

## Arvados - Story #12409

### CWL 1.2 with conditionals

10/05/2017 06:57 PM - Tom Morris

<b>Status:</b> Resolved	<b>Start date:</b> 01/01/2020
<b>Priority:</b> Normal	<b>Due date:</b>
<b>Assigned To:</b> Peter Amstutz	<b>% Done:</b> 100%
<b>Category:</b> CWL	<b>Estimated time:</b> 0.00 hour
<b>Target version:</b> 2020-03-25 Sprint	
<b>Description</b> Implement spec changes & cwltool support for workflow conditionals based on one of the designs described here: <a href="https://github.com/common-workflow-language/common-workflow-language/issues/494">https://github.com/common-workflow-language/common-workflow-language/issues/494</a> Once available in cwltool, we can update arvados-cwl-runner to take advantage of it.	
<b>Subtasks:</b> Task # 16184: Review 12409-cwl-v1.2 <b>Resolved</b>	
<b>Related issues:</b> Blocks Arvados Epics - Story #15955: CWL 1.2 <b>Resolved</b> <b>02/12/2020</b> <b>08/12/2020</b>	

#### Associated revisions

##### Revision e20adcd0 - 02/26/2020 07:17 PM - Peter Amstutz

arvbox now installs python tools with python3

Also adjust 'geo' config for local/public mode.

refs #12409

Arvados-DCO-1.1-Signed-off-by: Peter Amstutz <[peter.amstutz@curii.com](mailto:peter.amstutz@curii.com)>

##### Revision c5f67bbc - 03/18/2020 07:15 PM - Peter Amstutz

Merge branch '12409-cwl-v1.2' refs #12409

Arvados-DCO-1.1-Signed-off-by: Peter Amstutz <[peter.amstutz@curii.com](mailto:peter.amstutz@curii.com)>

##### Revision 50a4212e - 03/24/2020 05:23 PM - Peter Amstutz

Remove python2 arvados-cwl-runner package build, only python3

refs #12409

Arvados-DCO-1.1-Signed-off-by: Peter Amstutz <[peter.amstutz@curii.com](mailto:peter.amstutz@curii.com)>

##### Revision e9e56eca - 05/15/2020 12:30 AM - Ward Vandewege

We only build the python3 version of the arvados-cwl-runner package now.

refs #12409

Arvados-DCO-1.1-Signed-off-by: Ward Vandewege <[ward@jhvc.com](mailto:ward@jhvc.com)>

#### History

##### #1 - 10/05/2017 07:08 PM - Peter Amstutz

- Description updated

##### #2 - 12/18/2019 04:19 PM - Peter Amstutz

- Target version changed from Arvados Future Sprints to 2020-01-15 Sprint

- Subject changed from [cwl] cwl-tool conditional implementation to [cwl] CWL 1.2 with conditionals

##### #3 - 12/31/2019 09:59 PM - Peter Amstutz

- Category set to CWL
- Subject changed from [cwl] CWL 1.2 with conditionals to CWL 1.2 with conditionals

**#4 - 12/31/2019 10:27 PM - Peter Amstutz**

- Start date set to 01/01/2020
- Category deleted (CWL)
- Due date set to 01/31/2020
- Project changed from Arvados to Arvados Epics

**#5 - 12/31/2019 10:29 PM - Peter Amstutz**

- Related to Story #15955: CWL 1.2 added

**#6 - 12/31/2019 10:29 PM - Peter Amstutz**

- Related to deleted (Story #15955: CWL 1.2)

