ODTEM
On Demand Test Execution Management

Max, Zhang
July 16, 2019

THE BEST RUN SAP

Agenda

- How to manage Test plans

- ODTEM Key features

- ODTEM Components

- History

- How we use

- How we do it without ODTEM

How to manage test plans now

- All of the test job and test plan names are controlled by TestPlans.josn/TestCycle.json on hanalite-releasepack project.

- No one can add/remove test job/test plan without permission.

- How To Manage Tests

The DB in ODTEM save other configurations that not related test logic.

- Common job template(build, k8s_creation/k8s_deletion/log collection, install/uninstall).

- Job timeout

- Resource limitation(cpu/memory)

- Job dependency relationship.

- Security context

- Job runtime environment that used by CI.

```json
{
    "security_context": {
        "privileged": true
    },
    "name": "vsystem_api_test_gke",
    "docker_file": "hera/ci/hanalite-releasepack/infrabox/vsystem_api_test/Dockerfile",
    "depends_on": [
        {
            "on": [
                "finished"
            ],
            "job": "k8s_creation_gke"
        },
        {
            "on": [
                "finished"
            ],
            "job": "install_gke"
        }
    ],
    "build_only": false,
    "environment": {
        "CONTINUES_INTEGRATION": "TRUE",
        "PARENT_INSTALL_JOB": "install_gke"
    },
    "timeout": 10800,
    "deployments": [
        {
            "always_push": "true",
            "host": "registry.datahub.only.sap",
            "type": "docker-registry",
            "repository": "bdh-infra-tools/troubleshooting/vsystem_api_test_gke"
        }
    ],
    "type": "docker",
    "resources": {
        "limits": {
            "cpu": 2,
            "memory": 2048
        }
    }
}
```

ODTEM Key Features

Trigger the infrabox builds (like *infrabox push*)

Return the infrabox.json

- Trigger the milestone validation.
- Run validation jobs against customized DH cluster.

- You could push it by yourself.
- You could copy it to the /infrabox/output folder to expand the infrabox jobs dynamically. (Used in **push / nightly validation**)
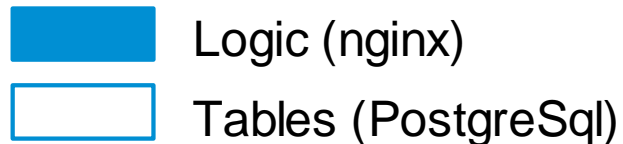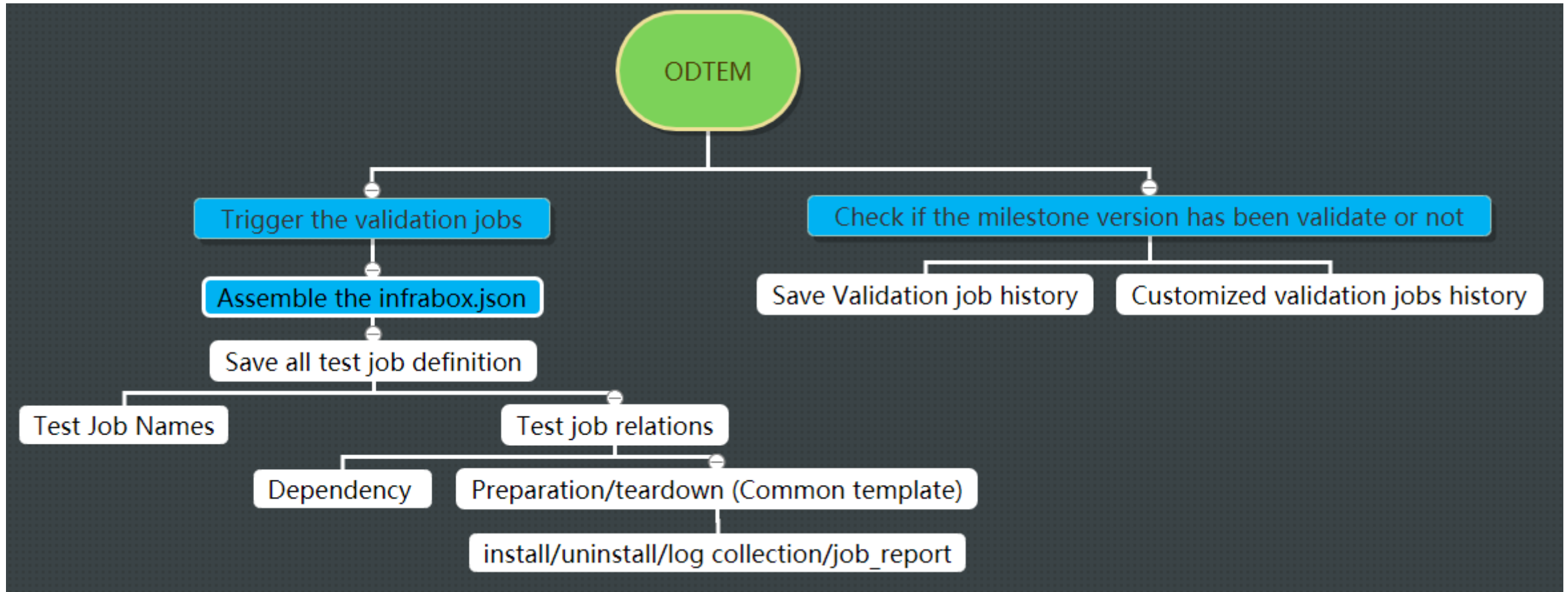
ODTEM – Component

