ONAP Development

Developer Setup

Gerrit/Git

Quickstarts

Committing Code

```
# clone
git clone ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics
# modify files
# stage your changes
git add .
git commit -m "your commit message"
# commit your staged changes with sign-off
git commit -s --amend
# add Issue-ID after Change-ID
# Submit your commit to ONAP Gerrit for review
git review
# goto https://gerrit.onap.org/r/#/dashboard/self
```

Amending existing gerrit changes in review

```
# add new files/changes
git add .
# dont use -m - keep the same Issue-ID: line from original commmit
git commit --amend
git review -R
# see the change set number increase - https://gerrit.onap.org/r/#/c/17203/2
```

If you get a 404 on commit hooks - reconfigure - https://lists.onap.org/pipermail/onap-discuss/2018-May/009737.html and https://lists.onap.org/g/onap-discuss/topic/unable_to_push_patch_to/28034546?p=,,,20,0,0,0::recentpostdate%2Fsticky,,,20,2,0,28034546

```
curl -kLo `git rev-parse --git-dir`/hooks/commit-msg http://gerrit.onap.org/r/tools/hooks/commit-msg; chmod +x
`git rev-parse --git-dir`/hooks/commit-msg
git commit --amend
git review -R
```

Verify Change Set from another developer

```
# clone master, cd into it, pull review
git clone ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics
git pull ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics refs/changes/93/67093/1
```

Shared Change Set across Multiple VMs

```
amdocs@ubuntu:~/_dev/20180917_shared_test$ rm -rf logging-analytics/
amdocs@ubuntu:~/_dev/20180917_shared_test$ git clone ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics
amdocs@ubuntu:~/_dev/20180917_shared_test$ cd logging-analytics/
amdocs@ubuntu:~/_dev/20180917_shared_test/logging-analytics$ git review -d 67093
Downloading refs/changes/93/67093/1 from gerrit
Switched to branch "review/michael_o_brien/67093"
```

Work across multiple VMs

```
  sudo git clone ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics
  cd logging-analytics/
  sudo git pull ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics refs/changes/39/55339/1
```

Filter gerrit reviews - Thanks Mandeep Khinda

https://gerrit.onap.org/r/#/q/is:reviewer+AND+status:open+AND+label:Code-Review%253D0

Run/verify jobs Configuring Gerrit#RunningaCommandwithinGerrit

Workstation configuration

Ubuntu 16.04 on VMware Workstation 15 or Fusion 8 or AWS/Azure VM

Note: do not use the gui upgrade (will cause the vm to periodically lock) - do individual apt-get 's

```
# start with clean VM, I use root, you can use the recommended non-root account
sudo vi /etc/hosts
# add your hostname to ::1 and 127.0.0.1 or each sudo command will hang for up to 10 sec on DNS resolution
especially on ubuntu 18.04
sudo apt-get update
sudo apt-get install openjdk-8-jdk
# not in headless vm
sudo apt-get install ubuntu-desktop
#sudo apt-get install git
sudo apt-get install maven
#or
sudo wget http://apache.mirror.gtcomm.net/maven/maven-3/3.5.4/binaries/apache-maven-3.5.4-bin.tar.gz
sudo cp ap(tab) /opt
cd /opt
tar -xvf apache-maven-3.5.4-bin.tar.gz
sudo vi /etc/environment
   MAVEN_OPTS="-Xms8192 -Djava.net.preferIPv4Stack=true"
# restart the terminal
ubuntu@ip-172-31-78-76:~$ mvn -version
Apache Maven 3.5.4 (1edded0938998edf8bf061f1ceb3cfdeccf443fe; 2018-06-17T18:33:14Z)
Maven home: /opt/apache-maven-3.5.4

Java version: 1.8.0_171, vendor: Oracle Corporation, runtime: /usr/lib/jvm/java-8-openjdk-amd64/jre
sudo vi ~/.ssh/config
Host *
   StrictHostKeyChecking no
   UserKnownHostsFile=/dev/null

 # a couple options on copying the ssh key
 # from another machine
root@ubuntu:~/_dev# cat ~/.ssh/id_rsa | ssh -i ~/.ssh/onap_rsa ubuntu@ons.onap.info 'cat >> .ssh/onap_rsa &&
echo "Key copied"'
Key copied
sudo chown ubuntu:ubuntu ~/.ssh/onap_rsa

 # or
 # scp onap gerrit cert into VM from host macbook
obrien:obrienlabs amdocs$ scp ~/.ssh/onap_rsa amdocs@192.168.211.129:~/
move to root
sudo su -
 root@obriensystemsu0:~# cp /home/amdocs/onap_rsa .
ls /home/amdocs/.m2
cp onap_rsa ~/.ssh/id_rsa
chmod 400 ~/.ssh/id_rsa
# move from root to ubuntu - if using non-root user
sudo chown ubuntu:ubuntu ~/.ssh/onap_rsa

# test your gerrit access
```

```
sudo git config --global --add gitreview.username michaelobrien
sudo git config --global user.email frank.obrien@amdocs.com
sudo git config --global user.name "Michael OBrien"
sudo git config --global gitreview.remote origin
sudo mkdir log-326-rancher-ver
cd log-326-rancher-ver/
sudo git clone ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics
cd logging-analytics/
sudo vi deploy/rancher/oom_rancher_setup.sh
sudo git add deploy/rancher/oom_rancher_setup.sh .
# setup git-review
sudo apt-get install git-review
sudo  git config --global gitreview.remote origin
# upload a patch
sudo git commit -am "update rancher version to 1.6.18"
# 2nd line should be "Issue-ID: LOG-326"
sudo git commit -s --amend
sudo git review
Your change was committed before the commit hook was installed.
Amending the commit to add a gerrit change id.
remote: Processing changes: new: 1, refs: 1, done
remote: New Changes:
remote:   https://gerrit.onap.org/r/55299 update rancher version to 1.6.18
remote:
To ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics
 * [new branch]      HEAD -> refs/publish/master
# see
https://gerrit.onap.org/r/#/c/55299/


if you get a corrupted FS type "fsck -y /dev/sda1"
```

OSX 10.13

```
# turn of host checking
# install mvn
# download from http://maven.apache.org/download.cgi
sudo chown -R root:wheel apache-maven-3.5.4*
sudo vi ~/.bash_profile
# use
export PATH=$PATH:/Users/amdocs/apache-maven-3.5.4/bin
```

Windows 10

On a 64GB Thinkpad P52

get maven http://maven.apache.org/download.cgi

get https://gitforwindows.org/

install putty, run pageant, load the ppk version of your ssh key

setup gerrit config in your .ssh/config file

The powershell now has unix and OpenSSH capabilities built in

or Just install the Windows Subsystem for Linux https://docs.microsoft.com/en-us/windows/wsl/install-win10 and the Ubuntu 16 tools https://www.microsoft.com/en-ca/p/ubuntu/9nblggh4msv6?rtc=1&activetab=pivot:overviewtab and skip git-bash, putty and cygwin.

```
michaelobrien@biometrics MINGW64 ~/_dev/intelij/onap_20180916
$ cat ~/.ssh/config
host gerrit.onap.org
    Hostname gerrit.onap.org
    IdentityFile ~/.ssh/onap_rsa


michaelobrien@biometrics MINGW64 ~/_dev/intelij/onap_20180916
$ git clone ssh://michaelobrien@gerrit.onap.org:29418/logging-analytics
Cloning into 'logging-analytics'...
remote: Counting objects: 1, done
remote: Finding sources: 100% (1/1)
remote: Total 1083 (delta 0), reused 1083 (delta 0)
Receiving objects: 100% (1083/1083), 1.18 MiB | 2.57 MiB/s, done.
Resolving deltas: 100% (298/298), done.
```

Note: some repos are close to thew 255 char limit - only for windows - SDC-1765 - Getting issue details... STATUS

Java Environment

Since JDK 8 oracle has moved to a 6 month release cycle where the changes are minor - such as the lambda support added to Java 11 for the new local variable type inferences in Java 10.

Java 8

```
sudo apt-get install openjdk-8-jdk
```

Java 9 - deprecated

```
apt-cache search openjdk
sudo apt-get install openjdk-9jdk
```

Java 10

```
# this one is 3rd party
sudo add-apt-repository ppa:linuxuprising/java
sudo apt update
sudo apt install oracle-java10-installer
# it is an older one
amdocs@obriensystemsu0:~$ java -version
java version "10.0.2" 2018-07-17
Java(TM) SE Runtime Environment 18.3 (build 10.0.2+13)
Java HotSpot(TM) 64-Bit Server VM 18.3 (build 10.0.2+13, mixed mode)
```

Java 11

```
# came out this week - use windows for now or dockerhub
PS C:\Windows\system32> java -version
java version "11" 2018-09-25
Java(TM) SE Runtime Environment 18.9 (build 11+28)
Java HotSpot(TM) 64-Bit Server VM 18.9 (build 11+28, mixed mode)
```

Maven Configuration

add ~/.m2/settings.xml from the following or oparent/settings.xml - as of oparent 1.2.1 20180927 you will need the following additional profile


```
<profile>
      <id>onap-settings</id>
      <properties>
        <onap.nexus.url>https://nexus.onap.org</onap.nexus.url>
        <onap.nexus.rawrepo.baseurl.upload>https://nexus.onap.org/content/sites/raw</onap.nexus.rawrepo.baseurl.
upload>
        <onap.nexus.rawrepo.baseurl.download>https://nexus.onap.org/service/local/repositories/raw/content<
/onap.nexus.rawrepo.baseurl.download>
        <onap.nexus.rawrepo.serverid>ecomp-raw</onap.nexus.rawrepo.serverid>

        <!-- properties for Nexus Docker registry -->
        <onap.nexus.dockerregistry.daily>nexus3.onap.org:10003</onap.nexus.dockerregistry.daily>
        <onap.nexus.dockerregistry.release>nexus3.onap.org:10002</onap.nexus.dockerregistry.release>
        <docker.pull.registry>nexus3.onap.org:10001</docker.pull.registry>
        <docker.push.registry>nexus3.onap.org:10003</docker.push.registry>
      </properties>
    </profile>


# top profile above the other 8
<activeProfile>onap-settings</activeProfile>
```

