51:31,089 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
17 2015-08-07 19:51:31,089 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
18 2015-08-07 19:51:36,093 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
19 2015-08-07 19:51:36,093 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
20 2015-08-07 19:51:41,099 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
21 2015-08-07 19:51:41,099 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
22 2015-08-07 19:51:46,107 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
23 2015-08-07 19:51:46,107 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
24 2015-08-07 19:51:51,112 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
25 2015-08-07 19:51:51,112 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
26 2015-08-07 19:51:56,117 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
27 2015-08-07 19:51:56,117 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
28 2015-08-07 19:52:01,121 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
29 2015-08-07 19:52:01,122 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
30 2015-08-07 19:52:06,125 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
31 2015-08-07 19:52:06,126 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
32 2015-08-07 19:52:11,132 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
33 2015-08-07 19:52:11,133 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
34 2015-08-07 19:52:16,136 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:

```

```

35 2015-08-07 19:52:16,136 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
36 2015-08-07 19:52:21,142 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 2, Passed:
37 2015-08-07 19:52:21,142 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
38 2015-08-07 19:52:21,142 INFO pytan.handler.QuestionPoller: ID 1313: Progress Changed 100% (2 of
39 2015-08-07 19:52:21,142 INFO pytan.handler.QuestionPoller: ID 1313: Reached Threshold of 99% (2
40
41 print the export_str returned from export_obj():
42 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
43 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: id resolved to 1312
44 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: expiration resolved to 2015-
45 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: query_text resolved to Get C
46 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: id resolved to 1312
47 2015-08-07 19:49:40,850 DEBUG pytan.handler.QuestionPoller: ID 1312: Object Info resolved to Ques
48 2015-08-07 19:49:40,853 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
49 2015-08-07 19:49:40,853 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
50 2015-08-07 19:49:40,854 INFO pytan.handler.QuestionPoller: ID 1312: Progress Changed 0% (0 of 2)
51 2015-08-07 19:49:45,859 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
52 2015-08-07 19:49:45,859 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
53 2015-08-07 19:49:50,863 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
54 2015-08-07 19:49:50,863 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
55 2015-08-07 19:49:55,870 DEBUG pytan.handler.QuestionPoller: ID 1312: Progress: Tested: 0, Passed:
56 2015-08-07 19:49:55,870 DEBUG pytan.handler.QuestionPoller: ID 1312: Timing: Started: 2015-08-07
57 ..trimmed for brevity..

```

### Export resultset csv sort false

Export a ResultSet from asking a question as CSV with false for header\_sort

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25

```

```
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = False
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:52:21,243 DEBUG      pytan.handler.QuestionPoller: ID 1315: id resolved to 1315
3 2015-08-07 19:52:21,243 DEBUG      pytan.handler.QuestionPoller: ID 1315: expiration resolved to 2015-
4 2015-08-07 19:52:21,243 DEBUG      pytan.handler.QuestionPoller: ID 1315: query_text resolved to Get C
5 2015-08-07 19:52:21,243 DEBUG      pytan.handler.QuestionPoller: ID 1315: id resolved to 1315
6 2015-08-07 19:52:21,243 DEBUG      pytan.handler.QuestionPoller: ID 1315: Object Info resolved to Ques
7 2015-08-07 19:52:21,246 DEBUG      pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 0, Passed:
```

```

8 2015-08-07 19:52:21,246 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
9 2015-08-07 19:52:21,246 INFO pytan.handler.QuestionPoller: ID 1315: Progress Changed 0% (0 of 2)
10 2015-08-07 19:52:26,251 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 0, Passed:
11 2015-08-07 19:52:26,251 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
12 2015-08-07 19:52:31,255 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 0, Passed:
13 2015-08-07 19:52:31,255 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
14 2015-08-07 19:52:36,264 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 1, Passed:
15 2015-08-07 19:52:36,264 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
16 2015-08-07 19:52:36,264 INFO pytan.handler.QuestionPoller: ID 1315: Progress Changed 50% (1 of 2)
17 2015-08-07 19:52:41,271 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 1, Passed:
18 2015-08-07 19:52:41,271 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
19 2015-08-07 19:52:46,275 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 1, Passed:
20 2015-08-07 19:52:46,275 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
21 2015-08-07 19:52:51,282 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 2, Passed:
22 2015-08-07 19:52:51,283 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
23 2015-08-07 19:52:51,283 INFO pytan.handler.QuestionPoller: ID 1315: Progress Changed 100% (2 of 2)
24 2015-08-07 19:52:51,283 INFO pytan.handler.QuestionPoller: ID 1315: Reached Threshold of 99% (2
25
26 print the export_str returned from export_obj():
27 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
28 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: id resolved to 1313
29 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: expiration resolved to 2015-
30 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: query_text resolved to Get C
31 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: id resolved to 1313
32 2015-08-07 19:51:11,061 DEBUG pytan.handler.QuestionPoller: ID 1313: Object Info resolved to Ques
33 2015-08-07 19:51:11,066 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
34 2015-08-07 19:51:11,066 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
35 2015-08-07 19:51:11,066 INFO pytan.handler.QuestionPoller: ID 1313: Progress Changed 0% (0 of 2)
36 2015-08-07 19:51:16,074 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
37 2015-08-07 19:51:16,074 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
38 2015-08-07 19:51:21,079 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
39 2015-08-07 19:51:21,079 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
40 2015-08-07 19:51:26,083 DEBUG pytan.handler.QuestionPoller: ID 1313: Progress: Tested: 0, Passed:
41 2015-08-07 19:51:26,083 DEBUG pytan.handler.QuestionPoller: ID 1313: Timing: Started: 2015-08-07
42 ..trimmed for brevity..

```

## Export resultset csv sort list

Export a ResultSet from asking a question as CSV with Computer Name and IP Address for the header\_sort

## Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]

```

```
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = [u'Computer Name', u'IP Address']
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
```

```
72 print out
```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:52:51,388 DEBUG pytan.handler.QuestionPoller: ID 1316: id resolved to 1316
3 2015-08-07 19:52:51,388 DEBUG pytan.handler.QuestionPoller: ID 1316: expiration resolved to 2015-
4 2015-08-07 19:52:51,388 DEBUG pytan.handler.QuestionPoller: ID 1316: query_text resolved to Get C
5 2015-08-07 19:52:51,388 DEBUG pytan.handler.QuestionPoller: ID 1316: id resolved to 1316
6 2015-08-07 19:52:51,388 DEBUG pytan.handler.QuestionPoller: ID 1316: Object Info resolved to Ques
7 2015-08-07 19:52:51,392 DEBUG pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 0, Passed:
8 2015-08-07 19:52:51,392 DEBUG pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
9 2015-08-07 19:52:51,392 INFO pytan.handler.QuestionPoller: ID 1316: Progress Changed 0% (0 of 2)
10 2015-08-07 19:52:56,396 DEBUG pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 0, Passed:
11 2015-08-07 19:52:56,396 DEBUG pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
12 2015-08-07 19:53:01,404 DEBUG pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 0, Passed:
13 2015-08-07 19:53:01,404 DEBUG pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
14 2015-08-07 19:53:06,413 DEBUG pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 1, Passed:
15 2015-08-07 19:53:06,413 DEBUG pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
16 2015-08-07 19:53:06,413 INFO pytan.handler.QuestionPoller: ID 1316: Progress Changed 50% (1 of 2)
17 2015-08-07 19:53:11,418 DEBUG pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 2, Passed:
18 2015-08-07 19:53:11,419 DEBUG pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
19 2015-08-07 19:53:11,419 INFO pytan.handler.QuestionPoller: ID 1316: Progress Changed 100% (2 of
20 2015-08-07 19:53:11,419 INFO pytan.handler.QuestionPoller: ID 1316: Reached Threshold of 99% (2
21
22 print the export_str returned from export_obj():
23 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
24 2015-08-07 19:52:21,243 DEBUG pytan.handler.QuestionPoller: ID 1315: id resolved to 1315
25 2015-08-07 19:52:21,243 DEBUG pytan.handler.QuestionPoller: ID 1315: expiration resolved to 2015-
26 2015-08-07 19:52:21,243 DEBUG pytan.handler.QuestionPoller: ID 1315: query_text resolved to Get C
27 2015-08-07 19:52:21,243 DEBUG pytan.handler.QuestionPoller: ID 1315: id resolved to 1315
28 2015-08-07 19:52:21,243 DEBUG pytan.handler.QuestionPoller: ID 1315: Object Info resolved to Ques
29 2015-08-07 19:52:21,246 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 0, Passed:
30 2015-08-07 19:52:21,246 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
31 2015-08-07 19:52:21,246 INFO pytan.handler.QuestionPoller: ID 1315: Progress Changed 0% (0 of 2)
32 2015-08-07 19:52:26,251 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 0, Passed:
33 2015-08-07 19:52:26,251 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
34 2015-08-07 19:52:31,255 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 0, Passed:
35 2015-08-07 19:52:31,255 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
36 2015-08-07 19:52:36,264 DEBUG pytan.handler.QuestionPoller: ID 1315: Progress: Tested: 1, Passed:
37 2015-08-07 19:52:36,264 DEBUG pytan.handler.QuestionPoller: ID 1315: Timing: Started: 2015-08-07
38 ..trimmed for brevity..

```

### Export resultset csv type false

Export a ResultSet from asking a question as CSV with false for header\_add\_type

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir

```

```
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_add_type"] = False
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         "Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}'",
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
```



```

64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: id resolved to 1318
3 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: expiration resolved to 2015-
4 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: query_text resolved to Get C
5 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: id resolved to 1318
6 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: Object Info resolved to Ques
7 2015-08-07 19:53:11,522 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
8 2015-08-07 19:53:11,522 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
9 2015-08-07 19:53:11,522 INFO pytan.handler.QuestionPoller: ID 1318: Progress Changed 0% (0 of 2)
10 2015-08-07 19:53:16,530 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
11 2015-08-07 19:53:16,530 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
12 2015-08-07 19:53:21,538 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
13 2015-08-07 19:53:21,538 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
14 2015-08-07 19:53:26,543 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
15 2015-08-07 19:53:26,543 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
16 2015-08-07 19:53:31,548 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
17 2015-08-07 19:53:31,548 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
18 2015-08-07 19:53:36,552 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
19 2015-08-07 19:53:36,552 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
20 2015-08-07 19:53:41,559 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
21 2015-08-07 19:53:41,559 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
22 2015-08-07 19:53:46,566 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
23 2015-08-07 19:53:46,566 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
24 2015-08-07 19:53:51,570 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
25 2015-08-07 19:53:51,570 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
26 2015-08-07 19:53:56,577 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
27 2015-08-07 19:53:56,577 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
28 2015-08-07 19:54:01,583 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
29 2015-08-07 19:54:01,583 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
30 2015-08-07 19:54:06,590 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
31 2015-08-07 19:54:06,591 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
32 2015-08-07 19:54:11,600 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
33 2015-08-07 19:54:11,600 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
34 2015-08-07 19:54:16,608 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
35 2015-08-07 19:54:16,608 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
36 2015-08-07 19:54:21,612 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
37 2015-08-07 19:54:21,612 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
38 2015-08-07 19:54:26,621 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
39 2015-08-07 19:54:26,621 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
40 2015-08-07 19:54:31,629 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
41 2015-08-07 19:54:31,629 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
42 2015-08-07 19:54:36,635 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 2, Passed:
43 2015-08-07 19:54:36,635 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
44 2015-08-07 19:54:36,635 INFO pytan.handler.QuestionPoller: ID 1318: Progress Changed 100% (2 of
45 2015-08-07 19:54:36,635 INFO pytan.handler.QuestionPoller: ID 1318: Reached Threshold of 99% (2

```

```
46
47 print the export_str returned from export_obj():
48 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
49 2015-08-07 19:52:51,388 DEBUG      pytan.handler.QuestionPoller: ID 1316: id resolved to 1316
50 2015-08-07 19:52:51,388 DEBUG      pytan.handler.QuestionPoller: ID 1316: expiration resolved to 2015-
51 2015-08-07 19:52:51,388 DEBUG      pytan.handler.QuestionPoller: ID 1316: query_text resolved to Get C
52 2015-08-07 19:52:51,388 DEBUG      pytan.handler.QuestionPoller: ID 1316: id resolved to 1316
53 2015-08-07 19:52:51,388 DEBUG      pytan.handler.QuestionPoller: ID 1316: Object Info resolved to Ques
54 2015-08-07 19:52:51,392 DEBUG      pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 0, Passed:
55 2015-08-07 19:52:51,392 DEBUG      pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
56 2015-08-07 19:52:51,392 INFO       pytan.handler.QuestionPoller: ID 1316: Progress Changed 0% (0 of 2)
57 2015-08-07 19:52:56,396 DEBUG      pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 0, Passed:
58 2015-08-07 19:52:56,396 DEBUG      pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
59 2015-08-07 19:53:01,404 DEBUG      pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 0, Passed:
60 2015-08-07 19:53:01,404 DEBUG      pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
61 2015-08-07 19:53:06,413 DEBUG      pytan.handler.QuestionPoller: ID 1316: Progress: Tested: 1, Passed:
62 2015-08-07 19:53:06,413 DEBUG      pytan.handler.QuestionPoller: ID 1316: Timing: Started: 2015-08-07
63 ..trimmed for brevity..
```

### Export resultset csv type true

Export a ResultSet from asking a question as CSV with true for header\_add\_type

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
```

```

31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_add_type"] = True
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: id resolved to 1319
3 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: expiration resolved to 2015-
4 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: query_text resolved to Get C
5 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: id resolved to 1319
6 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: Object Info resolved to Ques
7 2015-08-07 19:54:36,754 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:
8 2015-08-07 19:54:36,754 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
9 2015-08-07 19:54:36,754 INFO pytan.handler.QuestionPoller: ID 1319: Progress Changed 0% (0 of 2)
10 2015-08-07 19:54:41,761 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:
11 2015-08-07 19:54:41,761 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
12 2015-08-07 19:54:46,767 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:

```

```
13 2015-08-07 19:54:46,767 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
14 2015-08-07 19:54:51,771 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:
15 2015-08-07 19:54:51,771 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
16 2015-08-07 19:54:56,775 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 2, Passed:
17 2015-08-07 19:54:56,775 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
18 2015-08-07 19:54:56,775 INFO pytan.handler.QuestionPoller: ID 1319: Progress Changed 100% (2 of
19 2015-08-07 19:54:56,775 INFO pytan.handler.QuestionPoller: ID 1319: Reached Threshold of 99% (2
20
21 print the export_str returned from export_obj():
22 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
23 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: id resolved to 1318
24 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: expiration resolved to 2015-
25 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: query_text resolved to Get C
26 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: id resolved to 1318
27 2015-08-07 19:53:11,519 DEBUG pytan.handler.QuestionPoller: ID 1318: Object Info resolved to Ques
28 2015-08-07 19:53:11,522 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
29 2015-08-07 19:53:11,522 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
30 2015-08-07 19:53:11,522 INFO pytan.handler.QuestionPoller: ID 1318: Progress Changed 0% (0 of 2)
31 2015-08-07 19:53:16,530 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
32 2015-08-07 19:53:16,530 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
33 2015-08-07 19:53:21,538 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
34 2015-08-07 19:53:21,538 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
35 2015-08-07 19:53:26,543 DEBUG pytan.handler.QuestionPoller: ID 1318: Progress: Tested: 0, Passed:
36 2015-08-07 19:53:26,543 DEBUG pytan.handler.QuestionPoller: ID 1318: Timing: Started: 2015-08-07
37 ..trimmed for brevity..
```

## Export resultset csv sensor false

Export a ResultSet from asking a question as CSV with false for header\_add\_sensor

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
```

```

24 PORT = "443"
25
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_add_sensor"] = False
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')
70     out = '\n'.join(out)
71
72 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:54:56,919 DEBUG      pytan.handler.QuestionPoller: ID 1320: id resolved to 1320
3 2015-08-07 19:54:56,919 DEBUG      pytan.handler.QuestionPoller: ID 1320: expiration resolved to 2015-
4 2015-08-07 19:54:56,919 DEBUG      pytan.handler.QuestionPoller: ID 1320: query_text resolved to Get C
5 2015-08-07 19:54:56,919 DEBUG      pytan.handler.QuestionPoller: ID 1320: id resolved to 1320

```

```

6 2015-08-07 19:54:56,919 DEBUG pytan.handler.QuestionPoller: ID 1320: Object Info resolved to Ques
7 2015-08-07 19:54:56,923 DEBUG pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
8 2015-08-07 19:54:56,923 DEBUG pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
9 2015-08-07 19:54:56,923 INFO pytan.handler.QuestionPoller: ID 1320: Progress Changed 0% (0 of 2)
10 2015-08-07 19:55:01,930 DEBUG pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
11 2015-08-07 19:55:01,930 DEBUG pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
12 2015-08-07 19:55:06,936 DEBUG pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
13 2015-08-07 19:55:06,936 DEBUG pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
14 2015-08-07 19:55:11,944 DEBUG pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
15 2015-08-07 19:55:11,944 DEBUG pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
16 2015-08-07 19:55:16,949 DEBUG pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
17 2015-08-07 19:55:16,950 DEBUG pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
18 2015-08-07 19:55:21,957 DEBUG pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 1, Passed:
19 2015-08-07 19:55:21,957 DEBUG pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
20 2015-08-07 19:55:21,957 INFO pytan.handler.QuestionPoller: ID 1320: Progress Changed 50% (1 of 2)
21 2015-08-07 19:55:26,962 DEBUG pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 2, Passed:
22 2015-08-07 19:55:26,962 DEBUG pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
23 2015-08-07 19:55:26,962 INFO pytan.handler.QuestionPoller: ID 1320: Progress Changed 100% (2 of 2)
24 2015-08-07 19:55:26,962 INFO pytan.handler.QuestionPoller: ID 1320: Reached Threshold of 99% (2
25
26 print the export_str returned from export_obj():
27 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
28 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: id resolved to 1319
29 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: expiration resolved to 2015-
30 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: query_text resolved to Get C
31 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: id resolved to 1319
32 2015-08-07 19:54:36,751 DEBUG pytan.handler.QuestionPoller: ID 1319: Object Info resolved to Ques
33 2015-08-07 19:54:36,754 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:
34 2015-08-07 19:54:36,754 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
35 2015-08-07 19:54:36,754 INFO pytan.handler.QuestionPoller: ID 1319: Progress Changed 0% (0 of 2)
36 2015-08-07 19:54:41,761 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:
37 2015-08-07 19:54:41,761 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
38 2015-08-07 19:54:46,767 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:
39 2015-08-07 19:54:46,767 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
40 2015-08-07 19:54:51,771 DEBUG pytan.handler.QuestionPoller: ID 1319: Progress: Tested: 0, Passed:
41 2015-08-07 19:54:51,771 DEBUG pytan.handler.QuestionPoller: ID 1319: Timing: Started: 2015-08-07
42 ..trimmed for brevity..

```

## Export resultset csv sensor true

Export a ResultSet from asking a question as CSV with true for header\_add\_sensor

## Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)

```

```

12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_add_sensor"] = True
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name", "IP Route Details", "IP Address",
54         'Folder Name Search with RegEx Match{dirname=Program Files,regex=.*Shared.*}',
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response['question_results']
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67 if len(out.splitlines()) > 15:
68     out = out.splitlines()[0:15]
69     out.append('..trimmed for brevity..')

```



```

70     out = '\n'.join(out)
71
72 print out

```

### Output from Python Code

```

1  Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2  2015-08-07 19:55:27,070 DEBUG    pytan.handler.QuestionPoller: ID 1321: id resolved to 1321
3  2015-08-07 19:55:27,070 DEBUG    pytan.handler.QuestionPoller: ID 1321: expiration resolved to 2015-
4  2015-08-07 19:55:27,070 DEBUG    pytan.handler.QuestionPoller: ID 1321: query_text resolved to Get C
5  2015-08-07 19:55:27,070 DEBUG    pytan.handler.QuestionPoller: ID 1321: id resolved to 1321
6  2015-08-07 19:55:27,070 DEBUG    pytan.handler.QuestionPoller: ID 1321: Object Info resolved to Ques
7  2015-08-07 19:55:27,074 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
8  2015-08-07 19:55:27,074 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
9  2015-08-07 19:55:27,074 INFO     pytan.handler.QuestionPoller: ID 1321: Progress Changed 0% (0 of 2)
10 2015-08-07 19:55:32,077 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
11 2015-08-07 19:55:32,077 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
12 2015-08-07 19:55:37,083 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
13 2015-08-07 19:55:37,083 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
14 2015-08-07 19:55:42,089 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
15 2015-08-07 19:55:42,089 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
16 2015-08-07 19:55:47,097 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
17 2015-08-07 19:55:47,097 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
18 2015-08-07 19:55:52,105 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
19 2015-08-07 19:55:52,105 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
20 2015-08-07 19:55:57,112 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
21 2015-08-07 19:55:57,112 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
22 2015-08-07 19:56:02,119 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
23 2015-08-07 19:56:02,119 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
24 2015-08-07 19:56:07,129 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
25 2015-08-07 19:56:07,129 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
26 2015-08-07 19:56:12,138 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
27 2015-08-07 19:56:12,138 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
28 2015-08-07 19:56:17,145 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
29 2015-08-07 19:56:17,145 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
30 2015-08-07 19:56:22,152 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
31 2015-08-07 19:56:22,152 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
32 2015-08-07 19:56:27,160 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 0, Passed:
33 2015-08-07 19:56:27,160 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
34 2015-08-07 19:56:32,167 DEBUG    pytan.handler.QuestionPoller: ID 1321: Progress: Tested: 2, Passed:
35 2015-08-07 19:56:32,167 DEBUG    pytan.handler.QuestionPoller: ID 1321: Timing: Started: 2015-08-07
36 2015-08-07 19:56:32,167 INFO     pytan.handler.QuestionPoller: ID 1321: Progress Changed 100% (2 of
37 2015-08-07 19:56:32,167 INFO     pytan.handler.QuestionPoller: ID 1321: Reached Threshold of 99% (2
38
39 print the export_str returned from export_obj():
40 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
41 2015-08-07 19:54:56,919 DEBUG    pytan.handler.QuestionPoller: ID 1320: id resolved to 1320
42 2015-08-07 19:54:56,919 DEBUG    pytan.handler.QuestionPoller: ID 1320: expiration resolved to 2015-
43 2015-08-07 19:54:56,919 DEBUG    pytan.handler.QuestionPoller: ID 1320: query_text resolved to Get C
44 2015-08-07 19:54:56,919 DEBUG    pytan.handler.QuestionPoller: ID 1320: id resolved to 1320
45 2015-08-07 19:54:56,919 DEBUG    pytan.handler.QuestionPoller: ID 1320: Object Info resolved to Ques
46 2015-08-07 19:54:56,923 DEBUG    pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
47 2015-08-07 19:54:56,923 DEBUG    pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
48 2015-08-07 19:54:56,923 INFO     pytan.handler.QuestionPoller: ID 1320: Progress Changed 0% (0 of 2)
49 2015-08-07 19:55:01,930 DEBUG    pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
50 2015-08-07 19:55:01,930 DEBUG    pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
51 2015-08-07 19:55:06,936 DEBUG    pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:

```



```

52 | 2015-08-07 19:55:06,936 DEBUG      pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
53 | 2015-08-07 19:55:11,944 DEBUG      pytan.handler.QuestionPoller: ID 1320: Progress: Tested: 0, Passed:
54 | 2015-08-07 19:55:11,944 DEBUG      pytan.handler.QuestionPoller: ID 1320: Timing: Started: 2015-08-07
55 | ..trimmed for brevity..

```

## PyTan API Invalid Export ResultSet Examples

### Invalid export resultset csv bad sort sub type

Export a ResultSet from asking a question using a bad header\_sort

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler

```

```

43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = [[]]
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name"
54     ],
55 }
56 response = handler.ask(**ask_kwargs)
57 export_kwargs['obj'] = response['question_results']
58
59 # export the object to a string
60 # this should throw an exception: pytan.exceptions.HandlerError
61 import traceback
62
63 try:
64     handler.export_obj(**export_kwargs)
65 except Exception as e:
66     traceback.print_exc(file=sys.stdout)

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:56:32,279 DEBUG pytan.handler.QuestionPoller: ID 1323: id resolved to 1323
3 2015-08-07 19:56:32,279 DEBUG pytan.handler.QuestionPoller: ID 1323: expiration resolved to 2015-
4 2015-08-07 19:56:32,279 DEBUG pytan.handler.QuestionPoller: ID 1323: query_text resolved to Get C
5 2015-08-07 19:56:32,279 DEBUG pytan.handler.QuestionPoller: ID 1323: id resolved to 1323
6 2015-08-07 19:56:32,279 DEBUG pytan.handler.QuestionPoller: ID 1323: Object Info resolved to Ques
7 2015-08-07 19:56:32,282 DEBUG pytan.handler.QuestionPoller: ID 1323: Progress: Tested: 0, Passed:
8 2015-08-07 19:56:32,282 DEBUG pytan.handler.QuestionPoller: ID 1323: Timing: Started: 2015-08-07
9 2015-08-07 19:56:32,282 INFO pytan.handler.QuestionPoller: ID 1323: Progress Changed 0% (0 of 2)
10 2015-08-07 19:56:37,290 DEBUG pytan.handler.QuestionPoller: ID 1323: Progress: Tested: 2, Passed:
11 2015-08-07 19:56:37,290 DEBUG pytan.handler.QuestionPoller: ID 1323: Timing: Started: 2015-08-07
12 2015-08-07 19:56:37,290 INFO pytan.handler.QuestionPoller: ID 1323: Progress Changed 100% (2 of
13 2015-08-07 19:56:37,290 INFO pytan.handler.QuestionPoller: ID 1323: Reached Threshold of 99% (2
14 Traceback (most recent call last):
15   File "<string>", line 65, in <module>
16   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
17     ret = f(*args, **kwargs)
18   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
19     pytan.utils.check_dictkey(**check_args)
20   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2692, in check_dictkey
21     raise pytan.exceptions.HandlerError(err(key, valid_list_types, list_types))
22 HandlerError: 'header_sort' must be a list of [<type 'str'>, <type 'unicode'>], you supplied [<type

```

## Invalid export resultset csv bad sort type

Export a ResultSet from asking a question using a bad header\_sort

## Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = u'bad'
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name"
54     ],
55 }
56 response = handler.ask(**ask_kwargs)
57 export_kwargs['obj'] = response['question_results']

```

```

58
59 # export the object to a string
60 # this should throw an exception: pytan.exceptions.HandlerError
61 import traceback
62
63 try:
64     handler.export_obj(**export_kwargs)
65 except Exception as e:
66     traceback.print_exc(file=sys.stdout)

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:56:37,342 DEBUG pytan.handler.QuestionPoller: ID 1324: id resolved to 1324
3 2015-08-07 19:56:37,342 DEBUG pytan.handler.QuestionPoller: ID 1324: expiration resolved to 2015-
4 2015-08-07 19:56:37,342 DEBUG pytan.handler.QuestionPoller: ID 1324: query_text resolved to Get C
5 2015-08-07 19:56:37,342 DEBUG pytan.handler.QuestionPoller: ID 1324: id resolved to 1324
6 2015-08-07 19:56:37,342 DEBUG pytan.handler.QuestionPoller: ID 1324: Object Info resolved to Ques
7 2015-08-07 19:56:37,345 DEBUG pytan.handler.QuestionPoller: ID 1324: Progress: Tested: 0, Passed:
8 2015-08-07 19:56:37,345 DEBUG pytan.handler.QuestionPoller: ID 1324: Timing: Started: 2015-08-07
9 2015-08-07 19:56:37,345 INFO pytan.handler.QuestionPoller: ID 1324: Progress Changed 0% (0 of 2)
10 2015-08-07 19:56:42,353 DEBUG pytan.handler.QuestionPoller: ID 1324: Progress: Tested: 0, Passed:
11 2015-08-07 19:56:42,353 DEBUG pytan.handler.QuestionPoller: ID 1324: Timing: Started: 2015-08-07
12 2015-08-07 19:56:47,361 DEBUG pytan.handler.QuestionPoller: ID 1324: Progress: Tested: 1, Passed:
13 2015-08-07 19:56:47,361 DEBUG pytan.handler.QuestionPoller: ID 1324: Timing: Started: 2015-08-07
14 2015-08-07 19:56:47,361 INFO pytan.handler.QuestionPoller: ID 1324: Progress Changed 50% (1 of 2)
15 2015-08-07 19:56:52,368 DEBUG pytan.handler.QuestionPoller: ID 1324: Progress: Tested: 2, Passed:
16 2015-08-07 19:56:52,368 DEBUG pytan.handler.QuestionPoller: ID 1324: Timing: Started: 2015-08-07
17 2015-08-07 19:56:52,368 INFO pytan.handler.QuestionPoller: ID 1324: Progress Changed 100% (2 of
18 2015-08-07 19:56:52,368 INFO pytan.handler.QuestionPoller: ID 1324: Reached Threshold of 99% (2
19
20 Traceback (most recent call last):
21   File "<string>", line 65, in <module>
22   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
23     ret = f(*args, **kwargs)
24   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
25     pytan.utils.check_dictkey(**check_args)
26   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2685, in check_dictkey
27     raise pytan.exceptions.HandlerError(err(key, valid_types, k_type))
HandlerError: 'header_sort' must be one of [<type 'bool'>, <type 'list'>, <type 'tuple'>], you supplied