**#7 - 12/31/2019 10:29 PM - Peter Amstutz**

- Blocks Story #15955: CWL 1.2 added

**#8 - 12/31/2019 10:30 PM - Peter Amstutz**

- Project changed from Arvados Epics to Arvados

**#9 - 01/02/2020 04:13 PM - Peter Amstutz**

- Target version changed from 2020-01-15 Sprint to 2020-01-29 Sprint

**#10 - 01/02/2020 07:03 PM - Peter Amstutz**

- Category set to CWL

**#11 - 01/15/2020 03:45 PM - Peter Amstutz**

- Target version changed from 2020-01-29 Sprint to 2020-02-12 Sprint

**#12 - 01/23/2020 08:35 PM - Peter Amstutz**

- Story points set to 4.0
- Assigned To set to Peter Amstutz

**#13 - 01/29/2020 02:49 PM - Peter Amstutz**

- Target version changed from 2020-02-12 Sprint to 2020-02-26 Sprint

**#14 - 02/26/2020 03:16 PM - Peter Amstutz**

- Target version changed from 2020-02-26 Sprint to 2020-03-11 Sprint

**#15 - 02/26/2020 03:16 PM - Peter Amstutz**

- Status changed from New to In Progress

**#16 - 03/09/2020 11:30 PM - Peter Amstutz**

12409-cwl-v1.2 @ [f3b02f85ce244e22033e40e59caf87228b11faee](https://ci.arvados.org/view/Developer/job/developer-run-tests/1768/)  
<https://ci.arvados.org/view/Developer/job/developer-run-tests/1768/>

**#17 - 03/10/2020 07:45 PM - Lucas Di Pentima**

While trying to install a-c-r on a py3 virtualenv to run the arvbox tests, I got the following error:

```
error: ruamel.yaml 0.16.5 is installed but ruamel.yaml<=0.15.77,>=0.15.54 is required by {'arvados-python-client'}
```

**#18 - 03/10/2020 08:00 PM - Peter Amstutz**

Lucas Di Pentima wrote:

While trying to install a-c-r on a py3 virtualenv to run the arvbox tests, I got the following error:

[...]

Thanks, the Python SDK has a version pin on ruamel.yaml and I didn't change it. Fixed.

#### #19 - 03/10/2020 08:37 PM - Lucas Di Pentima

A couple more comments:

- Scripts with set -x that I believe are for debugging purposes:
  - test\_with\_arvbox.sh - lines 6 & 99 (from past branches)
  - build-dev-docker-jobs-image.sh - line 82 from current branch
- Have problems running cwl integration tests:

```
(venv-12409) lucas@buster:~/arvados/sdk/cwl/tests$ sh arvados-tests.sh
Traceback (most recent call last):
  File "/home/lucas/venv-12409/lib/python3.7/site-packages/schema_salad-5.0.20200220195218-py3.7.egg/schema_salad/schema.py", line 282, in load_and_validate
    strict_foreign_properties=strict_foreign_properties,
  File "/home/lucas/venv-12409/lib/python3.7/site-packages/schema_salad-5.0.20200220195218-py3.7.egg/schema_salad/ref_resolver.py", line 770, in resolve_ref
    strict_foreign_properties=strict_foreign_properties,
  File "/home/lucas/venv-12409/lib/python3.7/site-packages/schema_salad-5.0.20200220195218-py3.7.egg/schema_salad/ref_resolver.py", line 1196, in resolve_all
    strict_foreign_properties=strict_foreign_properties,
  File "/home/lucas/venv-12409/lib/python3.7/site-packages/schema_salad-5.0.20200220195218-py3.7.egg/schema_salad/ref_resolver.py", line 1418, in validate_links
    raise ValidationException("", None, errors)
schema_salad.exceptions.ValidationException: arvados-tests.yml:27:3: checking item
  `job` field is NoneType, expected string, list, or a dict.
arvados-tests.yml:38:3: checking item
  `job` field is NoneType, expected string, list, or a dict.
arvados-tests.yml:90:3: checking item
  `job` field is NoneType, expected string, list, or a dict.
[...]
```

#### #20 - 03/10/2020 09:30 PM - Lucas Di Pentima

Reviewing [5782d9e6f37bde05fb7dc06a312a5a909c7223e4](https://github.com/Arvados/arvados/pull/5782d9e6f37bde05fb7dc06a312a5a909c7223e4)