Rest calls

- Fetch the infrabox.json by job names.

- Manage job, test plans. (Register, update)

- Trigger the milestone job.

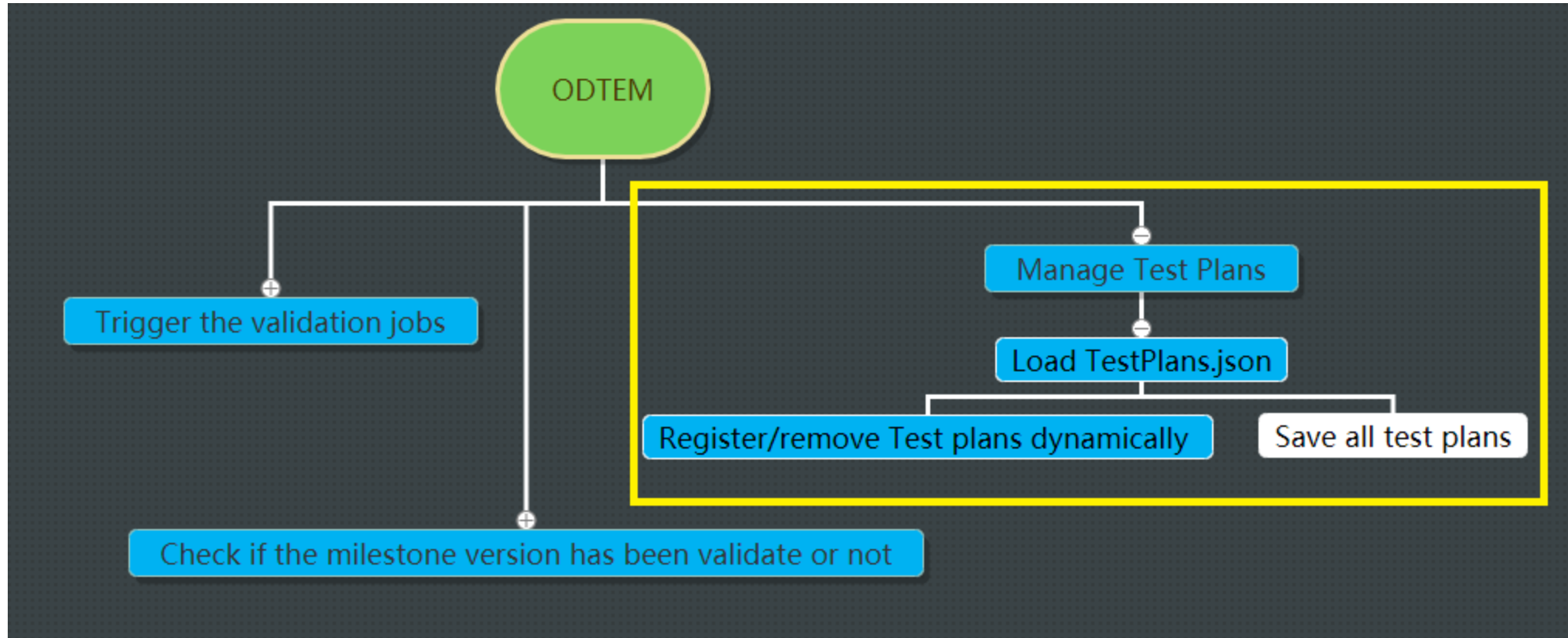- Trigger the infrabox builds against customized DH cluster.