```

## Invalid export resultset csv bad expand type

Export a ResultSet from asking a question using a bad `expand_grouped_columns`

## Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8

```

```

9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["expand_grouped_columns"] = u'bad'
48
49 # ask the question that will provide the resultset that we want to use
50 ask_kwargs = {
51     'qtype': 'manual',
52     'sensors': [
53         "Computer Name"
54     ],
55 }
56 response = handler.ask(**ask_kwargs)
57 export_kwargs['obj'] = response['question_results']
58
59 # export the object to a string
60 # this should throw an exception: pytan.exceptions.HandlerError
61 import traceback
62
63 try:
64     handler.export_obj(**export_kwargs)
65 except Exception as e:

```

```
66 traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:56:52,416 DEBUG pytan.handler.QuestionPoller: ID 1325: id resolved to 1325
3 2015-08-07 19:56:52,416 DEBUG pytan.handler.QuestionPoller: ID 1325: expiration resolved to 2015-
4 2015-08-07 19:56:52,416 DEBUG pytan.handler.QuestionPoller: ID 1325: query_text resolved to Get C
5 2015-08-07 19:56:52,416 DEBUG pytan.handler.QuestionPoller: ID 1325: id resolved to 1325
6 2015-08-07 19:56:52,416 DEBUG pytan.handler.QuestionPoller: ID 1325: Object Info resolved to Ques
7 2015-08-07 19:56:52,420 DEBUG pytan.handler.QuestionPoller: ID 1325: Progress: Tested: 0, Passed:
8 2015-08-07 19:56:52,420 DEBUG pytan.handler.QuestionPoller: ID 1325: Timing: Started: 2015-08-07
9 2015-08-07 19:56:52,420 INFO pytan.handler.QuestionPoller: ID 1325: Progress Changed 0% (0 of 2)
10 2015-08-07 19:56:57,424 DEBUG pytan.handler.QuestionPoller: ID 1325: Progress: Tested: 1, Passed:
11 2015-08-07 19:56:57,424 DEBUG pytan.handler.QuestionPoller: ID 1325: Timing: Started: 2015-08-07
12 2015-08-07 19:56:57,424 INFO pytan.handler.QuestionPoller: ID 1325: Progress Changed 50% (1 of 2)
13 2015-08-07 19:57:02,429 DEBUG pytan.handler.QuestionPoller: ID 1325: Progress: Tested: 2, Passed:
14 2015-08-07 19:57:02,429 DEBUG pytan.handler.QuestionPoller: ID 1325: Timing: Started: 2015-08-07
15 2015-08-07 19:57:02,429 INFO pytan.handler.QuestionPoller: ID 1325: Progress Changed 100% (2 of
16 2015-08-07 19:57:02,429 INFO pytan.handler.QuestionPoller: ID 1325: Reached Threshold of 99% (2
17
18 Traceback (most recent call last):
19   File "<string>", line 65, in <module>
20   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
21     ret = f(*args, **kwargs)
22   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
23     pytan.utils.check_dictkey(**check_args)
24   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2685, in check_dictkey
25     raise pytan.exceptions.HandlerError(err(key, valid_types, k_type))
HandlerError: 'expand_grouped_columns' must be one of [<type 'bool'>], you supplied <type 'unicode'>
```

### Invalid export resultset csv bad sensors sub type

Export a ResultSet from asking a question using a bad sensors

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
```

```

19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["sensors"] = [[]]
48 export_kwargs["header_add_sensor"] = True
49
50 # ask the question that will provide the resultset that we want to use
51 ask_kwargs = {
52     'qtype': 'manual',
53     'sensors': [
54         "Computer Name"
55     ],
56 }
57 response = handler.ask(**ask_kwargs)
58 export_kwargs['obj'] = response['question_results']
59
60 # export the object to a string
61 # this should throw an exception: pytan.exceptions.HandlerError
62 import traceback
63
64 try:
65     handler.export_obj(**export_kwargs)
66 except Exception as e:
67     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:57:02,479 DEBUG      pytan.handler.QuestionPoller: ID 1326: id resolved to 1326
3 2015-08-07 19:57:02,479 DEBUG      pytan.handler.QuestionPoller: ID 1326: expiration resolved to 2015-
4 2015-08-07 19:57:02,479 DEBUG      pytan.handler.QuestionPoller: ID 1326: query_text resolved to Get C
5 2015-08-07 19:57:02,479 DEBUG      pytan.handler.QuestionPoller: ID 1326: id resolved to 1326

```

```

6 2015-08-07 19:57:02,479 DEBUG pytan.handler.QuestionPoller: ID 1326: Object Info resolved to Ques
7 2015-08-07 19:57:02,482 DEBUG pytan.handler.QuestionPoller: ID 1326: Progress: Tested: 0, Passed:
8 2015-08-07 19:57:02,483 DEBUG pytan.handler.QuestionPoller: ID 1326: Timing: Started: 2015-08-07
9 2015-08-07 19:57:02,483 INFO pytan.handler.QuestionPoller: ID 1326: Progress Changed 0% (0 of 2)
10 2015-08-07 19:57:07,486 DEBUG pytan.handler.QuestionPoller: ID 1326: Progress: Tested: 0, Passed:
11 2015-08-07 19:57:07,486 DEBUG pytan.handler.QuestionPoller: ID 1326: Timing: Started: 2015-08-07
12 2015-08-07 19:57:12,490 DEBUG pytan.handler.QuestionPoller: ID 1326: Progress: Tested: 2, Passed:
13 2015-08-07 19:57:12,490 DEBUG pytan.handler.QuestionPoller: ID 1326: Timing: Started: 2015-08-07
14 2015-08-07 19:57:12,490 INFO pytan.handler.QuestionPoller: ID 1326: Progress Changed 100% (2 of
15 2015-08-07 19:57:12,490 INFO pytan.handler.QuestionPoller: ID 1326: Reached Threshold of 99% (2
16
17 Traceback (most recent call last):
18   File "<string>", line 66, in <module>
19   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
20     ret = f(*args, **kwargs)
21   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
22     pytan.utils.check_dictkey(**check_args)
23   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2692, in check_dictkey
24     raise pytan.exceptions.HandlerError(err(key, valid_list_types, list_types))
HandlerError: 'sensors' must be a list of [<class 'taniumpy.object_types.sensor.Sensor'>], you supplied

```

### Invalid export resultset bad format

Export a ResultSet from asking a question using a bad export\_format

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29

```



```

30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'bad'
47
48 # ask the question that will provide the resultset that we want to use
49 ask_kwargs = {
50     'qtype': 'manual',
51     'sensors': [
52         "Computer Name"
53     ],
54 }
55 response = handler.ask(**ask_kwargs)
56 export_kwargs['obj'] = response['question_results']
57
58 # export the object to a string
59 # this should throw an exception: pytan.exceptions.HandlerError
60 import traceback
61
62 try:
63     handler.export_obj(**export_kwargs)
64 except Exception as e:
65     traceback.print_exc(file=sys.stdout)

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 2015-08-07 19:57:12,541 DEBUG pytan.handler.QuestionPoller: ID 1327: id resolved to 1327
3 2015-08-07 19:57:12,541 DEBUG pytan.handler.QuestionPoller: ID 1327: expiration resolved to 2015-
4 2015-08-07 19:57:12,541 DEBUG pytan.handler.QuestionPoller: ID 1327: query_text resolved to Get C
5 2015-08-07 19:57:12,541 DEBUG pytan.handler.QuestionPoller: ID 1327: id resolved to 1327
6 2015-08-07 19:57:12,541 DEBUG pytan.handler.QuestionPoller: ID 1327: Object Info resolved to Ques
7 2015-08-07 19:57:12,545 DEBUG pytan.handler.QuestionPoller: ID 1327: Progress: Tested: 0, Passed:
8 2015-08-07 19:57:12,545 DEBUG pytan.handler.QuestionPoller: ID 1327: Timing: Started: 2015-08-07
9 2015-08-07 19:57:12,545 INFO pytan.handler.QuestionPoller: ID 1327: Progress Changed 0% (0 of 2)
10 2015-08-07 19:57:17,551 DEBUG pytan.handler.QuestionPoller: ID 1327: Progress: Tested: 0, Passed:
11 2015-08-07 19:57:17,551 DEBUG pytan.handler.QuestionPoller: ID 1327: Timing: Started: 2015-08-07
12 2015-08-07 19:57:22,556 DEBUG pytan.handler.QuestionPoller: ID 1327: Progress: Tested: 2, Passed:
13 2015-08-07 19:57:22,556 DEBUG pytan.handler.QuestionPoller: ID 1327: Timing: Started: 2015-08-07
14 2015-08-07 19:57:22,556 INFO pytan.handler.QuestionPoller: ID 1327: Progress Changed 100% (2 of
15 2015-08-07 19:57:22,556 INFO pytan.handler.QuestionPoller: ID 1327: Reached Threshold of 99% (2
16
17 Traceback (most recent call last):
18   File "<string>", line 64, in <module>
19   File "/Users/jolsen/gh/pytan/lib/pytan/utls.py", line 2699, in wrap

```

```
19         ret = f(*args, **kwargs)
20         File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1078, in export_obj
21             raise pytan.exceptions.HandlerError(err)
22 HandlerError: u'bad' not a supported export format for ResultSet, must be one of: json, csv
```

## PyTan API Valid Export BaseType Examples

### Export basetype csv default options

Export a BaseType from getting objects as CSV with the default options

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
```

```

43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47
48 # get the objects that will provide the basetype that we want to use
49 get_kwargs = {
50     'name': [
51         "Computer Name", "IP Route Details", "IP Address",
52         'Folder Name Search with RegEx Match',
53     ],
54     'objtype': 'sensor',
55 }
56 response = handler.get(**get_kwargs)
57
58 # export the object to a string
59 # (we could just as easily export to a file using export_to_report_file)
60 export_kwargs['obj'] = response
61 export_str = handler.export_obj(**export_kwargs)
62
63
64 print ""
65 print "print the export_str returned from export_obj():"
66
67 out = export_str
68 if len(out.splitlines()) > 15:
69     out = out.splitlines()[0:15]
70     out.append('..trimmed for brevity..')
71     out = '\n'.join(out)
72
73 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 category,creation_time,delimiter,description,exclude_from_parse_flag,hash,hidden_flag,id,ignore_case
5 Reserved,,, "The assigned name of the client machine.
6 Example: workstation-1.company.com",0,3409330187,0,3,1,,86400,,,,,Computer Name,,Windows,select CSNa
7 Network,2015-08-07T13:22:12,|,"Returns IPv4 network routes, filtered to exclude noise. With Flags, M
8 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0",1,435227963,0,552,1,Jim Olsen,60,0,defined
9 Set objWMIService = GetObject(&quot;winmgmts:&quot;; _
10     &amp; &quot;{impersonationLevel=impersonate}!\&quot; &amp; strComputer &amp; &quot;\root\cimv2&
11
12 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where IPE
13 dim ipaddrs()
14 ipcount = 0
15 for each ipItem in collip
16     for each ipaddr in ipItem.IPAddress
17         ipcount = ipcount + 1
18     next
19 ..trimmed for brevity..

```

## Export basetype json type false

Export a BaseType from getting objects as JSON with false for include\_type

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47 export_kwargs["include_type"] = False
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
```

```

53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 {
5     "sensor": [
6         {
7             "category": "Reserved",
8             "description": "The assigned name of the client machine.\nExample: workstation-1.company.com",
9             "exclude_from_parse_flag": 0,
10            "hash": 3409330187,
11            "hidden_flag": 0,
12            "id": 3,
13            "ignore_case_flag": 1,
14            "max_age_seconds": 86400,
15            "name": "Computer Name",
16            "queries": {
17                "query": [
18                    {
19                        ..trimmed for brevity..

```

### Export basetype json explode false

Export a BaseType from getting objects as JSON with false for explode\_json\_string\_values

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True

```

```
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47 export_kwargs["explode_json_string_values"] = False
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
```

```

62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 {
5     "_type": "sensors",
6     "sensor": [
7         {
8             "_type": "sensor",
9             "category": "Reserved",
10            "description": "The assigned name of the client machine.\nExample: workstation-1.company.com",
11            "exclude_from_parse_flag": 0,
12            "hash": 3409330187,
13            "hidden_flag": 0,
14            "id": 3,
15            "ignore_case_flag": 1,
16            "max_age_seconds": 86400,
17            "name": "Computer Name",
18            "queries": {
19                ..trimmed for brevity..

```

### Export basetype json explode true

Export a BaseType from getting objects as JSON with true for explode\_json\_string\_values

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')

```

```
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47 export_kwargs["explode_json_string_values"] = True
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
```



```

71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 {
5     "_type": "sensors",
6     "sensor": [
7         {
8             "_type": "sensor",
9             "category": "Reserved",
10            "description": "The assigned name of the client machine.\nExample: workstation-1.company.com",
11            "exclude_from_parse_flag": 0,
12            "hash": 3409330187,
13            "hidden_flag": 0,
14            "id": 3,
15            "ignore_case_flag": 1,
16            "max_age_seconds": 86400,
17            "name": "Computer Name",
18            "queries": {
19 ..trimmed for brevity..

```

### Export basetype xml default options

Export a BaseType from getting objects as XML with the default options

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"

```

```
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'xml'
47
48 # get the objects that will provide the basetype that we want to use
49 get_kwargs = {
50     'name': [
51         "Computer Name", "IP Route Details", "IP Address",
52         'Folder Name Search with RegEx Match',
53     ],
54     'objtype': 'sensor',
55 }
56 response = handler.get(**get_kwargs)
57
58 # export the object to a string
59 # (we could just as easily export to a file using export_to_report_file)
60 export_kwargs['obj'] = response
61 export_str = handler.export_obj(**export_kwargs)
62
63
64 print ""
65 print "print the export_str returned from export_obj():"
66
67 out = export_str
68 if len(out.splitlines()) > 15:
69     out = out.splitlines()[0:15]
70     out.append('..trimmed for brevity..')
71     out = '\n'.join(out)
72
73 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
```

```

3 print the export_str returned from export_obj():
4 <sensors><cache_info /><sensor><category>Reserved</category><preview_sensor_flag /><hash>3409330187<
5 Example: workstation-1.company.com</description><string_hints /><subcolumns /><metadata /><parameter
6 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0</description><string_hints /><subcolumns><s
7 Set objWMIService = GetObject(&quot;winmgmts:&quot; _
8     &amp;& &quot;{impersonationLevel=impersonate}!\\&quot; &amp;& strComputer &amp;&
9
10 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where
11 dim ipaddrs()
12 ipcount = 0
13 for each ipItem in collip
14     for each ipaddr in ipItem.IPAddress
15         ipcount = ipcount + 1
16     next
17 next
18 redim ipaddrs(ipcount)
19 ..trimmed for brevity..

```

### Export basetype xml minimal false

Export a BaseType from getting objects as XML with false for minimal

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31

```

```
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'xml'
47 export_kwargs["minimal"] = False
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out
```

## Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 <sensors><cache_info /><sensor><category>Reserved</category><preview_sensor_flag /><hash>3409330187<
5 Example: workstation-1.company.com</description><string_hints /><subcolumns /><metadata /><parameter
6 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0</description><string_hints /><subcolumns><s
7 Set objWMIService = GetObject(&quot;winmgmts:&quot; &quot;_
8     &quot;&quot; &quot;{impersonationLevel=impersonate}!\\&quot; &quot;&quot; strComputer &quot;&quot;
9
10 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where
11 dim ipaddr)
```

```

12 ipcount = 0
13 for each ipItem in collip
14     for each ipaddr in ipItem.IPAddress
15         ipcount = ipcount + 1
16     next
17 next
18 redim ipaddrs(ipcount)
19 ..trimmed for brevity..

```

### Export basetype xml minimal true

Export a BaseType from getting objects as XML with true for minimal

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )

```

```
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'xml'
47 export_kwargs["minimal"] = True
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 <sensors><sensor><category>Reserved</category><hash>3409330187</hash><name>Computer Name</name><hid
5 Example: workstation-1.company.com</description><queries><query><platform>Windows</platform><script_
6 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0</description><subcolumns><subcolumn><index>
7 Set objWMIService = GetObject(&quot;winmgmts:&quot; _
8     &amp;&amp; &quot;{impersonationLevel=impersonate}!\\&quot; &amp;&amp; strComputer &amp;&amp;
9
10 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where
11 dim ipaddrs()
12 ipcount = 0
13 for each ipItem in collip
14     for each ipaddr in ipItem.IPAddress
15         ipcount = ipcount + 1
16     next
17 next
18 redim ipaddrs(ipcount)
19 ..trimmed for brevity..
```

## Export basetype csv with explode false

Export a BaseType from getting objects as CSV with false for explode\_json\_string\_values

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["explode_json_string_values"] = False
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",

```

```
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 category,creation_time,delimiter,description,exclude_from_parse_flag,hash,hidden_flag,id,ignore_case
5 Reserved,,, "The assigned name of the client machine.
6 Example: workstation-1.company.com",0,3409330187,0,3,1,,86400,,,,,Computer Name,,Windows,select CSNa
7 Network,2015-08-07T13:22:12,|,"Returns IPv4 network routes, filtered to exclude noise. With Flags, M
8 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0",1,435227963,0,552,1,Jim Olsen,60,0,defined
9 Set objWMIService = GetObject(&quot;winmgmts:&quot;; _
10     &amp; &quot;{impersonationLevel=impersonate}!\&quot;; &amp; strComputer &amp; &quot;;\root\cimv2&
11
12 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where IPE
13 dim ipaddrs()
14 ipcount = 0
15 for each ipItem in collip
16     for each ipaddr in ipItem.IPAddress
17         ipcount = ipcount + 1
18     next
19 ..trimmed for brevity..
```

### Export basetype csv with explode true

Export a BaseType from getting objects as CSV with true for explode\_json\_string\_values

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
```



```

4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["explode_json_string_values"] = True
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response

```

```
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 category,creation_time,delimiter,description,exclude_from_parse_flag,hash,hidden_flag,id,ignore_case
5 Reserved,,, "The assigned name of the client machine.
6 Example: workstation-1.company.com",0,3409330187,0,3,1,,86400,,,,,Computer Name,,,,,,,,,,,,,
7 Network,2015-08-07T13:22:12,|,"Returns IPv4 network routes, filtered to exclude noise. With Flags, M
8 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0",1,435227963,0,552,1,Jim Olsen,60,0,defined
9 Set objWMIService = GetObject(&quot;winmgmts:&quot;; _
10     &amp; &quot;{impersonationLevel=impersonate}!\\&quot;; &amp; strComputer &amp; &quot;;\root\cimv2&
11
12 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where IPE
13 dim ipaddrs()
14 ipcount = 0
15 for each ipItem in collip
16     for each ipaddr in ipItem.IPAddress
17         ipcount = ipcount + 1
18     next
19 ..trimmed for brevity..
```

### Export basetype csv with sort empty list

Export a BaseType from getting objects as CSV with an empty list for header\_sort

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
```

```

13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = []
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]

```

```
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 category,creation_time,delimiter,description,exclude_from_parse_flag,hash,hidden_flag,id,ignore_case
5 Reserved,,, "The assigned name of the client machine.
6 Example: workstation-1.company.com",0,3409330187,0,3,1,,86400,,,,,Computer Name,,Windows,select CSNa
7 Network,2015-08-07T13:22:12,|,"Returns IPv4 network routes, filtered to exclude noise. With Flags, M
8 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0",1,435227963,0,552,1,Jim Olsen,60,0,defined
9 Set objWMIService = GetObject(&quot;winmgmts:&quot;; _
10     &amp; &quot;{impersonationLevel=impersonate}!\\&quot;; &amp; strComputer &amp; &quot;;\root\cimv2&
11
12 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where IPE
13 dim ipaddrs()
14 ipcount = 0
15 for each ipItem in collip
16     for each ipaddr in ipItem.IPAddress
17         ipcount = ipcount + 1
18     next
19 ..trimmed for brevity..
```

### Export basetype csv with sort true

Export a BaseType from getting objects as CSV with true for header\_sort

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
```

```

22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = True
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out

```

## Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 category,creation_time,delimiter,description,exclude_from_parse_flag,hash,hidden_flag,id,ignore_case
5 Reserved,,,"The assigned name of the client machine.
6 Example: workstation-1.company.com",0,3409330187,0,3,1,,86400,,,,,Computer Name,,Windows,select CSNa
7 Network,2015-08-07T13:22:12,|,"Returns IPv4 network routes, filtered to exclude noise. With Flags, M
8 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0",1,435227963,0,552,1,Jim Olsen,60,0,defined
9 Set objWMIService = GetObject(&quot;winmgmts:&quot;; _
10     &amp; &quot;{impersonationLevel=impersonate}!\\&quot; &amp; strComputer &amp; &quot;\root\cimv2&
11
12 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where IPE
13 dim ipaddrs()
14 ipcount = 0
15 for each ipItem in collip
16     for each ipaddr in ipItem.IPAddress
17         ipcount = ipcount + 1
18     next
19 ..trimmed for brevity..
```

### Export basetype csv with sort list

Export a BaseType from getting objects as CSV with name and description for header\_sort

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
```

```

30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = [u'name', u'description']
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 name,description,category,creation_time,delimiter,exclude_from_parse_flag,hash,hidden_flag,id,ignore
5 Computer Name,"The assigned name of the client machine.
6 Example: workstation-1.company.com",Reserved,,,0,3409330187,0,3,1,,,86400,,,,,Windows,select CSName
7 IP Route Details,"Returns IPv4 network routes, filtered to exclude noise. With Flags, Metric, Interf
8 Example: 172.16.0.0|192.168.1.1|255.255.0.0|UG|100|eth0",Network,2015-08-07T13:22:12,|,1,435227963,
9 Set objWMIService = GetObject(&quot;winmgmts:&quot; _

```

```
10         & &quot;{impersonationLevel=impersonate}!\\&quot; & & strComputer & &quot;\root\cimv2&
11
12 Set collip = objWMIService.ExecQuery(&quot;select * from win32_networkadapterconfiguration where IPE
13 dim ipaddrs()
14 ipcount = 0
15 for each ipItem in collip
16     for each ipaddr in ipItem.IPAddress
17         ipcount = ipcount + 1
18     next
19 ..trimmed for brevity..
```

## Export basetype json default options

Export a BaseType from getting objects as JSON with the default options

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
```



```

39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47
48 # get the objects that will provide the basetype that we want to use
49 get_kwargs = {
50     'name': [
51         "Computer Name", "IP Route Details", "IP Address",
52         'Folder Name Search with RegEx Match',
53     ],
54     'objtype': 'sensor',
55 }
56 response = handler.get(**get_kwargs)
57
58 # export the object to a string
59 # (we could just as easily export to a file using export_to_report_file)
60 export_kwargs['obj'] = response
61 export_str = handler.export_obj(**export_kwargs)
62
63
64 print ""
65 print "print the export_str returned from export_obj():"
66
67 out = export_str
68 if len(out.splitlines()) > 15:
69     out = out.splitlines()[0:15]
70     out.append('..trimmed for brevity..')
71     out = '\n'.join(out)
72
73 print out

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 {
5     "_type": "sensors",
6     "sensor": [
7         {
8             "_type": "sensor",
9             "category": "Reserved",
10            "description": "The assigned name of the client machine.\nExample: workstation-1.company.com",
11            "exclude_from_parse_flag": 0,
12            "hash": 3409330187,
13            "hidden_flag": 0,
14            "id": 3,
15            "ignore_case_flag": 1,
16            "max_age_seconds": 86400,
17            "name": "Computer Name",
18            "queries": {

```

```
19 | ..trimmed for brevity..
```

### Export basetype json type true

Export a BaseType from getting objects as JSON with true for include\_type

### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47 export_kwargs["include_type"] = True
```

```

48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58
59 # export the object to a string
60 # (we could just as easily export to a file using export_to_report_file)
61 export_kwargs['obj'] = response
62 export_str = handler.export_obj(**export_kwargs)
63
64
65 print ""
66 print "print the export_str returned from export_obj():"
67
68 out = export_str
69 if len(out.splitlines()) > 15:
70     out = out.splitlines()[0:15]
71     out.append('..trimmed for brevity..')
72     out = '\n'.join(out)
73
74 print out

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2
3 print the export_str returned from export_obj():
4 {
5     "_type": "sensors",
6     "sensor": [
7         {
8             "_type": "sensor",
9             "category": "Reserved",
10            "description": "The assigned name of the client machine.\nExample: workstation-1.company.com",
11            "exclude_from_parse_flag": 0,
12            "hash": 3409330187,
13            "hidden_flag": 0,
14            "id": 3,
15            "ignore_case_flag": 1,
16            "max_age_seconds": 86400,
17            "name": "Computer Name",
18            "queries": {
19                ..trimmed for brevity..

```

## PyTan API Invalid Export BaseType Examples

### Invalid export basetype csv bad explode type

Export a BaseType from getting objects using a bad explode\_json\_string\_values

#### Example Python Code

```
1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["explode_json_string_values"] = u'bad'
48
49 # get the objects that will provide the basetype that we want to use
```

```

50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58 export_kwargs['obj'] = response
59
60 # export the object to a string
61 # this should throw an exception: pytan.exceptions.HandlerError
62 import traceback
63
64 try:
65     handler.export_obj(**export_kwargs)
66 except Exception as e:
67     traceback.print_exc(file=sys.stdout)

```

### Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 66, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
7     pytan.utils.check_dictkey(**check_args)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2685, in check_dictkey
9     raise pytan.exceptions.HandlerError(err(key, valid_types, k_type))
10 HandlerError: 'explode_json_string_values' must be one of [<type 'bool'>], you supplied <type 'unicod

```

### Invalid export basetype csv bad sort sub type

Export a BaseType from getting objects using a bad header\_sort

### Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:

```

```
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = [[]]
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58 export_kwargs['obj'] = response
59
60 # export the object to a string
61 # this should throw an exception: pytan.exceptions.HandlerError
62 import traceback
63
64 try:
65     handler.export_obj(**export_kwargs)
66 except Exception as e:
67     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 66, in <module>
```

```

4 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6 File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
7     pytan.utils.check_dictkey(**check_args)
8 File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2692, in check_dictkey
9     raise pytan.exceptions.HandlerError(err(key, valid_list_types, list_types))
10 HandlerError: 'header_sort' must be a list of [<type 'str'>, <type 'unicode'>], you supplied [<type

```

### Invalid export basetype csv bad sort type

Export a BaseType from getting objects using a bad header\_sort

### Example Python Code

```

1  import os
2  import sys
3  sys.dont_write_bytecode = True
4
5  # Determine our script name, script dir
6  my_file = os.path.abspath(sys.argv[0])
7  my_dir = os.path.dirname(my_file)
8
9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41

```

```
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'csv'
47 export_kwargs["header_sort"] = u'bad'
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58 export_kwargs['obj'] = response
59
60 # export the object to a string
61 # this should throw an exception: pytan.exceptions.HandlerError
62 import traceback
63
64 try:
65     handler.export_obj(**export_kwargs)
66 except Exception as e:
67     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 66, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
7     pytan.utils.check_dictkey(**check_args)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2685, in check_dictkey
9     raise pytan.exceptions.HandlerError(err(key, valid_types, k_type))
10 HandlerError: 'header_sort' must be one of [<type 'bool'>, <type 'list'>, <type 'tuple'>], you supplied
```

### Invalid export basetype xml bad minimal type

Export a BaseType from getting objects using a bad minimal

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
```



```

9  # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'xml'
47 export_kwargs["minimal"] = u'bad'
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58 export_kwargs['obj'] = response
59
60 # export the object to a string
61 # this should throw an exception: pytan.exceptions.HandlerError
62 import traceback
63
64 try:
65     handler.export_obj(**export_kwargs)
66 except Exception as e:

```

```
67     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 66, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
7     pytan.utils.check_dictkey(**check_args)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2685, in check_dictkey
9     raise pytan.exceptions.HandlerError(err(key, valid_types, k_type))
10 HandlerError: 'minimal' must be one of [<type 'bool'>], you supplied <type 'unicode'>!
```

### Invalid export basetype json bad include type

Export a BaseType from getting objects using a bad include\_type

### Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
```

```

34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47 export_kwargs["include_type"] = u'bad'
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58 export_kwargs['obj'] = response
59
60 # export the object to a string
61 # this should throw an exception: pytan.exceptions.HandlerError
62 import traceback
63
64 try:
65     handler.export_obj(**export_kwargs)
66 except Exception as e:
67     traceback.print_exc(file=sys.stdout)

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 66, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
7     pytan.utils.check_dictkey(**check_args)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2685, in check_dictkey
9     raise pytan.exceptions.HandlerError(err(key, valid_types, k_type))
10 HandlerError: 'include_type' must be one of [<type 'bool'>], you supplied <type 'unicode'>!

```

## Invalid export basetype json bad explode type

Export a BaseType from getting objects using a bad explode\_json\_string\_values

## Example Python Code