I was able to run the CWL integration tests, but got 9 failures, here's an extract:

```
(venv-12409) lucas@buster:~/arvados/sdk/cwl/tests$ sh arvados-tests.sh
Test [1/34] Test directory in keep
Test [2/34] Test directory in keep
Test [3/34] Test default directory in keep
Test [4/34] Test default directory in keep
Test [5/34] Test hashes in filenames
Test [6/34] test shallow directory listing
Test [7/34] test no directory listing
Test [8/34] test deep directory listing
Test [9/34] Test arv:ReuseRequirement
Test [10/34] Test manipulating keep references with expression tools
Test [11/34] Test glob output on empty collection
Test [12/34] Test issue 13976
Test [13/34] RunInSingleContainer cwl.input.json needs to be consistent with pathmapper manipulations
Test 13 failed: arvados-cwl-runner --disable-reuse --compute-checksum --api=containers --outdir=/tmp/tmp617rxs_d --quiet wf/runin-wf.cwl
RunInSingleContainer cwl.input.json needs to be consistent with pathmapper manipulations
Returned non-zero
WARNING Workflow checker warning:
wf/runin-wf.cwl:33:7: 'sleeptime' is not an input parameter of ordereddict([('class', 'Workflow'), ('id', 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub'), ('inputs', [ordereddict([('type', 'File'), ('id', 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/fileblub')])]), ('outputs', [ordereddict([('type', 'string'), ('outputSource', 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/sleep1/out'), ('id', 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/out')])]), ('steps', [ordereddict([('in', [ordereddict([('source', 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/fileblub'), ('id', 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/sleep1/fileblub')])]),
```

```

('out',
 ['file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/sleep1/out']),
 ('run', ordereddict([('class', 'CommandLineTool'), ('id',
 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/sleep1/subtool'),
 ('inputs', [ordereddict([('type', 'File'), ('inputBinding',
 ordereddict([('position', 1]))]), ('id',
 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/sleep1/subtool/fileblub'))])),
 ('outputs', [ordereddict([('type', 'string'), ('outputBinding',
 ordereddict([('outputEval', '$("out)')]))]), ('id',
 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/sleep1/subtool/output')])),
 ('baseCommand', 'cat'))], ('id',
 'file:///media/psf/arvados/sdk/cwl/tests/wf/runin-wf.cwl#substep/mysub/sleep1'))]),
 expected fileblub