Test your environment

Verify docker image pushes work

```
cd logging-analytics/reference/logging-docker-root/logging-docker-demo
./build.sh
Sending build context to Docker daemon 18.04 MB
Step 1/2 : FROM tomcat:8.0.48-jre8
8.0.48-jre8: Pulling from library/tomcat
723254a2c089: Pull complete
Digest: sha256:b2cd0873b73036b3442c5794a6f79d554a4df26d95a40f5683383673a98f3330
Status: Downloaded newer image for tomcat:8.0.48-jre8
 ---> e072422ca96f
Step 2/2 : COPY target/logging-demo-1.2.0-SNAPSHOT.war /usr/local/tomcat/webapps/logging-demo.war
 ---> a571670e32db
Removing intermediate container 4b9d81978ab3
Successfully built a571670e32db
oomk8s/logging-demo-nbi   latest              a571670e32db        Less than a second ago   576 MB
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head over to
https://hub.docker.com to create one.
Username: obrienlabs
Password:
Login Succeeded
The push refers to a repository [docker.io/oomk8s/logging-demo-nbi]
7922ca95f4db: Pushed
7a5faefa0b46: Mounted from library/tomcat
0.0.1: digest: sha256:7c1a3db2a71d47387432d6ca8328eabe9e5353fbc56c53f2a809cd7652c5be8c size: 3048
```

Verify maven builds work

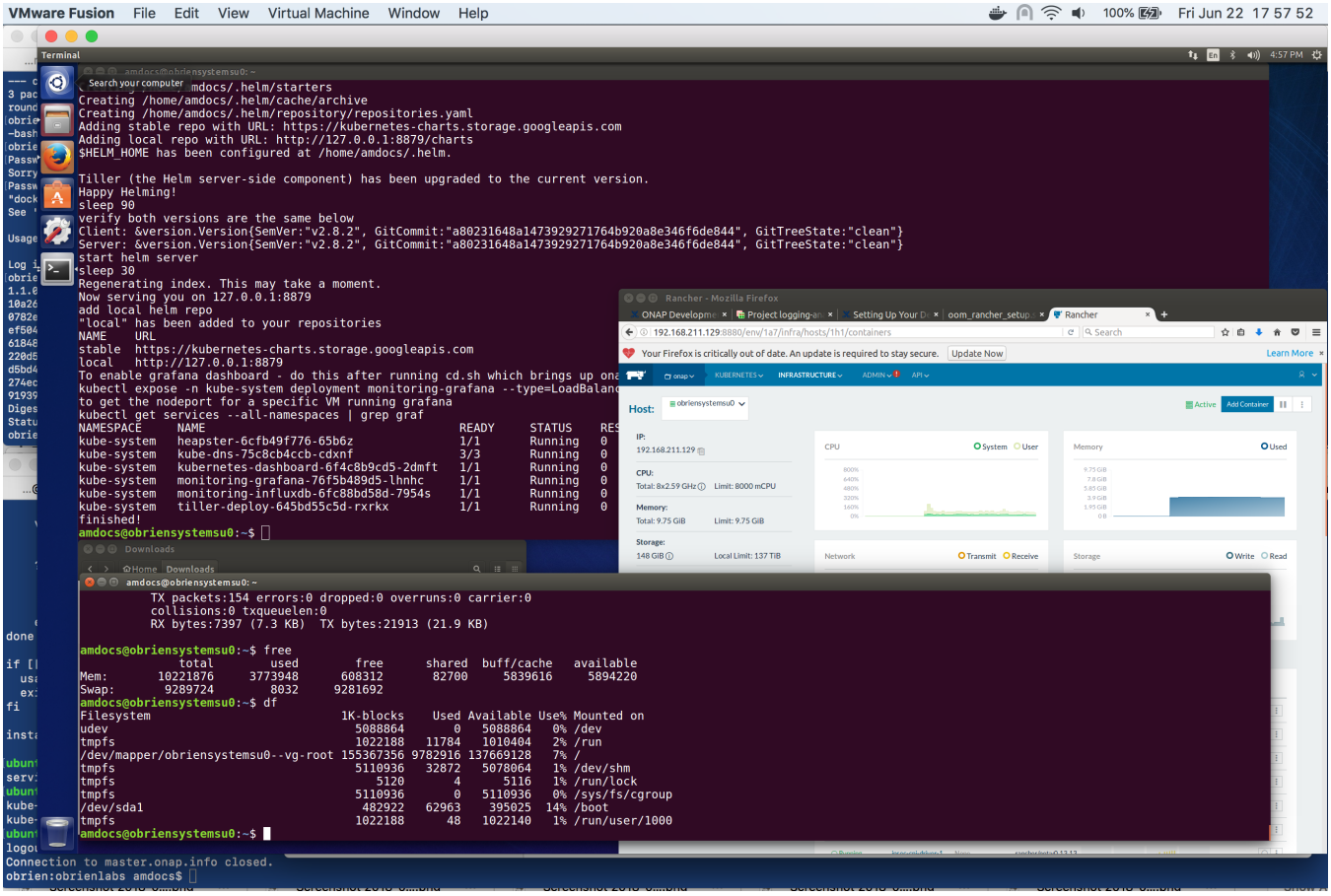
Will test nexus.onap.org

```
get clone string from https://gerrit.onap.org/r/#/admin/projects/logging-analytics
sudo wget https://jira.onap.org/secure/attachment/10829/settings.xml
mkdir ~/.m2
cp settings.xml ~/.m2
cd logging-analytics/
mvn clean install -U
[INFO] Finished at: 2018-06-22T16:11:47-05:00
```

Helm/Rancher/Kubernetes/Docker stack installation

Either install all the current versions manually or use the script in https://git.onap.org/logging-analytics/tree/deploy/rancher/oom_rancher_setup.sh

```
# fully automated (override 16.14 to 1.6.18)
sudo logging-analytics/deploy/rancher/oom_rancher_setup.sh -b master -s 192.168.211.129 -e onap
# or docker only if you kubernetes cluster is in a separate vm
sudo curl https://releases.rancher.com/install-docker/17.03.sh | sh
```



Verify Docker can pull from nexus3

```
ubuntu@ip-10-0-0-144:~$ sudo docker login -u docker -p docker nexus3.onap.org:10001
Login Succeeded
ubuntu@ip-10-0-0-144:~$ sudo docker pull docker.elastic.co/beats/filebeat:5.5.0
5.5.0: Pulling from beats/filebeat
e6e5bfbc38e5: Pull complete
ubuntu@ip-10-0-0-144:~$ sudo docker pull nexus3.onap.org:10001/aaionap/haproxy:1.1.0
1.1.0: Pulling from aaionap/haproxy
10a267c67f42: Downloading [==================================================>     ] 49.07 MB/52.58 MB
```

Install IntelliJ, Eclipse or SpringSource Tool Suite

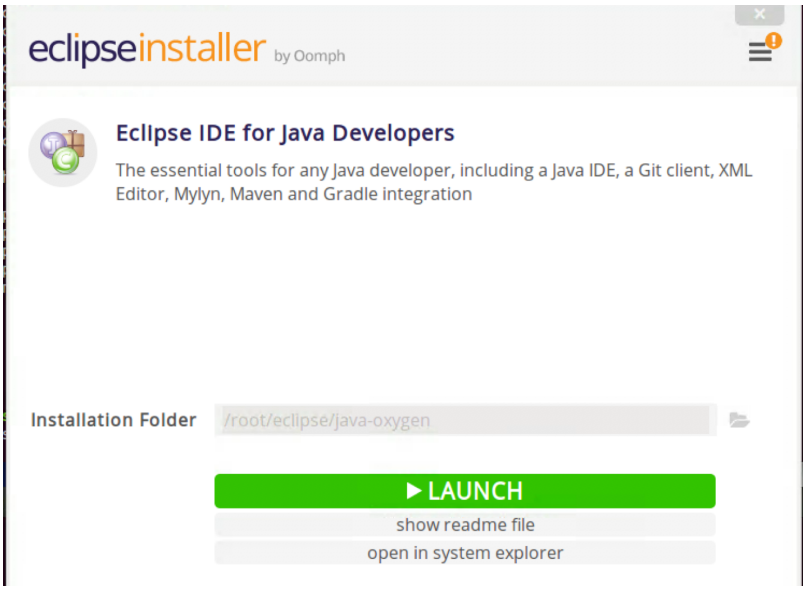
download and run the installer for https://www.eclipse.org/downloads/download.php?file=/oomph/epp/oxygen/R2/eclipse-inst-linux64.tar.gz

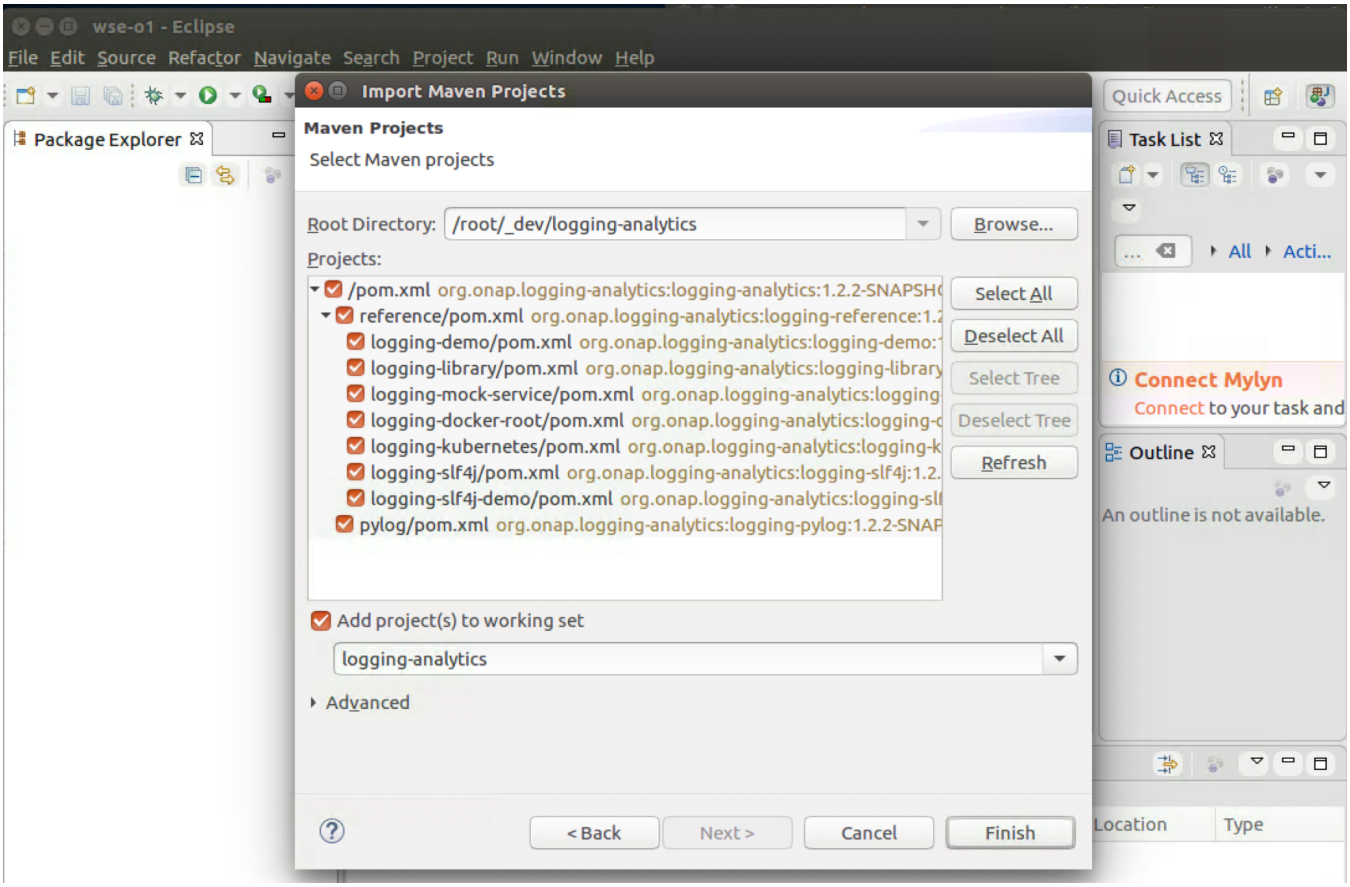
```
# run as root
sudo su -
tar -xvf eclipse-inst-linux64.tar.gz
cd eclipse-installer
./eclipse-inst
```