DB

- Templates

- Job dependency

- Job run time settings

ODTEM – history

ODTEM

Trigger the validation jobs

Check if the milestone version has been validate or not

Assemble the infrabox.json

Save Validation job history

Customized validation jobs history

Save all test job definition

Test Job Names

Test job relations

Dependency

Preparation/teardown (Common template)

install/uninstall/log collection/job_report

Logic (nginx)

Tables (PostgreSql)

ODTEM – Now

	Logic (nginx)
	Tables (PostgreSql)

Diagram nodes:

- ODTEM
  - Trigger the validation jobs
  - Check if the milestone version has been validate or not
  - Manage Test Plans
    - Load TestPlans.json
      - Register/remove Test plans dynamically
      - Save all test plans

How we use – push / nightly (1)

gerrit hanalite-releasepack

TestPlans.json
TestCycle.json

DB run with dashboard service on cloud

Backend DB
aka. ODTEM

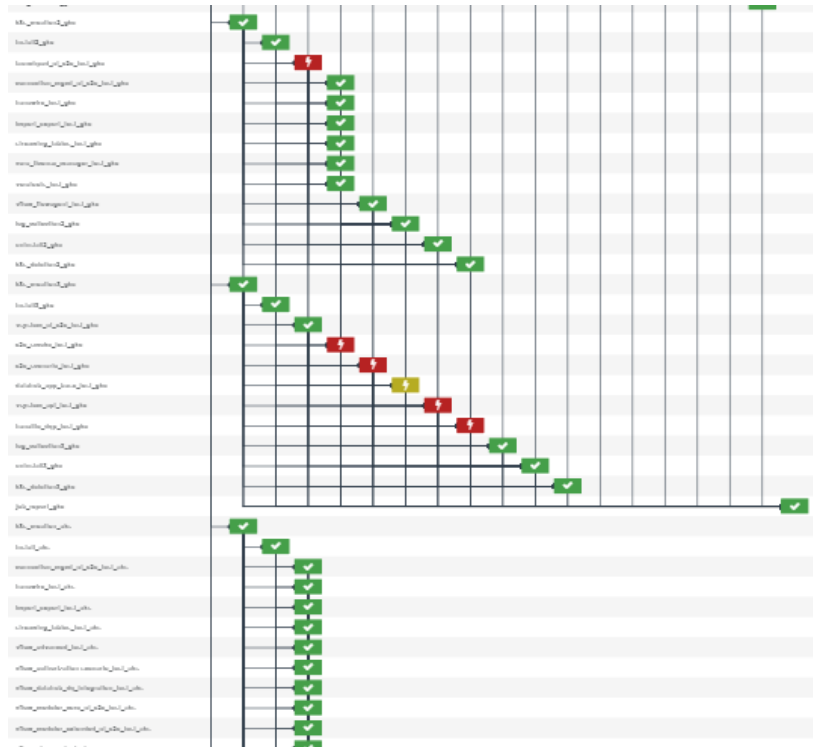Infrabox generator job
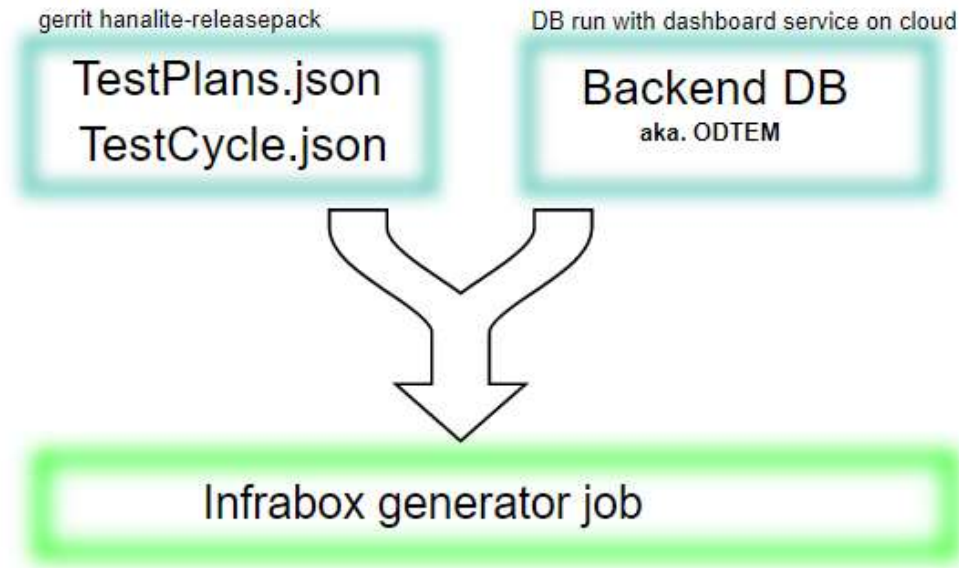
How we use – push / nightly (2)

