openQA Tests - coordination #15132

[saga][epic] Better structure of test plans in main.pm

2016-11-30 06:57 - okurz

Status:	Blocked	**Start date:**	2018-11-20
Priority:	Low	**Due date:**	
Assignee:	okurz	**% Done:**	86%
Category:	Enhancement to existing tests	**Estimated time:**	0.00 hour
Target version:	future		
Difficulty:			

Description

motivation

Currently the structure of the test plan in main.pm file is using simple if/else and variables which are mainly boolean to define the test plans for different scenarios with the help of some grouping functions. While there are problems advantages of this approach are that we are using simple tools and there is nearly no duplication of test module calls.

problems

- **P1**: The test plan for individual scenarios is hard to follow and it is especially hard for new contributors of individual test modules to find a good place where a test module should be stored
- **P2**: It is hard to find out under which scenarios a certain test module is called
- **P3**: There is no easy way to add a module based on conditions but only based on existing scenarios which cover these conditions
- **P4**: There is no explicit place where to define the variables. The variables are mainly defined by name and use only.
- **P5**: Too much business logic is in the database settings which is not versioned in sync with the test code
    - **P5.1**: The templates files are old and therefore confusing to some. As they are flattened database dumps they are not useful for manual editing

suggestions

- **S1**: Better use basetest::is_applicable from os-autoinst in test modules with multiple inheritance and based on mixin patterns for modules
- **S2**: Use proper inheritance for variable definitions that influence the test plan, e.g. with perl hashes mapping to JSON objects. ('ENCRYPT_ACTIVATE_EXISTING' is a good example as it should basically be below the top level folder switch 'ENCRYPT' so that we can use it like $vars{ENCRYPT}{ACTIVATE_EXISTING})
- **S3**: Define the flow of scenarios in a more concise way top-down with appropriate language
    - **S3.1**: Use dot language or similar tools to describe the test plan as graphs and then use some automagic to encode that into the more verbose real test plan
    - **S3.2**: Come up with a language proposal based on YAML

Subtasks:

action # 44030: [functional][y] Extend the use of scheduling test parameters	**Rejected**
action # 44252: [functional][u] Make more tests booting from HDD image "extratests" fol...	**Resolved**
coordination # 44360: [epic] Parameterize test suites within job groups	**Blocked**
action # 46667: Define version-able and human readable format for job scheduling-relate...	**Resolved**
action # 46670: Create import for format defined in #46667	**Resolved**
action # 46673: Extend tables for job scheduling by another table for parameters	**Resolved**
action # 50675: Commit changes to scheduling YAML to Git repository	**New**
action # 54143: Support parameters in {load,dump}_templates	**Resolved**
action # 54146: Expose saving YAML and opt-in migration in the editor	**Resolved**
action # 54149: Diffs for better error handling in the YAML editor	**Resolved**
action # 54179: Re-use YAML betweens different groups	**New**
action # 55454: The job group YAML schedule should support multiple scenarios with diff...	**Resolved**
coordination # 55730: [epic] Move parameters from test suites into job groups	**Resolved**
action # 56540: convert staging job groups to YAML	**Resolved**
action # 57845: Switch more job groups to YAML job templates	**Resolved**

action # 58652: Write a training file about how to use YAML in job group	**Resolved**
action # 60329: Use more parameterized job templates for test suites only used once	**Resolved**
action # 60782: descriptions for parameterized job templates independant of test suite ...	**Resolved**
action # 64967: job templates are duplicated as job template in job groups as well as t...	**Resolved**
action # 60014: Show YAML editor for unmigrated groups	**Resolved**
action # 60020: Provide a script to migrate job groups to YAML automatically	**Resolved**
action # 60017: Document process and potential issues with migration to YAML	**Resolved**
coordination # 66727: [epic] Define structure to define test suites not in openQA database	**Resolved**
action # 66781: hidden keys in yaml job templates	**Resolved**
action # 44420: [functional][y][timeboxed:6h] proof-of-concept of declarative test sche...	**Resolved**
action # 53159: [functional][y] Implement import of the test_data from another yaml file	**Resolved**
action # 54839: [functional][y] Use new yaml structure for test suites to define differ...	**Resolved**
action # 57536: [functional][y] implement autodeployment of the job group settings to osd	**Resolved**
action # 66865: Support !inherit tag in YAML job templates	**Workable**