up the allocation of

Xmx4096m in eclipse.ini

start eclipse with sudo /root/eclipse/jee-oxygen/eclipse/eclipse &

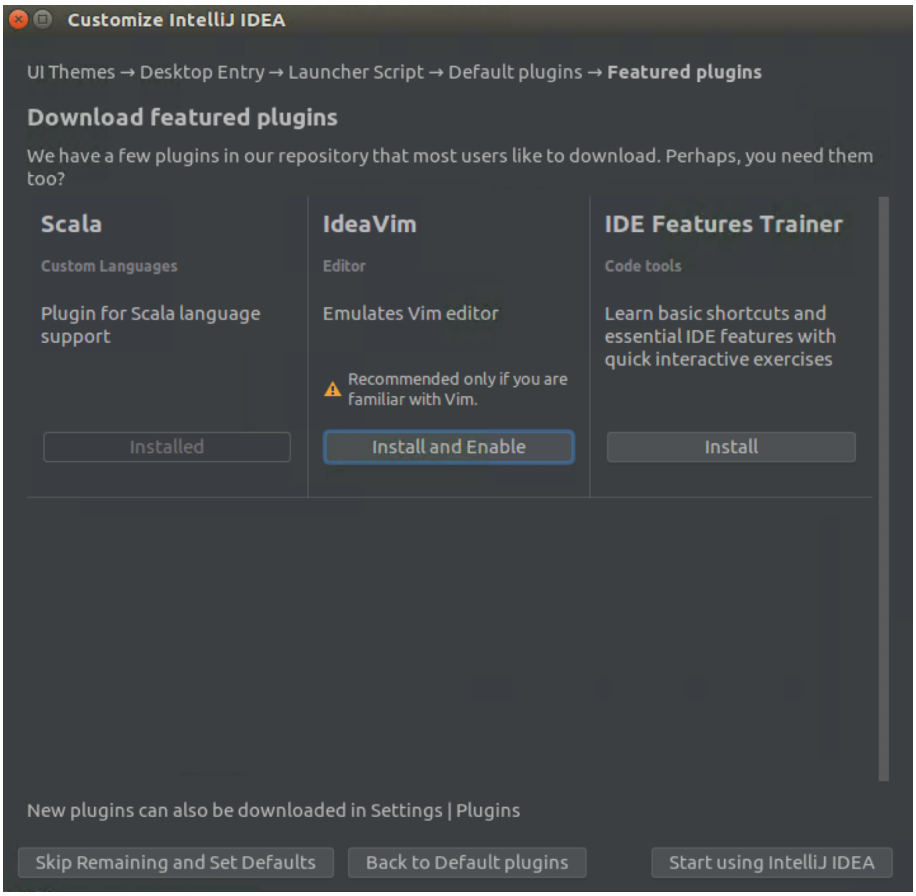




IntelliJ

download from https://www.jetbrains.com/idea/download/index.html#section=linux

```
tar -xvf ideaIC-2018.2.3.tar.gz
cd idea-IC-182.4323.46/
cat Install-Linux-tar.txt
cd bin
./idea.sh
```



Cloning All of ONAP

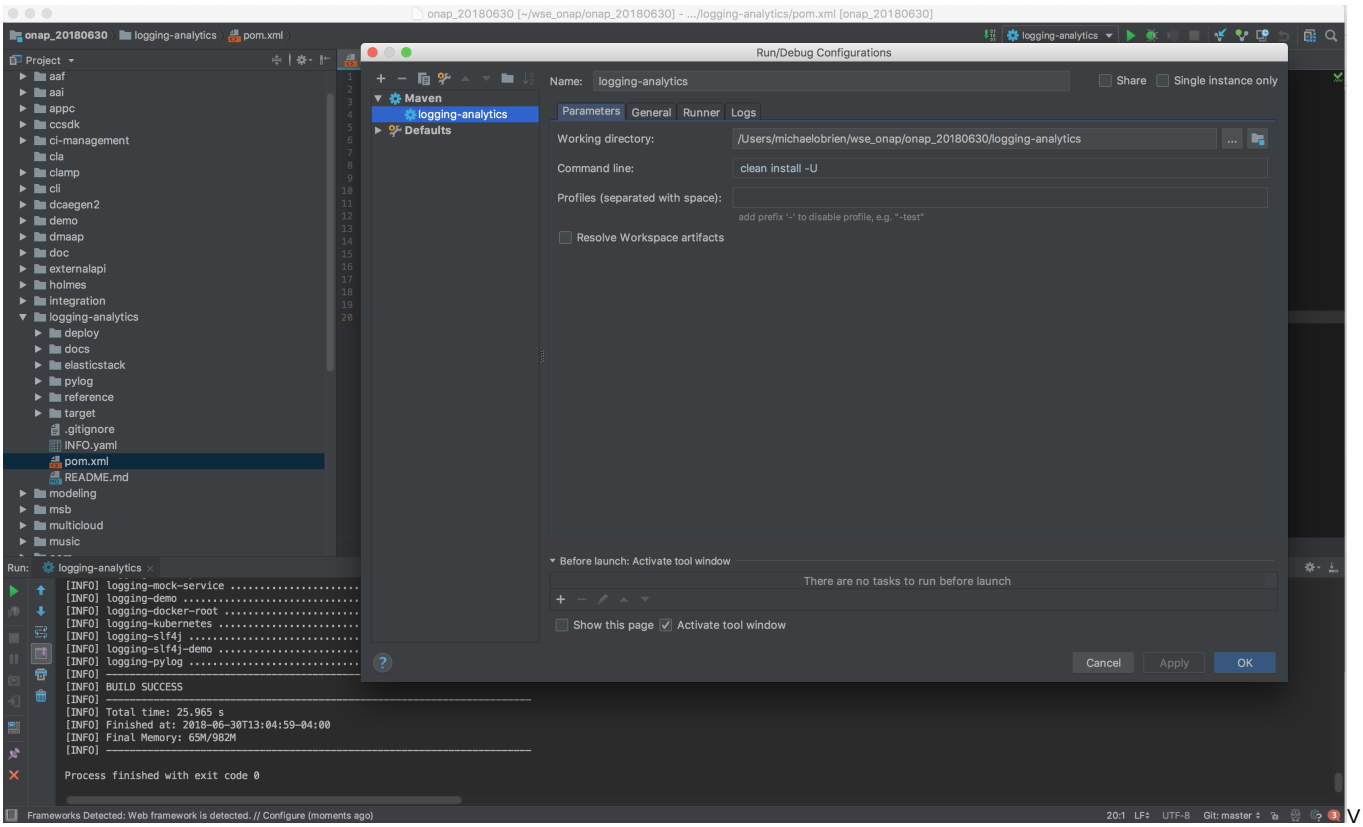
optional

Use the script on https://github.com/obrienlabs/onap-root/blob/master/git_recurse.sh

IntelliJ

Add git config, add jdk reference, add maven run target

Run maven build for logging-analytics in InteliJ



Developer Testing

Sonar

Having trouble getting the "run-sonar" command to run sonar - it skips the modules in the pom.

Looking at verifying sonar locally using eclemma

Kubernetes DevOps

https://kubernetes.io/docs/reference/generated/kubectl/kubectl-commands

Use a different kubectl context

```
kubectl --kubeconfig ~/.kube/config2  get pods --all-namespaces
```

Adding user kubectl accounts

Normally you don't use the admin account directly when working with particular namespaces. Details on how to create a user token and the appropriate role bindings.

```
# TODO: create a script out of this
# create a namespace
# https://kubernetes.io/docs/tasks/administer-cluster/namespaces-walkthrough/#create-new-namespaces
vi mobrien_namespace.yaml
{
  "kind": "Namespace",
```

```
  "apiVersion": "v1",
  "metadata": {
    "name": "mobrien",
    "labels": {
      "name": "mobrien"
    }
  }
}
kubectl create -f mobrien_namespace.yaml
# or
kubectl --kubeconfig ~/.kube/admin create ns mobrien
namespace "mobrien" created

# service account
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create sa mobrien
serviceaccount "mobrien" created

# rolebinding mobrien
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create rolebinding mobrien-mobrien-privilegedpsp --
clusterrole=privilegedpsp --serviceaccount=mobrien:mobrien
rolebinding "mobrien-mobrien-privilegedpsp" created

# rolebinding default
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create rolebinding mobrien-default-privilegedpsp --
clusterrole=privilegedpsp --serviceaccount=mobrien:default
rolebinding "mobrien-default-privilegedpsp" created

# rolebinding admin
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create rolebinding mobrien-mobrien-admin --
clusterrole=admin --serviceaccount=mobrien:mobrien
rolebinding "mobrien-mobrien-admin" created

# rolebinding persistent-volume-role
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create clusterrolebinding mobrien-mobrien-persistent-
volume-role --clusterrole=persistent-volume-role --serviceaccount=mobrien:mobrien
clusterrolebinding "mobrien-mobrien-persistent-volume-role" created

# rolebinding default-persistent-volume-role
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create clusterrolebinding mobrien-default-persistent-
volume-role --clusterrole=persistent-volume-role --serviceaccount=mobrien:default
clusterrolebinding "mobrien-default-persistent-volume-role" created

# rolebinding helm-pod-list
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create clusterrolebinding mobrien-mobrien-helm-pod-list
--clusterrole=helm-pod-list --serviceaccount=mobrien:mobrien
clusterrolebinding "mobrien-mobrien-helm-pod-list" created

# rolebinding default-helm-pod-list
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien create clusterrolebinding mobrien-default-helm-pod-list
--clusterrole=helm-pod-list --serviceaccount=mobrien:default
clusterrolebinding "mobrien-default-helm-pod-list" created


# get the serviceAccount and extract the token to place into a config yaml
kubectl --kubeconfig ~/.kube/admin --namespace=mobrien get sa
NAME      SECRETS   AGE
default   1         20m
mobrien   1         18m

kubectl --kubeconfig ~/.kube/admin --namespace=mobrien describe serviceaccount mobrien
Name:                mobrien
Namespace:        mobrien
Labels:               <none>
Annotations:        <none>
Image pull secrets:        <none>
Mountable secrets:         mobrien-token-v9z5j
Tokens:                    mobrien-token-v9z5j
TOKEN=$(kubectl --kubeconfig ~/.kube/admin --namespace=mobrien describe secrets "$(kubectl --kubeconfig ~/.kube
/admin --namespace=mobrien describe serviceaccount mobrien | grep -i Tokens | awk '{print $2}')" | grep token:
| awk '{print $2}')
```

```
echo $TOKEN
eyJO....b3VudC


# put this in your ~/.kube/config and edit the namespace
```

see also https://stackoverflow.com/questions/44948483/create-user-in-kubernetes-for-kubectl