```
1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25
26 # Logging conrols
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'json'
47 export_kwargs["explode_json_string_values"] = u'bad'
48
49 # get the objects that will provide the basetype that we want to use
50 get_kwargs = {
51     'name': [
52         "Computer Name", "IP Route Details", "IP Address",
53         'Folder Name Search with RegEx Match',
54     ],
55     'objtype': 'sensor',
56 }
57 response = handler.get(**get_kwargs)
58 export_kwargs['obj'] = response
```

```

59
60 # export the object to a string
61 # this should throw an exception: pytan.exceptions.HandlerError
62 import traceback
63
64 try:
65     handler.export_obj(**export_kwargs)
66 except Exception as e:
67     traceback.print_exc(file=sys.stdout)

```

## Output from Python Code

```

1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 66, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1084, in export_obj
7     pytan.utils.check_dictkey(**check_args)
8   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2685, in check_dictkey
9     raise pytan.exceptions.HandlerError(err(key, valid_types, k_type))
10 HandlerError: 'explode_json_string_values' must be one of [<type 'bool'>], you supplied <type 'unicod

```

## Invalid export basetype bad format

Export a BaseType from getting objects using a bad export\_format

## Example Python Code

```

1 import os
2 import sys
3 sys.dont_write_bytecode = True
4
5 # Determine our script name, script dir
6 my_file = os.path.abspath(sys.argv[0])
7 my_dir = os.path.dirname(my_file)
8
9 # determine the pytan lib dir and add it to the path
10 parent_dir = os.path.dirname(my_dir)
11 pytan_root_dir = os.path.dirname(parent_dir)
12 lib_dir = os.path.join(pytan_root_dir, 'lib')
13 path_adds = [lib_dir]
14
15 for aa in path_adds:
16     if aa not in sys.path:
17         sys.path.append(aa)
18
19
20 # connection info for Tanium Server
21 USERNAME = "Tanium User"
22 PASSWORD = "T@n!um"
23 HOST = "172.16.31.128"
24 PORT = "443"
25

```

```
26 # Logging controls
27 LOGLEVEL = 2
28 DEBUGFORMAT = False
29
30 import tempfile
31
32 import pytan
33 handler = pytan.Handler(
34     username=USERNAME,
35     password=PASSWORD,
36     host=HOST,
37     port=PORT,
38     loglevel=LOGLEVEL,
39     debugformat=DEBUGFORMAT,
40 )
41
42 print handler
43
44 # setup the export_obj kwargs for later
45 export_kwargs = {}
46 export_kwargs["export_format"] = u'bad'
47
48 # get the objects that will provide the basetype that we want to use
49 get_kwargs = {
50     'name': [
51         "Computer Name", "IP Route Details", "IP Address",
52         'Folder Name Search with RegEx Match',
53     ],
54     'objtype': 'sensor',
55 }
56 response = handler.get(**get_kwargs)
57 export_kwargs['obj'] = response
58
59 # export the object to a string
60 # this should throw an exception: pytan.exceptions.HandlerError
61 import traceback
62
63 try:
64     handler.export_obj(**export_kwargs)
65 except Exception as e:
66     traceback.print_exc(file=sys.stdout)
```

### Output from Python Code

```
1 Handler for Session to 172.16.31.128:443, Authenticated: True, Version: Not yet determined!
2 Traceback (most recent call last):
3   File "<string>", line 65, in <module>
4   File "/Users/jolsen/gh/pytan/lib/pytan/utils.py", line 2699, in wrap
5     ret = f(*args, **kwargs)
6   File "/Users/jolsen/gh/pytan/lib/pytan/handler.py", line 1078, in export_obj
7     raise pytan.exceptions.HandlerError(err)
8 HandlerError: u'bad' not a supported export format for SensorList, must be one of: xml, json, csv
```

## 1.2.2 pytan.handler module

The main `pytan` module that provides methods for programmatic use.

### Handler Class

```
class pytan.handler.Handler(username, password, host, port='443', loglevel=0, debugformat=False,  
                             get_version=True, gmt_log=True, **kwargs)
```

Bases: `object`

Creates a connection to a Tanium SOAP Server on host:port

**Parameters** **username** : str

*username* to connect to *host* with

**password** : str

*password* to connect to *host* with

**host** : str

hostname or ip of Tanium SOAP Server

**port** : int, optional

port of Tanium SOAP Server on *host*

**get\_version** : bool, optional

get the version of the server from Tanium after authenticating, default to True

**gmt\_log** : bool, optional

True use GMT timezone for log output, False use local time for log output

**loglevel** : int, optional

0 should not print anything, 1 and higher will print more

**debugformat** : bool, optional

False use one line logformat, True use two lines

**See also:**

`pytan.constants.LOG_LEVEL_MAPS` maps a given *loglevel* to respective logger names and their logger levels

`pytan.constants.INFO_FORMAT` debugformat=False

`pytan.constants.DEBUG_FORMAT` debugformat=True

### Notes

- for 6.2: port 444 is the default SOAP port, port 443 forwards /soap/ URLs to the SOAP port, Use port 444 if you have direct access to it. However, port 444 is the only port that exposes the /info page in 6.2
- for 6.5: port 443 is the default SOAP port, there is no port 444

### Example: Create a Handler object

Setup a Handler() object:

```
>>> import sys
>>> sys.path.append('/path/to/pytan/')
>>> import pytan
>>> handler = pytan.Handler('username', 'password', 'host')
```

---

## Handler Methods: Questions and Actions

### Ask a Question

Handler.**ask** (\*\*kwargs)

Ask a type of question and get the results back

**Parameters** **qtype** : str, optional

type of question to ask: saved, manual, or \_manual, defaults to manual

**Returns** **result** : dict, containing:

- **question\_object** : one of the following depending on **qtype**:  
taniumpy.object\_types.question.Question or  
taniumpy.object\_types.saved\_question.SavedQuestion
- **question\_results** : taniumpy.object\_types.result\_set.ResultSet

See also:

`pytan.constants.Q_OBJ_MAP` maps qtype to a method in Handler()

### Ask a Saved Question

Handler.**ask\_saved** (\*args, \*\*kwargs)

### Asking a Manual Question

Handler.**ask\_manual** (\*\*kwargs)

Ask a manual question using human strings and get the results back

This method takes a string or list of strings and parses them into their corresponding definitions needed by `_ask_manual()`

**Parameters** **sensors** : str, list of str

sensors (columns) to include in question

**question\_filters** : str, list of str, optional

filters that apply to the whole question

**question\_options** : str, list of str, optional

options that apply to the whole question

**get\_results** : bool, optional

- True: wait for result completion after asking question



- False: just ask the question and return it in result

**sensors\_help** : bool, optional

- False: do not print the help string for sensors
- True: print the help string for sensors and exit

**filters\_help** : bool, optional

- False: do not print the help string for filters
- True: print the help string for filters and exit

**options\_help** : bool, optional

- False: do not print the help string for options
- True: print the help string for options and exit

**Returns** **result** : dict, containing:

- *question\_object* : `taniumpy.object_types.question.Question`
- *question\_results* : `taniumpy.object_types.result_set.ResultSet`

See also:

`pytan.constants.FILTER_MAPS` valid filter dictionaries for filters

`pytan.constants.OPTION_MAPS` valid option dictionaries for options

## Examples

```
>>> # example of str for `sensors`
>>> sensors = 'Sensor1'
```

```
>>> # example of str for `sensors` with params
>>> sensors = 'Sensor1{key:value}'
```

```
>>> # example of str for `sensors` with params and filter
>>> sensors = 'Sensor1{key:value}, that contains:example text'
```

```
>>> # example of str for `sensors` with params and filter and options
>>> sensors = (
...     'Sensor1{key:value}, that contains:example text,'
...     'opt:ignore_case, opt:max_data_age:60'
... )
```

```
>>> # example of str for question_filters
>>> question_filters = 'Sensor2, that contains:example test'
```

```
>>> # example of list of str for question_options
>>> question_options = ['max_data_age:3600', 'and']
```

## Deploy an Action

`Handler.deploy_action(**kwargs)`

Deploy an action and get the results back

This method takes a string or list of strings and parses them into their corresponding definitions needed by `_deploy_action()`

**Parameters** `package` : str

each string must describe a package

`action_filters` : str, list of str, optional

each string must describe a sensor and a filter which limits which computers the action will deploy *package* to

`action_options` : str, list of str, optional

options to apply to *action\_filters*

`start_seconds_from_now` : int, optional

start action N seconds from now

`expire_seconds` : int, optional

expire action N seconds from now, will be derived from package if not supplied

`run` : bool, optional

- False: just ask the question that pertains to verify action, export the results to CSV, and raise `pytan.exceptions.RunFalse` – does not deploy the action
- True: actually deploy the action

`get_results` : bool, optional

- True: wait for result completion after deploying action
- False: just deploy the action and return the object in *ret*

`package_help` : bool, optional

- False: do not print the help string for package
- True: print the help string for package and exit

`filters_help` : bool, optional

- False: do not print the help string for filters
- True: print the help string for filters and exit

`options_help` : bool, optional

- False: do not print the help string for options
- True: print the help string for options and exit

**Returns** `ret` : dict, containing:

- `action_object` : `taniumpy.object_types.action.Action`
- `action_results` : `taniumpy.object_types.result_set.ResultSet`
- `action_progress_human` : str, progress map in human form
- `action_progress_map` : dict, progress map in dictionary form
- `pre_action_question_results` : `taniumpy.object_types.result_set.ResultSet`

See also:

`pytan.constants.FILTER_MAPS` valid filter dictionaries for filters

`pytan.constants.OPTION_MAPS` valid option dictionaries for options

### Examples

```
>>> # example of str for `package`
>>> package = 'Package1'
```

```
>>> # example of str for `package` with params
>>> package = 'Package1{key:value}'
```

```
>>> # example of str for `action_filters` with params and filter for sensors
>>> action_filters = 'Sensor1{key:value}, that contains:example text'
```

```
>>> # example of list of str for `action_options`
>>> action_options = ['max_data_age:3600', 'and']
```

### Stopping an Action

`Handler.stop_action(id, **kwargs)`

Stop an action

**Parameters** `id` : int

id of action to stop

**Returns** `action_stop_obj` : `taniumpy.object_types.action_stop.ActionStop`

The object containing the ID of the action stop job

### Handler Methods: Exporting/Importing Objects

#### Import an API Object from JSON

`Handler.create_from_json(objtype, json_file)`

Creates a new object using the SOAP api from a json file

**Parameters** `objtype` : str

Type of object described in `json_file`

`json_file` : str

path to JSON file that describes an API object

**Returns** `ret` : `taniumpy.object_types.base.BaseType`

TaniumPy object added to Tanium SOAP Server

See also:

`pytan.constants.GET_OBJ_MAP` maps objtype to supported 'create\_json' types

## Export Object

`Handler.export_obj(*args, **kwargs)`

## Export Object to Report File

`Handler.export_to_report_file(obj, export_format='csv', **kwargs)`

Exports a python API object to a file

**Parameters** `obj` : `taniumpy.object_types.base.BaseType` or  
`taniumpy.object_types.result_set.ResultSet`

TaniumPy object to export

**export\_format** : str

the format to export *obj* to, can be one of: csv, xml, json

**header\_sort** : list of str, bool, optional

- for *export\_format* csv and *obj* types `taniumpy.object_types.base.BaseType` or `taniumpy.object_types.result_set.ResultSet`
- True: sort the headers automatically
- False: do not sort the headers at all
- list of str: sort the headers returned by priority based on provided list

**header\_add\_sensor** : bool, optional

- for *export\_format* csv and *obj* type `taniumpy.object_types.result_set.ResultSet`
- False: do not prefix the headers with the associated sensor name for each column
- True: prefix the headers with the associated sensor name for each column

**header\_add\_type** : bool, optional

- for *export\_format* csv and *obj* type `taniumpy.object_types.result_set.ResultSet`
- False: do not postfix the headers with the result type for each column
- True: postfix the headers with the result type for each column

**expand\_grouped\_columns** : bool, optional

- for *export\_format* csv and *obj* type `taniumpy.object_types.result_set.ResultSet`
- False: do not expand multiline row entries into their own rows
- True: expand multiline row entries into their own rows

**explode\_json\_string\_values** : bool, optional

- for *export\_format* json or csv and *obj* type `taniumpy.object_types.base.BaseType`
- False: do not explode JSON strings in object attributes into their own object attributes
- True: explode JSON strings in object attributes into their own object attributes

**minimal** : bool, optional

- for *export\_format* xml and *obj* type `taniumpy.object_types.base.BaseType`
- False: include empty attributes in XML output
- True: do not include empty attributes in XML output

**report\_file**: str, optional

filename to save report as, will be automatically generated if not supplied

**report\_dir:** str, optional

directory to save report in, if not supplied, will be extracted from *report\_file*. if no directory in *report\_file* or *report\_file* not specified, will use current working directory.

**prefix:** str, optional

prefix to add to *report\_file*

**postfix:** str, optional

postfix to add to *report\_file*

**Returns** **report\_path** : str

the full path to the file created with contents of *result*

**result** : str

the str of *export\_format*

---

## Handler Methods: Creating Objects

### Create a Group

`Handler.create_group(groupname, filters=[], filter_options=[], **kwargs)`  
Create a group object

**Parameters** **groupname** : str

name of group to create

**filters** : str or list of str, optional

each string must describe a filter

**filter\_options** : str or list of str, optional

each string must describe an option for *filters*

**filters\_help** : bool, optional

- False: do not print the help string for filters
- True: print the help string for filters and exit

**options\_help** : bool, optional

- False: do not print the help string for options
- True: print the help string for options and exit

**Returns** **group\_obj** : `taniumpy.object_types.group.Group`

TaniumPy object added to Tanium SOAP Server

See also:

`pytan.constants.FILTER_MAPS` valid filters for filters

`pytan.constants.OPTION_MAPS` valid options for filter\_options

## Create a Package

```
Handler.create_package(name, command, display_name='', file_urls=[], com-  
mand_timeout_seconds=600, expire_seconds=600, param-  
eters_json_file='', verify_filters=[], verify_filter_options=[], ver-  
ify_expire_seconds=600, **kwargs)
```

Create a package object

**Parameters** **name** : str

name of package to create

**command** : str

command to execute

**display\_name** : str, optional

display name of package

**file\_urls** : list of strings, optional

- URL of file to add to package
- can optionally define download\_seconds by using SECONDS::URL
- can optionally define file name by using FILENAME||URL
- can combine optionals by using SECONDS::FILENAME||URL
- FILENAME will be extracted from basename of URL if not provided

**command\_timeout\_seconds** : int, optional

timeout for command execution in seconds

**parameters\_json\_file** : str, optional

path to json file describing parameters for package

**expire\_seconds** : int, optional

timeout for action expiry in seconds

**verify\_filters** : str or list of str, optional

each string must describe a filter to be used to verify the package

**verify\_filter\_options** : str or list of str, optional

each string must describe an option for *verify\_filters*

**verify\_expire\_seconds** : int, optional

timeout for verify action expiry in seconds

**filters\_help** : bool, optional

- False: do not print the help string for filters
- True: print the help string for filters and exit

**options\_help** : bool, optional

- False: do not print the help string for options
- True: print the help string for options and exit

**metadata**: list of list of strs, optional

- each list must be a 2 item list:

- list item 1 property name
- list item 2 property value

**Returns** `package_obj`: `taniumpy.object_types.package_spec.PackageSpec`

TaniumPy object added to Tanium SOAP Server

See also:

`pytan.constants.FILTER_MAPS` valid filters for `verify_filters`

`pytan.constants.OPTION_MAPS` valid options for `verify_filter_options`

### Create a Sensor

`Handler.create_sensor()`

Create a sensor object

**Raises** `pytan.exceptions.HandlerError`: `pytan.utils.pytan.exceptions.HandlerError`

**Warning:** Not currently supported, too complicated to add. Use `create_from_json()` instead for this object type!

### Create a User

`Handler.create_user(username, rolename=[], roleid=[], properties=[])`

Create a user object

**Parameters** `username`: str

name of user to create

**rolename**: str or list of str, optional

name(s) of roles to add to user

**roleid**: int or list of int, optional

id(s) of roles to add to user

**properties**: list of list of strs, optional

- each list must be a 2 item list:
- list item 1 property name
- list item 2 property value

**Returns** `user_obj`: `taniumpy.object_types.user.User`

TaniumPy object added to Tanium SOAP Server

### Create a Whitelisted URL

`Handler.create_whitelisted_url(url, regex=False, download_seconds=86400, properties=[])`

Create a whitelisted url object

**Parameters** `url`: str

text of new url

**regex**: bool, optional

- True: `url` is a regex pattern

- False: *url* is not a regex pattern

**download\_seconds** : int, optional

how often to re-download *url*

**properties**: list of list of strs, optional

- each list must be a 2 item list:
- list item 1 property name
- list item 2 property value

**Returns** `url_obj`: `taniumpy.object_types.white_listed_url.WhiteListedUrl`

TaniumPy object added to Tanium SOAP Server

### Create a Dashboard

`Handler.create_dashboard(name, text='', group='', public_flag=True)`

---

## Handler Methods: Deleting Objects

### Delete an Object

`Handler.delete(objtype, **kwargs)`

Delete an object type

**Parameters** `objtype` : string

type of object to delete

**id/name/hash** : int or string, list of int or string

search attributes of object to delete, must supply at least one valid search attr

**Returns** `ret` : dict

dict containing deploy action object and results from deploy action

See also:

`pytan.constants.GET_OBJ_MAP` maps objtype to supported 'search' keys

### Delete a Dashboard

`Handler.delete_dashboard(name)`

---

## Handler Methods: Getting Objects

### Get Single or Multiple Objects of a type

`Handler.get(*args, **kwargs)`

### Get All Objects of a type

`Handler.get_all(*args, **kwargs)`



## Get Dashboards

`Handler.get_dashboards (name='')`

---

## Handler Methods: Getting Result Data / Result Info

`Handler.get_result_data (*args, **kwargs)`

`Handler.get_result_info (*args, **kwargs)`

---

## Handler Methods: Plugins

`Handler.run_plugin (plugin)`

## Handler Methods: Private Methods

`Handler.__add (*args, **kwargs)`

`Handler.__ask_manual (*args, **kwargs)`

`Handler.__deploy_action (*args, **kwargs)`

`Handler.__derive_server_version ()`

`Handler.__export_class_BaseType (obj, export_format, **kwargs)`  
Handles exporting `taniumpy.object_types.base.BaseType`

`Handler.__export_class_ResultSet (obj, export_format, **kwargs)`  
Handles exporting `taniumpy.object_types.result_set.ResultSet`

`Handler.__export_format_csv (obj, **kwargs)`  
Handles exporting format: CSV

`Handler.__export_format_json (obj, **kwargs)`  
Handles exporting format: JSON

`Handler.__export_format_xml (obj, **kwargs)`  
Handles exporting format: XML

`Handler.__find (*args, **kwargs)`

`Handler.__get_multi (obj_map, **kwargs)`  
Find multiple item wrapper using `__find()`

`Handler.__get_package_def (d)`  
Uses `get()` to update a definition with a package object

`Handler.__get_sensor_defs (defs)`  
Uses `get()` to update a definition with a sensor object

`Handler.__get_single (obj_map, **kwargs)`  
Find single item wrapper using `__find()`

`Handler.__single_find (obj_map, k, v, **kwargs)`  
Wrapper for single item searches interfacing with `taniumpy.session.Session.find()`

### 1.2.3 pytan.exceptions module

Provides exceptions for the `pytan` module.

#### Exception Classes

Exceptions used throughout `pytan`:

**exception** `pytan.exceptions.HandlerError`

Bases: `exceptions.Exception`

Exception thrown for most errors in `pytan.handler`

**exception** `pytan.exceptions.HumanParserError`

Bases: `exceptions.Exception`

Exception thrown for errors while parsing human strings from `pytan.handler`

**exception** `pytan.exceptions.DefinitionParserError`

Bases: `exceptions.Exception`

Exception thrown for errors while parsing definitions from `pytan.handler`

**exception** `pytan.exceptions.RunFalse`

Bases: `exceptions.Exception`

Exception thrown when `run=False` from `pytan.handler.Handler.deploy_action()`

**exception** `pytan.exceptions.PytanHelp`

Bases: `exceptions.Exception`

Exception thrown when printing out help

**exception** `pytan.exceptions.PollingError`

Bases: `exceptions.Exception`

Exception thrown for most errors in `pytan.polling`

**exception** `pytan.exceptions.TimeoutException`

Bases: `exceptions.Exception`

Exception thrown for timeout errors in `pytan.polling`

**exception** `pytan.exceptions.HttpError`

Bases: `exceptions.Exception`

Exception thrown for HTTP errors in `pytan.sessions`

**exception** `pytan.exceptions.AuthorizationError`

Bases: `exceptions.Exception`

Exception thrown for authorization errors in `pytan.sessions`

**exception** `pytan.exceptions.BadResponseError`

Bases: `exceptions.Exception`

Exception thrown for `BadResponse` messages from Tanium in `pytan.sessions`

**exception** `pytan.exceptions.NotFoundError`

Bases: `exceptions.Exception`

Exception thrown for `Not Found` messages from Tanium in `pytan.handler`

**exception** `pytan.exceptions.VersionMismatchError`

Bases: `exceptions.Exception`

Exception thrown for `version_check` in `pytan.utils`

**exception** `pytan.exceptions.RunPluginError`

Bases: `exceptions.Exception`

Exception thrown for `run_plugin` in `pytan.sessions`

## 1.2.4 `pytan.sessions` module

Session classes for the `pytan` module.

**class** `pytan.sessions.Session` (*server*, *port=443*, *\*\*kwargs*)

Bases: `object`

This is session object uses the requests package instead of the built in `httplib` library. This provides support for keep alive, gzip, cookies, forwarding, and a host of other features automatically.

The Requests Session object allows you to persist certain parameters across requests. It also persists cookies across all requests made from the Session instance. Any requests that you make within a session will automatically reuse the appropriate connection

**ADD\_OBJECT\_CMD** = 'AddObject'

**AUTH\_CONNECT\_TIMEOUT\_SEC** = 5

**AUTH\_RES** = 'auth'

**AUTH\_RESPONSE\_TIMEOUT\_SEC** = 15

**COMMAND\_RE** = <\_sre.SRE\_Pattern object at 0x7ff15bac7f40>

**DELETE\_OBJECT\_CMD** = 'DeleteObject'

**GET\_OBJECT\_CMD** = 'GetObject'

**GET\_RESULT\_DATA\_CMD** = 'GetResultData'

**GET\_RESULT\_INFO\_CMD** = 'GetResultInfo'

**HTTP\_AUTH\_RETRY** = True

**HTTP\_DEBUG** = False

**HTTP\_RETRY\_COUNT** = 5

**INFO\_CONNECT\_TIMEOUT\_SEC** = 5

**INFO\_RES** = 'info.json'

**INFO\_RESPONSE\_TIMEOUT\_SEC** = 15

**REQUEST\_BODY\_BASE** = '<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" xmlns:'

**REQUEST\_BODY\_TEMPLATE** = <string.Template object at 0x110a3c890>

**REQ\_SESSION** = <requests.sessions.Session object at 0x110b6f090>

**RUN\_PLUGIN\_CMD** = 'RunPlugin'

**SERVER\_STATS** = False

**SERVER\_STATS\_SLEEP** = 5

**SERVER\_STATS\_TARGETS** = [{ 'Version': 'Settings/Version' }, { 'Active Questions': 'Active Question Cache/Active Question' }

```
SESSION_RE = <_sre.SRE_Pattern object at 0x7ff15bac7800>
SOAP_CONNECT_TIMEOUT_SEC = 15
SOAP_REQUEST_HEADERS = {'Content-Type': 'text/xml; charset=utf-8', 'Accept-Encoding': 'gzip'}
SOAP_RES = 'soap'
SOAP_RESPONSE_TIMEOUT_SEC = 540
UPDATE_OBJECT_CMD = 'UpdateObject'
VERSION_RE = <_sre.SRE_Pattern object at 0x7ff15bac83d0>
XMLNS = {'xsi': 'xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"', 'typens': 'xmlns:typens="urn:TaniumSOA'}
__dict__ = dict_proxy({'_create_add_object_body': <function _create_add_object_body at 0x110a42ed8>, 'HTTP_DE
__init__ (server, port=443, **kwargs)
__module__ = 'pytan.sessions'
__str__ ()
__weakref__
    list of weak references to the object (if defined)
_build_body (command, object_list, **kwargs)
_check_auth ()
_create_add_object_body (obj, **kwargs)
_create_delete_object_body (obj, **kwargs)
_create_get_object_body (object_or_type, **kwargs)
_create_get_result_data_body (obj, **kwargs)
_create_get_result_info_body (obj, **kwargs)
_create_run_plugin_object_body (obj, **kwargs)
_create_update_object_body (obj, **kwargs)
_find_stat_target (target, diags)
_flatten_server_info (structure)
_get_percentage (part, whole)
_get_response (request_body, **kwargs)
_http_post (host, port, url, body=None, headers=None, connect_timeout=15, response_timeout=180,
            debug=False)
_parse_response_for_regex (body, regex, fail=True)
_resolve_stat_target (search_path, diags)
_start_stats_thread ()
_stats_loop ()
add (obj, **kwargs)
authenticate (username=None, password=None, session_id=None, **kwargs)
    Authenticate against a Tanium Server using a username/password or a session ID

    Can request a persistent session that will last up to 1 week when authenticating with username and pass-
    word.
```

New persistent sessions may be handed out by the Tanium server when the session handed by this auth call is used to login with that week. The new session must be used to login, as no matter what persistent sessions will expire 1 week after issuance (or when logout is called with that session, or when logout with `all_sessions=True` is called for any session for this user)

the way sessions get issued:

- a POST request to `/auth` is issued
- username/password supplied in headers as base64 encoded, or session is supplied in headers as string
- session is returned upon successful auth
- if there is a header “persistent=1” in the headers, a session that expires after 1 week will be issued if username/password was used to auth. persistent is ignored if session is used to auth.
- if there is not a header “persistent=1” in the headers, a session that expires after 5 minutes will be issued
- if session is used before it expires, it’s expiry will be extended by 5 minutes or 1 week, depending on the type of persistence
- while using the SOAP api, new session ID’s may be returned as part of the response. these new session ID’s should be used in lieu of the old session ID

`/auth` URL This url is used for validating a server user’s credentials. It supports a few different ways to authenticate and returns a SOAP session ID on success. These sessions expire after 5 minutes by default if they aren’t used in SOAP requests. This expiration is configured with the server setting ‘`session_expiration_seconds`’.

#### Supported Authentication Methods:

- HTTP Basic Auth (Clear Text/BASE64)
- Username/Password/Domain Headers (Clear Text)
- Negotiate (NTLM Only)

NTLM is enabled by default in 6.3 or greater and requires a persistent connection until a session is generated.

