How to create a new pipeline (with new ONAP version) ?

The Daily chains are created to deploy and test ONAP.

Since the creation of the daily chains, several chains have been declared:

- daily_frankfurt
- daily_guilin
- daily_honolulu
- daily_istanbul
- daily_master

Usually we keep the master and the last stable, but we could imagine if we would have enough resource to keep more versions..

How to create a new daily chain...

1) Declare the chain in chained-ci inventory

All the chains must be declared in https://gitlab.com/Orange-OpenSource/lfn/ci_cd/chained-ci/-/blob/master/pod_inventory/inventory

As everything is ansible the chains must be declared in the inventory. Note we improved the system with collections but had not time to share with the community.

inventory

```
[orange_terrahouat]
oom-offline
openacumos
acumos_sandbox
onap_oom_gating_k8s_pod4_4
onap_oom_gating_k8s_pod4_3
onap_oom_gating_k8s_pod4_2
onap_oom_gating_k8s_pod4_1
onap_oom_gating_vnfs_pod4_4
onap_oom_gating_vnfs_pod4_3
onap_oom_gating_vnfs_pod4_2
onap_oom_gating_vnfs_pod4_1
onap_oom_gating_pod4_4
onap_oom_gating_pod4_3
onap_oom_gating_pod4_2
onap_oom_gating_pod4_1
onap_daily_pod4_k8s_master
onap_daily_pod4_master
onap_weekly_pod4_k8s_master
onap_weekly_pod4_master
onap_daily_pod4_k8s_ingress_master
onap_daily_pod4_ingress_master
onap_xtesting_k8s
onap_pod4_k8s_service_mesh_master
rke_daily_pod4
rke2_daily_pod4
kubespray_daily_pod4
harbor_server
onap_oom_pod4_sm_master
oronap_oom_gating_k8s_pod4_1
hardening_centos_pod4
onap_daily_pod4_k8s_test
onap_daily_pod4_test
onap_weekly_pod4_k8s_honolulu
onap_weekly_pod4_honolulu
onap_daily_pod4_k8s_honolulu
onap_daily_pod4_honolulu
onap_daily_pod4_k8s_istanbul
onap_daily_pod4_istanbul
onap_weekly_pod4_k8s_istanbul
onap_weekly_pod4_istanbul
new_k8s_daily
new_onap_daily

[azure]
onap_oom_gating_k8s_azure_3
onap_oom_gating_k8s_azure_4
onap_oom_staging_k8s_azure_1
onap_oom_gating_azure_3
onap_oom_gating_azure_4
onap_oom_staging_azure_1
```

In the example above I declared 2 new chains: new_k8s_daily and new_onap_daily.

Note that you can declare only one but for the daily we are used to redeploy the k8s prior to the ONAP deployment - we always restart from scratch. it allows to see any regression on OOM/k8s.

2) Create the chains

Once declare you must create several files

Let's start with the host vars https://gitlab.com/Orange-OpenSource/lfn/ci_cd/chained-ci/-/tree/master/pod_inventory/host_vars.