Helm on Rancher unauthorized

Cycle the RBAC to Github off/on if you get any security issue running helm commands

```
ubuntu@a-ons1-master:~$ watch kubectl get pods --all-namespaces
ubuntu@a-ons1-master:~$ sudo helm list
Error: Unauthorized
ubuntu@a-ons1-master:~$ sudo helm list
NAME                REVISION        UPDATED                         STATUS          CHART               NAMESPACE
onap                4               Thu Mar  7 13:03:29 2019        DEPLOYED        onap-3.0.0          onap
onap-dmaap          1               Thu Mar  7 13:03:32 2019        DEPLOYED        dmaap-3.0.0         onap
```

Working with JSONPath

https://kubernetes.io/docs/reference/kubectl/jsonpath/

Fortunately we can script most of what we can query from the state of our kubernetes deployment using JSONPath. We can then use jq to do additional processing to get values as an option.

Get the full json output to design JSONPath queries

LOG-914 - Getting issue details... STATUS

```
kubectl get pods --all-namespaces -o json
# we are looking to shutdown a rogue pod that is not responding to the normal deletion commands - but it
contains a generated name
onap          onap-portal-portal-sdk-7c49c97955-smbws   0/2       Terminating   0          2d
ubuntu@onap-oom-obrien-rancher-e0:~$ kubectl get pods --field-selector=status.phase!=Running --all-namespaces
NAMESPACE   NAME                                     READY     STATUS        RESTARTS   AGE
onap        onap-portal-portal-sdk-7c49c97955-smbws   0/2       Terminating   0          2d
#"spec": {"containers": [{},"name": "portal-sdk",
kubectl get pods --namespace onap -o jsonpath="{.items[*].spec.containers[0].name}"
portal-sdk
# so combining the two queries
kubectl get pods --field-selector=status.phase!=Running --all-namespaces -o jsonpath="{.items[*].metadata.name}"
onap-portal-portal-sdk-7c49c97955-smbws
# and wrapping it with a delete command

export POD_NAME=$(kubectl get pods --field-selector=status.phase!=Running --all-namespaces -o jsonpath="{.items
[*].metadata.name}")
echo "$POD_NAME"
kubectl delete pods $POD_NAME --grace-period=0 --force -n onap

ubuntu@onap-oom-obrien-rancher-e0:~$ sudo ./term.sh
onap-portal-portal-sdk-7c49c97955-smbws
warning: Immediate deletion does not wait for confirmation that the running resource has been terminated. The
resource may continue to run on the cluster indefinitely.
pod "onap-portal-portal-sdk-7c49c97955-smbws" force deleted
```

Installing a pod

```
# automatically via cd.sh in LOG-326
# get the dev.yaml and set any pods you want up to true as well as fill out the openstack parameters
sudo wget https://git.onap.org/oom/plain/kubernetes/onap/resources/environments/dev.yaml
sudo cp logging-analytics/deploy/cd.sh .

# or
# manually
cd oom/kubernetes/
sudo make clean
sudo make all
sudo make onap
sudo helm install local/onap -n onap --namespace onap -f onap/resources/environments/disable-allcharts.yaml --
set log.enabled=true
# adding another (so)
sudo helm upgrade local/onap --namespace onap -f onap/resources/environments/disable-allcharts.yaml --set so.
enabled=true --set log.enabled=true
```

Get the nodeport of a particular service

```
# human readable list
kubectl get services --all-namespaces | grep robot
# machine readable number - via JSONPath
kubectl get --namespace onap -o jsonpath="{.spec.ports[0].nodePort}" services robot)
```

Test DNS URLS in the kubernetes ONAP namespace

```
test urls in the robot container
wget http://pomba-sdcctxbuilder.onap:9530/sdccontextbuilder/health
wget http://pomba-networkdiscoveryctxbuilder.onap:9530/ndcontextbuilder/health
```

Override global policy

```
# override global docker pull policy for a single component
# set in oom/kubernetes/onap/values.yaml
# use global.pullPolicy in your -f yaml or a --set
```

Exec into a container of a pod with multiple containers

```
# for
onap          logdemonode-logdemonode-5c8bffb468-dhzcc   2/2       Running   0          1m
# use
kubectl exec -it logdemonode-logdemonode-5c8bffb468-dhzcc -n onap -c logdemonode bash
```

Push a file into a Kubernetes container/pod

```
opy files from the vm to the robot container - to avoid buiding a new robot image
root@ubuntu:~/_dev/62405_logback/testsuite/robot/testsuites# kubectl cp health-check.robot onap-robot-
7c84f54558-f8mw7: -n onap
root@ubuntu:~/_dev/62405_logback/testsuite/robot/testsuites# kubectl cp ../resources/pomba_interface.robot onap-
robot-7c84f54558-f8mw7: -n onap

move the files in the robot container to the proper dir
root@onap-robot-7c84f54558-f8mw7:/# cp health-check.robot /var/opt/OpenECOMP_ETE/robot/testsuites/
root@onap-robot-7c84f54558-f8mw7:/# ls
bin  boot  dev  etc  health-check.robot  home  lib  lib64  media  mnt  opt  pomba_interface.robot  proc  root
run  sbin  share  srv  sys  tmp  usr  var
root@onap-robot-7c84f54558-f8mw7:/# cp pomba_interface.robot /var/opt/OpenECOMP_ETE/robot/resources/

retest health
root@ubuntu:~/_dev/62405_logback/oom/kubernetes/robot# ./ete-k8s.sh onap health


and directly in the robot container
wget http://pomba-sdcctxbuilder.onap:9530/sdccontextbuilder/health
wget http://pomba-networkdiscoveryctxbuilder.onap:9530/ndcontextbuilder/health
```

Restarting a container

Restarting a pod

If you change configuration like the logback.xml in a pod or would like restart an entire pod like the log and portal pods

```
cd oom/kubernetes
# do a make if anything is modified in your charts
sudo make all
#sudo make onap
ubuntu@ip-172-31-19-23:~/oom/kubernetes$ sudo helm upgrade -i onap local/onap --namespace onap --set log.
enabled=false
# wait and check in another terminal for all containers to terminate
ubuntu@ip-172-31-19-23:~$ kubectl get pods --all-namespaces | grep onap-log
onap          onap-log-elasticsearch-7557486bc4-5mng9          0/1       CrashLoopBackOff   9          29m
onap          onap-log-kibana-fc88b6b79-nt7sd                  1/1       Running            0          35m
onap          onap-log-logstash-c5z4d                          1/1       Terminating        0          4h
onap          onap-log-logstash-ftxfz                          1/1       Terminating        0          4h
onap          onap-log-logstash-gl59m                          1/1       Terminating        0          4h
onap          onap-log-logstash-nxsf8                          1/1       Terminating        0          4h
onap          onap-log-logstash-w8q8m                          1/1       Terminating        0          4h
sudo helm upgrade -i onap local/onap --namespace onap --set portal.enabled=false
sudo vi portal/charts/portal-sdk/resources/config/deliveries/properties/ONAPPORTALSDK/logback.xml
sudo make portal
sudo make onap
ubuntu@ip-172-31-19-23:~$ kubectl get pods --all-namespaces | grep onap-log
sudo helm upgrade -i onap local/onap --namespace onap --set log.enabled=true
sudo helm upgrade -i onap local/onap --namespace onap --set portal.enabled=true
ubuntu@ip-172-31-19-23:~$ kubectl get pods --all-namespaces | grep onap-log
onap          onap-log-elasticsearch-7557486bc4-2jd65          0/1       Init:0/1           0          31s
onap          onap-log-kibana-fc88b6b79-5xqg4                  0/1       Init:0/1           0          31s
onap          onap-log-logstash-5vq82                          0/1       Init:0/1           0          31s
onap          onap-log-logstash-gvr9z                          0/1       Init:0/1           0          31s
onap          onap-log-logstash-qqzq5                          0/1       Init:0/1           0          31s
onap          onap-log-logstash-vbp2x                          0/1       Init:0/1           0          31s
onap          onap-log-logstash-wr9rd                          0/1       Init:0/1           0          31s

ubuntu@ip-172-31-19-23:~$ kubectl get pods --all-namespaces | grep onap-portal
onap          onap-portal-app-8486dc7ff8-nbps7                 0/2       Init:0/1           0          9m
onap          onap-portal-cassandra-8588fbd698-4wthv           1/1       Running            0          9m
onap          onap-portal-db-7d6b95cd94-9x4kf                  0/1       Running            0          9m
onap          onap-portal-db-config-dpqkq                      0/2       Init:0/1           0          9m
onap          onap-portal-sdk-77cd558c98-5255r                 0/2       Init:0/1           0          9m
onap          onap-portal-widget-6469f4bc56-g8s62              0/1       Init:0/1           0          9m
onap          onap-portal-zookeeper-5d8c598c4c-czpnz           1/1       Running            0          9m
```

Kubernetes inter pod communication - using DNS service addresses

Try to use the service name (with or without the namespace) - not the service IP address for inter namespace communication (nodeports or ingress is only required outside the namespace)