```
authlog = <logging.Logger object at 0x110813210>
bodyhttplog = <logging.Logger object at 0x110813310>
delete (obj, **kwargs)
disable_stats_loop (sleep=None)
enable_stats_loop (sleep=None)
find (object_type, **kwargs)
get_result_data (obj, **kwargs)
get_result_info (obj, **kwargs)
get_server_info (port=None, fallback_port=444, **kwargs)
get_server_stats ()
get_server_version ()
http_post (**kwargs)
httplog = <logging.Logger object at 0x110813290>
is_auth
```

```
logout (all_session_ids=False)
mylog = <logging.Logger object at 0x110813190>
run_plugin (obj, **kwargs)
save (obj, **kwargs)
session_id
statslog = <logging.Logger object at 0x110a3c8d0>
class pytan.sessions.Session (server, port=443, **kwargs)
    Bases: object
```

This is session object uses the requests package instead of the built in httplib library. This provides support for keep alive, gzip, cookies, forwarding, and a host of other features automatically.

The Requests Session object allows you to persist certain parameters across requests. It also persists cookies across all requests made from the Session instance. Any requests that you make within a session will automatically reuse the appropriate connection

```
ADD_OBJECT_CMD = 'AddObject'
AUTH_CONNECT_TIMEOUT_SEC = 5
AUTH_RES = 'auth'
AUTH_RESPONSE_TIMEOUT_SEC = 15
COMMAND_RE = <_sre.SRE_Pattern object at 0x7ff15bac7f40>
DELETE_OBJECT_CMD = 'DeleteObject'
GET_OBJECT_CMD = 'GetObject'
GET_RESULT_DATA_CMD = 'GetResultData'
GET_RESULT_INFO_CMD = 'GetResultInfo'
HTTP_AUTH_RETRY = True
HTTP_DEBUG = False
HTTP_RETRY_COUNT = 5
INFO_CONNECT_TIMEOUT_SEC = 5
INFO_RES = 'info.json'
INFO_RESPONSE_TIMEOUT_SEC = 15
REQUEST_BODY_BASE = '<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" xmlns='
REQUEST_BODY_TEMPLATE = <string.Template object at 0x110a3c890>
REQ_SESSION = <requests.sessions.Session object at 0x110b6f090>
RUN_PLUGIN_CMD = 'RunPlugin'
SERVER_STATS = False
SERVER_STATS_SLEEP = 5
SERVER_STATS_TARGETS = [{ 'Version': 'Settings/Version' }, { 'Active Questions': 'Active Question Cache/Active Questions' }]
SESSION_RE = <_sre.SRE_Pattern object at 0x7ff15bac7800>
SOAP_CONNECT_TIMEOUT_SEC = 15
```

```

SOAP_REQUEST_HEADERS = {'Content-Type': 'text/xml; charset=utf-8', 'Accept-Encoding': 'gzip'}
SOAP_RES = 'soap'
SOAP_RESPONSE_TIMEOUT_SEC = 540
UPDATE_OBJECT_CMD = 'UpdateObject'
VERSION_RE = <_sre.SRE_Pattern object at 0x7ff15bac83d0>
XMLNS = {'xsi': 'xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"', 'typens': 'xmlns:typens="urn:TaniumSOA'}
_build_body (command, object_list, **kwargs)
_check_auth ()
_create_add_object_body (obj, **kwargs)
_create_delete_object_body (obj, **kwargs)
_create_get_object_body (object_or_type, **kwargs)
_create_get_result_data_body (obj, **kwargs)
_create_get_result_info_body (obj, **kwargs)
_create_run_plugin_object_body (obj, **kwargs)
_create_update_object_body (obj, **kwargs)
_find_stat_target (target, diags)
_flatten_server_info (structure)
_get_percentage (part, whole)
_get_response (request_body, **kwargs)
_http_post (host, port, url, body=None, headers=None, connect_timeout=15, response_timeout=180,
            debug=False)
_parse_response_for_regex (body, regex, fail=True)
_resolve_stat_target (search_path, diags)
_start_stats_thread ()
_stats_loop ()
add (obj, **kwargs)

```

**authenticate** (username=None, password=None, session\_id=None, \*\*kwargs)

Authenticate against a Tanium Server using a username/password or a session ID

Can request a persistent session that will last up to 1 week when authenticating with username and password.

New persistent sessions may be handed out by the Tanium server when the session handed by this auth call is used to login with that week. The new session must be used to login, as no matter what persistent sessions will expire 1 week after issuance (or when logout is called with that session, or when logout with all\_sessions=True is called for any session for this user)

the way sessions get issued:

- a POST request to /auth is issued
- username/password supplied in headers as base64 encoded, or session is supplied in headers as string
- session is returned upon successful auth

- if there is a header “persistent=1” in the headers, a session that expires after 1 week will be issued if username/password was used to auth. persistent is ignored if session is used to auth.
- if there is not a header “persistent=1” in the headers, a session that expires after 5 minutes will be issued
- if session is used before it expires, it’s expiry will be extended by 5 minutes or 1 week, depending on the type of persistence
- while using the SOAP api, new session ID’s may be returned as part of the response. these new session ID’s should be used in lieu of the old session ID

/auth URL This url is used for validating a server user’s credentials. It supports a few different ways to authenticate and returns a SOAP session ID on success. These sessions expire after 5 minutes by default if they aren’t used in SOAP requests. This expiration is configured with the server setting ‘session\_expiration\_seconds’.

#### **Supported Authentication Methods:**

- HTTP Basic Auth (Clear Text/BASE64)
- Username/Password/Domain Headers (Clear Text)
- Negotiate (NTLM Only)

NTLM is enabled by default in 6.3 or greater and requires a persistent connection until a session is generated.

```
authlog = <logging.Logger object at 0x110813210>
bodyhttplog = <logging.Logger object at 0x110813310>
delete (obj, **kwargs)
disable_stats_loop (sleep=None)
enable_stats_loop (sleep=None)
find (object_type, **kwargs)
get_result_data (obj, **kwargs)
get_result_info (obj, **kwargs)
get_server_info (port=None, fallback_port=444, **kwargs)
get_server_stats ()
get_server_version ()
http_post (**kwargs)
httplog = <logging.Logger object at 0x110813290>
is_auth
logout (all_session_ids=False)
mylog = <logging.Logger object at 0x110813190>
run_plugin (obj, **kwargs)
save (obj, **kwargs)
session_id
statslog = <logging.Logger object at 0x110a3c8d0>
```



### 1.2.5 pytan.pollers module

Collection of classes and methods for polling of actions/questions in `pytan`

**class** `pytan.pollers.ActionPoller` (*handler, obj, override\_timeout\_secs=0, \*\*kwargs*)  
 Bases: `pytan.pollers.QuestionPoller`

A class to poll the progress of an Action.

The primary function of this class is to poll for result info for actions, and fire off events:

ProgressChanged AnswersChanged AnswersComplete

**Parameters** **handler** : `pytan.handler.Handler`

PyTan handler to use for GetResultInfo calls

**obj** : `taniumpy.object_types.action.Action`

object to poll for progress

**polling\_secs** : int, optional

Number of seconds to wait in between GetResultInfo loops

**complete\_pct** : int/float, optional

Percentage of mr\_tested out of estimated\_total to consider the action “done”

**override\_timeout\_secs** : int, optional

If supplied and not 0, timeout in seconds instead of when object expires

**ACTION\_DONE\_KEY** = ‘success’

**COMPLETE\_PCT** = 100

**OBJECT\_TYPE**

alias of Action

**RUNNING\_STATUSES** = [‘active’, ‘open’]

**\_\_module\_\_** = ‘pytan.pollers’

**\_derive\_expiration()**

Derive the expiration datetime string from a object

Will generate a datetime string from self.EXPIRY\_FALLBACK\_SECS if unable to get the expiration from the object (self.obj) itself.

**\_derive\_info()**

Derive self.obj\_info from self.obj

**\_derive\_package\_spec()**

**\_derive\_result\_map()**

A package object has to have a verify\_group defined on it in order for deploy action verification to trigger. That can be only done at package creation/update

If verify\_enable is True, then the various result states for an action change

**\_derive\_status()**

**\_derive\_stopped\_flag()**

**\_derive\_target\_group()**

**\_derive\_verify\_enabled()**

```
_fix_group (g)
    Sets ID to null on a group object and all of it's sub_groups, needed for 6.5

_post_init ()
    Post init class setup

finished_eq_passed_loop (callbacks={}, **kwargs)

qplog = <logging.Logger object at 0x110a4ab90>
qpplog = <logging.Logger object at 0x110a4ac50>

run (callbacks={}, **kwargs)
    Poll for action data and issue callbacks.
```

**Parameters** **callbacks** : dict

Callbacks should be a dict with any of these members: 'ProgressChanged' 'AnswersChanged' 'AnswersComplete'

Each callback should be a function that accepts a poller instance and a percent complete.

Any callback can choose to get data from the session by calling `poller.get_result_data()` or new info by calling `poller.get_result_info()`

Any callback can choose to stop the poller by calling `poller.stop()`

Polling will be stopped only when one of the callbacks calls the `stop()` method or the answers are complete. Note that callbacks can call `setPercentCompleteThreshold` to change what "done" means on the fly

```
seen_eq_passed_loop (callbacks={}, **kwargs)
```

```
class pytan.pollers.QuestionPoller (handler, obj, override_timeout_secs=0, **kwargs)
    Bases: object
```

A class to poll the progress of a Question.

The primary function of this class is to poll for result info for questions, and fire off events:

ProgressChanged AnswersChanged AnswersComplete

**Parameters** **handler** : `pytan.handler.Handler`

PyTan handler to use for GetResultInfo calls

**obj** : `taniumpy.object_types.question.Question`

object to poll for progress

**polling\_secs** : int, optional

Number of seconds to wait in between GetResultInfo loops

**complete\_pct** : int/float, optional

Percentage of mr\_tested out of estimated\_total to consider the question "done"

**override\_timeout\_secs** : int, optional

If supplied and not 0, timeout in seconds instead of when object expires

**COMPLETE\_PCT** = 99

**EXPIRY\_FALLBACK\_SECS** = 600

**OBJECT\_TYPE**

alias of `Question`

**POLLING\_SECS** = 5

**STR\_ATTRS** = ['obj\_info', 'polling\_secs', 'override\_timeout\_secs', 'complete\_pct', 'expiration']

**\_\_dict\_\_** = dict\_proxy({'passed\_eq\_est\_total\_loop': <function passed\_eq\_est\_total\_loop at 0x110a52410>, '\_\_module\_\_

**\_\_init\_\_** (*handler, obj, override\_timeout\_secs=0, \*\*kwargs*)

**\_\_module\_\_** = 'pytan.pollers'

**\_\_str\_\_** ()

**\_\_weakref\_\_**

list of weak references to the object (if defined)

**\_derive\_attribute** (*attr, fallback=''*)

Derive an attributes value from self.obj

Will re-fetch self.obj if the attribute is not set

**Parameters** *attr* : string

string of attribute name to fetch from self.obj

**fallback** : string

value to fallback to if it still can't be accessed after re-fetching the obj if fallback is None, an exception will be raised

**Returns** *val* : perspective

The value of the attr from self.obj

**\_derive\_expiration** ()

Derive the expiration datetime string from a object

Will generate a datetime string from self.EXPIRY\_FALLBACK\_SECS if unable to get the expiration from the object (self.obj) itself.

**\_derive\_info** ()

Derive self.obj\_info from self.obj

**\_post\_init** ()

Post init class setup

**\_refetch\_obj** ()

Utility method to re-fetch a object

This is used in the case that the obj supplied does not have all the metadata available

**get\_result\_data** (*\*\*kwargs*)

Simple utility wrapper around handler.get\_result\_data()

**get\_result\_info** (*\*\*kwargs*)

Simple utility wrapper around handler.get\_result\_info()

**passed\_eq\_est\_total\_loop** (*callbacks={}, \*\*kwargs*)

**qpplog** = <logging.Logger object at 0x110a4a9d0>

**qpplog** = <logging.Logger object at 0x110a4aa90>

**run** (*callbacks={}, \*\*kwargs*)

Poll for question data and issue callbacks.

**Parameters** *callbacks* : dict

Callbacks should be a dict with any of these members: 'ProgressChanged' 'AnswersChanged' 'AnswersComplete'

Each callback should be a function that accepts a poller instance and a percent complete.

Any callback can choose to get data from the session by calling `poller.get_result_data()` or new info by calling `poller.get_result_info()`

Any callback can choose to stop the poller by calling `poller.stop()`

Polling will be stopped only when one of the callbacks calls the `stop()` method or the answers are complete. Note that callbacks can call `setPercentCompleteThreshold` to change what "done" means on the fly

**set\_complete\_pct** (*val*)

Set the `complete_pct` to a new value

**Parameters** *val* : int/float

float value representing the new percentage to consider `self.obj` complete

**stop** ()

**class** `pytan.pollers.QuestionPoller` (*handler, obj, override\_timeout\_secs=0, \*\*kwargs*)

Bases: `object`

A class to poll the progress of a Question.

The primary function of this class is to poll for result info for questions, and fire off events:

ProgressChanged AnswersChanged AnswersComplete

**Parameters** **handler** : `pytan.handler.Handler`

PyTan handler to use for `GetResultInfo` calls

**obj** : `taniumpy.object_types.question.Question`

object to poll for progress

**polling\_secs** : int, optional

Number of seconds to wait in between `GetResultInfo` loops

**complete\_pct** : int/float, optional

Percentage of `mr_tested` out of `estimated_total` to consider the question "done"

**override\_timeout\_secs** : int, optional

If supplied and not 0, timeout in seconds instead of when object expires

**COMPLETE\_PCT** = 99

**EXPIRY\_FALLBACK\_SECS** = 600

**OBJECT\_TYPE**

alias of `Question`

**POLLING\_SECS** = 5

**STR\_ATTRS** = ['obj\_info', 'polling\_secs', 'override\_timeout\_secs', 'complete\_pct', 'expiration']

**\_derive\_attribute** (*attr, fallback=''*)

Derive an attributes value from `self.obj`

Will re-fetch `self.obj` if the attribute is not set

**Parameters** *attr* : string

string of attribute name to fetch from self.obj

**fallback** : string

value to fallback to if it still can't be accessed after re-fetching the obj if fallback is None, an exception will be raised

**Returns** **val** : perspective

The value of the attr from self.obj

**\_derive\_expiration** ()

Derive the expiration datetime string from a object

Will generate a datetime string from self.EXPIRY\_FALLBACK\_SECS if unable to get the expiration from the object (self.obj) itself.

**\_derive\_info** ()

Derive self.obj\_info from self.obj

**\_post\_init** ()

Post init class setup

**\_refetch\_obj** ()

Utility method to re-fetch a object

This is used in the case that the obj supplied does not have all the metadata available

**get\_result\_data** (\*\*kwargs)

Simple utility wrapper around handler.get\_result\_data()

**get\_result\_info** (\*\*kwargs)

Simple utility wrapper around handler.get\_result\_info()

**passed\_eq\_est\_total\_loop** (callbacks={}, \*\*kwargs)

**qpplog** = <logging.Logger object at 0x110a4a9d0>

**qpplog** = <logging.Logger object at 0x110a4aa90>

**run** (callbacks={}, \*\*kwargs)

Poll for question data and issue callbacks.

**Parameters** **callbacks** : dict

Callbacks should be a dict with any of these members: 'ProgressChanged' 'AnswersChanged' 'AnswersComplete'

Each callback should be a function that accepts a poller instance and a percent complete.

Any callback can choose to get data from the session by calling poller.get\_result\_data() or new info by calling poller.get\_result\_info()

Any callback can choose to stop the poller by calling poller.stop()

Polling will be stopped only when one of the callbacks calls the stop() method or the answers are complete. Note that callbacks can call setPercentCompleteThreshold to change what "done" means on the fly

**set\_complete\_pct** (val)

Set the complete\_pct to a new value

**Parameters** **val** : int/float

float value representing the new percentage to consider self.obj complete

**stop** ()

```
class pytan.pollers.ActionPoller(handler, obj, override_timeout_secs=0, **kwargs)
    Bases: pytan.pollers.QuestionPoller
```

A class to poll the progress of an Action.

The primary function of this class is to poll for result info for actions, and fire off events:

ProgressChanged AnswersChanged AnswersComplete

**Parameters** **handler** : `pytan.handler.Handler`

PyTan handler to use for GetResultInfo calls

**obj** : `taniumpy.object_types.action.Action`

object to poll for progress

**polling\_secs** : int, optional

Number of seconds to wait in between GetResultInfo loops

**complete\_pct** : int/float, optional

Percentage of mr\_tested out of estimated\_total to consider the action “done”

**override\_timeout\_secs** : int, optional

If supplied and not 0, timeout in seconds instead of when object expires

**ACTION\_DONE\_KEY** = ‘success’

**COMPLETE\_PCT** = 100

**OBJECT\_TYPE**

alias of Action

**RUNNING\_STATUSES** = [‘active’, ‘open’]

**\_derive\_expiration()**

Derive the expiration datetime string from a object

Will generate a datetime string from self.EXPIRY\_FALLBACK\_SECS if unable to get the expiration from the object (self.obj) itself.

**\_derive\_info()**

Derive self.obj\_info from self.obj

**\_derive\_package\_spec()**

**\_derive\_result\_map()**

A package object has to have a verify\_group defined on it in order for deploy action verification to trigger. That can be only done at package creation/update

If verify\_enable is True, then the various result states for an action change

**\_derive\_status()**

**\_derive\_stopped\_flag()**

**\_derive\_target\_group()**

**\_derive\_verify\_enabled()**

**\_fix\_group(g)**

Sets ID to null on a group object and all of it’s sub\_groups, needed for 6.5

**\_post\_init()**

Post init class setup

```
finished_eq_passed_loop (callbacks={}, **kwargs)
```

```
qpplog = <logging.Logger object at 0x110a4ab90>
```

```
qpplog = <logging.Logger object at 0x110a4ac50>
```

```
run (callbacks={}, **kwargs)
```

Poll for action data and issue callbacks.

**Parameters** **callbacks** : dict

Callbacks should be a dict with any of these members: 'ProgressChanged' 'AnswersChanged' 'AnswersComplete'

Each callback should be a function that accepts a poller instance and a percent complete.

Any callback can choose to get data from the session by calling poller.get\_result\_data() or new info by calling poller.get\_result\_info()

Any callback can choose to stop the poller by calling poller.stop()

Polling will be stopped only when one of the callbacks calls the stop() method or the answers are complete. Note that callbacks can call setPercentCompleteThreshold to change what "done" means on the fly

```
seen_eq_passed_loop (callbacks={}, **kwargs)
```

## 1.2.6 pytan.constants module

PyTan Constants

This contains a number of constants that drive PyTan.

```
pytan.constants.DEBUG_FORMAT = "[% (lineno)-5d - %(filename)20s: %(funcName)s()] %(asctime)s\n %(levelname)-8s %"
```

Logging format for debugformat=True

```
pytan.constants.EXPORT_MAPS = {'ResultSet': {'json': [], 'csv': [{'valid_list_types': ['str', 'unicode'], 'key': 'header_sor
```

**Maps a given TaniumPy object to the list of supported export formats for each object type, and the valid optional arguments**

- **key**: the optional argument name itself
- **valid\_types**: the valid python types that are allowed to be passed as a value to *key*
- **valid\_list\_types**: the valid python types in str format that are allowed to be passed in a list, if list is one of the *valid\_types*

```
pytan.constants.FILTER_MAPS = [{'operator': 'Less', 'not_flag': 0, 'help': 'Filter for less than VALUE', 'human': ['<', '']
```

**Maps a given set of human strings into the various filter attributes used by the SOAP API. Also used to verify that a manu**

- **human**: a list of human strings that can be used after *' , that '*. Ex: *' , that contains value '*
- **operator**: the filter operator used by the SOAP API when building a filter that matches *human*
- **not\_flag**: the value to set on *not\_flag* when building a filter that matches *human*
- **pre\_value**: the prefix to add to the *value* when building a filter
- **post\_value**: the postfix to add to the *value* when building a filter

```
pytan.constants.FILTER_RE = ',\s*that'
```

The regex that is used to find filters in a string. Ex: *Sensor1, that contains blah*

```
pytan.constants.GET_OBJ_MAP = {'user': {'search': ['id'], 'all': 'UserList', 'manual': True, 'multi': None, 'single': 'Use
```

**Maps an object type from a human friendly string into various aspects:**

- `single`: The `TaniumPy` object used to find singular instances of this object type
- `multi`: The `TaniumPy` object used to find multiple instances of this object type
- `all`: The `TaniumPy` object used to find all instances of this object type
- `search`: The list of attributes that can be used with the Tanium SOAP API for searches
- `manual`: Whether or not this object type is allowed to do a manual search, that is – allow the user to specify an attribute that is not in search, which will get ALL objects of that type then search for a match based on attribute values for EVERY key/value pair supplied
- `delete`: Whether or not this object type can be deleted
- `create_json`: Whether or not this object type can be created by importing from JSON

```
pytan.constants.INFO_FORMAT = '%(asctime)s %(levelname)-8s %(name)s: %(message)s'
    Logging format for debugformat=False
```

```
pytan.constants.LOG_LEVEL_MAPS = [(0, {}, 'Sets all loggers to only output at WARNING or above. '), (1, {'pytan.handle
```

**Map for loglevel(int) -> logger -> logger level(logging.INFO|WARN|DEBUG|...). Higher loglevels will include all levels up**

- `int`, loglevel
- `dict`, `{{logger_name: logger_level}}` for this loglevel
- `str`, description of this loglevel

```
pytan.constants.OPTION_MAPS = [{'destination': 'filter', 'help': 'Make the filter do a case insensitive match', 'attrs': {'ig
```

**Maps a given human string into the various options for filters used by the SOAP API. Also used to verify that a manually**

- `human`: the human string that can be used after `'opt:'`. Ex: `'opt:value_type:value'`
- `destination`: the type of object this option can be applied to (filter or group)
- `attrs`: the attributes and their values used by the SOAP API when building a filter with an option that matches *human*
- `attr`: the attribute used by the SOAP API when building a filter with an option that matches *human*. value is pulled from after a `:` when only `attr` exists for an option map, and not `attrs`.
- `valid_values`: if supplied, the list of valid values for this option
- `valid_type`: performs type checking on the value supplied to verify it is correct
- `human_type`: the human string for the value type if the option requires a value

```
pytan.constants.OPTION_RE = ',\\s*opt:'
```

The regex that is used to find options in a string. Ex: *Sensor1, that contains blah, opt:ignore\_case, opt:max\_data\_age:3600*

```
pytan.constants.PARAM_DELIM = '||'
```

The string to surround a parameter with when passing parameters to the SOAP API for a sensor in a question.  
Ex: `||parameter_key||`

```
pytan.constants.PARAM_KEY_SPLIT = '='
```

The string that is used to split parameter key from parameter value. Ex: *key1=value1*



```
pytan.constants.PARAM_RE = '(?<!\W)\{(.*)\}(?<!\W)\{'
```

The regex that is used to parse parameters from a human string. Ex: ala {key1=value1}

```
pytan.constants.PARAM_SPLIT_RE = '(?<!\W),'
```

The regex that is used to split multiple parameters. Ex: key1=value1, key2=value2

```
pytan.constants.Q_OBJ_MAP = {'manual': {'handler': 'ask_manual'}, 'saved': {'handler': 'ask_saved'}, '_manual': {'ha
```

Maps a question type from a human friendly string into the handler method that supports each type

```
pytan.constants.REQ_KWARGS = ['hide_errors_flag', 'include_answer_times_flag', 'row_counts_only_flag', 'aggregate_ov
```

A list of arguments that will be pulled from any respective kwargs for most calls to `taniumpy.session.Session`

```
pytan.constants.SELECTORS = ['id', 'name', 'hash']
```

The search selectors that can be extracted from a string. Ex: name:Sensor1, or id:1, or hash:111111

```
pytan.constants.SENSOR_TYPE_MAP = {0: 'Hash', 1: 'String', 2: 'Version', 3: 'NumericDecimal', 4: 'BESDate', 5: 'IPAC
```

Maps a Result type from the Tanium SOAP API from an int to a string

```
pytan.constants.TIME_FORMAT = '%Y-%m-%dT%H:%M:%S'
```

Tanium's format for date time strings

## 1.2.7 pytan.utils module

Collection of exceptions, classes, and methods used throughout `pytan`

### Utility Classes: Logging handlers

```
class pytan.utils.SplitStreamHandler
```

Bases: `logging.Handler`

Custom `logging.Handler` class that sends all messages that are logging.INFO and below to STDOUT, and all messages that are logging.WARNING and above to STDERR

**emit** (*record*)

### Utility Classes: Argument Parsers for Command Line Scripts

```
class pytan.utils.CustomArgFormat (prog, indent_increment=2, max_help_position=24, width=None)
```

Bases: `argparse.ArgumentParser`, `argparse.RawDescriptionHelpFormatter`

Multiple inheritance Formatter class for `argparse.ArgumentParser`.

If a `argparse.ArgumentParser` class uses this as it's Formatter class, it will show the defaults for each argument in the *help* output

```
class pytan.utils.CustomArgParse (*args, **kwargs)
```

Bases: `argparse.ArgumentParser`

Custom `argparse.ArgumentParser` class which does a number of things:

- Uses `pytan.utils.CustomArgFormat` as it's Formatter class, if none was passed in
- Prints help if there is an error
- Prints the help for any subparsers that exist

**error** (*message*)

```
print_help (**kwargs)
```

## Utility Functions: Logging

```
pytan.utils.change_console_format (debug=False)
```

Changes the logging format for console handler to `pytan.constants.DEBUG_FORMAT` or `pytan.constants.INFO_FORMAT`

**Parameters** `debug` : bool, optional

- False : set logging format for console handler to `pytan.constants.INFO_FORMAT`
- True : set logging format for console handler to `pytan.constants.DEBUG_FORMAT`

```
pytan.utils.remove_logging_handler (name='all')
```

Removes a logging handler

**Parameters** `name` : str

name of logging handler to remove. if `name == 'all'` then all logging handlers are removed

```
pytan.utils.set_all_loglevels (level='DEBUG')
```

Sets all loggers that the logging system knows about to a given logger level

```
pytan.utils.set_log_levels (loglevel=0)
```

Enables loggers based on loglevel and `pytan.constants.LOG_LEVEL_MAPS`

**Parameters** `loglevel` : int, optional

loglevel to match against each item in `pytan.constants.LOG_LEVEL_MAPS` - each item that is greater than or equal to loglevel will have the according loggers set to their respective levels identified there-in.

```
pytan.utils.setup_console_logging (gmt_tz=True)
```

Creates a console logging handler using `SplitStreamHandler`

```
pytan.utils.spew (t)
```

Prints a string based on `DEBUG_OUTPUT` bool

**Parameters** `t` : str

string to debug print

```
pytan.utils.print_log_levels ()
```

Prints info about each loglevel from `pytan.constants.LOG_LEVEL_MAPS`

```
pytan.utils.get_all_loggers ()
```

```
pytan.utils.log_session_communication (h)
```

Uses `xml_pretty()` to pretty print the last request and response bodies from the session object in `h` to the logging system

**Parameters** `h` : Handler object

Handler object with session object containing last request and response body

## Utility Functions: Type Checking