You must create the files: new_k8s_daily.yml and new_onap_daily.yml

These files describe the chain you want to setup

Let's consider new_k8s_daily.yml, it could look like

new_k8s

```
---
jumphost:
  server: rebond.opnfv.fr
  user: !vault |
    $ANSIBLE_VAULT;1.1;AES256
    3434613036643437336466623463383762363761656564383535373037353066363563666634
    3363333062373233336466626631663036316233353266366638 0a303038626438303464323 9
    3837626339336334313034623561396365626635656565353061666437393330633464333130
    3035366639373863643130346133620a326462306366376563386238353063306630663636 2 35
    66623232333464643766
environment: orange_pod4/k8s_master
scenario_steps:
  config:
    project: config
    get_artifacts:
      - name: orange_vim_pod4
        static_src: true
    infra: k8s18-new-daily
    ssh_access: orange.eyml
  infra_deploy:
    project: os_infra_manager
    get_artifacts: config
    extra_parameters:
      ADMIN: true
      CLEAN: true
      TENANT_NAME: new-daily
      USER_NAME: new-daily-ci
      IDENTIFIER: -new-daily
      USE_PRIVATE_IP: True
      ADD_FLOATING_IP: True
      DNS_NAME: "{{ lookup('env','DNS_NAME') | default('master', true) }}"
  k8s_deploy:
    get_artifacts: infra_deploy
    project: kubespray
    branch: helm_3
    ssh_access: orange.eyml
    extra_parameters:
      kubespray_version: release-2.18
      helm_release: v3.6.4
      kube_network_plugin: cilium
      kubernetes_release: v1.22.4
      ENABLE_MONITORING: false
      DOCKER_HUB_PROXY: docker.nexus.azure.onap.eu
      GCR_PROXY: docker.nexus.azure.onap.eu
      K8S_GCR_PROXY: docker.nexus.azure.onap.eu
      QUAY_PROXY: docker.nexus.azure.onap.eu
  trigger:
    project: trigger
  k8s_test:
    project: functest_k8s
    get_artifacts:
      - name: infra_deploy
        limit_to:
          - inventory/infra: inventory/infra
      - name: config
        limit_to:
          - vars/pdf.yml: vars/pdf.yml
          - vars/ssh_gateways.yml: vars/ssh_gateways.yml
          - vars/vaulted_ssh_credentials.yml: vars/vaulted_ssh_credentials.yml
      - name: k8s_deploy
        limit_to:
          - vars/kube-config: vars/kube-config
    extra_parameters:
      DEPLOYMENT: kubespray
      TEST_RESULT_DB_URL: http://testresults.opnfv.org/test/api/v1/results
```

There are lots of information in this file, it describes the different stages of the kubernetes installation: config (init), infra_deploy (creation of the VMs on Orange OpenStack), k8s_deploy (deployement of the kubernetes), k8s_test (kubernetes testing).

For each stage we may change some parameters..

- on the config part: the full configration of the VM is indicated through the parameter infra: k8s18-new-daily (see next section)
- on the VM creation for instance we can change the name of the tenants/vms/users/...
- on the kubernetes installation we can change the versions of kubespray, helm, the network plugin,the kubernetes release...This section must be in line with the OOM recommendations
- We also do precise the docker repository (here we use our internal mirror)

Same for the ONAP installation (chained once the kubernetes is installed)

new_onap

```
---
jumphost:
  server: rebond.opnfv.fr
  user: !vault |
    $ANSIBLE_VAULT;1.1;AES256
    3434613036643437336466623463383762363761656564383535373037353066363563666634
    3363333062373233336466626631663036316233353266366638 0a303038626438303464323 9
    3837626339336334313034623561396365626635656565353061666437393330633464333130
    3035366639373863643130346133620a326462306366376563386238353063306636636 36235
    66623232333464643766
environment: orange_pod4/k8s_master/onap_daily
inpod: onap_daily_pod4_k8s_master
scenario_steps:
  config:
    project: config
    get_artifacts:
      - name: orange_vim_pod4
        static_src: true
    infra: onap-vnfs
    ssh_access: orange.eyml
  vnf_project_deploy:
    project: os_infra_manager
    get_artifacts: config
    extra_parameters:
      ADMIN: true
      CLEAN: true
      TENANT_NAME: onap-master-daily-vnfs
      USER_NAME: onap-master-daily-vnfs-ci
      IDENTIFIER: -onap
      NETWORK_IDENTIFIER: NONE
  onap_deploy:
    branch: master
    extra_parameters:
      OOM_BRANCH: master
      ONAP_REPOSITORY: nexus3.onap.org:10001
      ONAP_FLAVOR: small
      DOCKER_HUB_PROXY: docker.nexus.azure.onap.eu
      ELASTIC_PROXY: docker.nexus.azure.onap.eu
      K8S_GCR_PROXY: docker.nexus.azure.onap.eu
    get_artifacts:
      - name: vnf_project_deploy
        limit_to:
          - vars/user_cloud.yml: vars/user_cloud.yml
      - name: infra_deploy:onap_daily_pod4_k8s_master
        in_pipeline: false
        limit_to:
          - inventory/infra: inventory/infra
      - name: config:onap_daily_pod4_k8s_master
        in_pipeline: false
        limit_to:
          - vars/pdf.yml: vars/pdf.yml
          - vars/idf.yml: vars/idf.yml
```

```
          #- vars/ddf.yml: vars/ddf.yml
      - name: config
        limit_to:
          - vars/vim.yml: vars/vim.yml
          - vars/ssh_gateways.yml: vars/ssh_gateways.yml
          - vars/vaulted_ssh_credentials.yml: vars/vaulted_ssh_credentials.yml
    project: oom
  onap_test:
    project: xtesting-onap
    branch: master
    get_artifacts:
      - name: infra_deploy:onap_daily_pod4_k8s_master
        in_pipeline: false
        limit_to:
          - inventory/infra: inventory/infra
      - name: config:onap_daily_pod4_k8s_master
        in_pipeline: false
        limit_to:
          - vars/pdf.yml: vars/pdf.yml
      - name: k8s_deploy:onap_daily_pod4_k8s_master
        in_pipeline: false
        limit_to:
          - vars/kube-config: vars/kube-config
      - name: onap_deploy
        limit_to:
          - vars/cluster.yml: vars/cluster.yml
      - name: config
        limit_to:
          - vars/vim.yml: vars/vim.yml
          - vars/ssh_gateways.yml: vars/ssh_gateways.yml
          - vars/vaulted_ssh_credentials.yml: vars/vaulted_ssh_credentials.yml
    extra_parameters:
      DEPLOYMENT: oom
      INFRA_DEPLOYMENT: kubespray
      DEPLOYMENT_TYPE: full
      DEPLOY_SCENARIO: onap-ftw
      RANDOM_WAIT: True
      TEST_RESULT_DB_URL: http://testresults.opnfv.org/onap/api/v1/results
```