For example log-ls:5044 or log-ls.onap:5044

```
# example curl call between AAI and SDC
amdocs@obriensystemsu0:~$ kubectl exec -it -n onap    onap-aai-aai-graphadmin-7bd5fc9bd-l4v4z bash
Defaulting container name to aai-graphadmin.
root@aai-graphadmin:/opt/app/aai-graphadmin# curl http://sdc-fe:8181
<HTML><HEAD><TITLE>Error 404 - Not Found</TITLE><BODY><H2>Error 404 - Not Found.</H2>
</ul><hr><a href="http://eclipse.org/jetty"><img border=0 src="/favicon.ico"/></a> <a href="http://eclipse.
org/jetty">Powered by Jetty:// 9.4.12.v20180830</a><hr/>
```

docker if required

```
sudo apt-get autoremove -y docker-engine
```

Change max-pods from default 110 pod limit

Rancher ships with a 110 pod limit - you can override this on the kubernetes template for 1.10

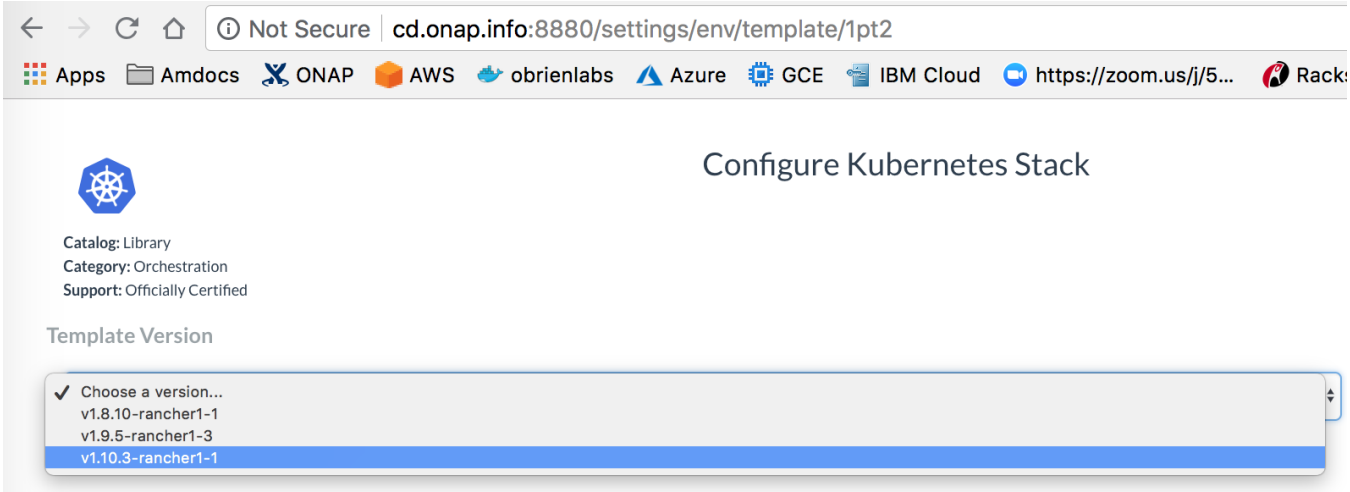
https://lists.onap.org/g/onap-discuss/topic/oom_110_kubernetes_pod/25213556?p=,,,20,0,0,0::recentpostdate%2Fsticky,,,20,2,0,25213556

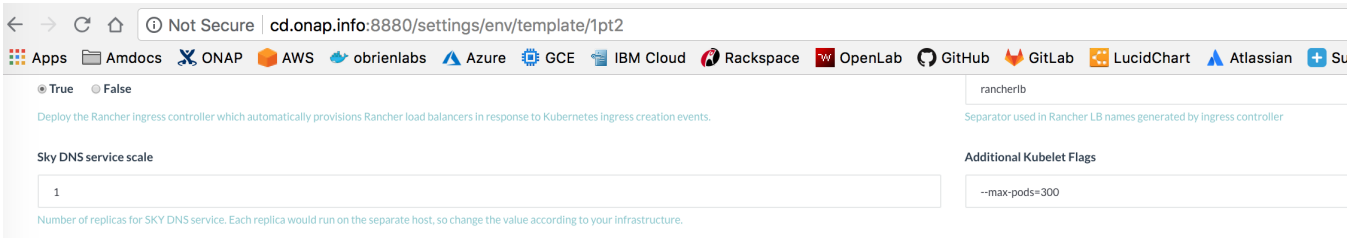
Manual procedure: change the kubernetes template (1pt2) before using it to create an environment (1a7)

add --max-pods=500 to the "Additional Kubelet Flags" box on the v1.10.13 version of the kubernetes template from the "Manage Environments" dropdown on the left of the 8880 rancher console.

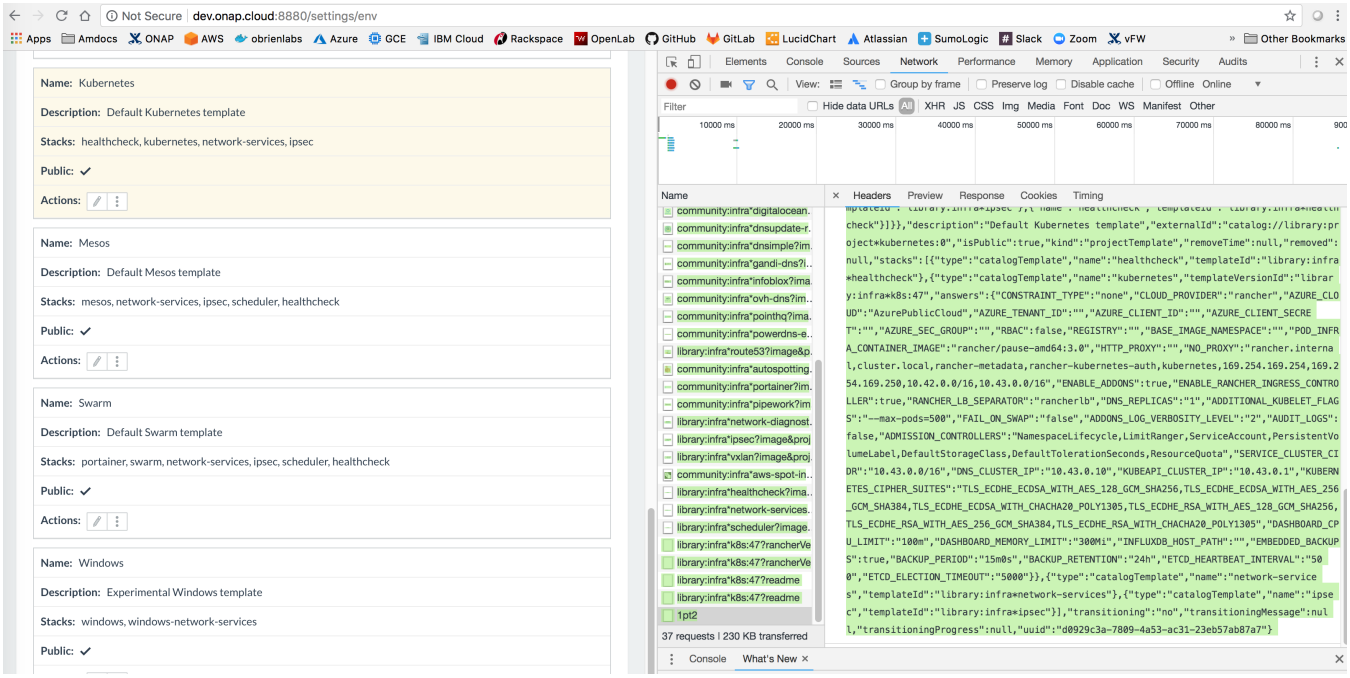
? Unknown Attachment

OOM-1137 - Getting issue details... STATUS





Or capture the output of the REST PUT call - and add around line 111 of the script https://git.onap.org/logging-analytics/tree/deploy/rancher/oom_rancher_setup.sh#n111