```

ERROR [container runin-wf.cwl] ([x2jbo-dz642-jee8sxpe2iipszy](#)) error log:

```

2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:03.451938791Z crunch-run Running [arv-mount --foreground --allow-other --read-write --crunchstat-interval=10 --file-cache 268435456 --mount-by-pdh by_id /tmp/crunch-run.x2jbo-dz642-jjh6a2sgjxavj8j.284390681/keep505234340]
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:04.144209457Z crunch-run Creating Docker container
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:04.235636360Z crunch-run Attaching container stream
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:04.415397883Z crunch-run Starting Docker container
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:04.556779046Z crunch-run Waiting for container to finish
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.718329012Z stderr INFO /usr/bin/cwltool 1.0.20190603140227
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.725322562Z stderr INFO Resolved 'workflow.cwl#main' to 'file:///var/spool/cwl/workflow.cwl#main'
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.822369379Z stderr ERROR Tool definition failed validation:
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.822369379Z stderr The CWL reference runner no longer supports pre CWL v1.0 documents. Supported versions are:
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.822369379Z stderr v1.0
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.822369379Z stderr v1.1
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.822369379Z stderr v1.1.0-dev1 (with --enable-dev flag only)
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:05.963152671Z crunch-run Container exited with code : 1
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:06.018476974Z crunch-run copying "/cwl.output.json" (0 bytes)
2020-03-10T21:17:08.279914286Z stderr 2020-03-10T21:17:06.055107113Z crunch-run Complete
2020-03-10T21:17:08.405690646Z stderr ERROR [container substep] while getting output object:
2020-03-10T21:17:08.405690646Z stderr Traceback (most recent call last):
2020-03-10T21:17:08.405690646Z stderr File "/usr/local/lib/python3.5/dist-packages/arvados_cwl/arvcontainer.py", line 364, in done
2020-03-10T21:17:08.405690646Z stderr outputs = done.done_outputs(self, container, "/tmp", self.outdir, "/keep")
2020-03-10T21:17:08.405690646Z stderr File "/usr/local/lib/python3.5/dist-packages/arvados_cwl/done.py", line 55, in done_outputs
2020-03-10T21:17:08.405690646Z stderr return self.collect_outputs("keep:" + record["output"], record["exit_code"])
2020-03-10T21:17:08.405690646Z stderr File "/usr/local/lib/python3.5/dist-packages/cwltool/command_line_tool.py", line 811, in collect_output_ports
2020-03-10T21:17:08.405690646Z stderr ret = json.load(f)
2020-03-10T21:17:08.405690646Z stderr File "/usr/lib/python3.5/json/__init__.py", line 268, in load
2020-03-10T21:17:08.405690646Z stderr parse_constant=parse_constant, object_pairs_hook=object_pairs_hook, **kw)
2020-03-10T21:17:08.405690646Z stderr File "/usr/lib/python3.5/json/__init__.py", line 319, in loads
2020-03-10T21:17:08.405690646Z stderr return _default_decoder.decode(s)
2020-03-10T21:17:08.405690646Z stderr File "/usr/lib/python3.5/json/decoder.py", line 339, in decode
2020-03-10T21:17:08.405690646Z stderr obj, end = self.raw_decode(s, idx=_w(s, 0).end())
2020-03-10T21:17:08.405690646Z stderr File "/usr/lib/python3.5/json/decoder.py", line 357, in raw_decode
2020-03-10T21:17:08.405690646Z stderr raise JSONDecodeError("Expecting value", s, err.value) from None
2020-03-10T21:17:08.405690646Z stderr json.decoder.JSONDecodeError: Expecting value: line 1 column 1 (char 0)
)
2020-03-10T21:17:08.499524827Z stderr ERROR [step substep] Output is missing expected field file:///var/lib/cwl/workflow.json#main/substep/out
2020-03-10T21:17:08.603126883Z stderr WARNING [step substep] completed permanentFail
2020-03-10T21:17:08.713455729Z stderr INFO [workflow workflow.json#main] completed permanentFail
2020-03-10T21:17:08.713455729Z stderr ERROR Overall process status is permanentFail
2020-03-10T21:17:08.867141448Z stderr INFO Final output collection 237233ea9b49c1486aabfc86fbb7bc74+59 "Output of main" (x2jbo-4zz18-6a5guiu8nd0be0y)

```

```
2020-03-10T21:17:09.086793907Z stderr WARNING Final process status is permanentFail
2020-03-10T21:17:09.514881027Z crunch-run Container exited with code: 1
2020-03-10T21:17:09.537807614Z crunch-run Complete
ERROR Overall process status is permanentFail
WARNING Final process status is permanentFail
[...]
```

I've launched a Jenkins job: <https://ci.arvados.org/job/arvados-cwl-conformance-tests/384/> but it's failing for other purposes.

**#21 - 03/11/2020 01:39 PM - Peter Amstutz**

- Target version changed from 2020-03-11 Sprint to 2020-03-25 Sprint

**#22 - 03/12/2020 07:33 PM - Peter Amstutz**

12409-cwl-v1.2 @ [cf447c1718535fe924005db53bed5011c714dd63](https://ci.arvados.org/view/Developer/job/developer-run-tests/1772/)

Preserve original version when packing a document for use with RunInSingleContainer.

<https://ci.arvados.org/view/Developer/job/developer-run-tests/1772/>

**#23 - 03/12/2020 10:02 PM - Lucas Di Pentima**

Local cwl integration tests run was OK, but sdk/cwl tests failed both local and on jenkins.

**#24 - 03/17/2020 09:40 PM - Peter Amstutz**

12409-cwl-v1.2 @ [60ed2df387ca0ee304bf8d2e40f2199184375b29](https://ci.arvados.org/view/Developer/job/developer-run-tests/1778/)

<https://ci.arvados.org/view/Developer/job/developer-run-tests/1778/>

**#25 - 03/18/2020 07:00 PM - Lucas Di Pentima**

Tests pass on my side, LGTM.

**#26 - 03/18/2020 07:17 PM - Peter Amstutz**

- Status changed from In Progress to Resolved

**#27 - 10/07/2020 02:11 AM - Peter Amstutz**

- Release set to 25