We find back the notion of stages: config (retrieve information from VMs and k8s installation), vnf_project_deploy (create a tenant for the test), onap_deploy (ONAP deployment), onap_test (tests to be executed on ONAP linked to the gitlab project onap_test)

Here again you can modify some parameters. in the onap_deploy stage you can specify the branch of the oom_installer (here master) and the branch of OOM

3) Resources definition

In the k8s chain definition, a parameter infra was set to precise the resources. These resources are defined in the associated pdf and idf files that can be found in https://gitlab.com/Orange-OpenSource/lfn/ci_cd/chained-ci/-/tree/master/pod_config/config

If we consider for instances k8s-onap-master, the 2 files are:

- Infrastructure Description File (IDF): https://gitlab.com/Orange-OpenSource/lfn/ci_cd/chained-ci/-/blob/master/pod_config/config/idf-k8s18-onap-master.yaml
- Platform Description File (PDF): https://gitlab.com/Orange-OpenSource/lfn/ci_cd/chained-ci/-/blob/master/pod_config/config/k8s18-onap-master.yaml

the parameters defined here are used by the collection infra managers to create the VM and or deploying infrastructure and platform components.

4) Summary

If you want to create a new daily

- clone chained-ci repo
- git clone https://gitlab.com/Orange-OpenSource/lfn/ci_cd/chained-ci.git
- add onap-daily-k8s-x and onap-daily-x in the inventory https://gitlab.com/Orange-OpenSource/lfn/ci_cd/chained-ci/-/blob/master/pod_inventory/inventory
- copy/paste master host_vars

    - cd chained-ci/pod_inventory/host_vars
    - cp onap_daily_pod4_k8s_master.yml onap_daily_x_k8s.yml
    - cp onap_daily_pod4_master.yml onap_daily_x.yml
    - Edit and adapt the chains
        - e.g. change the OOM branch to x in onap_daily_x.yml, update the versions of kubernetes, helm,..according to OOM recommentations
        - if resources changes, create an idf and pdf file in chained-ci/pod_config/config/ (note if resources are unchanged you may just reuse existing ones or copy paste existing ones for clarity)
            - cp chained-ci/pod_config/config/idf-k8s18-onap-master.yaml chained-ci/pod_config/config/idf-k8s18-onap-x.yaml
            - cp chained-ci/pod_config/config/k8s18-onap-master.yaml chained-ci/pod_config/config/k8s18-onap-x.yaml
            - and then reference infra: k8s18-onap-x in onap_daily_x_k8s.yml
- add a schedule in gitlab vi with TARGET=onap-daily-x