Automated - ongoing

```
ubuntu@ip-172-31-27-183:~$ curl 'http://127.0.0.1:8880/v2-beta/projecttemplates/1pt2' --data-binary '{"id":"
1pt2","type":"projectTemplate","baseType":"projectTemplate","name":"Kubernetes","state":"active","accountId":
null,"created":"2018-09-05T14:12:24Z","createdTS":1536156744000,"data":{"fields":{"stacks":[{"name":"
healthcheck","templateId":"library:infra*healthcheck"},{"answers":{"CONSTRAINT_TYPE":"none","CLOUD_PROVIDER":"
rancher","AZURE_CLOUD":"AzurePublicCloud","AZURE_TENANT_ID":"","AZURE_CLIENT_ID":"","AZURE_CLIENT_SECRET":"","
AZURE_SEC_GROUP":"","RBAC":false,"REGISTRY":"","BASE_IMAGE_NAMESPACE":"","POD_INFRA_CONTAINER_IMAGE":"rancher
/pause-amd64:3.0","HTTP_PROXY":"","NO_PROXY":"rancher.internal,cluster.local,rancher-metadata,rancher-
kubernetes-auth,kubernetes,169.254.169.254,169.254.169.250,10.42.0.0/16,10.43.0.0/16","ENABLE_ADDONS":true,"
ENABLE_RANCHER_INGRESS_CONTROLLER":true,"RANCHER_LB_SEPARATOR":"rancherlb","DNS_REPLICAS":"1","
ADDITIONAL_KUBELET_FLAGS":"","FAIL_ON_SWAP":"false","ADDONS_LOG_VERBOSITY_LEVEL":"2","AUDIT_LOGS":false,"
ADMISSION_CONTROLLERS":"NamespaceLifecycle,LimitRanger,ServiceAccount,PersistentVolumeLabel,DefaultStorageClass,
DefaultTolerationSeconds,ResourceQuota","SERVICE_CLUSTER_CIDR":"10.43.0.0/16","DNS_CLUSTER_IP":"10.43.0.10","
KUBEAPI_CLUSTER_IP":"10.43.0.1","KUBERNETES_CIPHER_SUITES":"TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256,
TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384,TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305,
TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256,TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384,
TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305","DASHBOARD_CPU_LIMIT":"100m","DASHBOARD_MEMORY_LIMIT":"300Mi","
INFLUXDB_HOST_PATH":"","EMBEDDED_BACKUPS":true,"BACKUP_PERIOD":"15m0s","BACKUP_RETENTION":"24h","
ETCD_HEARTBEAT_INTERVAL":"500","ETCD_ELECTION_TIMEOUT":"5000"},"name":"kubernetes","templateVersionId":"library:
infra*k8s:47"},{"name":"network-services","templateId":"library:infra*network-services"},{"name":"ipsec","
templateId":"library:infra*ipsec"}]}},"description":"Default Kubernetes template","externalId":"
catalog://library:project*kubernetes:0","isPublic":true,"kind":"projectTemplate","removeTime":null,"removed":
null,"stacks":[{"type":"catalogTemplate","name":"healthcheck","templateId":"library:infra*healthcheck"},
{"type":"catalogTemplate","answers":{"CONSTRAINT_TYPE":"none","CLOUD_PROVIDER":"rancher","AZURE_CLOUD":"
AzurePublicCloud","AZURE_TENANT_ID":"","AZURE_CLIENT_ID":"","AZURE_CLIENT_SECRET":"","AZURE_SEC_GROUP":"","
RBAC":false,"REGISTRY":"","BASE_IMAGE_NAMESPACE":"","POD_INFRA_CONTAINER_IMAGE":"rancher/pause-amd64:3.0","
HTTP_PROXY":"","NO_PROXY":"rancher.internal,cluster.local,rancher-metadata,rancher-kubernetes-auth,kubernetes,
169.254.169.254,169.254.169.250,10.42.0.0/16,10.43.0.0/16","ENABLE_ADDONS":true,"
ENABLE_RANCHER_INGRESS_CONTROLLER":true,"RANCHER_LB_SEPARATOR":"rancherlb","DNS_REPLICAS":"1","
ADDITIONAL_KUBELET_FLAGS":"--max-pods=600","FAIL_ON_SWAP":"false","ADDONS_LOG_VERBOSITY_LEVEL":"2","AUDIT_LOGS":
false,"ADMISSION_CONTROLLERS":"NamespaceLifecycle,LimitRanger,ServiceAccount,PersistentVolumeLabel,
DefaultStorageClass,DefaultTolerationSeconds,ResourceQuota","SERVICE_CLUSTER_CIDR":"10.43.0.0/16","
DNS_CLUSTER_IP":"10.43.0.10","KUBEAPI_CLUSTER_IP":"10.43.0.1","KUBERNETES_CIPHER_SUITES":"
TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256,TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384,
TLS_ECDHE_ECDSA_WITH_CHACHA20_POLY1305,TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256,
TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384,TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305","DASHBOARD_CPU_LIMIT":"100m","
DASHBOARD_MEMORY_LIMIT":"300Mi","INFLUXDB_HOST_PATH":"","EMBEDDED_BACKUPS":true,"BACKUP_PERIOD":"15m0s","
BACKUP_RETENTION":"24h","ETCD_HEARTBEAT_INTERVAL":"500","ETCD_ELECTION_TIMEOUT":"5000"},"name":"kubernetes","
templateVersionId":"library:infra*k8s:47"},{"type":"catalogTemplate","name":"network-services","templateId":"
library:infra*network-services"},{"type":"catalogTemplate","name":"ipsec","templateId":"library:infra*ipsec"}],"
transitioning":"no","transitioningMessage":null,"transitioningProgress":null,"uuid":null}' --compressed

{"id":"9107b9ce-0b61-4c22-bc52-f147babb0ba7","type":"error","links":{},"actions":{},"status":405,"code":"Method
not allowed","message":"Method not allowed","detail":null,"baseType":"error"}
```

Results

Single AWS 244G 32vCore VM with 110 pod limit workaround - 164 pods (including both secondary DCAEGEN2 orchestrations at 30 and 55 min) - most of the remaining 8 container failures are known/in-progress issues.

```
ubuntu@ip-172-31-20-218:~$ free
              total        used        free      shared  buff/cache   available
Mem:      251754696   111586672    45000724      193628    95167300   137158588
ubuntu@ip-172-31-20-218:~$ kubectl get pods --all-namespaces | grep onap | wc -l
164
ubuntu@ip-172-31-20-218:~$ kubectl get pods --all-namespaces | grep onap | grep -E '1/1|2/2' | wc -l
155
ubuntu@ip-172-31-20-218:~$ kubectl get pods --all-namespaces | grep -E '0/|1/2' | wc -l
8
ubuntu@ip-172-31-20-218:~$ kubectl get pods --all-namespaces | grep -E '0/|1/2'
onap          dep-dcae-ves-collector-59d4ff58f7-94rpq                 1/2       Running
0          4m
onap          onap-aai-champ-68ff644d85-rv7tr                         0/1       Running
0          59m
onap          onap-aai-gizmo-856f86d664-q5pvg                         1/2       CrashLoopBackOff
10         59m
onap          onap-oof-85864d6586-zcsz5                               0/1       ImagePullBackOff
0          59m
onap          onap-pomba-kibana-d76b6dd4c-sfbl6                       0/1       Init:CrashLoopBackOff
8          59m
onap          onap-pomba-networkdiscovery-85d76975b7-mfk92            1/2       CrashLoopBackOff
11         59m
onap          onap-pomba-networkdiscoveryctxbuilder-c89786dfc-qnlx9   1/2       CrashLoopBackOff
10         59m
onap          onap-vid-84c88db589-8cpgr                               1/2       CrashLoopBackOff
9          59m
```

Operations

Get failed/pending containers

```
kubectl get pods --all-namespaces | grep -E "0/|1/2" | wc -l
```

```
kubectl cluster-info
# get pods/containers
kubectl get pods --all-namespaces
# get port mappings
kubectl get services --all-namespaces -o wide
NAMESPACE     NAME                                    READY     STATUS    RESTARTS   AGE
default       nginx-1389790254-lgkz3                  1/1       Running   1          5d
kube-system   heapster-4285517626-x080g               1/1       Running   1          6d
kube-system   kube-dns-638003847-tst97                3/3       Running   3          6d
kube-system   kubernetes-dashboard-716739405-fnn3g    1/1       Running   2          6d
kube-system   monitoring-grafana-2360823841-hr824     1/1       Running   1          6d
kube-system   monitoring-influxdb-2323019309-k7h1t    1/1       Running   1          6d
kube-system   tiller-deploy-737598192-x9wh5           1/1       Running   1          6d
# ssh into a pod
kubectl -n default exec -it  nginx-1389790254-lgkz3 /bin/bash
# get logs
kubectl -n default logs -f nginx-1389790254-lgkz3
```

Exec

kubectl -n onap-aai exec -it aai-resources-1039856271-d9bvq bash

Bounce/Fix a failed container

Periodically one of the higher containers in a dependency tree will not get restarted in time to pick up running child containers - usually this is the kibana container

Fix this or "any" container by deleting the container in question and kubernetes will bring another one up.

```
root@a-onap-auto-20180412-ref:~# kubectl get services --all-namespaces | grep log
onap          dev-vfc-catalog              ClusterIP   10.43.210.8     <none>        8806
/TCP                                                                    5d
onap          log-es                       NodePort    10.43.77.87     <none>        9200:30254
/TCP                                                                    5d
onap          log-es-tcp                   ClusterIP   10.43.159.93    <none>        9300
/TCP                                                                    5d
onap          log-kibana                   NodePort    10.43.41.102    <none>        5601:30253
/TCP                                                                    5d
onap          log-ls                       NodePort    10.43.180.165   <none>        5044:30255
/TCP                                                                    5d
onap          log-ls-http                  ClusterIP   10.43.13.180    <none>        9600
/TCP                                                                    5d
root@a-onap-auto-20180412-ref:~# kubectl get pods --all-namespaces | grep log
onap          dev-log-elasticsearch-66cdc4f855-wmpkz         1/1       Running                 0          5d
onap          dev-log-kibana-5b6f86bcb4-drpzq                0/1       Running                 1076       5d
onap          dev-log-logstash-6d9fdccdb6-ngq2f              1/1       Running                 0          5d
onap          dev-vfc-catalog-7d89bc8b9d-vxk74               2/2       Running                 0          5d
root@a-onap-auto-20180412-ref:~# kubectl delete pod dev-log-kibana-5b6f86bcb4-drpzq -n onap
pod "dev-log-kibana-5b6f86bcb4-drpzq" deleted
root@a-onap-auto-20180412-ref:~# kubectl get pods --all-namespaces | grep log
onap          dev-log-elasticsearch-66cdc4f855-wmpkz         1/1       Running                 0          5d
onap          dev-log-kibana-5b6f86bcb4-drpzq                0/1       Terminating             1076       5d
onap          dev-log-kibana-5b6f86bcb4-gpn2m                0/1       Pending                 0          12s
onap          dev-log-logstash-6d9fdccdb6-ngq2f              1/1       Running                 0          5d
onap          dev-vfc-catalog-7d89bc8b9d-vxk74               2/2       Running                 0          5d
```

Remove containers stuck in terminating

a helm namespace delete or a kubectl delete or a helm purge may not remove everything based on hanging PVs - use

```
#after a kubectl delete namespace onap
sudo helm delete --purge onap


melliott [12:11 PM]
kubectl delete pods <pod> --grace-period=0 --force -n onap
```

Reboot VMs hosting a Deployment

aka https://lists.onap.org/g/onap-discuss/topic/procedure_to_shut_down_and/29540879?p=,,,20,0,0,0::recentpostdate%2Fsticky,,,20,2,0,29540879