How we use – milestone validation

Milestone bubble up

Milestone validation

10:09:12|## trigger milestone test cycle

10:09:12|job request json: {

10:09:12| "environment": {

10:09:12| "VORA_KUBE_PREFIX_URL": "http://nexus.wdf.sap.corp:8081/nexus/content/repositories/build.milestones/com/sap/datahub/SAPDataHub/",

10:09:12| "PROVISION_PLATFORM": "AWS-EKS,AZURE-AKS,DHAAS-AWS,GKE,GARDENER-AWS",

10:09:12| "PRODUCT_NAME": "BDH",

10:09:12| "USE_FOR": "MILESTONE_VALIDATION",

10:09:12| "VORA_VERSION": "2.7.54-ms"

10:09:12| },

10:09:12| "test_plan": {

10:09:12| "AWS-EKS": "tmp_MILESTONE_VALIDATION_test_plan_20190716100821_aws-eks",

10:09:12| "AZURE-AKS": "tmp_MILESTONE_VALIDATION_test_plan_20190716100832_azure-aks",

10:09:12| "DHAAS-AWS": "tmp_MILESTONE_VALIDATION_test_plan_20190716100833_dhaas-aws",

10:09:12| "GKE": "tmp_MILESTONE_VALIDATION_test_plan_20190716100834_gke",

10:09:12| "GARDENER-AWS": "tmp_MILESTONE_VALIDATION_test_plan_20190716100835_gardener-aws"

10:09:12| },

10:09:12| "executor": "i062958"

10:09:12|}

How we use – Customized testing*

Prepare DH cluster

Select the job names

Call API to run validation

```
POST /api/v2/tasks/test/userenv HTTPS/1.1

{

    "environment": {

        "PRODUCT_NAME": "BDH",

        "PROJECT_NAME": "hanalite-releasepack",

        "VORA_VERSION": "2.7.32-ms",

        "VORA_TENANT": "default",

        "GERRIT_CHANGE_BRANCH": "master",

        "VORA_USERNAME": "system",

        "VORA_PASSWORD": "...",

        "PROVISION_PLATFORM": "GKE",

        "NODE_HOST": "https://max-zhang-20190613-095914375-gke.infra.datahub.sapcloud.io",

        "VSYSTEM_PORT": "443",

        "NAMESPACE": "bdh-2-7-18-ms",

        "VSYSTEM_ENDPOINT": "https://max-zhang-20190613-095914375-gke.infra.datahub.sapclou

        "VORA_SYSTEM_TENANT_PASSWORD": "...",

        "KUBECONFIG": {...}

    },

    "test": [{

        "case_name": "vflow_test_gke",

        "environment": {"SCENARIO_LIST": "basic",}

    }],

    "executor": "i322966"
```

How we do it without ODTEM – proposal

- ❑ **Save multiple test plan json files for each test plan on releasepack in original infrabox json format.**

- ❑ **Save other job settings that not related to the test logic into releasepack or somewhere else.**
  E.g: build_context, security_context, deployment, cpu/memory, use_for type.

- ❑ **Manage the dependency logic in "generator" infrabox job at run time.**

- ❑ **For customized validation, users need to write the infrabox.json and do the infrabox push.**

Thank you.

Contact information:

F name L name
Title
Address
Phone number

THE BEST RUN **SAP**