Related issues:

Related to openQA Tests - coordination #13040: [functional][epic][u]more flex...	**Rejected**	2016-08-05	
Related to openQA Tests - coordination #31972: [qe-core][opensuse][functional...	**New**	2018-02-19	
Related to openQA Project - action #36994: Dynamic test flow definition + ove...	**Resolved**	2018-06-08	
Related to openQA Project - coordination #37958: [epic] self-tests in os-auto...	**Resolved**	2019-02-25	2020-05-19
Related to openQA Tests - action #42440: [qam] default "kde" test incompletes...	**Resolved**	2018-10-13	
Related to openQA Project - coordination #58184: [saga][epic][use case] full ...	**Blocked**	2018-03-23	

History

#1 - 2016-11-30 06:58 - okurz

- Related to coordination #13040: [functional][epic][u]more flexible console test selection by addons, testsuite variable, etc. (was: Run zypper lifecycle more selectively) added

#2 - 2016-12-16 12:22 - okurz

- Target version set to Milestone 5

#3 - 2017-01-18 09:59 - okurz

- Target version changed from Milestone 5 to Milestone 6

Considering amount of tickets in M5 I guess M6 might be a good plan.

#4 - 2017-02-21 07:48 - okurz

- Target version changed from Milestone 6 to Milestone 7

#5 - 2017-02-21 22:00 - okurz

https://github.com/os-autoinst/os-autoinst-distri-opensuse/pull/2468 is adding the "load_testdir" function which can help a bit.

#6 - 2017-05-23 06:41 - okurz

- Target version deleted (Milestone 7)

#7 - 2018-02-18 18:51 - okurz

- Subject changed from Better structure of test plans in main.pm to [functional]Better structure of test plans in main.pm

- Status changed from New to In Progress

- Assignee set to okurz

- Target version set to future

One step in the direction: https://github.com/os-autoinst/os-autoinst-distri-opensuse/pull/4432

#8 - 2018-02-21 21:23 - okurz

- Status changed from In Progress to Workable

- Assignee deleted (okurz)

merged, ready to be picked up by others for next steps.

#9 - 2018-06-15 19:07 - okurz

- Target version changed from future to future

#10 - 2018-06-27 21:30 - okurz

- Related to coordination #31972: [qe-core][opensuse][functional][epic][userspace][medium]Harmonize openSUSE/SLE test module schedule added

#11 - 2018-06-27 21:33 - okurz

- Related to action #36994: Dynamic test flow definition + override added

#12 - 2018-06-27 21:34 - okurz

- Related to coordination #37958: [epic] self-tests in os-autoinst-distri-opensuse for impact on staging test schedule added

#13 - 2018-09-21 13:40 - okurz

One outcome of a discussion by coolo and me: Would be good if the existing tables of testsuites and the actual test plan (main.pm) reside together. Currently testsuites on o3/osd grew a lot, e.g. huge bunch of LTP and migration tests

#14 - 2018-09-21 14:32 - riafarov

A bit more details from the discussion. First of all, we all acknowledge the problem with main.pm and we predicted that it will become un-maintainable, which I would say already happened.
Just to write brainstorming outcomes, which was more than just what was mentioned by Oliver.

Possible solutions:

- Storing plain schedules for each test suite with possibility to inherit them. For migration part, we can evaluate schedule for each existing test suite, for each medium and each machine
    - - redundancy
    - - more efforts for maintenance, however with simple steps
    - + transparency
    - + granularity, individual test suite reflects business logic
- Storing test suites using serialization language with code injections and dependencies (yml + pre/macro processors)
    - - may get as complex as main.pm
    - - generalization which may lead to executing tests with no business value for particular setups
    - + audit and versions control for no cost using git
    - + no/less redundancy
- Parameterized test suites:
    - - conditions may get as complex as we currently have affecting transparency
    - - generalization which may lead to executing tests with no business value for particular setups
    - + no/less redundancy
    - + localized complexity for conditions (even with complex conditions, one test suite one affect conditions for another one)
- Forking main.pm per area/job group
    - + cheapest solution
    - - will only postpone current issue and introduce new challenges

Steps to mitigate consequences of un-maintainable main.pm:

- split existing test-suites to smaller ones
- reuse common images, where snapshots are supported
- reduce test coverage on bare metal and revisit business values of those by evaluating risks of package/component not to work, when tested in the different environment (e.g. firefox on ipmi)

#15 - 2018-09-22 10:30 - okurz

- Description updated

#17 - 2018-10-11 20:13 - okurz

- Subject changed from [functional]Better structure of test plans in main.pm to [functional][u][y] Better structure of test plans in main.pm

#18 - 2018-10-14 12:32 - okurz

- Related to action #42440: [qam] default "kde" test incompletes sometimes because it takes too long added

#19 - 2018-11-26 10:39 - okurz

Ideas from workshop meeting 2018-11-26:

- "Copy-pasting" happens either in "main.pm" or openQA test suites to evade the pain, we have to cover the complexity somewhere
- test suites should prescribe the workflow, main.pm "was meant to" provide a parameterized run
- test suite inheritance for code reuse?
- code reuse between work flows can be improved, e.g. have a list of settings in test suites with parameterized test suite names, e.g. switch_keyboard_%DESKTOP% with setting DESKTOP=[textmode,gnome] and START_AFTER_TEST=%DESKTOP% -> how would the specific scenario be mapped in the job groups then? Best opinion so far: Have test suites as well as job groups defined within the test distribution
- dynamic test suite definition by test code?

#20 - 2018-12-05 09:25 - mgriessmeier

- Subject changed from [functional][u][y] Better structure of test plans in main.pm to [functional][u][y][epic] Better structure of test plans in main.pm

#21 - 2018-12-11 10:02 - okurz

- Status changed from Workable to Blocked

- Assignee set to okurz

we have enough subtasks defined for now, tracking the epic, blocked by subtasks.

#22 - 2019-01-09 13:53 - okurz

- Due date set to 2019-02-12

due to changes in a related task

#23 - 2019-02-11 11:49 - okurz

- Due date changed from 2019-02-12 to 2019-06-04

due to changes in a related task

#24 - 2019-05-22 10:18 - okurz

- Assignee changed from okurz to riafarov

Move to new QSF-y PO after I moved to the "tools"-team. I mainly checked the subject line so in individual instances you might not agree to take it over completely into QSF-y. Feel free to reassign to me or someone else in this case. Thanks.

#25 - 2019-10-08 14:40 - riafarov

- Due date changed from 2019-11-05 to 2019-10-22

due to changes in a related task

#26 - 2019-10-09 09:29 - riafarov

- Due date changed from 2019-10-22 to 2019-11-05

due to changes in a related task

#27 - 2019-11-04 15:47 - okurz

- Due date changed from 2019-11-05 to 2019-11-19

due to changes in a related task

#28 - 2019-11-18 09:52 - riafarov

- Subject changed from [functional][u][y][epic] Better structure of test plans in main.pm to [epic] Better structure of test plans in main.pm

- Assignee changed from riafarov to okurz

I believe everything is done for QSF part, so assigning to okurz to track the progress inside of tool team. Thanks for the work!

#29 - 2019-11-18 12:23 - okurz

sure, thx. All ticket relations are still current so I can just keep he status as is.

#30 - 2019-11-19 10:54 - okurz

- Due date changed from 2019-11-19 to 2019-12-17

due to changes in a related task

#31 - 2019-11-19 17:37 - okurz

- Due date changed from 2019-12-17 to 2019-11-19

due to changes in a related task

#32 - 2020-03-05 14:54 - okurz

- Subject changed from [epic] Better structure of test plans in main.pm to [epic][saga] Better structure of test plans in main.pm

#33 - 2020-03-05 14:54 - okurz

- Subject changed from [epic][saga] Better structure of test plans in main.pm to [saga][epic] Better structure of test plans in main.pm

#34 - 2020-05-12 05:19 - okurz

- Related to coordination #58184: [saga][epic][use case] full version control awareness within openQA, e.g. user forks and branches, fully versioned test schedules and configuration settings added

#35 - 2020-10-12 13:31 - szarate

- Tracker changed from action to coordination

- Status changed from Blocked to New

#36 - 2020-10-12 13:47 - szarate

See for the reason of tracker change: http://mailman.suse.de/mailman/private/qa-sle/2020-October/002722.html

#37 - 2020-11-19 12:07 - okurz

- Status changed from New to Blocked