in progress

```
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces | wc -l
234
# master 20190125
ubuntu@a-ld0:~$ kubectl scale --replicas=0 deployments --all -n onap
deployment.extensions/onap-aaf-aaf-cm scaled
deployment.extensions/onap-aaf-aaf-cs scaled
deployment.extensions/onap-aaf-aaf-fs scaled
deployment.extensions/onap-aaf-aaf-gui scaled
deployment.extensions/onap-aaf-aaf-hello scaled
deployment.extensions/onap-aaf-aaf-locate scaled
deployment.extensions/onap-aaf-aaf-oauth scaled
deployment.extensions/onap-aaf-aaf-service scaled
deployment.extensions/onap-aaf-aaf-sms scaled
deployment.extensions/onap-aai-aai scaled
deployment.extensions/onap-aai-aai-babel scaled
deployment.extensions/onap-aai-aai-champ scaled
deployment.extensions/onap-aai-aai-data-router scaled
deployment.extensions/onap-aai-aai-elasticsearch scaled
deployment.extensions/onap-aai-aai-gizmo scaled
deployment.extensions/onap-aai-aai-graphadmin scaled
deployment.extensions/onap-aai-aai-modelloader scaled
```

```
deployment.extensions/onap-aai-aai-resources scaled
deployment.extensions/onap-aai-aai-search-data scaled
deployment.extensions/onap-aai-aai-sparky-be scaled
deployment.extensions/onap-aai-aai-spike scaled
deployment.extensions/onap-aai-aai-traversal scaled
deployment.extensions/onap-appc-appc-ansible-server scaled
deployment.extensions/onap-appc-appc-cdt scaled
deployment.extensions/onap-appc-appc-dgbuilder scaled
deployment.extensions/onap-clamp-clamp scaled
deployment.extensions/onap-clamp-clamp-dash-es scaled
deployment.extensions/onap-clamp-clamp-dash-kibana scaled
deployment.extensions/onap-clamp-clamp-dash-logstash scaled
deployment.extensions/onap-clamp-clampdb scaled
deployment.extensions/onap-cli-cli scaled
deployment.extensions/onap-consul-consul scaled
deployment.extensions/onap-contrib-netbox-app scaled
deployment.extensions/onap-contrib-netbox-nginx scaled
deployment.extensions/onap-contrib-netbox-postgres scaled
deployment.extensions/onap-dcaegen2-dcae-bootstrap scaled
deployment.extensions/onap-dcaegen2-dcae-cloudify-manager scaled
deployment.extensions/onap-dcaegen2-dcae-healthcheck scaled
deployment.extensions/onap-dcaegen2-dcae-pgpool scaled
deployment.extensions/onap-dmaap-dbc-pgpool scaled
deployment.extensions/onap-dmaap-dmaap-bus-controller scaled
deployment.extensions/onap-dmaap-dmaap-dr-db scaled
deployment.extensions/onap-dmaap-dmaap-dr-node scaled
deployment.extensions/onap-dmaap-dmaap-dr-prov scaled
deployment.extensions/onap-esr-esr-gui scaled
deployment.extensions/onap-esr-esr-server scaled
deployment.extensions/onap-log-log-elasticsearch scaled
deployment.extensions/onap-log-log-kibana scaled
deployment.extensions/onap-log-log-logstash scaled
deployment.extensions/onap-msb-kube2msb scaled
deployment.extensions/onap-msb-msb-consul scaled
deployment.extensions/onap-msb-msb-discovery scaled
deployment.extensions/onap-msb-msb-eag scaled
deployment.extensions/onap-msb-msb-iag scaled
deployment.extensions/onap-multicloud-multicloud scaled
deployment.extensions/onap-multicloud-multicloud-azure scaled
deployment.extensions/onap-multicloud-multicloud-ocata scaled
deployment.extensions/onap-multicloud-multicloud-pike scaled
deployment.extensions/onap-multicloud-multicloud-vio scaled
deployment.extensions/onap-multicloud-multicloud-windriver scaled
deployment.extensions/onap-oof-music-tomcat scaled
deployment.extensions/onap-oof-oof scaled
deployment.extensions/onap-oof-oof-cmso-service scaled
deployment.extensions/onap-oof-oof-has-api scaled
deployment.extensions/onap-oof-oof-has-controller scaled
deployment.extensions/onap-oof-oof-has-data scaled
deployment.extensions/onap-oof-oof-has-reservation scaled
deployment.extensions/onap-oof-oof-has-solver scaled
deployment.extensions/onap-policy-brmsgw scaled
deployment.extensions/onap-policy-nexus scaled
deployment.extensions/onap-policy-pap scaled
deployment.extensions/onap-policy-policy-distribution scaled
deployment.extensions/onap-policy-policydb scaled
deployment.extensions/onap-pomba-pomba-aaictxbuilder scaled
deployment.extensions/onap-pomba-pomba-contextaggregator scaled
deployment.extensions/onap-pomba-pomba-data-router scaled
deployment.extensions/onap-pomba-pomba-elasticsearch scaled
deployment.extensions/onap-pomba-pomba-kibana scaled
deployment.extensions/onap-pomba-pomba-networkdiscovery scaled
deployment.extensions/onap-pomba-pomba-networkdiscoveryctxbuilder scaled
deployment.extensions/onap-pomba-pomba-sdcctxbuilder scaled
deployment.extensions/onap-pomba-pomba-sdncctxbuilder scaled
deployment.extensions/onap-pomba-pomba-search-data scaled
deployment.extensions/onap-pomba-pomba-servicedecomposition scaled
deployment.extensions/onap-pomba-pomba-validation-service scaled
deployment.extensions/onap-portal-portal-app scaled
deployment.extensions/onap-portal-portal-cassandra scaled
deployment.extensions/onap-portal-portal-db scaled
```

```
deployment.extensions/onap-portal-portal-sdk scaled
deployment.extensions/onap-portal-portal-widget scaled
deployment.extensions/onap-portal-portal-zookeeper scaled
deployment.extensions/onap-robot-robot scaled
deployment.extensions/onap-sdc-sdc-be scaled
deployment.extensions/onap-sdc-sdc-cs scaled
deployment.extensions/onap-sdc-sdc-dcae-be scaled
deployment.extensions/onap-sdc-sdc-dcae-dt scaled
deployment.extensions/onap-sdc-sdc-dcae-fe scaled
deployment.extensions/onap-sdc-sdc-dcae-tosca-lab scaled
deployment.extensions/onap-sdc-sdc-es scaled
deployment.extensions/onap-sdc-sdc-fe scaled
deployment.extensions/onap-sdc-sdc-kb scaled
deployment.extensions/onap-sdc-sdc-onboarding-be scaled
deployment.extensions/onap-sdc-sdc-wfd-be scaled
deployment.extensions/onap-sdc-sdc-wfd-fe scaled
deployment.extensions/onap-sdnc-controller-blueprints scaled
deployment.extensions/onap-sdnc-network-name-gen scaled
deployment.extensions/onap-sdnc-sdnc-ansible-server scaled
deployment.extensions/onap-sdnc-sdnc-dgbuilder scaled
deployment.extensions/onap-sdnc-sdnc-dmaap-listener scaled
deployment.extensions/onap-sdnc-sdnc-portal scaled
deployment.extensions/onap-sdnc-sdnc-ueb-listener scaled
deployment.extensions/onap-sniro-emulator-sniro-emulator scaled
deployment.extensions/onap-so-so scaled
deployment.extensions/onap-so-so-bpmn-infra scaled
deployment.extensions/onap-so-so-catalog-db-adapter scaled
deployment.extensions/onap-so-so-mariadb scaled
deployment.extensions/onap-so-so-monitoring scaled
deployment.extensions/onap-so-so-openstack-adapter scaled
deployment.extensions/onap-so-so-request-db-adapter scaled
deployment.extensions/onap-so-so-sdc-controller scaled
deployment.extensions/onap-so-so-sdnc-adapter scaled
deployment.extensions/onap-so-so-vfc-adapter scaled
deployment.extensions/onap-uui-uui scaled
deployment.extensions/onap-uui-uui-server scaled
deployment.extensions/onap-vfc-vfc-catalog scaled
deployment.extensions/onap-vfc-vfc-db scaled
deployment.extensions/onap-vfc-vfc-ems-driver scaled
deployment.extensions/onap-vfc-vfc-generic-vnfm-driver scaled
deployment.extensions/onap-vfc-vfc-huawei-vnfm-driver scaled
deployment.extensions/onap-vfc-vfc-juju-vnfm-driver scaled
deployment.extensions/onap-vfc-vfc-multivim-proxy scaled
deployment.extensions/onap-vfc-vfc-nokia-v2vnfm-driver scaled
deployment.extensions/onap-vfc-vfc-nokia-vnfm-driver scaled
deployment.extensions/onap-vfc-vfc-nslcm scaled
deployment.extensions/onap-vfc-vfc-resmgr scaled
deployment.extensions/onap-vfc-vfc-vnflcm scaled
deployment.extensions/onap-vfc-vfc-vnfmgr scaled
deployment.extensions/onap-vfc-vfc-vnfres scaled
deployment.extensions/onap-vfc-vfc-workflow scaled
deployment.extensions/onap-vfc-vfc-workflow-engine scaled
deployment.extensions/onap-vfc-vfc-zte-sdnc-driver scaled
deployment.extensions/onap-vfc-vfc-zte-vnfm-driver scaled
deployment.extensions/onap-vid-vid scaled
deployment.extensions/onap-vnfsdk-vnfsdk scaled
deployment.extensions/onap-vnfsdk-vnfsdk-pgpool scaled
deployment.extensions/onap-vvp-vvp scaled
deployment.extensions/onap-vvp-vvp-ci-uwsgi scaled
deployment.extensions/onap-vvp-vvp-cms-uwsgi scaled
deployment.extensions/onap-vvp-vvp-em-uwsgi scaled
deployment.extensions/onap-vvp-vvp-ext-haproxy scaled
deployment.extensions/onap-vvp-vvp-gitlab scaled
deployment.extensions/onap-vvp-vvp-imagescanner scaled
deployment.extensions/onap-vvp-vvp-int-haproxy scaled
deployment.extensions/onap-vvp-vvp-jenkins scaled
deployment.extensions/onap-vvp-vvp-postgres scaled
deployment.extensions/onap-vvp-vvp-redis scaled
ubuntu@a-ld0:~$ kubectl scale --replicas=0 statefulsets --all -n onap
statefulset.apps/onap-aaf-aaf-sms-quorumclient scaled
statefulset.apps/onap-aaf-aaf-sms-vault scaled
```

```
statefulset.apps/onap-aai-aai-cassandra scaled
statefulset.apps/onap-appc-appc scaled
statefulset.apps/onap-appc-appc-db scaled
statefulset.apps/onap-consul-consul-server scaled
statefulset.apps/onap-dcaegen2-dcae-db scaled
statefulset.apps/onap-dcaegen2-dcae-redis scaled
statefulset.apps/onap-dmaap-dbc-pg scaled
statefulset.apps/onap-dmaap-message-router scaled
statefulset.apps/onap-dmaap-message-router-kafka scaled
statefulset.apps/onap-dmaap-message-router-zookeeper scaled
statefulset.apps/onap-oof-cmso-db scaled
statefulset.apps/onap-oof-music-cassandra scaled
statefulset.apps/onap-oof-zookeeper scaled
statefulset.apps/onap-policy-drools scaled
statefulset.apps/onap-policy-pdp scaled
statefulset.apps/onap-policy-policy-apex-pdp scaled
statefulset.apps/onap-sdnc-controller-blueprints-db scaled
statefulset.apps/onap-sdnc-nengdb scaled
statefulset.apps/onap-sdnc-sdnc scaled
statefulset.apps/onap-sdnc-sdnc-db scaled
statefulset.apps/onap-vid-vid-mariadb-galera scaled
statefulset.apps/onap-vnfsdk-vnfsdk-postgres scaled
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces | grep Terminating | wc -l
179
# 4 min later
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces | grep Terminating | wc -l
118
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces |  wc -l
135
# completed/failed jobs are left
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces |  wc -l
27
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces | grep Terminating | wc -l
0
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces
NAMESPACE     NAME                                              READY     STATUS       RESTARTS   AGE
kube-system   heapster-7b48b696fc-99cd6                         1/1       Running      0          2d
kube-system   kube-dns-6655f78c68-k4dh4                         3/3       Running      0          2d
kube-system   kubernetes-dashboard-6f54f7c4b-fhqmf              1/1       Running      0          2d
kube-system   monitoring-grafana-7877679464-cscg4               1/1       Running      0          2d
kube-system   monitoring-influxdb-64664c6cf5-wmw8w              1/1       Running      0          2d
kube-system   tiller-deploy-78db58d887-9qlwh                    1/1       Running      0          2d
onap          onap-aaf-aaf-sms-preload-k7mx6                    0/1       Completed    0          2d
onap          onap-aaf-aaf-sshsm-distcenter-lk5st               0/1       Completed    0          2d
onap          onap-aaf-aaf-sshsm-testca-lg2g6                   0/1       Completed    0          2d
onap          onap-aai-aai-graphadmin-create-db-schema-7qhcr    0/1       Completed    0          2d
onap          onap-aai-aai-traversal-update-query-data-n6dt6    0/1       Init:0/1     289        2d
onap          onap-contrib-netbox-app-provisioning-7mb4f        0/1       Completed    0          2d
onap          onap-contrib-netbox-app-provisioning-wbvpv        0/1       Error        0          2d
onap          onap-oof-music-cassandra-job-config-wvwgv         0/1       Completed    0          2d
onap          onap-oof-oof-has-healthcheck-s44jv                0/1       Completed    0          2d
onap          onap-oof-oof-has-onboard-kcfb6                    0/1       Completed    0          2d
onap          onap-portal-portal-db-config-vt848                0/2       Completed    0          2d
onap          onap-sdc-sdc-be-config-backend-cktdp              0/1       Completed    0          2d
onap          onap-sdc-sdc-cs-config-cassandra-t5lt7            0/1       Completed    0          2d
onap          onap-sdc-sdc-dcae-be-tools-8pkqz                  0/1       Completed    0          2d
onap          onap-sdc-sdc-dcae-be-tools-lrcwk                  0/1       Init:Error   0          2d
onap          onap-sdc-sdc-es-config-elasticsearch-9zrdw        0/1       Completed    0          2d
onap          onap-sdc-sdc-onboarding-be-cassandra-init-8klpv   0/1       Completed    0          2d
onap          onap-sdc-sdc-wfd-be-workflow-init-b4j4v           0/1       Completed    0          2d
onap          onap-vid-vid-galera-config-d4srr                  0/1       Completed    0          2d
onap          onap-vnfsdk-vnfsdk-init-postgres-bm668            0/1       Completed    0          2d
# deployments are still there
# reboot server
ubuntu@a-ld0:~$ sudo helm list
NAME                        REVISION        UPDATED                         STATUS
CHART                       NAMESPACE
onap                        28              Thu Jan 24 18:48:42 2019        DEPLOYED        onap-
3.0.0                  onap
onap-aaf                    23              Thu Jan 24 18:48:45 2019        DEPLOYED        aaf-
3.0.0                   onap
```

```
onap-aai                    21              Thu Jan 24 18:48:51 2019        DEPLOYED        aai-
3.0.0                   onap
onap-appc                   7               Thu Jan 24 18:49:02 2019        DEPLOYED        appc-
3.0.0                  onap
onap-clamp                  6               Thu Jan 24 18:49:06 2019        DEPLOYED        clamp-
3.0.0                 onap
onap-cli                    5               Thu Jan 24 18:49:09 2019        DEPLOYED        cli-
3.0.0                   onap
onap-consul                 27              Thu Jan 24 18:49:11 2019        DEPLOYED        consul-
3.0.0                 onap
onap-contrib                2               Thu Jan 24 18:49:14 2019        DEPLOYED        contrib-
3.0.0               onap
onap-dcaegen2               24              Thu Jan 24 18:49:18 2019        DEPLOYED        dcaegen2-
3.0.0              onap
onap-dmaap                  25              Thu Jan 24 18:49:22 2019        DEPLOYED        dmaap-
3.0.0                 onap
onap-esr                    20              Thu Jan 24 18:49:27 2019        DEPLOYED        esr-
3.0.0                   onap
onap-log                    11              Thu Jan 24 18:49:31 2019        DEPLOYED        log-
3.0.0                   onap
onap-msb                    26              Thu Jan 24 18:49:34 2019        DEPLOYED        msb-
3.0.0                   onap
onap-multicloud             19              Thu Jan 24 18:49:37 2019        DEPLOYED        multicloud-
3.0.0            onap
onap-oof                    18              Thu Jan 24 18:49:44 2019        DEPLOYED        oof-
3.0.0                   onap
onap-policy                 13              Thu Jan 24 18:49:52 2019        DEPLOYED        policy-
3.0.0                 onap
onap-pomba                  4               Thu Jan 24 18:49:56 2019        DEPLOYED        pomba-
3.0.0                  onap
onap-portal                 12              Thu Jan 24 18:50:03 2019        DEPLOYED        portal-
3.0.0                 onap
onap-robot                  22              Thu Jan 24 18:50:08 2019        DEPLOYED        robot-
3.0.0                  onap
onap-sdc                    16              Thu Jan 24 18:50:11 2019        DEPLOYED        sdc-
3.0.0                   onap
onap-sdnc                   15              Thu Jan 24 18:50:17 2019        DEPLOYED        sdnc-
3.0.0                  onap
onap-sniro-emulator         1               Thu Jan 24 18:50:21 2019        DEPLOYED        sniro-emulator-
3.0.0        onap
onap-so                     17              Thu Jan 24 18:50:24 2019        DEPLOYED        so-
3.0.0                    onap
onap-uui                    9               Thu Jan 24 18:50:30 2019        DEPLOYED        uui-
3.0.0                   onap
onap-vfc                    10              Thu Jan 24 18:50:33 2019        DEPLOYED        vfc-
3.0.0                   onap
onap-vid                    14              Thu Jan 24 18:50:38 2019        DEPLOYED        vid-
3.0.0                   onap
onap-vnfsdk                 8               Thu Jan 24 18:50:41 2019        DEPLOYED        vnfsdk-
3.0.0                 onap
onap-vvp                    3               Thu Jan 24 18:50:44 2019        DEPLOYED        vvp-
3.0.0                   onap


sudo reboot now
ubuntu@a-ld0:~$ sudo docker ps
CONTAINER ID        IMAGE                     COMMAND                  CREATED             STATUS
PORTS                              NAMES
f61dc9902248        rancher/agent:v1.2.11     "/run.sh run"            2 days ago          Up 30
seconds                                        rancher-agent
01f40fa3a4ed        rancher/server:v1.6.25    "/usr/bin/entry /u..."   2 days ago          Up 30 seconds
3306/tcp, 0.0.0.0:8880->8080/tcp   rancher_server


# back up
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces
NAMESPACE     NAME                                          READY     STATUS       RESTARTS   AGE
kube-system   heapster-7b48b696fc-99cd6                     0/1       Error        0          2d
kube-system   kube-dns-6655f78c68-k4dh4                     0/3       Error        0          2d
kube-system   kubernetes-dashboard-6f54f7c4b-fhqmf          0/1       Error        0          2d
kube-system   monitoring-grafana-7877679464-cscg4           0/1       Completed    0          2d
```

```
kube-system   monitoring-influxdb-64664c6cf5-wmw8w              0/1       Completed    0          2d
kube-system   tiller-deploy-78db58d887-9qlwh                    1/1       Running      0          2d
onap          onap-aaf-aaf-sms-preload-k7mx6                    0/1       Completed    0          2d
onap          onap-aaf-aaf-sshsm-distcenter-lk5st               0/1       Completed    0          2d
....

# note not all replicas were actually 1 - some were 2,3,7
kubectl scale --replicas=1 deployments --all -n onap
kubectl scale --replicas=1 statefulsets --all -n onap

# 6m
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces | grep -E '0/|1/2|1/3|2/3' | wc -l
199
# 20m
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces | grep -E '0/|1/2|1/3|2/3' | wc -l
180


# 60 min
ubuntu@a-ld0:~$ kubectl get pods --all-namespaces | grep -E '0/|1/2|1/3|2/3' | wc -l
42
```