```
pytan.utils.is_dict (l)
```

returns True if `l` is a dictionary, False if not

`pytan.utils.is_list(l)`  
 returns True if *l* is a list, False if not

`pytan.utils.is_num(l)`  
 returns True if *l* is a number, False if not

`pytan.utils.is_str(l)`  
 returns True if *l* is a string, False if not

## Utility Functions: Misc

`pytan.utils.get_dict_list_len(d, keys=[], negate=False)`  
 Gets the sum of each list in dict *d*

**Parameters** *d* : dict of str

dict to sums of

**keys** : list of str

list of keys to get sums of, if empty gets a sum of all keys

**negate** : bool

- only used if keys supplied
- False : get the sums of *d* that do match keys
- True : get the sums of *d* that do not match keys

**Returns** *list\_len* : int

sum of lists in *d* that match keys

`pytan.utils.jsonify(v, indent=2, sort_keys=True)`  
 Turns python object *v* into a pretty printed JSON string

**Parameters** *v* : object

python object to convert to JSON

**indent** : int, 2

number of spaces to indent JSON string when pretty printing

**sort\_keys** : bool, True

sort keys of JSON string when pretty printing

**Returns** str :

JSON pretty printed string

`pytan.utils.port_check(address, port, timeout=5)`  
 Check if *address:port* can be reached within *timeout*

**Parameters** *address* : str

hostname/ip address to check *port* on

**port** : int

port to check on *address*

**timeout** : int, optional

timeout after N seconds of not being able to connect

**Returns** `socket` or `False` :

if connection succeeds, the socket object is returned, else `False` is returned

`pytan.utils.test_app_port (host, port)`

Validates that *host:port* can be reached using `port_check()`

**Parameters** `host` : str

hostname/ip address to check *port* on

**port** : int

port to check on *host*

**Raises** `pytan.exceptions.HandlerError` : `pytan.exceptions.HandlerError`

if *host:port* can not be reached

`pytan.utils.version_check (reqver)`

Allows scripts using `pytan` to validate the version of the script against the version of `pytan`

**Parameters** `reqver` : str

string containing version number to check against `Exception`

**Raises** `VersionMismatchError` : `Exception`

if `pytan.__version__` is not greater or equal to *reqver*

`pytan.utils.xml_pretty (x)`

Uses `xmldict` to pretty print an XML str *x*

**Parameters** `x` : str

XML string to pretty print

**Returns** str :

The pretty printed string of *x*

`pytan.utils.xml_pretty_resultobj (x)`

Uses `xmldict` to pretty print an the result-object element in XML str *x*

**Parameters** `x` : str

XML string to pretty print

**Returns** str :

The pretty printed string of result-object in *x*

`pytan.utils.xml_pretty_resultxml (x)`

Uses `xmldict` to pretty print an the ResultXML element in XML str *x*

**Parameters** `x` : str

XML string to pretty print

**Returns** str :

The pretty printed string of ResultXML in *x*

`pytan.utils.get_percentage (part, whole)`

`pytan.utils.calc_percent (percent, whole)`

## Utility Functions: Time and Date handling

`pytan.utils.get_now()`

Get current time in human friendly format

**Returns** str :

str of current time return from `human_time()`

`pytan.utils.human_time(t, tformat='%Y_%m_%d-%H_%M_%S-%Z')`

Get time in human friendly format

**Parameters** `t` : int, float, time

either a unix epoch or struct\_time object to convert to string

**tformat** : str, optional

format of string to convert time to

**Returns** str :

`t` converted to str

`pytan.utils.seconds_from_now(secs=0, tz='utc')`

Get time in Tanium SOAP API format `secs` from now

**Parameters** `secs` : int

seconds from now to get time str

**tz** : str, optional

time zone to return string in, default is 'utc' - supplying anything else will supply local time

**Returns** str :

time `secs` from now in Tanium SOAP API format

`pytan.utils.timestr_to_datetime(timestr)`

Get a datetime.datetime object for `timestr`

**Parameters** `timestr` : str

date & time in taniums format

**Returns** datetime.datetime

the datetime object for the `timestr`

`pytan.utils.datetime_to_timestr(dt)`

Get a timestr for `dt`

**Parameters** `dt` : datetime.datetime

datetime object

**Returns** timestr: str

the timestr for `dt` in taniums format

`pytan.utils.func_timing(f)`

Decorator to add timing information around a function

## Utility Functions: Argument Parsers for Command Line Scripts

`pytan.utils.setup_parser(desc, help=False)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts that use `pytan`. This establishes the basic arguments that are needed by all such scripts, such as:

- `--help`
- `--username`
- `--password`
- `--host`
- `--port`
- `--loglevel`
- `--debugformat` (not shown in `--help`)

`pytan.utils.setup_get_object_argparser(obj, doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to get objects.

`pytan.utils.setup_create_json_object_argparser(obj, doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to create objects from json files.

`pytan.utils.setup_delete_object_argparser(obj, doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to delete objects.

`pytan.utils.setup_ask_saved_argparser(doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to ask saved questions.

`pytan.utils.setup_stop_action_argparser(doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to stop actions.

`pytan.utils.setup_deploy_action_argparser(doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to deploy actions.

`pytan.utils.setup_get_result_argparser(doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to get results for questions or actions.

`pytan.utils.setup_ask_manual_argparser(doc)`

Method to setup the base `pytan.utils.CustomArgParse` class for command line scripts using `pytan.utils.setup_parser()`, then add specific arguments for scripts that use `pytan` to ask manual questions.

`pytan.utils.add_ask_report_argparser(parser)`

Method to extend a `pytan.utils.CustomArgParse` class for command line scripts with arguments for scripts that need to supply export format subparsers for asking questions.

`pytan.utils.add_report_file_options(parser)`

Method to extend a `pytan.utils.CustomArgParse` class for command line scripts with arguments for scripts that need to supply export file and directory options.

`pytan.utils.add_get_object_report_argparser(parser)`

Method to extend a `pytan.utils.CustomArgParse` class for command line scripts with arguments for scripts that need to supply export format subparsers for getting objects.

`pytan.utils.get_grp_opts(parser, grp_names)`

Used to get arguments in *parser* that match argument group names in *grp\_names*

**Parameters** `parser` : `argparse.ArgumentParser`

ArgParse object

`grp_names` : list of str

list of str of argument group names to get arguments for

**Returns** `grp_opts` : list of str

list of arguments gathered from argument group names in *grp\_names*

`pytan.utils.process_create_json_object_args(parser, handler, obj, all_args)`

Process command line args supplied by user for create json object

**Parameters** `parser` : `argparse.ArgumentParser`

ArgParse object used to parse *all\_args*

`handler` : `pytan.handler.Handler`

Instance of Handler created from command line args

`obj` : str

Object type for create json object

`all_args` : dict

dict of args parsed from *parser*

**Returns** `response` : `taniumpy.object_types.base.BaseType`

response from `pytan.handler.Handler.create_from_json()`

`pytan.utils.process_delete_object_args(parser, handler, obj, all_args)`

Process command line args supplied by user for delete object

**Parameters** `parser` : `argparse.ArgumentParser`

ArgParse object used to parse *all\_args*

`handler` : `pytan.handler.Handler`

Instance of Handler created from command line args

`obj` : str

Object type for delete object

`all_args` : dict

dict of args parsed from *parser*

**Returns** `response` : `taniumpy.object_types.base.BaseType`

response from `pytan.handler.Handler.delete()`

`pytan.utils.process_get_object_args` (*parser, handler, obj, all\_args*)

Process command line args supplied by user for get object

**Parameters** `parser` : `argparse.ArgumentParser`

ArgParse object used to parse *all\_args*

**handler** : `pytan.handler.Handler`

Instance of Handler created from command line args

**obj** : str

Object type for get object

**all\_args** : dict

dict of args parsed from *parser*

**Returns** `response` : `taniumpy.object_types.base.BaseType`

response from `pytan.handler.Handler.get()`

## Utility Functions: Dehumanize human strings

`pytan.utils.dehumanize_package` (*package*)

Turns a package str into a package definition

**Parameters** `package` : str

A str that describes a package and optionally a selector and/or parameters

**Returns** `package_def` : dict

dict parsed from *sensors*

`pytan.utils.dehumanize_question_filters` (*question\_filters*)

Turns a question\_filters str or list of str into a question filter definition

**Parameters** `question_filters` : str, list of str

A str or list of str that describes a sensor for a question filter(s) and optionally a selector and/or filter

**Returns** `question_filter_defs` : list of dict

list of dict parsed from *question\_filters*

`pytan.utils.dehumanize_question_options` (*question\_options*)

Turns a question\_options str or list of str into a question option definition

**Parameters** `question_options` : str, list of str

A str or list of str that describes question options

**Returns** `question_option_defs` : list of dict

list of dict parsed from *question\_options*

`pytan.utils.dehumanize_sensors` (*sensors, key='sensors', empty\_ok=True*)

Turns a sensors str or list of str into a sensor definition

**Parameters** `sensors` : str, list of str

A str or list of str that describes a sensor(s) and optionally a selector, parameters, filter, and/or options



**key** : str, optional

Name of key that user should have provided *sensors* as

**empty\_ok** : bool, optional

False: *sensors* is not allowed to be empty, throw `pytan.exceptions.HumanParserError` if it is empty True: *sensors* is allowed to be empty

**Returns** **sensor\_defs** : list of dict

list of dict parsed from *sensors*

`pytan.utils.extract_filter(s)`

Extracts a filter from str *s*

**Parameters** **s** : str

A str that may or may not have a filter identified by ‘, that HUMAN VALUE’

**Returns** **s** : str

str *s* without the parsed\_filter included

**parsed\_filter** : dict

filter attributes mapped from filter from *s* if any found

`pytan.utils.extract_options(s)`

Extracts options from str *s*

**Parameters** **s** : str

A str that may or may not have options identified by ‘, opt:name[:value]’

**Returns** **s** : str

str *s* without the parsed\_options included

**parsed\_options** : list

options extracted from *s* if any found

`pytan.utils.extract_params(s)`

Extracts parameters from str *s*

**Parameters** **s** : str

A str that may or may not have parameters identified by {key=value}

**Returns** **s** : str

str *s* without the parsed\_params included

**parsed\_params** : list

parameters extracted from *s* if any found

`pytan.utils.extract_selector(s)`

Extracts a selector from str *s*

**Parameters** **s** : str

A str that may or may not have a selector in the beginning in the form of id:, name:, or :hash – if no selector found, name will be assumed as the default selector

**Returns** **s** : str

str *s* without the `parsed_selector` included

**parsed\_selector** : str

selector extracted from *s*, or 'name' if none found

`pytan.utils.map_filter(filter_str)`

Maps a filter str against `constants.FILTER_MAPS`

**Parameters** `filter_str` : str

`filter_str` str that should be validated

**Returns** `filter_attrs` : dict

dict containing mapped filter attributes for SOAP API

`pytan.utils.map_option(opt, dest)`

Maps an opt str against `constants.OPTION_MAPS`

**Parameters** `opt` : str

option str that should be validated

**dest** : list of str

list of valid destinations (i.e. *filter* or *group*)

**Returns** `opt_attrs` : dict

dict containing mapped option attributes for SOAP API

`pytan.utils.map_options(options, dest)`

Maps a list of options using `map_option()`

**Parameters** `options` : list of str

list of str that should be validated

**dest** : list of str

list of valid destinations (i.e. *filter* or *group*)

**Returns** `mapped_options` : dict

dict of all mapped\_options

### Utility Functions: kwargs getters

`pytan.utils.get_kwargs_int(key, default=None, **kwargs)`

Gets key from kwargs and validates it is an int

**Parameters** `key` : str

key to get from kwargs

**default** : int, optional

default value to use if key not found in kwargs

**\*\*kwargs** : dict

kwargs to get key from

**Returns** `val` : int

value from key, or default if supplied

## Utility Functions: Object mappers

`pytan.utils.get_obj_map(objtype)`

Gets an object map for *objtype*

**Parameters** `objtype` : str

object type to get object map from in `pytan.constants.GET_OBJ_MAP`

**Returns** `obj_map` : dict

matching object map for *objtype* from `pytan.constants.GET_OBJ_MAP`

`pytan.utils.get_q_obj_map(qtype)`

Gets an object map for *qtype*

**Parameters** `qtype` : str

question type to get object map from in `pytan.constants.Q_OBJ_MAP`

**Returns** `obj_map` : dict

matching object map for *qtype* from `pytan.constants.Q_OBJ_MAP`

## Utility Functions: Taniumpy objects

`pytan.utils.load_taniumpy_from_json(json_file)`

Opens a json file and parses it into a taniumpy object

**Parameters** `json_file` : str

path to JSON file that describes an API object

**Returns** `obj` : `taniumpy.object_types.base.BaseType`

TaniumPy object converted from json file

`pytan.utils.load_param_json_file(parameters_json_file)`

`pytan.utils.shrink_obj(obj, attrs=None)`

Returns a new class of *obj* with only id/name/hash defined

**Parameters** `obj` : `taniumpy.object_types.base.BaseType`

Object to shrink

**Returns** `new_obj` : `taniumpy.object_types.base.BaseType`

Shrunk object

`pytan.utils.get_taniumpy_obj(obj_map)`

Gets a taniumpy object from *obj\_map*

**Parameters** `obj_map` : str

str of taniumpy object to fetch

**Returns** `obj` : `taniumpy.object_types.base.BaseType`

matching taniumpy object for *obj\_map*

`pytan.utils.plugin_zip(p)`

maps columns to values for each row in a plugins sql\_response and returns a list of dicts

`pytan.utils.apply_options_obj(options, obj, dest)`

Updates an object with options

**Parameters** **options** : dict

dict containing options definition

**obj** : `taniumpy.object_types.base.BaseType`

TaniumPy object to apply *options* to

**dest** : list of str

list of valid destinations (i.e. *filter* or *group*)

**Returns** **obj** : `taniumpy.object_types.base.BaseType`

TaniumPy object updated with attributes from *options*

`pytan.utils.build_group_obj(q_filter_defs, q_option_defs)`

Creates a Group object from *q\_filter\_defs* and *q\_option\_defs*

**Parameters** **q\_filter\_defs** : list of dict

List of dict that are question filter definitions

**q\_option\_defs** : dict

dict of question filter options

**Returns** **group\_obj** : `taniumpy.object_types.group.Group`

Group object with list of `taniumpy.object_types.filter.Filter` built from *q\_filter\_defs* and *q\_option\_defs*

`pytan.utils.build_manual_q(selectlist_obj, group_obj)`

Creates a Question object from *selectlist\_obj* and *group\_obj*

**Parameters** **selectlist\_obj** : `taniumpy.object_types.select_list.SelectList`

SelectList object to add to Question object

**group\_obj** : `taniumpy.object_types.group.Group`

Group object to add to Question object

**Returns** **add\_q\_obj** : `taniumpy.object_types.question.Question`

Question object built from *selectlist\_obj* and *group\_obj*

`pytan.utils.build_metadatalist_obj(properties, nameprefix='')`

Creates a MetadataList object from *properties*

**Parameters** **properties** : list of list of str

list of lists, each list having two str - str 1: property key, str2: property value

**nameprefix** : str

prefix to insert in front of property key when creating MetadataItem

**Returns** **metadatalist\_obj** : `taniumpy.object_types.metadata_list.MetadataList`

MetadataList object with list of `taniumpy.object_types.metadata_item.MetadataItem` built from *properties*

`pytan.utils.build_param_obj(key, val, delim='')`

Creates a Parameter object from key and value, surrounding key with *delim*

**Parameters** **key** : str

key to use for parameter

**value** : str

value to use for parameter

**delim** : str

str to surround key with when adding to parameter object

**Returns** **param\_obj** : `taniumpy.object_types.parameter.Parameter`

Parameter object built from key and val

`pytan.utils.build_param_objlist(obj, user_params, delim='', derive_def=False, empty_ok=False)`

Creates a ParameterList object from user\_params

**Parameters** **obj** : `taniumpy.object_types.base.BaseType`

TaniumPy object to verify parameters against

**user\_params** : dict

dict describing key and value of user supplied params

**delim** : str

str to surround key with when adding to parameter object

**derive\_def** : bool, optional

- False: Do not derive default values, and throw a `pytan.exceptions.HandlerError` if user did not supply a value for a given parameter
- True: Try to derive a default value for each parameter if user did not supply one

**empty\_ok** : bool, optional

- False: If user did not supply a value for a given parameter, throw a `pytan.exceptions.HandlerError`
- True: If user did not supply a value for a given parameter, do not add the parameter to the ParameterList object

**Returns** **param\_objlist** : `taniumpy.object_types.parameter_list.ParameterList`

ParameterList object with list of `taniumpy.object_types.parameter.Parameter` built from user\_params

`pytan.utils.build_selectlist_obj(sensor_defs)`

Creates a SelectList object from sensor\_defs

**Parameters** **sensor\_defs** : list of dict

List of dict that are sensor definitions

**Returns** **select\_objlist** : `taniumpy.object_types.select_list.SelectList`

SelectList object with list of `taniumpy.object_types.select.Select` built from *sensor\_defs*

`pytan.utils.derive_param_default(obj_param)`

Derive a parameter default

**Parameters** **obj\_param** : dict

parameter dict from TaniumPy object

**Returns** **def\_val** : str

default value derived from `obj_param`

`pytan.utils.empty_obj(taniumpy_object)`

Validate that a given TaniumPy object is not empty

**Parameters** `taniumpy_object`: `taniumpy.object_types.base.BaseType`

object to check if empty

**Returns** `bool`

True if `taniumpy_object` is considered empty, False otherwise

`pytan.utils.get_filter_obj(sensor_def)`

Creates a Filter object from `sensor_def`

**Parameters** `sensor_def`: `dict`

dict containing sensor definition

**Returns** `filter_obj`: `taniumpy.object_types.filter.Filter`

Filter object created from `sensor_def`

`pytan.utils.get_obj_params(obj)`

Get the parameters from a TaniumPy object and JSON load them

**obj** [`taniumpy.object_types.base.BaseType`] TaniumPy object to get parameters from

**Returns** `params`: `dict`

JSON loaded dict of parameters from `obj`

## Utility Functions: Definition objects

`pytan.utils.check_dictkey(d, key, valid_types, valid_list_types)`

Yet another method to check a dictionary for a key

**Parameters** `d`: `dict`

dictionary to check for key

**key**: `str`

key to check for in `d`

**valid\_types**: `list of str`

list of str of valid types for key

**valid\_list\_types**: `list of str`

if key is a list, validate that all values of list are in `valid_list_types`

`pytan.utils.chk_def_key(def_dict, key, keytypes, keysubtypes=None, req=False)`

Checks that `def_dict` has key

**Parameters** `def_dict`: `dict`

Definition dictionary

**key**: `str`

key to check for in `def_dict`

**keytypes**: `list of str`

list of str of valid types for key

**keysubtypes** : list of str

if key is a dict or list, validate that all values of dict or list are in keysubtypes

**req** : bool

- False: key does not have to be in def\_dict
- True: key must be in def\_dict, throw `pytan.exceptions.DefinitionParserError` if not

`pytan.utils.parse_defs` (*defname*, *deftypes*, *strconv=None*, *empty\_ok=True*, *defs=None*, *\*\*kwargs*)  
Parses and validates defs into new\_defs

**Parameters** **defname** : str

Name of definition

**deftypes** : list of str

list of valid types that defs can be

**strconv** : str

if supplied, and defs is a str, turn defs into a dict with key = strconv, value = defs

**empty\_ok** : bool

- True: defs is allowed to be empty
- False: defs is not allowed to be empty

**Returns** **new\_defs** : list of dict

parsed and validated defs

`pytan.utils.val_package_def` (*package\_def*)  
Validates package definitions

Ensures package definition has a selector, and if a package definition has a params key, that key is valid

**Parameters** **package\_def** : dict

package definition

`pytan.utils.val_q_filter_defs` (*q\_filter\_defs*)  
Validates question filter definitions

Ensures each question filter definition has a selector, and if a question filter definition has a filter key, that key is valid

**Parameters** **q\_filter\_defs** : list of dict

list of question filter definitions

`pytan.utils.val_sensor_defs` (*sensor\_defs*)  
Validates sensor definitions

Ensures each sensor definition has a selector, and if a sensor definition has a params, options, or filter key, that each key is valid

**Parameters** **sensor\_defs** : list of dict

list of sensor definitions

## 1.2.8 pytan Unit Tests

This contains unit tests for pytan.

These unit tests do not require a connection to a Tanium server in order to run.

```
class test_pytan_unit.TestDehumanizeExtractionUtils (methodName='runTest')
    Bases: unittest.case.TestCase
        __module__ = 'test_pytan_unit'
        test_extract_filter_invalid()
        test_extract_filter_nofilter()
        test_extract_filter_valid()
        test_extract_filter_valid_all()
        test_extract_options_invalid_option()
        test_extract_options_many()
        test_extract_options_missing_value_max_data_age()
        test_extract_options_missing_value_value_type()
        test_extract_options_nooptions()
        test_extract_options_single()
        test_extract_params()
        test_extract_params_missing_seperator()
        test_extract_params_multiparams()
        test_extract_params_noparams()
        test_extract_selector()
        test_extract_selector_use_name_if_noselector()

class test_pytan_unit.TestDehumanizeQuestionFilterUtils (methodName='runTest')
    Bases: unittest.case.TestCase
        __module__ = 'test_pytan_unit'
        test_empty_filterlist()
        test_empty_filterstr()
        test_invalid_filter1()
        test_invalid_filter2()
        test_invalid_filter3()
        test_multi_filter_list()
        test_single_filter_list()
        test_single_filter_str()

class test_pytan_unit.TestDehumanizeQuestionOptionUtils (methodName='runTest')
    Bases: unittest.case.TestCase
        __module__ = 'test_pytan_unit'
        test_empty_optionlist()
```



```

test_empty_optionstr()
test_invalid_option1()
test_invalid_option2()
test_option_list_many()
test_option_list_multi()
test_option_list_single()
test_option_str()

```

**class** test\_pytan\_unit.**TestDehumanizeSensorUtils** (*methodName='runTest'*)  
 Bases: unittest.case.TestCase

```

__module__ = 'test_pytan_unit'

test_empty_args_dict()
test_empty_args_list()
test_empty_args_str()
test_multi_list_complex()
test_single_str()
test_single_str_complex1()
test_single_str_complex2()
test_single_str_with_filter()
test_valid_simple_list()
test_valid_simple_str_hash_selector()
test_valid_simple_str_id_selector()
test_valid_simple_str_name_selector()

```

**class** test\_pytan\_unit.**TestDeserializeBadXML** (*methodName='runTest'*)  
 Bases: unittest.case.TestCase

```

__module__ = 'test_pytan_unit'

test_bad_chars_basetype_control()

```

This XML file has a number of control characters that are not valid in XML.

This test validates that pytan.xml\_clean.xml\_cleaner() will remove all the invalid and restricted characters, which should allow the body to be parsed properly.

```

test_bad_chars_resultset_latin1()

```

This XML file has some characters that are actually encoded as latin1 (as well as some restricted characters).

This test validates that pytan.xml\_clean.xml\_cleaner() will properly fall back to latin1 for decoding the docuemnt, as well as remove all the invalid and restricted characters, which should allow the body to be parsed properly.

```

test_bad_chars_resultset_surrogate()

```

This XML file has some characters that are unpaired surrogates in unicode. Surrogates (unpaired or otherwise) are not legal XML characters.

This test validates that pytan.xml\_clean.xml\_cleaner() will properly remove all the invalid and restricted characters, which should allow the body to be parsed properly.

```
class test_pytan_unit.TestGenericUtils (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_unit'

    test_empty_obj()
    test_get_now()
    test_get_obj_map()
    test_get_q_obj_map()
    test_invalid_port()
    test_is_dict()
    test_is_list()
    test_is_not_dict()
    test_is_not_list()
    test_is_not_num()
    test_is_not_str()
    test_is_num()
    test_is_str()
    test_jsonify()
    test_load_param_file_invalid_file()
    test_load_param_file_invalid_json()
    test_load_param_file_valid()
    test_load_taniumpy_file_invalid_file()
    test_load_taniumpy_file_invalid_json()
    test_version_higher()
    test_version_lower()

class test_pytan_unit.TestManualBuildObjectUtils (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_unit'

    classmethod setUpClass()
    test_build_group_obj()
    test_build_manual_q()
    test_build_selectlist_obj_invalid_filter()
    test_build_selectlist_obj_missing_value()
    test_build_selectlist_obj_noparamssensorobj_noparams()
        builds a selectlist object using a sensor obj with no params
    test_build_selectlist_obj_noparamssensorobj_withparams()
        builds a selectlist object using a sensor obj with no params, but passing in params (which should be added
        as of 1.0.4)
```

```

    test_build_selectlist_obj_withparamssensorobj_noparams ()
        builds a selectlist object using a sensor obj with 4 params but not supplying any values for any of the
        params

    test_build_selectlist_obj_withparamssensorobj_withparams ()
        builds a selectlist object using a sensor obj with 4 params but supplying a value for only one param
class test_pytan_unit.TestManualPackageDefValidateUtils (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_unit'

    test_invalid1 ()

    test_invalid2 ()

    test_valid1 ()

    test_valid2 ()

class test_pytan_unit.TestManualQuestionFilterDefParseUtils (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_unit'

    test_parse_emptydict ()

    test_parse_emptylist ()

    test_parse_emptystr ()

    test_parse_multi_filter ()

    test_parse_noargs ()

    test_parse_none ()

    test_parse_single_filter ()

    test_parse_str ()

class test_pytan_unit.TestManualQuestionFilterDefValidateUtils (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_unit'

    test_invalid1 ()

    test_valid1 ()

    test_valid2 ()

class test_pytan_unit.TestManualQuestionOptionDefParseUtils (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_unit'

    test_parse_emptydict ()

    test_parse_emptylist ()

    test_parse_emptystr ()

    test_parse_list ()

    test_parse_noargs ()

    test_parse_none ()

```

```
test_parse_options_dict ()
test_parse_str ()
class test_pytan_unit.TestManualSensorDefParseUtils (methodName='runTest')
    Bases: unittest.case.TestCase
    __module__ = 'test_pytan_unit'
    test_parse_complex ()
        list with many items is parsed into same list
    test_parse_dict_hash ()
        dict with hash is parsed into list of same dict
    test_parse_dict_id ()
        dict with id is parsed into list of same dict
    test_parse_dict_name ()
        dict with name is parsed into list of same dict
    test_parse_emptydict ()
        args=={} throws exception
    test_parse_emptylist ()
        args==[] throws exception
    test_parse_emptystr ()
        args=='' throws exception
    test_parse_noargs ()
        no args throws exception
    test_parse_none ()
        args==None throws exception
    test_parse_str1 ()
        simple str is parsed into list of same str
class test_pytan_unit.TestManualSensorDefValidateUtils (methodName='runTest')
    Bases: unittest.case.TestCase
    __module__ = 'test_pytan_unit'
    test_invalid1 ()
    test_invalid2 ()
    test_invalid3 ()
    test_invalid4 ()
    test_valid1 ()
    test_valid2 ()
    test_valid3 ()
    test_valid4 ()
```

### 1.2.9 pytan Functional Tests

This contains functional tests for pytan.

These functional tests require a connection to a Tanium server in order to run. The connection info is pulled from the SERVER\_INFO dictionary in test/API\_INFO.py.

These tests all use `ddt`, a package that provides for data driven tests via JSON files.

```
class test_pytan_func.InvalidServerTests (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_func'

    classmethod setUpClass ()

    test_invalid_connect_1_bad_username ()

    test_invalid_connect_2_bad_host_and_non_ssl_port ()

    test_invalid_connect_3_bad_password ()

    test_invalid_connect_4_bad_host_and_bad_port ()

class test_pytan_func.ValidServerTests (methodName='runTest')
    Bases: unittest.case.TestCase

    __module__ = 'test_pytan_func'

    classmethod setUpClass ()

    setup_test ()

    test_invalid_create_object_1_invalid_create_sensor ()

    test_invalid_create_object_from_json_1_invalid_create_saved_action_from_json ()

    test_invalid_create_object_from_json_2_invalid_create_client_from_json ()

    test_invalid_create_object_from_json_3_invalid_create_userrole_from_json ()

    test_invalid_create_object_from_json_4_invalid_create_setting_from_json ()

    test_invalid_deploy_action_1_invalid_deploy_action_run_false ()

    test_invalid_deploy_action_2_invalid_deploy_action_package_help ()

    test_invalid_deploy_action_3_invalid_deploy_action_package ()

    test_invalid_deploy_action_4_invalid_deploy_action_options_help ()

    test_invalid_deploy_action_5_invalid_deploy_action_empty_package ()

    test_invalid_deploy_action_6_invalid_deploy_action_filters_help ()

    test_invalid_deploy_action_7_invalid_deploy_action_missing_parameters ()

    test_invalid_export_basetype_1_invalid_export_basetype_csv_bad_explode_type ()

    test_invalid_export_basetype_2_invalid_export_basetype_csv_bad_sort_sub_type ()

    test_invalid_export_basetype_3_invalid_export_basetype_csv_bad_sort_type ()

    test_invalid_export_basetype_4_invalid_export_basetype_xml_bad_minimal_type ()

    test_invalid_export_basetype_5_invalid_export_basetype_json_bad_include_type ()

    test_invalid_export_basetype_6_invalid_export_basetype_json_bad_explode_type ()

    test_invalid_export_basetype_7_invalid_export_basetype_bad_format ()

    test_invalid_export_resultset_1_invalid_export_resultset_csv_bad_sort_sub_type ()

    test_invalid_export_resultset_2_invalid_export_resultset_csv_bad_sort_type ()
```

```
test_invalid_export_resultset_3_invalid_export_resultset_csv_bad_expand_type()
test_invalid_export_resultset_4_invalid_export_resultset_csv_bad_sensors_sub_type()
test_invalid_export_resultset_5_invalid_export_resultset_bad_format()
test_invalid_get_object_1_invalid_get_action_single_by_name()
test_invalid_get_object_2_invalid_get_question_by_name()
test_invalid_question_1_invalid_ask_manual_question_sensor_help()
test_invalid_question_2_invalid_ask_manual_question_parameter_split()
test_invalid_question_3_invalid_ask_manual_question_filter_help()
test_invalid_question_4_invalid_ask_manual_question_option()
test_invalid_question_5_invalid_ask_manual_question_sensor()
test_invalid_question_6_invalid_ask_manual_question_option_help()
test_invalid_question_7_invalid_ask_manual_question_paramater_too_many()
test_invalid_question_8_invalid_ask_manual_question_filter()
test_valid_create_object_1_create_user()
test_valid_create_object_2_create_package()
test_valid_create_object_3_create_group()
test_valid_create_object_4_create_whitelisted_url()
test_valid_create_object_from_json_1_create_package_from_json()
test_valid_create_object_from_json_2_create_user_from_json()
test_valid_create_object_from_json_3_create_saved_question_from_json()
test_valid_create_object_from_json_4_create_action_from_json()
test_valid_create_object_from_json_5_create_sensor_from_json()
test_valid_create_object_from_json_6_create_question_from_json()
test_valid_create_object_from_json_7_create_whitelisted_url_from_json()
test_valid_create_object_from_json_8_create_group_from_json()
test_valid_deploy_action_1_deploy_action_simple_against_windows_computers()
test_valid_deploy_action_2_deploy_action_simple_without_results()
test_valid_deploy_action_3_deploy_action_with_params_against_windows_computers()
test_valid_deploy_action_4_deploy_action_simple()
test_valid_export_basetype_10_export_basetype_xml_default_options()
test_valid_export_basetype_11_export_basetype_csv_with_explode_true()
test_valid_export_basetype_12_export_basetype_json_explode_false()
test_valid_export_basetype_13_export_basetype_json_type_false()
test_valid_export_basetype_14_export_basetype_json_default_options()
test_valid_export_basetype_1_export_basetype_csv_with_sort_list()
test_valid_export_basetype_2_export_basetype_csv_with_explode_false()
```

```
test_valid_export_basetype_3_export_basetype_json_type_true()
test_valid_export_basetype_4_export_basetype_xml_minimal_false()
test_valid_export_basetype_5_export_basetype_xml_minimal_true()
test_valid_export_basetype_6_export_basetype_csv_with_sort_empty_list()
test_valid_export_basetype_7_export_basetype_csv_default_options()
test_valid_export_basetype_8_export_basetype_json_explode_true()
test_valid_export_basetype_9_export_basetype_csv_with_sort_true()
test_valid_export_resultset_10_export_resultset_csv_default_options()
test_valid_export_resultset_11_export_resultset_csv_type_true()
test_valid_export_resultset_12_export_resultset_csv_all_options()
test_valid_export_resultset_13_export_resultset_csv_sort_false()
test_valid_export_resultset_1_export_resultset_json()
test_valid_export_resultset_2_export_resultset_csv_sensor_true()
test_valid_export_resultset_3_export_resultset_csv_type_false()
test_valid_export_resultset_4_export_resultset_csv_expand_false()
test_valid_export_resultset_5_export_resultset_csv_sort_empty()
test_valid_export_resultset_6_export_resultset_csv_sort_true()
test_valid_export_resultset_7_export_resultset_csv_sort_list()
test_valid_export_resultset_8_export_resultset_csv_sensor_false()
test_valid_export_resultset_9_export_resultset_csv_expand_true()
test_valid_get_object_10_get_all_saved_questions()
test_valid_get_object_11_get_user_by_name()
test_valid_get_object_12_get_all_userroless()
test_valid_get_object_13_get_all_questions()
test_valid_get_object_14_get_sensor_by_id()
test_valid_get_object_15_get_all_groups()
test_valid_get_object_16_get_all_sensors()
test_valid_get_object_17_get_sensor_by_mixed()
test_valid_get_object_18_get_whitelisted_url_by_id()
test_valid_get_object_19_get_group_by_name()
test_valid_get_object_1_get_all_users()
test_valid_get_object_20_get_all_whitelisted_urls()
test_valid_get_object_21_get_sensor_by_hash()
test_valid_get_object_22_get_package_by_name()
test_valid_get_object_23_get_all_clients()
test_valid_get_object_24_get_sensor_by_names()
```

