openQA Project - action #66865

coordination # 15132 (Blocked): [saga][epic] Better structure of test plans in main.pm

Support !inherit tag in YAML job templates

2020-05-14 13:51 - cdywan

Status:	Workable		**Start date:**	2020-05-14
Priority:	Low		**Due date:**	
Assignee:			**% Done:**	0%
Category:	Feature requests		**Estimated time:**	0.00 hour
Target version:	future			
Difficulty:				

Description

Motivation

Our extensive use of YAML merge keys << is hitting limits. Only the top level is merged. In the context of scenarios it can be more desirable to include settings, which are at the second level.

Acceptance criteria

- **AC1:** A "deep merge" of multi-level YAML sections are possible within one YAML document with a special tag

Suggestions

tinita wrote:

> Just a note: YAML Merge Keys << are not performing a "deep merge". It only merges at the top level.
> So in the following example the settings would only contain the ANOTHER_SETTING.

```
- .testsuite: &crypt_no_lvm
    description: |
      bla bla bla
    settings:
      YAML_SCHEDULE: schedule/yast/encryption/crypt_no_lvm.yaml
      YAML_TEST_DATA: test_data/yast/encryption/encrypt_no_lvm.yaml
- crypt_no_lvm:
    settings:
      ANOTHER_SETTING: foo
    <<: *crypt_no_lvm
```

> Resulting data with resolved merge keys:

```
- .testsuite:
    description: |
      bla bla bla
    settings:
      YAML_SCHEDULE: schedule/yast/encryption/crypt_no_lvm.yaml
      YAML_TEST_DATA: test_data/yast/encryption/encrypt_no_lvm.yaml
- crypt_no_lvm:
    description: |
      bla bla bla
    settings:
      ANOTHER_SETTING: foo
```

A custom tag which I will call !inherit could fix that. And although I'm hesitant to diverge from standard YAML, I think we could try and keep it generic and straightforward to implement in e.g. YAML schedules or Python code.

Proposal in #66865#note-1

History

#1 - 2020-05-15 18:36 - tinita

The idea was to introduce a custom tag which will perform a deepmerge, so it could for example look like this:

```
def:
- &default-template
  settings:
      a: A
      b: B
  desc: lala
# ...
- crypt: !inherit
    *default-template :
      settings:
        a: NEW A
        d: D
```

Result:

```
- crypt:
    desc: lala
    settings:
      a: NEW A
      b: B
      d: D
```

I implemented a proof of concept here: https://gist.github.com/perlpunk/f90f9a4f2ab36565c2f7da19d5bced7d

That's not "standard" YAML, but a concept that several other YAML libraries implement, like PyYAML, ruamel.yaml, Javascript yaml.

Such custom tags are used in Ansible and AWS Cloudformation, for example.

#2 - 2020-07-03 19:31 - okurz

- Category set to Feature requests

- Priority changed from Normal to Low

#3 - 2020-07-28 11:31 - okurz

- Target version set to Ready

#4 - 2020-11-05 14:51 - okurz

- Description updated

- Status changed from New to Workable

- Parent task set to #15132

#5 - 2021-02-23 14:58 - okurz

- Target version changed from Ready to future