```
test_valid_get_object_25_get_all_packages()
test_valid_get_object_26_get_saved_question_by_name()
test_valid_get_object_27_get_all_actions()
test_valid_get_object_28_get_user_by_id()
test_valid_get_object_29_get_sensor_by_name()
test_valid_get_object_2_get_action_by_id()
test_valid_get_object_30_get_saved_action_by_name()
test_valid_get_object_3_get_question_by_id()
test_valid_get_object_4_get_saved_question_by_names()
test_valid_get_object_5_get_userrole_by_id()
test_valid_get_object_6_get_all_saved_actions()
test_valid_get_object_7_get_leader_clients()
test_valid_get_object_8_get_all_settings()
test_valid_get_object_9_get_setting_by_name()
test_valid_question_10_ask_manual_question_sensor_with_filter()
test_valid_question_11_ask_manual_question_multiple_sensors_identified_by_name()
test_valid_question_12_ask_manual_question_sensor_with_parameters_and_filter_and_options()
test_valid_question_13_ask_manual_question_sensor_with_filter_and_3_options()
test_valid_question_14_ask_manual_question_complex_query2()
test_valid_question_15_ask_manual_question_complex_query1()
test_valid_question_1_ask_manual_question_sensor_with_parameters_and_some_supplied_parameters()
test_valid_question_2_ask_manual_question_multiple_sensors_with_parameters_and_some_supplied_parameters()
test_valid_question_3_ask_manual_question_simple_multiple_sensors()
test_valid_question_4_ask_manual_question_sensor_without_parameters_and_supplied_parameters()
test_valid_question_5_ask_manual_question_sensor_with_filter_and_2_options()
test_valid_question_6_ask_manual_question_sensor_with_parameters_and_filter()
test_valid_question_7_ask_manual_question_sensor_complex()
test_valid_question_8_ask_manual_question_sensor_with_parameters_and_no_supplied_parameters()
test_valid_question_9_ask_manual_question_simple_single_sensor()
test_valid_saved_question_1_ask_saved_question_refresh_data()
test_valid_saved_question_2_ask_saved_question_by_name()
test_valid_saved_question_3_ask_saved_question_by_name_in_list()

test_pytan_func.chew_csv(c)
test_pytan_func.spew(m)
```



## 1.3 taniumpy package

A python package that handles the serialization/deserialization of XML SOAP requests/responses from Tanium to/from python objects.

### 1.3.1 taniumpy.object\_types package

**taniumpy.object\_types module**

**taniumpy.object\_types.action module**

```
class taniumpy.object_types.action.Action
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.action\_list module**

```
class taniumpy.object_types.action_list.ActionList
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.action\_list\_info module**

```
class taniumpy.object_types.action_list_info.ActionListInfo
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.action\_stop module**

```
class taniumpy.object_types.action_stop.ActionStop
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.action\_stop\_list module**

```
class taniumpy.object_types.action_stop_list.ActionStopList
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.all\_objects module**

**taniumpy.object\_types.archived\_question module**

```
class taniumpy.object_types.archived_question.ArchivedQuestion
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.archived\_question\_list module**

```
class taniumpy.object_types.archived_question_list.ArchivedQuestionList
    Bases: taniumpy.object_types.base.BaseType
```

## taniumpy.object\_types.audit\_data module

**class** `taniumpy.object_types.audit_data.AuditData`  
Bases: `taniumpy.object_types.base.BaseType`

## taniumpy.object\_types.base module

**class** `taniumpy.object_types.base.BaseType` (*simple\_properties,* *complex\_properties,*  
*list\_properties*)  
Bases: `object`

**append** (*n*)  
Allow adding to list.  
Only supported on types that have a single property that is in `list_properties`

**explode\_json** (*val*)

**flatten\_jsonable** (*val, prefix*)

**classmethod fromSOAPBody** (*body*)  
Parse body (text) and produce Python tanium objects.  
This method assumes a single `result_object`, which may be a list or a single object.

**classmethod fromSOAPElement** (*el*)

**static from\_jsonable** (*jsonable*)  
Inverse of `to_jsonable`, with `explode_json_string_values=False`.  
This can be used to import objects from serialized JSON. This JSON should come from `BaseType.to_jsonable(explode_json_string_values=False, include_type=True)`

### Examples

```
>>> with open('question_list.json') as fd:
...     questions = json.loads(fd.read())
...     # is a list of serialized questions
...     question_objects = BaseType.from_jsonable(questions)
...     # will return a list of api.Question
```

**toSOAPBody** (*minimal=False*)

**toSOAPElement** (*minimal=False*)

**to\_flat\_dict** (*prefix='', explode\_json\_string\_values=False*)  
Convert the object to a dict, flattening any lists or nested types

**to\_flat\_dict\_explode\_json** (*val, prefix=''*)  
see if the value is json. If so, flatten it out into a dict

**static to\_json** (*jsonable, \*\*kwargs*)  
Convert to a json string.  
  
`jsonable` can be a single `BaseType` instance or a list of `BaseType`

**to\_jsonable** (*explode\_json\_string\_values=False, include\_type=True*)

**static write\_csv** (*fd, val, explode\_json\_string\_values=False, \*\*kwargs*)

Write 'val' to CSV. val can be a BaseType instance or a list of BaseType

This does a two-pass, calling to\_flat\_dict for each object, then finding the union of all headers, then writing out the value of each column for each object sorted by header name

explode\_json\_string\_values attempts to see if any of the str values are parseable by json.loads, and if so treat each property as a column value

fd is a file-like object

**exception** `taniumpy.object_types.base.IncorrectTypeException` (*property, expected, actual*)

Bases: `exceptions.Exception`

Raised when a property is not of the expected type

### **taniumpy.object\_types.cache\_filter module**

**class** `taniumpy.object_types.cache_filter.CacheFilter`

Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.cache\_filter\_list module**

**class** `taniumpy.object_types.cache_filter_list.CacheFilterList`

Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.cache\_info module**

**class** `taniumpy.object_types.cache_info.CacheInfo`

Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.client\_count module**

**class** `taniumpy.object_types.client_count.ClientCount`

Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.client\_status module**

**class** `taniumpy.object_types.client_status.ClientStatus`

Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.column module**

**class** `taniumpy.object_types.column.Column`

Bases: `object`

**classmethod** `fromSOAPElement` (*el*)

### **taniumpy.object\_types.column\_set module**

```
class taniumpy.object_types.column_set.ColumnSet
    Bases: object

    classmethod fromSOAPElement (el)
```

### **taniumpy.object\_types.computer\_group module**

```
class taniumpy.object_types.computer_group.ComputerGroup
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.computer\_group\_list module**

```
class taniumpy.object_types.computer_group_list.ComputerGroupList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.computer\_group\_spec module**

```
class taniumpy.object_types.computer_group_spec.ComputerGroupSpec
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.computer\_spec\_list module**

```
class taniumpy.object_types.computer_spec_list.ComputerSpecList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.error\_list module**

```
class taniumpy.object_types.error_list.ErrorList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.filter module**

```
class taniumpy.object_types.filter.Filter
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.filter\_list module**

```
class taniumpy.object_types.filter_list.FilterList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.group module**

```
class taniumpy.object_types.group.Group
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.group\_list module**

```
class taniumpy.object_types.group_list.GroupList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.metadata\_item module**

```
class taniumpy.object_types.metadata_item.MetadataItem  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.metadata\_list module**

```
class taniumpy.object_types.metadata_list.MetadataList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.object\_list module**

```
class taniumpy.object_types.object_list.ObjectList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.object\_list\_types module****taniumpy.object\_types.options module**

```
class taniumpy.object_types.options.Options  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.package\_file module**

```
class taniumpy.object_types.package_file.PackageFile  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.package\_file\_list module**

```
class taniumpy.object_types.package_file_list.PackageFileList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.package\_file\_status module**

```
class taniumpy.object_types.package_file_status.PackageFileStatus  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.package\_file\_status\_list module**

```
class taniumpy.object_types.package_file_status_list.PackageFileStatusList  
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.package\_file\_template module**

**class** `taniumpy.object_types.package_file_template.PackageFileTemplate`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.package\_file\_template\_list module**

**class** `taniumpy.object_types.package_file_template_list.PackageFileTemplateList`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.package\_spec module**

**class** `taniumpy.object_types.package_spec.PackageSpec`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.package\_spec\_list module**

**class** `taniumpy.object_types.package_spec_list.PackageSpecList`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.parameter module**

**class** `taniumpy.object_types.parameter.Parameter`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.parameter\_list module**

**class** `taniumpy.object_types.parameter_list.ParameterList`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.parse\_job module**

**class** `taniumpy.object_types.parse_job.ParseJob`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.parse\_job\_list module**

**class** `taniumpy.object_types.parse_job_list.ParseJobList`  
Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.parse\_result module**

**class** `taniumpy.object_types.parse_result.ParseResult`  
Bases: `taniumpy.object_types.base.BaseType`

**taniumpy.object\_types.parse\_result\_group module**

```
class taniumpy.object_types.parse_result_group.ParseResultGroup  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.parse\_result\_group\_list module**

```
class taniumpy.object_types.parse_result_group_list.ParseResultGroupList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.parse\_result\_list module**

```
class taniumpy.object_types.parse_result_list.ParseResultList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.permission\_list module**

```
class taniumpy.object_types.permission_list.PermissionList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.plugin module**

```
class taniumpy.object_types.plugin.Plugin  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.plugin\_argument module**

```
class taniumpy.object_types.plugin_argument.PluginArgument  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.plugin\_argument\_list module**

```
class taniumpy.object_types.plugin_argument_list.PluginArgumentList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.plugin\_command\_list module**

```
class taniumpy.object_types.plugin_command_list.PluginCommandList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.plugin\_list module**

```
class taniumpy.object_types.plugin_list.PluginList  
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.plugin\_schedule module**

```
class taniumpy.object_types.plugin_schedule.PluginSchedule
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.plugin\_schedule\_list module**

```
class taniumpy.object_types.plugin_schedule_list.PluginScheduleList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.plugin\_sql module**

```
class taniumpy.object_types.plugin_sql.PluginSql
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.plugin\_sql\_column module**

```
class taniumpy.object_types.plugin_sql_column.PluginSqlColumn
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.plugin\_sql\_result module**

```
class taniumpy.object_types.plugin_sql_result.PluginSqlResult
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.question module**

```
class taniumpy.object_types.question.Question
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.question\_list module**

```
class taniumpy.object_types.question_list.QuestionList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.question\_list\_info module**

```
class taniumpy.object_types.question_list_info.QuestionListInfo
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.result\_info module**

```
class taniumpy.object_types.result_info.ResultInfo
    Bases: object

    Wrap the result of GetResultInfo
```



**classmethod fromSOAPElement** (*el*)  
 Deserialize a ResultInfo from a result\_info SOAPElement  
 Assumes all properties are integer values (true today)

### **taniumpy.object\_types.result\_set module**

**class** `taniumpy.object_types.result_set.ResultSet`  
 Bases: `object`  
 Wrap the result of GetResultData  
**classmethod fromSOAPElement** (*el*)  
 Deserialize a ResultSet from a result\_set SOAPElement  
**static to\_json** (*jsonable, \*\*kwargs*)  
 Convert to a json string.  
 jsonable must be a ResultSet instance  
**to\_jsonable** (*\*\*kwargs*)  
**static write\_csv** (*fd, val, \*\*kwargs*)

### **taniumpy.object\_types.row module**

**class** `taniumpy.object_types.row.Row` (*columns*)  
 Bases: `object`  
 A row in a result set.  
 Values are stored in column order, also accessible by key using []  
**classmethod fromSOAPElement** (*el, columns*)

### **taniumpy.object\_types.saved\_action module**

**class** `taniumpy.object_types.saved_action.SavedAction`  
 Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.saved\_action\_approval module**

**class** `taniumpy.object_types.saved_action_approval.SavedActionApproval`  
 Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.saved\_action\_list module**

**class** `taniumpy.object_types.saved_action_list.SavedActionList`  
 Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.saved\_action\_policy module**

**class** `taniumpy.object_types.saved_action_policy.SavedActionPolicy`  
 Bases: `taniumpy.object_types.base.BaseType`

### **taniumpy.object\_types.saved\_action\_row\_id\_list module**

```
class taniumpy.object_types.saved_action_row_id_list.SavedActionRowIdList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.saved\_question module**

```
class taniumpy.object_types.saved_question.SavedQuestion
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.saved\_question\_list module**

```
class taniumpy.object_types.saved_question_list.SavedQuestionList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.select module**

```
class taniumpy.object_types.select.Select
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.select\_list module**

```
class taniumpy.object_types.select_list.SelectList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.sensor module**

```
class taniumpy.object_types.sensor.Sensor
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.sensor\_list module**

```
class taniumpy.object_types.sensor_list.SensorList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.sensor\_query module**

```
class taniumpy.object_types.sensor_query.SensorQuery
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.sensor\_query\_list module**

```
class taniumpy.object_types.sensor_query_list.SensorQueryList
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.string\_hint\_list module**

```
class taniumpy.object_types.string_hint_list.StringHintList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.sensor\_subcolumn module**

```
class taniumpy.object_types.sensor_subcolumn.SensorSubcolumn  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.sensor\_subcolumn\_list module**

```
class taniumpy.object_types.sensor_subcolumn_list.SensorSubcolumnList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.sensor\_types module****taniumpy.object\_types.soap\_error module**

```
class taniumpy.object_types.soap_error.SoapError  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.system\_setting module**

```
class taniumpy.object_types.system_setting.SystemSetting  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.system\_setting\_list module**

```
class taniumpy.object_types.system_setting_list.SystemSettingList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.system\_status\_aggregate module**

```
class taniumpy.object_types.system_status_aggregate.SystemStatusAggregate  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.system\_status\_list module**

```
class taniumpy.object_types.system_status_list.SystemStatusList  
    Bases: taniumpy.object_types.base.BaseType
```

**taniumpy.object\_types.upload\_file module**

```
class taniumpy.object_types.upload_file.UploadFile  
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.upload\_file\_list module**

```
class taniumpy.object_types.upload_file_list.UploadFileList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.upload\_file\_status module**

```
class taniumpy.object_types.upload_file_status.UploadFileStatus
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.user module**

```
class taniumpy.object_types.user.User
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.user\_list module**

```
class taniumpy.object_types.user_list.UserList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.user\_role module**

```
class taniumpy.object_types.user_role.UserRole
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.user\_role\_list module**

```
class taniumpy.object_types.user_role_list.UserRoleList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.version\_aggregate module**

```
class taniumpy.object_types.version_aggregate.VersionAggregate
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.version\_aggregate\_list module**

```
class taniumpy.object_types.version_aggregate_list.VersionAggregateList
    Bases: taniumpy.object_types.base.BaseType
```

### **taniumpy.object\_types.white\_listed\_url module**

```
class taniumpy.object_types.white_listed_url.WhiteListedUrl
    Bases: taniumpy.object_types.base.BaseType
```

### taniumpy.object\_types.white\_listed\_url\_list module

```
class taniumpy.object_types.white_listed_url_list.WhiteListedUrlList
    Bases: taniumpy.object_types.base.BaseType
```

### taniumpy.object\_types.xml\_error module

```
class taniumpy.object_types.xml_error.XmlError
    Bases: taniumpy.object_types.base.BaseType
```

## 1.4 xmlltodict module

Makes working with XML feel like you are working with JSON

```
xmlltodict.parse(xml_input, encoding=None, expat=<module 'xml.parsers.expat' from
                  '/Library/Python/2.7/site-packages/_xmlplus/parsers/expat.pyc'>,
                  process_namespaces=False, namespace_separator=':', **kwargs)
    Parse the given XML input and convert it into a dictionary.
```

*xml\_input* can either be a *string* or a file-like object.

If *xml\_attribs* is *True*, element attributes are put in the dictionary among regular child elements, using @ as a prefix to avoid collisions. If set to *False*, they are just ignored.

Simple example:

```
>>> import xmlltodict
>>> doc = xmlltodict.parse("""
... <a prop="x">
...   <b>1</b>
...   <b>2</b>
... </a>
... """)
>>> doc['a']['@prop']
u'x'
>>> doc['a']['b']
[u'1', u'2']
```

If *item\_depth* is 0, the function returns a dictionary for the root element (default behavior). Otherwise, it calls *item\_callback* every time an item at the specified depth is found and returns *None* in the end (streaming mode).

The callback function receives two parameters: the *path* from the document root to the item (name-attrs pairs), and the *item* (dict). If the callback's return value is false-ish, parsing will be stopped with the *ParsingInterrupted* exception.

Streaming example:

```
>>> def handle(path, item):
...     print 'path:%s item:%s' % (path, item)
...     return True
...
>>> xmlltodict.parse("""
... <a prop="x">
...   <b>1</b>
...   <b>2</b>
... </a>""", item_depth=2, item_callback=handle)
```

```
path:[(u'a', {u'prop': u'x'}), (u'b', None)] item:1
path:[(u'a', {u'prop': u'x'}), (u'b', None)] item:2
```

The optional argument *postprocessor* is a function that takes *path*, *key* and *value* as positional arguments and returns a new (*key*, *value*) pair where both *key* and *value* may have changed. Usage example:

```
>>> def postprocessor(path, key, value):
...     try:
...         return key + ':int', int(value)
...     except (ValueError, TypeError):
...         return key, value
>>> xmldict.parse('<a><b>1</b><b>2</b><b>x</b></a>',
...               postprocessor=postprocessor)
OrderedDict([(u'a', OrderedDict([(u'b:int', [1, 2]), (u'b', u'x')]))])
```

You can pass an alternate version of *expat* (such as *defusedexpat*) by using the *expat* parameter. E.g:

```
>>> import defusedexpat
>>> xmldict.parse('<a>hello</a>', expat=defusedexpat.pyexpat)
OrderedDict([(u'a', u'hello')])
```

`xmldict.unparse(input_dict, output=None, encoding='utf-8', full_document=True, **kwargs)`  
Emit an XML document for the given *input\_dict* (reverse of *parse*).

The resulting XML document is returned as a string, but if *output* (a file-like object) is specified, it is written there instead.

Dictionary keys prefixed with *attr\_prefix* (default='@') are interpreted as XML node attributes, whereas keys equal to *cdata\_key* (default='#text') are treated as character data.

The *pretty* parameter (default='False') enables pretty-printing. In this mode, lines are terminated with 'n' and indented with 't', but this can be customized with the *newl* and *indent* parameters.

## 1.5 ddt module

`ddt.data(*values)`

Method decorator to add to your test methods.

Should be added to methods of instances of `unittest.TestCase`.

`ddt.ddt(cls)`

Class decorator for subclasses of `unittest.TestCase`.

Apply this decorator to the test case class, and then decorate test methods with `@data`.

For each method decorated with `@data`, this will effectively create as many methods as data items are passed as parameters to `@data`.

The names of the test methods follow the pattern `original_test_name_{ordinal}_{data}`. *ordinal* is the position of the data argument, starting with 1.

For data we use a string representation of the data value converted into a valid python identifier. If `data.__name__` exists, we use that instead.

For each method decorated with `@file_data('test_data.json')`, the decorator will try to load the `test_data.json` file located relative to the python file containing the method that is decorated. It will, for each `test_name` key create as many methods in the list of values from the data key.

`ddt.file_data(value)`

Method decorator to add to your test methods.

Should be added to methods of instances of `unittest.TestCase`.

`value` should be a path relative to the directory of the file containing the decorated `unittest.TestCase`. The file should contain JSON encoded data, that can either be a list or a dict.

In case of a list, each value in the list will correspond to one test case, and the value will be concatenated to the test method name.

In case of a dict, keys will be used as suffixes to the name of the test case, and values will be fed as test data.

`ddt.is_hash_randomized()`

`ddt.mk_test_name(name, value, index=0)`

Generate a new name for a test case.

It will take the original test name and append an ordinal index and a string representation of the value, and convert the result into a valid python identifier by replacing extraneous characters with `_`.

If hash randomization is enabled (a feature available since 2.7.3/3.2.3 and enabled by default since 3.3) and a “non-trivial” value is passed this will omit the name argument by default. Set `PYTHONHASHSEED` to a fixed value before running tests in these cases to get the names back consistently or use the `__name__` attribute on data values.

A “trivial” value is a plain scalar, or a tuple or list consisting only of trivial values.

`ddt.unpack(func)`

Method decorator to add unpack feature.

## 1.6 threaded\_http module

Simple HTTP server for testing purposes

`class threaded_http.Handler(request, client_address, server)`

Bases: `BaseHTTPServer.BaseHTTPRequestHandler`

`__module__ = 'threaded_http'`

`do_GET()`

`do_POST()`

`log_message(format, *args)`

`class threaded_http.ThreadedHTTPServer(server_address, RequestHandlerClass, bind_and_activate=True)`

Bases: `SocketServer.ThreadingMixIn, BaseHTTPServer.HTTPServer`

Handle requests in a separate thread.

`__module__ = 'threaded_http'`

`threaded_http.threaded_http(host='localhost', port=4443, verbosity=2)`

establishes an HTTP server on host:port in a thread

## 1.7 requests package

### 1.7.1 requests HTTP library

Requests is an HTTP library, written in Python, for human beings. Basic GET usage:

```
>>> import requests
>>> r = requests.get('https://www.python.org')
>>> r.status_code
200
>>> 'Python is a programming language' in r.content
True
```

... or POST:

```
>>> payload = dict(key1='value1', key2='value2')
>>> r = requests.post('http://httpbin.org/post', data=payload)
>>> print(r.text)
{
  ...
  "form": {
    "key2": "value2",
    "key1": "value1"
  },
  ...
}
```

The other HTTP methods are supported - see *requests.api*. Full documentation is at <<http://python-requests.org>>.

#### copyright

3. 2015 by Kenneth Reitz.

**license** Apache 2.0, see LICENSE for more details.



## INDICES AND TABLES

- *genindex*
- *modindex*
- *search*



**d**

ddt, 346

**p**

pytan, 3

pytan.constants, 307

pytan.exceptions, 294

pytan.handler, 283

pytan.pollers, 301

pytan.sessions, 295

pytan.utils, 309

**r**

requests, 348

**t**

taniumpy, 333

taniumpy.object\_types, 333

taniumpy.object\_types.action, 333

taniumpy.object\_types.action\_list, 333

taniumpy.object\_types.action\_list\_info, 333

taniumpy.object\_types.action\_stop, 333

taniumpy.object\_types.action\_stop\_list, 333

taniumpy.object\_types.all\_objects, 333

taniumpy.object\_types.archived\_question, 333

taniumpy.object\_types.archived\_question\_list, 333

taniumpy.object\_types.audit\_data, 334

taniumpy.object\_types.base, 334

taniumpy.object\_types.cache\_filter, 335

taniumpy.object\_types.cache\_filter\_list, 335

taniumpy.object\_types.cache\_info, 335

taniumpy.object\_types.client\_count, 335

taniumpy.object\_types.client\_status, 335

taniumpy.object\_types.column, 335

taniumpy.object\_types.column\_set, 336

taniumpy.object\_types.computer\_group, 336

taniumpy.object\_types.computer\_group\_list, 336

taniumpy.object\_types.computer\_group\_spec, 336

taniumpy.object\_types.computer\_spec\_list, 336

taniumpy.object\_types.error\_list, 336

taniumpy.object\_types.filter, 336

taniumpy.object\_types.filter\_list, 336

taniumpy.object\_types.group, 336

taniumpy.object\_types.group\_list, 337

taniumpy.object\_types.metadata\_item, 337

taniumpy.object\_types.metadata\_list, 337

taniumpy.object\_types.object\_list, 337

taniumpy.object\_types.object\_list\_types, 337

taniumpy.object\_types.options, 337

taniumpy.object\_types.package\_file, 337

taniumpy.object\_types.package\_file\_list, 337

taniumpy.object\_types.package\_file\_status, 337

taniumpy.object\_types.package\_file\_status\_list, 337

taniumpy.object\_types.package\_file\_template, 338

taniumpy.object\_types.package\_file\_template\_list, 338

taniumpy.object\_types.package\_spec, 338

taniumpy.object\_types.package\_spec\_list, 338

taniumpy.object\_types.parameter, 338

taniumpy.object\_types.parameter\_list, 338

taniumpy.object\_types.parse\_job, 338

taniumpy.object\_types.parse\_job\_list, 338

taniumpy.object\_types.parse\_result, 338

taniumpy.object\_types.parse\_result\_group, 339

taniumpy.object\_types.parse\_result\_group\_list, 339

`taniumpy.object_types.parse_result_list`, [339](#)  
`taniumpy.object_types.permission_list`, [339](#)  
`taniumpy.object_types.plugin`, [339](#)  
`taniumpy.object_types.plugin_argument`, [339](#)  
`taniumpy.object_types.plugin_argument_list`, [339](#)  
`taniumpy.object_types.plugin_command_list`, [339](#)  
`taniumpy.object_types.plugin_list`, [339](#)  
`taniumpy.object_types.plugin_schedule`, [340](#)  
`taniumpy.object_types.plugin_schedule_list`, [340](#)  
`taniumpy.object_types.plugin_sql`, [340](#)  
`taniumpy.object_types.plugin_sql_column`, [340](#)  
`taniumpy.object_types.plugin_sql_result`, [340](#)  
`taniumpy.object_types.question`, [340](#)  
`taniumpy.object_types.question_list`, [340](#)  
`taniumpy.object_types.question_list_info`, [340](#)  
`taniumpy.object_types.result_info`, [340](#)  
`taniumpy.object_types.result_set`, [341](#)  
`taniumpy.object_types.row`, [341](#)  
`taniumpy.object_types.saved_action`, [341](#)  
`taniumpy.object_types.saved_action_approval`, [341](#)  
`taniumpy.object_types.saved_action_list`, [341](#)  
`taniumpy.object_types.saved_action_policy`, [341](#)  
`taniumpy.object_types.saved_action_row_id_list`, [342](#)  
`taniumpy.object_types.saved_question`, [342](#)  
`taniumpy.object_types.saved_question_list`, [342](#)  
`taniumpy.object_types.select`, [342](#)  
`taniumpy.object_types.select_list`, [342](#)  
`taniumpy.object_types.sensor`, [342](#)  
`taniumpy.object_types.sensor_list`, [342](#)  
`taniumpy.object_types.sensor_query`, [342](#)  
`taniumpy.object_types.sensor_query_list`, [342](#)  
`taniumpy.object_types.sensor_subcolumn`, [343](#)  
`taniumpy.object_types.sensor_subcolumn_list`, [343](#)  
`taniumpy.object_types.sensor_types`, [343](#)  
`taniumpy.object_types.soap_error`, [343](#)  
`taniumpy.object_types.string_hint_list`, [343](#)  
`taniumpy.object_types.system_setting`, [343](#)  
`taniumpy.object_types.system_setting_list`, [343](#)  
`taniumpy.object_types.system_status_aggregate`, [343](#)  
`taniumpy.object_types.system_status_list`, [343](#)  
`taniumpy.object_types.upload_file`, [343](#)  
`taniumpy.object_types.upload_file_list`, [344](#)  
`taniumpy.object_types.upload_file_status`, [344](#)  
`taniumpy.object_types.user`, [344](#)  
`taniumpy.object_types.user_list`, [344](#)  
`taniumpy.object_types.user_role`, [344](#)  
`taniumpy.object_types.user_role_list`, [344](#)  
`taniumpy.object_types.version_aggregate`, [344](#)  
`taniumpy.object_types.version_aggregate_list`, [344](#)  
`taniumpy.object_types.white_listed_url`, [344](#)  
`taniumpy.object_types.white_listed_url_list`, [345](#)  
`taniumpy.object_types.xml_error`, [345](#)  
`test_pytan_func`, [328](#)  
`test_pytan_unit`, [324](#)  
`threaded_http`, [347](#)

## Symbols

- `__author__` (in module `pytan`), 3
- `__copyright__` (in module `pytan`), 3
- `__dict__` (`pytan.pollers.QuestionPoller` attribute), 303
- `__dict__` (`pytan.sessions.Session` attribute), 296
- `__init__()` (`pytan.pollers.QuestionPoller` method), 303
- `__init__()` (`pytan.sessions.Session` method), 296
- `__license__` (in module `pytan`), 3
- `__module__` (`pytan.pollers.ActionPoller` attribute), 301
- `__module__` (`pytan.pollers.QuestionPoller` attribute), 303
- `__module__` (`pytan.sessions.Session` attribute), 296
- `__module__` (`test_pytan_func.InvalidServerTests` attribute), 329
- `__module__` (`test_pytan_func.ValidServerTests` attribute), 329
- `__module__` (`test_pytan_unit.TestDehumanizeExtractionUtils` attribute), 324
- `__module__` (`test_pytan_unit.TestDehumanizeQuestionFilterUtils` attribute), 324
- `__module__` (`test_pytan_unit.TestDehumanizeQuestionOptionUtils` attribute), 324
- `__module__` (`test_pytan_unit.TestDehumanizeSensorUtils` attribute), 325
- `__module__` (`test_pytan_unit.TestDeserializeBadXML` attribute), 325
- `__module__` (`test_pytan_unit.TestGenericUtils` attribute), 326
- `__module__` (`test_pytan_unit.TestManualBuildObjectUtils` attribute), 326
- `__module__` (`test_pytan_unit.TestManualPackageDefValidateUtils` attribute), 327
- `__module__` (`test_pytan_unit.TestManualQuestionFilterDefParseUtils` attribute), 327
- `__module__` (`test_pytan_unit.TestManualQuestionFilterDefValidateUtils` attribute), 327
- `__module__` (`test_pytan_unit.TestManualQuestionOptionDefParseUtils` attribute), 327
- `__module__` (`test_pytan_unit.TestManualSensorDefParseUtils` attribute), 328
- `__module__` (`test_pytan_unit.TestManualSensorDefValidateUtils` attribute), 328
- `__module__` (`threaded_http.Handler` attribute), 347
- `__module__` (`threaded_http.ThreadedHTTPServer` attribute), 347
- `__str__()` (`pytan.pollers.QuestionPoller` method), 303
- `__str__()` (`pytan.sessions.Session` method), 296
- `__version__` (in module `pytan`), 3
- `__weakref__` (`pytan.pollers.QuestionPoller` attribute), 303
- `__weakref__` (`pytan.sessions.Session` attribute), 296
- `_add()` (`pytan.handler.Handler` method), 293
- `_ask_manual()` (`pytan.handler.Handler` method), 293
- `_build_body()` (`pytan.sessions.Session` method), 296, 299
- `_check_auth()` (`pytan.sessions.Session` method), 296, 299
- `_create_add_object_body()` (`pytan.sessions.Session` method), 296, 299
- `_create_delete_object_body()` (`pytan.sessions.Session` method), 296, 299
- `_create_get_object_body()` (`pytan.sessions.Session` method), 296, 299
- `_create_get_result_data_body()` (`pytan.sessions.Session` method), 296, 299
- `_create_get_result_info_body()` (`pytan.sessions.Session` method), 296, 299
- `_create_run_plugin_object_body()` (`pytan.sessions.Session` method), 296, 299
- `_create_update_object_body()` (`pytan.sessions.Session` method), 296, 299
- `_deploy_action()` (`pytan.handler.Handler` method), 293
- `_derive_attribute()` (`pytan.pollers.QuestionPoller` method), 303, 304
- `_derive_expiration()` (`pytan.pollers.ActionPoller` method), 301, 306
- `_derive_expiration()` (`pytan.pollers.QuestionPoller` method), 303, 305
- `_derive_info()` (`pytan.pollers.ActionPoller` method), 301, 306
- `_derive_info()` (`pytan.pollers.QuestionPoller` method), 303, 305
- `_derive_package_spec()` (`pytan.pollers.ActionPoller` method), 301, 306
- `_derive_result_map()` (`pytan.pollers.ActionPoller` method), 301, 306
- `_derive_server_version()` (`pytan.handler.Handler` method), 293

`_derive_status()` (pytan.pollers.ActionPoller method), 301, 306

`_derive_stopped_flag()` (pytan.pollers.ActionPoller method), 301, 306

`_derive_target_group()` (pytan.pollers.ActionPoller method), 301, 306

`_derive_verify_enabled()` (pytan.pollers.ActionPoller method), 301, 306

`_export_class_BaseType()` (pytan.handler.Handler method), 293

`_export_class_ResultSet()` (pytan.handler.Handler method), 293

`_export_format_csv()` (pytan.handler.Handler method), 293

`_export_format_json()` (pytan.handler.Handler method), 293

`_export_format_xml()` (pytan.handler.Handler method), 293

`_find()` (pytan.handler.Handler method), 293

`_find_stat_target()` (pytan.sessions.Session method), 296, 299

`_fix_group()` (pytan.pollers.ActionPoller method), 301, 306

`_flatten_server_info()` (pytan.sessions.Session method), 296, 299

`_get_multi()` (pytan.handler.Handler method), 293

`_get_package_def()` (pytan.handler.Handler method), 293

`_get_percentage()` (pytan.sessions.Session method), 296, 299

`_get_response()` (pytan.sessions.Session method), 296, 299

`_get_sensor_defs()` (pytan.handler.Handler method), 293

`_get_single()` (pytan.handler.Handler method), 293

`_http_post()` (pytan.sessions.Session method), 296, 299

`_parse_response_for_regex()` (pytan.sessions.Session method), 296, 299

`_post_init()` (pytan.pollers.ActionPoller method), 302, 306

`_post_init()` (pytan.pollers.QuestionPoller method), 303, 305

`_refetch_obj()` (pytan.pollers.QuestionPoller method), 303, 305

`_resolve_stat_target()` (pytan.sessions.Session method), 296, 299

`_single_find()` (pytan.handler.Handler method), 293

`_start_stats_thread()` (pytan.sessions.Session method), 296, 299

`_stats_loop()` (pytan.sessions.Session method), 296, 299

## A

Action (class in taniumpy.object\_types.action), 333

ACTION\_DONE\_KEY (pytan.pollers.ActionPoller attribute), 301, 306

ActionList (class in taniumpy.object\_types.action\_list), 333

ActionListInfo (class in taniumpy.object\_types.action\_list\_info), 333

ActionPoller (class in pytan.pollers), 301, 305

ActionStop (class in taniumpy.object\_types.action\_stop), 333

ActionStopList (class in taniumpy.object\_types.action\_stop\_list), 333

`add()` (pytan.sessions.Session method), 296, 299

`add_ask_report_argparser()` (in module pytan.utils), 314

`add_get_object_report_argparser()` (in module pytan.utils), 315

ADD\_OBJECT\_CMD (pytan.sessions.Session attribute), 295, 298

`add_report_file_options()` (in module pytan.utils), 314

`append()` (taniumpy.object\_types.base.BaseType method), 334

`apply_options_obj()` (in module pytan.utils), 319

ArchivedQuestion (class in taniumpy.object\_types.archived\_question), 333

ArchivedQuestionList (class in taniumpy.object\_types.archived\_question\_list), 333

`ask()` (pytan.handler.Handler method), 284

`ask_manual()` (pytan.handler.Handler method), 284

`ask_saved()` (pytan.handler.Handler method), 284

AuditData (class in taniumpy.object\_types.audit\_data), 334

AUTH\_CONNECT\_TIMEOUT\_SEC (pytan.sessions.Session attribute), 295, 298

AUTH\_RES (pytan.sessions.Session attribute), 295, 298

AUTH\_RESPONSE\_TIMEOUT\_SEC (pytan.sessions.Session attribute), 295, 298

`authenticate()` (pytan.sessions.Session method), 296, 299

`authlog` (pytan.sessions.Session attribute), 297, 300

AuthorizationError, 294

## B

BadResponseError, 294

BaseType (class in taniumpy.object\_types.base), 334

`bodyhttplog` (pytan.sessions.Session attribute), 297, 300

`build_group_obj()` (in module pytan.utils), 320

`build_manual_q()` (in module pytan.utils), 320

`build_metadatalist_obj()` (in module pytan.utils), 320

`build_param_obj()` (in module pytan.utils), 320

`build_param_objlist()` (in module pytan.utils), 321

`build_selectlist_obj()` (in module pytan.utils), 321

## C

CacheFilter (class in taniumpy.object\_types.cache\_filter), 335

CacheFilterList (class in taniumpy.object\_types.cache\_filter\_list), 335

- CacheInfo (class in `taniumpy.object_types.cache_info`), 335
- `calc_percent()` (in module `pytan.utils`), 312
- `change_console_format()` (in module `pytan.utils`), 310
- `check_dictkey()` (in module `pytan.utils`), 322
- `chew_csv()` (in module `test_pytan_func`), 332
- `chk_def_key()` (in module `pytan.utils`), 322
- ClientCount (class in `taniumpy.object_types.client_count`), 335
- ClientStatus (class in `taniumpy.object_types.client_status`), 335
- Column (class in `taniumpy.object_types.column`), 335
- ColumnSet (class in `taniumpy.object_types.column_set`), 336
- COMMAND\_RE (`pytan.sessions.Session` attribute), 295, 298
- COMPLETE\_PCT (`pytan.pollers.ActionPoller` attribute), 301, 306
- COMPLETE\_PCT (`pytan.pollers.QuestionPoller` attribute), 302, 304
- ComputerGroup (class in `taniumpy.object_types.computer_group`), 336
- ComputerGroupList (class in `taniumpy.object_types.computer_group_list`), 336
- ComputerGroupSpec (class in `taniumpy.object_types.computer_group_spec`), 336
- ComputerSpecList (class in `taniumpy.object_types.computer_spec_list`), 336
- `create_dashboard()` (`pytan.handler.Handler` method), 292
- `create_from_json()` (`pytan.handler.Handler` method), 287
- `create_group()` (`pytan.handler.Handler` method), 289
- `create_package()` (`pytan.handler.Handler` method), 290
- `create_sensor()` (`pytan.handler.Handler` method), 291
- `create_user()` (`pytan.handler.Handler` method), 291
- `create_whitelisted_url()` (`pytan.handler.Handler` method), 291
- CustomArgFormat (class in `pytan.utils`), 309
- CustomArgParse (class in `pytan.utils`), 309
- ## D
- `data()` (in module `ddt`), 346
- `datetime_to_timestr()` (in module `pytan.utils`), 313
- `ddt` (module), 346
- `ddt()` (in module `ddt`), 346
- DEBUG\_FORMAT (in module `pytan.constants`), 307
- DefinitionParserError, 294
- `dehumanize_package()` (in module `pytan.utils`), 316
- `dehumanize_question_filters()` (in module `pytan.utils`), 316
- `dehumanize_question_options()` (in module `pytan.utils`), 316
- `dehumanize_sensors()` (in module `pytan.utils`), 316
- `delete()` (`pytan.handler.Handler` method), 292
- `delete()` (`pytan.sessions.Session` method), 297, 300
- `delete_dashboard()` (`pytan.handler.Handler` method), 292
- DELETE\_OBJECT\_CMD (`pytan.sessions.Session` attribute), 295, 298
- `deploy_action()` (`pytan.handler.Handler` method), 286
- `derive_param_default()` (in module `pytan.utils`), 321
- `disable_stats_loop()` (`pytan.sessions.Session` method), 297, 300
- `do_GET()` (`threaded_http.Handler` method), 347
- `do_POST()` (`threaded_http.Handler` method), 347
- ## E
- `emit()` (`pytan.utils.SplitStreamHandler` method), 309
- `empty_obj()` (in module `pytan.utils`), 322
- `enable_stats_loop()` (`pytan.sessions.Session` method), 297, 300
- `error()` (`pytan.utils.CustomArgParse` method), 309
- ErrorList (class in `taniumpy.object_types.error_list`), 336
- EXPIRY\_FALLBACK\_SECS (`pytan.pollers.QuestionPoller` attribute), 302, 304
- `explode_json()` (`taniumpy.object_types.base.BaseType` method), 334
- EXPORT\_MAPS (in module `pytan.constants`), 307
- `export_obj()` (`pytan.handler.Handler` method), 288
- `export_to_report_file()` (`pytan.handler.Handler` method), 288
- `extract_filter()` (in module `pytan.utils`), 317
- `extract_options()` (in module `pytan.utils`), 317
- `extract_params()` (in module `pytan.utils`), 317
- `extract_selector()` (in module `pytan.utils`), 317
- ## F
- `file_data()` (in module `ddt`), 346
- Filter (class in `taniumpy.object_types.filter`), 336
- FILTER\_MAPS (in module `pytan.constants`), 307
- FILTER\_RE (in module `pytan.constants`), 307
- FilterList (class in `taniumpy.object_types.filter_list`), 336
- `find()` (`pytan.sessions.Session` method), 297, 300
- `finished_eq_passed_loop()` (`pytan.pollers.ActionPoller` method), 302, 306
- `flatten_jsonable()` (`taniumpy.object_types.base.BaseType` method), 334
- `from_jsonable()` (`taniumpy.object_types.base.BaseType` static method), 334
- `fromSOAPBody()` (`taniumpy.object_types.base.BaseType` class method), 334
- `fromSOAPElement()` (`taniumpy.object_types.base.BaseType` class method), 334

- fromSOAPElement() (taniumpy.object\_types.column.Column method), 335
  - fromSOAPElement() (taniumpy.object\_types.column\_set.ColumnSet class method), 336
  - fromSOAPElement() (taniumpy.object\_types.result\_info.ResultInfo class method), 340
  - fromSOAPElement() (taniumpy.object\_types.result\_set.ResultSet class method), 341
  - fromSOAPElement() (taniumpy.object\_types.row.Row class method), 341
  - func\_timing() (in module pytan.utils), 313
- ## G
- get() (pytan.handler.Handler method), 292
  - get\_all() (pytan.handler.Handler method), 292
  - get\_all\_loggers() (in module pytan.utils), 310
  - get\_dashboards() (pytan.handler.Handler method), 293
  - get\_dict\_list\_len() (in module pytan.utils), 311
  - get\_filter\_obj() (in module pytan.utils), 322
  - get\_grp\_opts() (in module pytan.utils), 315
  - get\_kwargs\_int() (in module pytan.utils), 318
  - get\_now() (in module pytan.utils), 313
  - GET\_OBJ\_MAP (in module pytan.constants), 307
  - get\_obj\_map() (in module pytan.utils), 319
  - get\_obj\_params() (in module pytan.utils), 322
  - GET\_OBJECT\_CMD (pytan.sessions.Session attribute), 295, 298
  - get\_percentage() (in module pytan.utils), 312
  - get\_q\_obj\_map() (in module pytan.utils), 319
  - get\_result\_data() (pytan.handler.Handler method), 293
  - get\_result\_data() (pytan.pollers.QuestionPoller method), 303, 305
  - get\_result\_data() (pytan.sessions.Session method), 297, 300
  - GET\_RESULT\_DATA\_CMD (pytan.sessions.Session attribute), 295, 298
  - get\_result\_info() (pytan.handler.Handler method), 293
  - get\_result\_info() (pytan.pollers.QuestionPoller method), 303, 305
  - get\_result\_info() (pytan.sessions.Session method), 297, 300
  - GET\_RESULT\_INFO\_CMD (pytan.sessions.Session attribute), 295, 298
  - get\_server\_info() (pytan.sessions.Session method), 297, 300
  - get\_server\_stats() (pytan.sessions.Session method), 297, 300
  - get\_server\_version() (pytan.sessions.Session method), 297, 300
  - get\_taniumpy\_obj() (in module pytan.utils), 319
- Group (class in taniumpy.object\_types.group), 336
  - GroupList (class in taniumpy.object\_types.group\_list), 337
- ## H
- Handler (class in pytan.handler), 283
  - Handler (class in threaded\_http), 347
  - HandlerError, 294
  - HTTP\_AUTH\_RETRY (pytan.sessions.Session attribute), 295, 298
  - HTTP\_DEBUG (pytan.sessions.Session attribute), 295, 298
  - http\_post() (pytan.sessions.Session method), 297, 300
  - HTTP\_RETRY\_COUNT (pytan.sessions.Session attribute), 295, 298
  - HttpError, 294
  - httplog (pytan.sessions.Session attribute), 297, 300
  - human\_time() (in module pytan.utils), 313
  - HumanParserError, 294
- ## I
- IncorrectTypeException, 335
  - INFO\_CONNECT\_TIMEOUT\_SEC (pytan.sessions.Session attribute), 295, 298
  - INFO\_FORMAT (in module pytan.constants), 308
  - INFO\_RES (pytan.sessions.Session attribute), 295, 298
  - INFO\_RESPONSE\_TIMEOUT\_SEC (pytan.sessions.Session attribute), 295, 298
  - InvalidServerTests (class in test\_pytan\_func), 329
  - is\_auth (pytan.sessions.Session attribute), 297, 300
  - is\_dict() (in module pytan.utils), 310
  - is\_hash\_randomized() (in module ddt), 347
  - is\_list() (in module pytan.utils), 310
  - is\_num() (in module pytan.utils), 311
  - is\_str() (in module pytan.utils), 311
- ## J
- jsonify() (in module pytan.utils), 311
- ## L
- load\_param\_json\_file() (in module pytan.utils), 319
  - load\_taniumpy\_from\_json() (in module pytan.utils), 319
  - LOG\_LEVEL\_MAPS (in module pytan.constants), 308
  - log\_message() (threaded\_http.Handler method), 347
  - log\_session\_communication() (in module pytan.utils), 310
  - logout() (pytan.sessions.Session method), 297, 300
- ## M
- map\_filter() (in module pytan.utils), 318
  - map\_option() (in module pytan.utils), 318
  - map\_options() (in module pytan.utils), 318
  - MetadataItem (class in taniumpy.object\_types.metadata\_item), 337



MetadataList (class in taniumpy.object\_types.metadata\_list), 337  
 mk\_test\_name() (in module ddt), 347  
 mylog (pytan.sessions.Session attribute), 298, 300

## N

NotFoundError, 294

## O

OBJECT\_TYPE (pytan.pollers.ActionPoller attribute), 301, 306  
 OBJECT\_TYPE (pytan.pollers.QuestionPoller attribute), 302, 304  
 ObjectList (class in taniumpy.object\_types.object\_list), 337  
 OPTION\_MAPS (in module pytan.constants), 308  
 OPTION\_RE (in module pytan.constants), 308  
 Options (class in taniumpy.object\_types.options), 337

## P

PackageFile (class in taniumpy.object\_types.package\_file), 337  
 PackageFileList (class in taniumpy.object\_types.package\_file\_list), 337  
 PackageFileStatus (class in taniumpy.object\_types.package\_file\_status), 337  
 PackageFileStatusList (class in taniumpy.object\_types.package\_file\_status\_list), 337  
 PackageFileTemplate (class in taniumpy.object\_types.package\_file\_template), 338  
 PackageFileTemplateList (class in taniumpy.object\_types.package\_file\_template\_list), 338  
 PackageSpec (class in taniumpy.object\_types.package\_spec), 338  
 PackageSpecList (class in taniumpy.object\_types.package\_spec\_list), 338  
 PARAM\_DELIM (in module pytan.constants), 308  
 PARAM\_KEY\_SPLIT (in module pytan.constants), 308  
 PARAM\_RE (in module pytan.constants), 308  
 PARAM\_SPLIT\_RE (in module pytan.constants), 309  
 Parameter (class in taniumpy.object\_types.parameter), 338  
 ParameterList (class in taniumpy.object\_types.parameter\_list), 338  
 parse() (in module xmldict), 345  
 parse\_defs() (in module pytan.utils), 323  
 ParseJob (class in taniumpy.object\_types.parse\_job), 338  
 ParseJobList (class in taniumpy.object\_types.parse\_job\_list), 338

ParseResult (class in taniumpy.object\_types.parse\_result), 338  
 ParseResultGroup (class in taniumpy.object\_types.parse\_result\_group), 339  
 ParseResultGroupList (class in taniumpy.object\_types.parse\_result\_group\_list), 339  
 ParseResultList (class in taniumpy.object\_types.parse\_result\_list), 339  
 passed\_eq\_est\_total\_loop() (pytan.pollers.QuestionPoller method), 303, 305  
 PermissionList (class in taniumpy.object\_types.permission\_list), 339  
 Plugin (class in taniumpy.object\_types.plugin), 339  
 plugin\_zip() (in module pytan.utils), 319  
 PluginArgument (class in taniumpy.object\_types.plugin\_argument), 339  
 PluginArgumentList (class in taniumpy.object\_types.plugin\_argument\_list), 339  
 PluginCommandList (class in taniumpy.object\_types.plugin\_command\_list), 339  
 PluginList (class in taniumpy.object\_types.plugin\_list), 339  
 PluginSchedule (class in taniumpy.object\_types.plugin\_schedule), 340  
 PluginScheduleList (class in taniumpy.object\_types.plugin\_schedule\_list), 340  
 PluginSql (class in taniumpy.object\_types.plugin\_sql), 340  
 PluginSqlColumn (class in taniumpy.object\_types.plugin\_sql\_column), 340  
 PluginSqlResult (class in taniumpy.object\_types.plugin\_sql\_result), 340  
 POLLING\_SECS (pytan.pollers.QuestionPoller attribute), 302, 304  
 PollingError, 294  
 port\_check() (in module pytan.utils), 311  
 print\_help() (pytan.utils.CustomArgParse method), 309  
 print\_log\_levels() (in module pytan.utils), 310  
 process\_create\_json\_object\_args() (in module pytan.utils), 315  
 process\_delete\_object\_args() (in module pytan.utils), 315  
 process\_get\_object\_args() (in module pytan.utils), 315  
 pytan (module), 3  
 pytan.constants (module), 307  
 pytan.exceptions (module), 294  
 pytan.handler (module), 283  
 pytan.pollers (module), 301  
 pytan.sessions (module), 295

pytan.utils (module), 309  
PytanHelp, 294

## Q

Q\_OBJ\_MAP (in module pytan.constants), 309  
qplog (pytan.pollers.ActionPoller attribute), 302, 307  
qplog (pytan.pollers.QuestionPoller attribute), 303, 305  
qpplog (pytan.pollers.ActionPoller attribute), 302, 307  
qpplog (pytan.pollers.QuestionPoller attribute), 303, 305  
Question (class in taniumpy.object\_types.question), 340  
QuestionList (class in taniumpy.object\_types.question\_list), 340  
QuestionListInfo (class in taniumpy.object\_types.question\_list\_info), 340  
QuestionPoller (class in pytan.pollers), 302, 304

## R

remove\_logging\_handler() (in module pytan.utils), 310  
REQ\_KWARGS (in module pytan.constants), 309  
REQ\_SESSION (pytan.sessions.Session attribute), 295, 298  
REQUEST\_BODY\_BASE (pytan.sessions.Session attribute), 295, 298  
REQUEST\_BODY\_TEMPLATE (pytan.sessions.Session attribute), 295, 298  
requests (module), 348  
ResultInfo (class in taniumpy.object\_types.result\_info), 340  
ResultSet (class in taniumpy.object\_types.result\_set), 341  
Row (class in taniumpy.object\_types.row), 341  
run() (pytan.pollers.ActionPoller method), 302, 307  
run() (pytan.pollers.QuestionPoller method), 303, 305  
run\_plugin() (pytan.handler.Handler method), 293  
run\_plugin() (pytan.sessions.Session method), 298, 300  
RUN\_PLUGIN\_CMD (pytan.sessions.Session attribute), 295, 298  
RunFalse, 294  
RUNNING\_STATUSES (pytan.pollers.ActionPoller attribute), 301, 306  
RunPluginError, 295

## S

save() (pytan.sessions.Session method), 298, 300  
SavedAction (class in taniumpy.object\_types.saved\_action), 341  
SavedActionApproval (class in taniumpy.object\_types.saved\_action\_approval), 341  
SavedActionList (class in taniumpy.object\_types.saved\_action\_list), 341  
SavedActionPolicy (class in taniumpy.object\_types.saved\_action\_policy), 341

SavedActionRowIdList (class in taniumpy.object\_types.saved\_action\_row\_id\_list), 342  
SavedQuestion (class in taniumpy.object\_types.saved\_question), 342  
SavedQuestionList (class in taniumpy.object\_types.saved\_question\_list), 342  
seconds\_from\_now() (in module pytan.utils), 313  
seen\_eq\_passed\_loop() (pytan.pollers.ActionPoller method), 302, 307  
Select (class in taniumpy.object\_types.select), 342  
SelectList (class in taniumpy.object\_types.select\_list), 342  
SELECTORS (in module pytan.constants), 309  
Sensor (class in taniumpy.object\_types.sensor), 342  
SENSOR\_TYPE\_MAP (in module pytan.constants), 309  
SensorList (class in taniumpy.object\_types.sensor\_list), 342  
SensorQuery (class in taniumpy.object\_types.sensor\_query), 342  
SensorQueryList (class in taniumpy.object\_types.sensor\_query\_list), 342  
SensorSubcolumn (class in taniumpy.object\_types.sensor\_subcolumn), 343  
SensorSubcolumnList (class in taniumpy.object\_types.sensor\_subcolumn\_list), 343  
SERVER\_STATS (pytan.sessions.Session attribute), 295, 298  
SERVER\_STATS\_SLEEP (pytan.sessions.Session attribute), 295, 298  
SERVER\_STATS\_TARGETS (pytan.sessions.Session attribute), 295, 298  
Session (class in pytan.sessions), 295, 298  
session\_id (pytan.sessions.Session attribute), 298, 300  
SESSION\_RE (pytan.sessions.Session attribute), 295, 298  
set\_all\_loglevels() (in module pytan.utils), 310  
set\_complect\_pct() (pytan.pollers.QuestionPoller method), 304, 305  
set\_log\_levels() (in module pytan.utils), 310  
setup\_ask\_manual\_argparser() (in module pytan.utils), 314  
setup\_ask\_saved\_argparser() (in module pytan.utils), 314  
setup\_console\_logging() (in module pytan.utils), 310  
setup\_create\_json\_object\_argparser() (in module pytan.utils), 314  
setup\_delete\_object\_argparser() (in module pytan.utils), 314  
setup\_deploy\_action\_argparser() (in module pytan.utils), 314  
setup\_get\_object\_argparser() (in module pytan.utils), 314  
setup\_get\_result\_argparser() (in module pytan.utils), 314

- setup\_parser() (in module pytan.utils), 314
- setup\_stop\_action\_argparser() (in module pytan.utils), 314
- setup\_test() (test\_pytan\_func.ValidServerTests method), 329
- setUpClass() (test\_pytan\_func.InvalidServerTests class method), 329
- setUpClass() (test\_pytan\_func.ValidServerTests class method), 329
- setUpClass() (test\_pytan\_unit.TestManualBuildObjectUtils class method), 326
- shrink\_obj() (in module pytan.utils), 319
- SOAP\_CONNECT\_TIMEOUT\_SEC (pytan.sessions.Session attribute), 296, 298
- SOAP\_REQUEST\_HEADERS (pytan.sessions.Session attribute), 296, 298
- SOAP\_RES (pytan.sessions.Session attribute), 296, 299
- SOAP\_RESPONSE\_TIMEOUT\_SEC (pytan.sessions.Session attribute), 296, 299
- SoapError (class in taniumpy.object\_types.soap\_error), 343
- spew() (in module pytan.utils), 310
- spew() (in module test\_pytan\_func), 332
- SplitStreamHandler (class in pytan.utils), 309
- statslog (pytan.sessions.Session attribute), 298, 300
- stop() (pytan.pollers.QuestionPoller method), 304, 305
- stop\_action() (pytan.handler.Handler method), 287
- STR\_ATTRS (pytan.pollers.QuestionPoller attribute), 303, 304
- StringHintList (class in taniumpy.object\_types.string\_hint\_list), 343
- SystemSetting (class in taniumpy.object\_types.system\_setting), 343
- SystemSettingList (class in taniumpy.object\_types.system\_setting\_list), 343
- SystemStatusAggregate (class in taniumpy.object\_types.system\_status\_aggregate), 343
- SystemStatusList (class in taniumpy.object\_types.system\_status\_list), 343
- T**
- taniumpy (module), 333
- taniumpy.object\_types (module), 333
- taniumpy.object\_types.action (module), 333
- taniumpy.object\_types.action\_list (module), 333
- taniumpy.object\_types.action\_list\_info (module), 333
- taniumpy.object\_types.action\_stop (module), 333
- taniumpy.object\_types.action\_stop\_list (module), 333
- taniumpy.object\_types.all\_objects (module), 333
- taniumpy.object\_types.archived\_question (module), 333
- taniumpy.object\_types.archived\_question\_list (module), 333
- taniumpy.object\_types.audit\_data (module), 334
- taniumpy.object\_types.base (module), 334
- taniumpy.object\_types.cache\_filter (module), 335
- taniumpy.object\_types.cache\_filter\_list (module), 335
- taniumpy.object\_types.cache\_info (module), 335
- taniumpy.object\_types.client\_count (module), 335
- taniumpy.object\_types.client\_status (module), 335
- taniumpy.object\_types.column (module), 335
- taniumpy.object\_types.column\_set (module), 336
- taniumpy.object\_types.computer\_group (module), 336
- taniumpy.object\_types.computer\_group\_list (module), 336
- taniumpy.object\_types.computer\_group\_spec (module), 336
- taniumpy.object\_types.computer\_spec\_list (module), 336
- taniumpy.object\_types.error\_list (module), 336
- taniumpy.object\_types.filter (module), 336
- taniumpy.object\_types.filter\_list (module), 336
- taniumpy.object\_types.group (module), 336
- taniumpy.object\_types.group\_list (module), 337
- taniumpy.object\_types.metadata\_item (module), 337
- taniumpy.object\_types.metadata\_list (module), 337
- taniumpy.object\_types.object\_list (module), 337
- taniumpy.object\_types.object\_list\_types (module), 337
- taniumpy.object\_types.options (module), 337
- taniumpy.object\_types.package\_file (module), 337
- taniumpy.object\_types.package\_file\_list (module), 337
- taniumpy.object\_types.package\_file\_status (module), 337
- taniumpy.object\_types.package\_file\_status\_list (module), 337
- taniumpy.object\_types.package\_file\_template (module), 338
- taniumpy.object\_types.package\_file\_template\_list (module), 338
- taniumpy.object\_types.package\_spec (module), 338
- taniumpy.object\_types.package\_spec\_list (module), 338
- taniumpy.object\_types.parameter (module), 338
- taniumpy.object\_types.parameter\_list (module), 338
- taniumpy.object\_types.parse\_job (module), 338
- taniumpy.object\_types.parse\_job\_list (module), 338
- taniumpy.object\_types.parse\_result (module), 338
- taniumpy.object\_types.parse\_result\_group (module), 339
- taniumpy.object\_types.parse\_result\_group\_list (module), 339
- taniumpy.object\_types.parse\_result\_list (module), 339
- taniumpy.object\_types.permission\_list (module), 339
- taniumpy.object\_types.plugin (module), 339
- taniumpy.object\_types.plugin\_argument (module), 339
- taniumpy.object\_types.plugin\_argument\_list (module), 339
- taniumpy.object\_types.plugin\_command\_list (module), 339
- taniumpy.object\_types.plugin\_list (module), 339
- taniumpy.object\_types.plugin\_schedule (module), 340

`taniumpy.object_types.plugin_schedule_list` (module), 340

`taniumpy.object_types.plugin_sql` (module), 340

`taniumpy.object_types.plugin_sql_column` (module), 340

`taniumpy.object_types.plugin_sql_result` (module), 340

`taniumpy.object_types.question` (module), 340

`taniumpy.object_types.question_list` (module), 340

`taniumpy.object_types.question_list_info` (module), 340

`taniumpy.object_types.result_info` (module), 340

`taniumpy.object_types.result_set` (module), 341

`taniumpy.object_types.row` (module), 341

`taniumpy.object_types.saved_action` (module), 341

`taniumpy.object_types.saved_action_approval` (module), 341

`taniumpy.object_types.saved_action_list` (module), 341

`taniumpy.object_types.saved_action_policy` (module), 341

`taniumpy.object_types.saved_action_row_id_list` (module), 342

`taniumpy.object_types.saved_question` (module), 342

`taniumpy.object_types.saved_question_list` (module), 342

`taniumpy.object_types.select` (module), 342

`taniumpy.object_types.select_list` (module), 342

`taniumpy.object_types.sensor` (module), 342

`taniumpy.object_types.sensor_list` (module), 342

`taniumpy.object_types.sensor_query` (module), 342

`taniumpy.object_types.sensor_query_list` (module), 342

`taniumpy.object_types.sensor_subcolumn` (module), 343

`taniumpy.object_types.sensor_subcolumn_list` (module), 343

`taniumpy.object_types.sensor_types` (module), 343

`taniumpy.object_types.soap_error` (module), 343

`taniumpy.object_types.string_hint_list` (module), 343

`taniumpy.object_types.system_setting` (module), 343

`taniumpy.object_types.system_setting_list` (module), 343

`taniumpy.object_types.system_status_aggregate` (module), 343

`taniumpy.object_types.system_status_list` (module), 343

`taniumpy.object_types.upload_file` (module), 343

`taniumpy.object_types.upload_file_list` (module), 344

`taniumpy.object_types.upload_file_status` (module), 344

`taniumpy.object_types.user` (module), 344

`taniumpy.object_types.user_list` (module), 344

`taniumpy.object_types.user_role` (module), 344

`taniumpy.object_types.user_role_list` (module), 344

`taniumpy.object_types.version_aggregate` (module), 344

`taniumpy.object_types.version_aggregate_list` (module), 344

`taniumpy.object_types.white_listed_url` (module), 344

`taniumpy.object_types.white_listed_url_list` (module), 345

`taniumpy.object_types.xml_error` (module), 345

`test_app_port()` (in module `pytan.utils`), 312

`test_bad_chars_basetype_control()` (test\_pytan\_unit.TestDeserializeBadXML method), 325

`test_bad_chars_resultset_latin1()` (test\_pytan\_unit.TestDeserializeBadXML method), 325

`test_bad_chars_resultset_surrogate()` (test\_pytan\_unit.TestDeserializeBadXML method), 325

`test_build_group_obj()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 326

`test_build_manual_q()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 326

`test_build_selectlist_obj_invalid_filter()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 326

`test_build_selectlist_obj_missing_value()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 326

`test_build_selectlist_obj_noparamssensorobj_noparams()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 326

`test_build_selectlist_obj_noparamssensorobj_withparams()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 326

`test_build_selectlist_obj_withparamssensorobj_noparams()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 326

`test_build_selectlist_obj_withparamssensorobj_withparams()` (test\_pytan\_unit.TestManualBuildObjectUtils method), 327

`test_empty_args_dict()` (test\_pytan\_unit.TestDehumanizeSensorUtils method), 325

`test_empty_args_list()` (test\_pytan\_unit.TestDehumanizeSensorUtils method), 325

`test_empty_args_str()` (test\_pytan\_unit.TestDehumanizeSensorUtils method), 325

`test_empty_filterlist()` (test\_pytan\_unit.TestDehumanizeQuestionFilterUtils method), 324

`test_empty_filterstr()` (test\_pytan\_unit.TestDehumanizeQuestionFilterUtils method), 324

`test_empty_obj()` (test\_pytan\_unit.TestGenericUtils method), 326

`test_empty_optionlist()` (test\_pytan\_unit.TestDehumanizeQuestionOptionUtils method), 324

`test_empty_optionstr()` (test\_pytan\_unit.TestDehumanizeQuestionOptionUtils method), 324

`test_extract_filter_invalid()` (test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

`test_extract_filter_nofilter()` (test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

`test_extract_filter_valid()` (test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

method), 324

test\_extract\_filter\_valid\_all()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_options\_invalid\_option()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_options\_many()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_options\_missing\_value\_max\_data\_age()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_options\_missing\_value\_value\_type()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_options\_nooptions()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_options\_single()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_params()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_params\_missing\_seperator()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_params\_multiparams()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_params\_noparams()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_selector()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_extract\_selector\_use\_name\_if\_noselector()  
(test\_pytan\_unit.TestDehumanizeExtractionUtils method), 324

test\_get\_now()  
(test\_pytan\_unit.TestGenericUtils method), 326

test\_get\_obj\_map()  
(test\_pytan\_unit.TestGenericUtils method), 326

test\_get\_q\_obj\_map()  
(test\_pytan\_unit.TestGenericUtils method), 326

test\_invalid1()  
(test\_pytan\_unit.TestManualPackageDefValidateUtils method), 327

test\_invalid1()  
(test\_pytan\_unit.TestManualQuestionFilterDefValidateUtils method), 327

test\_invalid1()  
(test\_pytan\_unit.TestManualSensorDefValidateUtils method), 328

test\_invalid2()  
(test\_pytan\_unit.TestManualPackageDefValidateUtils method), 327

test\_invalid2()  
(test\_pytan\_unit.TestManualSensorDefValidateUtils method), 328

test\_invalid3()  
(test\_pytan\_unit.TestManualSensorDefValidateUtils method), 328

test\_invalid4()  
(test\_pytan\_unit.TestManualSensorDefValidateUtils method), 328

test\_invalid\_connect\_1\_bad\_username()  
(test\_pytan\_func.InvalidServerTests method), 329

test\_invalid\_connect\_2\_bad\_host\_and\_non\_ssl\_port()  
(test\_pytan\_func.InvalidServerTests method), 329

test\_invalid\_connect\_3\_bad\_password()  
(test\_pytan\_func.InvalidServerTests method), 329

test\_invalid\_connect\_4\_bad\_host\_and\_bad\_port()  
(test\_pytan\_func.InvalidServerTests method), 329

test\_invalid\_create\_object\_1\_invalid\_create\_sensor()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_create\_object\_from\_json\_1\_invalid\_create\_saved\_action\_from\_json()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_create\_object\_from\_json\_2\_invalid\_create\_client\_from\_json()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_create\_object\_from\_json\_3\_invalid\_create\_userrole\_from\_json()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_create\_object\_from\_json\_4\_invalid\_create\_setting\_from\_json()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_deploy\_action\_1\_invalid\_deploy\_action\_run\_false()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_deploy\_action\_2\_invalid\_deploy\_action\_package\_help()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_deploy\_action\_3\_invalid\_deploy\_action\_package()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_deploy\_action\_4\_invalid\_deploy\_action\_options\_help()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_deploy\_action\_5\_invalid\_deploy\_action\_empty\_package()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_deploy\_action\_6\_invalid\_deploy\_action\_filters\_help()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_deploy\_action\_7\_invalid\_deploy\_action\_missing\_parameters()  
(test\_pytan\_func.ValidServerTests method), 329

test\_invalid\_export\_basetype\_1\_invalid\_export\_basetype\_csv\_bad\_explode()  
(test\_pytan\_func.ValidServerTests method), 329



329	test_invalid_export_basetype_2_invalid_export_basetype_csv_bad_value_type()	330	test_invalid_question_2_invalid_ask_manual_question_parameter_split()
	(test_pytan_func.ValidServerTests method),		(test_pytan_func.ValidServerTests method),
329	test_invalid_export_basetype_3_invalid_export_basetype_csv_bad_value_type()	330	test_invalid_question_3_invalid_ask_manual_question_filter_help()
	(test_pytan_func.ValidServerTests method),		(test_pytan_func.ValidServerTests method),
329	test_invalid_export_basetype_4_invalid_export_basetype_csv_bad_value_type()	330	test_invalid_question_4_invalid_ask_manual_question_option()
	(test_pytan_func.ValidServerTests method),		(test_pytan_func.ValidServerTests method),
329	test_invalid_export_basetype_5_invalid_export_basetype_json_bad_value_type()	330	test_invalid_question_5_invalid_ask_manual_question_sensor()
	(test_pytan_func.ValidServerTests method),		(test_pytan_func.ValidServerTests method),
329	test_invalid_export_basetype_6_invalid_export_basetype_json_bad_value_type()	330	test_invalid_question_6_invalid_ask_manual_question_option_help()
	(test_pytan_func.ValidServerTests method),		(test_pytan_func.ValidServerTests method),
329	test_invalid_export_basetype_7_invalid_export_basetype_json_bad_value_type()	330	test_invalid_question_7_invalid_ask_manual_question_paramater_too_many()
	(test_pytan_func.ValidServerTests method),		(test_pytan_func.ValidServerTests method),
329	test_invalid_export_resultset_1_invalid_export_resultset_csv_bad_value_type()	330	test_invalid_question_8_invalid_ask_manual_question_filter()
	(test_pytan_func.ValidServerTests method),		(test_pytan_func.ValidServerTests method),
329	test_invalid_export_resultset_2_invalid_export_resultset_csv_bad_value_type()	326	test_is_dict() (test_pytan_unit.TestGenericUtils method),
	(test_pytan_func.ValidServerTests method),		test_is_list() (test_pytan_unit.TestGenericUtils method),
329	test_invalid_export_resultset_3_invalid_export_resultset_csv_bad_value_type()	326	test_is_not_dict() (test_pytan_unit.TestGenericUtils method),
	(test_pytan_func.ValidServerTests method),		test_is_not_num() (test_pytan_unit.TestGenericUtils method),
329	test_invalid_export_resultset_4_invalid_export_resultset_csv_bad_value_type()	326	test_is_not_str() (test_pytan_unit.TestGenericUtils method),
	(test_pytan_func.ValidServerTests method),		test_load_param_file_invalid_file()
330	test_invalid_export_resultset_5_invalid_export_resultset_bad_format()		test_load_param_file_invalid_json()
	(test_pytan_func.ValidServerTests method),		test_load_param_file_valid()
330	test_invalid_filter1() (test_pytan_unit.TestDehumanizeQuestionFilterUtils method),	326	test_load_taniumpy_file_invalid_file()
	324		test_load_taniumpy_file_invalid_json()
test_invalid_filter2() (test_pytan_unit.TestDehumanizeQuestionFilterUtils method),	324		
test_invalid_filter3() (test_pytan_unit.TestDehumanizeQuestionFilterUtils method),	324		
test_invalid_get_object_1_invalid_get_action_single_by_name()	330		
(test_pytan_func.ValidServerTests method),			
test_invalid_get_object_2_invalid_get_question_by_name()	330		
(test_pytan_func.ValidServerTests method),			
test_invalid_option1() (test_pytan_unit.TestDehumanizeQuestionOptionUtils method),	325		
test_invalid_option2() (test_pytan_unit.TestDehumanizeQuestionOptionUtils method),	325		
test_invalid_port() (test_pytan_unit.TestGenericUtils method),	326		
test_invalid_question_1_invalid_ask_manual_question_sensor_help()	330		
(test_pytan_func.ValidServerTests method),			

test_multi_filter_list()	(test_pytan_unit.TestDehumanizeQuestionFilterDefParseUtils method),	324
test_multi_list_complex()	(test_pytan_unit.TestDehumanizeSensorUtils method),	325
test_option_list_many()	(test_pytan_unit.TestDehumanizeQuestionOptionUtils method),	327
test_option_list_multi()	(test_pytan_unit.TestDehumanizeQuestionOptionUtils method),	325
test_option_list_single()	(test_pytan_unit.TestDehumanizeQuestionOptionUtils method),	328
test_option_str()	(test_pytan_unit.TestDehumanizeQuestionOptionUtils method),	325
test_parse_complex()	(test_pytan_unit.TestManualSensorDefParseUtils method),	328
test_parse_dict_hash()	(test_pytan_unit.TestManualSensorDefParseUtils method),	324
test_parse_dict_id()	(test_pytan_unit.TestManualSensorDefParseUtils method),	328
test_parse_dict_name()	(test_pytan_unit.TestManualSensorDefParseUtils method),	325
test_parse_emptydict()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_emptydict()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	327
test_parse_emptydict()	(test_pytan_unit.TestManualSensorDefParseUtils method),	325
test_parse_emptylist()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_emptylist()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	327
test_parse_emptylist()	(test_pytan_unit.TestManualSensorDefParseUtils method),	328
test_parse_emptystr()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_emptystr()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	327
test_parse_emptystr()	(test_pytan_unit.TestManualSensorDefParseUtils method),	328
test_parse_list()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	327
test_parse_multi_filter()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_noargs()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_noargs()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	327
test_parse_noargs()	(test_pytan_unit.TestManualSensorDefParseUtils method),	328
test_parse_none()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_none()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	327
test_parse_none()	(test_pytan_unit.TestManualSensorDefParseUtils method),	328
test_parse_options_dict()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	327
test_parse_single_filter()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_str()	(test_pytan_unit.TestManualQuestionFilterDefParseUtils method),	327
test_parse_str()	(test_pytan_unit.TestManualQuestionOptionDefParseUtils method),	328
test_parse_str1()	(test_pytan_unit.TestManualSensorDefParseUtils method),	328
test_pytan_func	(module),	328
test_pytan_unit	(module),	324
test_single_filter_list()	(test_pytan_unit.TestDehumanizeQuestionFilterUtils method),	328
test_single_filter_str()	(test_pytan_unit.TestDehumanizeQuestionFilterUtils method),	328
test_single_str()	(test_pytan_unit.TestDehumanizeSensorUtils method),	325
test_single_str_complex1()	(test_pytan_unit.TestDehumanizeSensorUtils method),	325
test_single_str_with_filter()	(test_pytan_unit.TestDehumanizeSensorUtils method),	325
test_validate_package_def()	(test_pytan_unit.TestManualPackageDefValidateUtils method),	327
test_validate_question_def()	(test_pytan_unit.TestManualQuestionFilterDefValidateUtils method),	327
test_validate_question_option_def()	(test_pytan_unit.TestManualQuestionOptionDefValidateUtils method),	327
test_validate_sensor_def()	(test_pytan_unit.TestManualSensorDefValidateUtils method),	328
test_valid_create_object_1_create_user()	(test_pytan_func.ValidServerTests method),	330
test_valid_create_object_2_create_package()	(test_pytan_func.ValidServerTests method),	330
test_valid_create_object_3_create_group()	(test_pytan_func.ValidServerTests method),	330

```
330                                     330
test_valid_create_object_4_create_whitelisted_url()      test_valid_export_basetype_1_export_basetype_csv_with_sort_list()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     330
test_valid_create_object_from_json_1_create_package_from_json() test_valid_export_basetype_2_export_basetype_csv_with_explode_false()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     330
test_valid_create_object_from_json_2_create_user_from_json() test_valid_export_basetype_3_export_basetype_json_type_true()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     330
test_valid_create_object_from_json_3_create_saved_question_from_json() test_valid_export_basetype_4_export_basetype_xml_minimal_false()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_create_object_from_json_4_create_action_from_json() test_valid_export_basetype_5_export_basetype_xml_minimal_true()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_create_object_from_json_5_create_sensor_from_json() test_valid_export_basetype_6_export_basetype_csv_with_sort_empty_list()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_create_object_from_json_6_create_question_from_json() test_valid_export_basetype_7_export_basetype_csv_default_options()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_create_object_from_json_7_create_whitelisted_urls_from_json() test_valid_export_basetype_8_export_basetype_json_explode_true()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_create_object_from_json_8_create_group_from_json() test_valid_export_basetype_9_export_basetype_csv_with_sort_true()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_deploy_action_1_deploy_action_simple_against_windows_computers() test_valid_export_resultset_10_export_resultset_csv_default_options()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_deploy_action_2_deploy_action_simple_without_resultset() test_valid_export_resultset_11_export_resultset_csv_type_true()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_deploy_action_3_deploy_action_with_params_against_windows_computers() test_valid_export_resultset_12_export_resultset_csv_all_options()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_deploy_action_4_deploy_action_simple()         test_valid_export_resultset_13_export_resultset_csv_sort_false()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_export_basetype_10_export_basetype_xml_defaults_true() test_valid_export_resultset_1_export_resultset_json()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_export_basetype_11_export_basetype_csv_with_explode_true() test_valid_export_resultset_2_export_resultset_csv_sensor_true()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_export_basetype_12_export_basetype_json_explode_false() test_valid_export_resultset_3_export_resultset_csv_type_false()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_export_basetype_13_export_basetype_json_type_false() test_valid_export_resultset_4_export_resultset_csv_expand_false()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
330                                     331
test_valid_export_basetype_14_export_basetype_json_defaults_true() test_valid_export_resultset_5_export_resultset_csv_sort_empty()
    (test_pytan_func.ValidServerTests    method),        (test_pytan_func.ValidServerTests    method),
```



test_valid_export_resultset_6_export_resultset_csv_sort_true() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_23_get_all_clients() (test_pytan_func.ValidServerTests method), 331
test_valid_export_resultset_7_export_resultset_csv_sort_list() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_24_get_sensor_by_names() (test_pytan_func.ValidServerTests method), 331
test_valid_export_resultset_8_export_resultset_csv_sensor_false() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_25_get_all_packages() (test_pytan_func.ValidServerTests method), 331
test_valid_export_resultset_9_export_resultset_csv_expand_true() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_26_get_saved_question_by_name() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_10_get_all_saved_questions() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_27_get_all_actions() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_11_get_user_by_name() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_28_get_user_by_id() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_12_get_all_userroless() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_29_get_sensor_by_name() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_13_get_all_questions() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_2_get_action_by_id() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_14_get_sensor_by_id() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_30_get_saved_action_by_name() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_15_get_all_groups() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_3_get_question_by_id() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_16_get_all_sensors() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_4_get_saved_question_by_names() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_17_get_sensor_by_mixed() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_5_get_userrole_by_id() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_18_get_whitelisted_url_by_id() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_6_get_all_saved_actions() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_19_get_group_by_name() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_7_get_leader_clients() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_1_get_all_users() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_8_get_all_settings() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_20_get_all_whitelisted_urls() (test_pytan_func.ValidServerTests method), 331	test_valid_get_object_9_get_setting_by_name() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_21_get_sensor_by_hash() (test_pytan_func.ValidServerTests method), 331	test_valid_question_10_ask_manual_question_sensor_with_filter() (test_pytan_func.ValidServerTests method), 332
test_valid_get_object_22_get_package_by_name() (test_pytan_func.ValidServerTests method),	test_valid_question_11_ask_manual_question_multiple_sensors_identified() (test_pytan_func.ValidServerTests method),

[332](#) [test\\_valid\\_simple\\_str\\_id\\_selector\(\)](#)  
[test\\_valid\\_question\\_12\\_ask\\_manual\\_question\\_sensor\\_with\\_parameters\\_and\\_filter\\_and\\_test\\_dehumanizeSensorUtils](#)  
 (test\_pytan\_func.ValidServerTests method), [method\), 325](#)  
[332](#) [test\\_valid\\_simple\\_str\\_name\\_selector\(\)](#)  
[test\\_valid\\_question\\_13\\_ask\\_manual\\_question\\_sensor\\_with\\_filter\\_and\\_test\\_options\(\)](#) (test\_pytan\_unit.TestDehumanizeSensorUtils  
 (test\_pytan\_func.ValidServerTests method), [method\), 325](#)  
[332](#) [test\\_version\\_higher\(\)](#) (test\_pytan\_unit.TestGenericUtils  
[test\\_valid\\_question\\_14\\_ask\\_manual\\_question\\_complex\\_query2\(\)](#) [method\), 326](#)  
 (test\_pytan\_func.ValidServerTests method), [test\\_version\\_lower\(\)](#) (test\_pytan\_unit.TestGenericUtils  
[332](#) [method\), 326](#)  
[test\\_valid\\_question\\_15\\_ask\\_manual\\_question\\_complex\\_query2\(\)](#) [TestDehumanizeExtractionUtils](#) (class in  
 (test\_pytan\_func.ValidServerTests method), [test\\_pytan\\_unit\), 324](#)  
[332](#) [TestDehumanizeQuestionFilterUtils](#) (class in  
[test\\_valid\\_question\\_1\\_ask\\_manual\\_question\\_sensor\\_with\\_parameters\\_and\\_test\\_dehumanizeSensorUtils](#)  
 (test\_pytan\_func.ValidServerTests method), [TestDehumanizeQuestionOptionUtils](#) (class in  
[332](#) [test\\_pytan\\_unit\), 324](#)  
[test\\_valid\\_question\\_2\\_ask\\_manual\\_question\\_multiple\\_sensor\\_def\\_validate\\_filters\(\)](#) (class in  
 (test\_pytan\_func.ValidServerTests method), [325](#)  
[332](#) [TestDeserializeBadXML](#) (class in test\_pytan\_unit), [325](#)  
[test\\_valid\\_question\\_3\\_ask\\_manual\\_question\\_simple\\_multiple\\_sensor\\_def\\_validate\\_filters\(\)](#) (class in test\_pytan\_unit), [325](#)  
 (test\_pytan\_func.ValidServerTests method), [TestManualBuildObjectUtils](#) (class in test\_pytan\_unit),  
[332](#) [326](#)  
[test\\_valid\\_question\\_4\\_ask\\_manual\\_question\\_sensor\\_without\\_parameters\\_and\\_test\\_dehumanizeSensorUtils](#)  
 (test\_pytan\_func.ValidServerTests method), [test\\_pytan\\_unit\), 327](#)  
[332](#) [TestManualQuestionFilterDefParseUtils](#) (class in  
[test\\_valid\\_question\\_5\\_ask\\_manual\\_question\\_sensor\\_with\\_filter\\_and\\_test\\_options\(\)](#) (unit), [327](#)  
 (test\_pytan\_func.ValidServerTests method), [TestManualQuestionFilterDefValidateUtils](#) (class in  
[332](#) [test\\_pytan\\_unit\), 327](#)  
[test\\_valid\\_question\\_6\\_ask\\_manual\\_question\\_sensor\\_with\\_parameters\\_and\\_test\\_options\(\)](#) (unit), [327](#)  
 (test\_pytan\_func.ValidServerTests method), [TestManualSensorDefParseUtils](#) (class in  
[332](#) [test\\_pytan\\_unit\), 327](#)  
[test\\_valid\\_question\\_7\\_\\_ask\\_manual\\_question\\_sensor\\_complex\(\)](#) [test\\_pytan\\_unit\), 328](#)  
 (test\_pytan\_func.ValidServerTests method), [TestManualSensorDefValidateUtils](#) (class in  
[332](#) [test\\_pytan\\_unit\), 328](#)  
[test\\_valid\\_question\\_8\\_ask\\_manual\\_question\\_sensor\\_with\\_parameters\\_and\\_test\\_options\(\)](#) (unit), [328](#)  
 (test\_pytan\_func.ValidServerTests method), [threaded\\_http\(\)](#) (in module threaded\_http), [347](#)  
[332](#) [ThreadedHTTPServer](#) (class in threaded\_http), [347](#)  
[test\\_valid\\_question\\_9\\_ask\\_manual\\_question\\_simple\\_single\\_sensor\\_def\\_validate\\_filters\(\)](#) (class in  
 (test\_pytan\_func.ValidServerTests method), [TIMEFORMAT](#) (in module pytan.constants), [309](#)  
[332](#) [TimeoutException](#), [294](#)  
[test\\_valid\\_saved\\_question\\_1\\_ask\\_saved\\_question\\_refresh\\_data\(\)](#) [timestr\\_to\\_datetime\(\)](#) (in module pytan.utils), [313](#)  
 (test\_pytan\_func.ValidServerTests method), [to\\_flat\\_dict\(\)](#) (taniumpy.object\_types.base.BaseType  
[332](#) [method\), 334](#)  
[test\\_valid\\_saved\\_question\\_2\\_ask\\_saved\\_question\\_by\\_name\(\)](#) [to\\_flat\\_dict\\_explode\\_json\(\)](#) (tani-  
 (test\_pytan\_func.ValidServerTests method), [umpy.object\\_types.base.BaseType method\),](#)  
[332](#) [334](#)  
[test\\_valid\\_saved\\_question\\_3\\_ask\\_saved\\_question\\_by\\_name\\_in\\_list\(\)](#) [to\\_json\(\)](#) (taniumpy.object\_types.base.BaseType static  
 (test\_pytan\_func.ValidServerTests method), [to\\_json\(\)](#) (taniumpy.object\_types.result\_set.ResultSet  
[332](#) [static method\), 341](#)  
[test\\_valid\\_simple\\_list\(\)](#) (test\_pytan\_unit.TestDehumanizeSensorUtils) [to\\_jsonable\(\)](#) (taniumpy.object\_types.base.BaseType  
 method), [325](#) [method\), 334](#)  
[test\\_valid\\_simple\\_str\\_hash\\_selector\(\)](#) [to\\_jsonable\(\)](#) (taniumpy.object\_types.result\_set.ResultSet  
 (test\_pytan\_unit.TestDehumanizeSensorUtils method), [341](#)  
[method\), 325](#) [toSOAPBody\(\)](#) (taniumpy.object\_types.base.BaseType

method), 334  
 toSOAPElement() (taniumpy.object\_types.base.BaseType method), 334  
 XMLNS (pytan.sessions.Session attribute), 296, 299  
 xmldict (module), 345

## U

unpack() (in module ddt), 347  
 unparse() (in module xmldict), 346  
 UPDATE\_OBJECT\_CMD (pytan.sessions.Session attribute), 296, 299  
 UploadFile (class in taniumpy.object\_types.upload\_file), 343  
 UploadFileList (class in taniumpy.object\_types.upload\_file\_list), 344  
 UploadFileStatus (class in taniumpy.object\_types.upload\_file\_status), 344  
 User (class in taniumpy.object\_types.user), 344  
 UserList (class in taniumpy.object\_types.user\_list), 344  
 UserRole (class in taniumpy.object\_types.user\_role), 344  
 UserRoleList (class in taniumpy.object\_types.user\_role\_list), 344

## V

val\_package\_def() (in module pytan.utils), 323  
 val\_q\_filter\_defs() (in module pytan.utils), 323  
 val\_sensor\_defs() (in module pytan.utils), 323  
 ValidServerTests (class in test\_pytan\_func), 329  
 version\_check() (in module pytan.utils), 312  
 VERSION\_RE (pytan.sessions.Session attribute), 296, 299  
 VersionAggregate (class in taniumpy.object\_types.version\_aggregate), 344  
 VersionAggregateList (class in taniumpy.object\_types.version\_aggregate\_list), 344  
 VersionMismatchError, 294

## W

WhiteListedUrl (class in taniumpy.object\_types.white\_listed\_url), 344  
 WhiteListedUrlList (class in taniumpy.object\_types.white\_listed\_url\_list), 345  
 write\_csv() (taniumpy.object\_types.base.BaseType static method), 334  
 write\_csv() (taniumpy.object\_types.result\_set.ResultSet static method), 341

## X

xml\_pretty() (in module pytan.utils), 312  
 xml\_pretty\_resultobj() (in module pytan.utils), 312  
 xml\_pretty\_resultxml() (in module pytan.utils), 312  
 XmlError (class in taniumpy.object\_types.xml\_error), 345