Remove a Deployment

Cloud Native Deployment#RemoveaDeployment

Rotate Logs

find them

du --max-depth=1 | sort -nr

Persistent Volumes

Several applications in ONAP require persistent configuration or storage outside of the stateless docker containers managed by Kubernetes. In this case Kubernetes can act as a direct wrapper of native docker volumes or provide its own extended dynamic persistence for use cases where we are running scaled pods on multiple hosts.

https://kubernetes.io/docs/concepts/storage/persistent-volumes/

The SDNC clustering poc - https://gerrit.onap.org/r/#/c/25467/23

For example the following has a patch that exposes a dir into the container just like a docker volume or a volume in docker-compose - the issue here is mixing emptyDir (exposing dirs between containers) and exposing dirs outside to the FS/NFS

https://jira.onap.org/browse/LOG-52

This is only one way to do a static PV in K8S

https://jira.onap.org/secure/attachment/10436/LOG-50-expose_mso_logs.patch

Token

Thanks Joey

```
root@ip-172-31-27-86:~# kubectl describe secret $(kubectl get secrets | grep default | cut -f1 -d ' ')

Name:         default-token-w1jq0

Namespace:    default

Labels:       <none>

Annotations:  kubernetes.io/service-account.name=default

              kubernetes.io/service-account.uid=478eae11-f0f4-11e7-b936-022346869a82

Type:  kubernetes.io/service-account-token

Data

====

ca.crt:     1025 bytes

namespace:  7 bytes

token:      eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCJ9.
eyJpc3MiOiJrdWJlcm5ldGVzL3NlcnZpY2VhY2NvdW50Iiwia3ViZXJuZXRlcy5pby9zZXJ2aWNlYWNjb3VudC9uYW1lc3BhY2UiOiJkZWZhdWx0Iiwia3ViZXJuZXRlcy5pby9zZXJ2aWNlYWNjb3VudC9zZWNyZXQubmFtZSI6ImRlZmF1bHQtdG9rZW4tdzFqcTAiLCJrdWJlcm5ldGVzLmlvL3NlcnZpY2VhY2NvdW50L3NlcnZpY2UtYWNjb3VudC5uYW1lIjoiZGVmYXVsdCIsImt1YmVybmV0ZXMuaW8vc2VydmljZWFjY291bnQvc2VydmljZS1hY2NvdW50LnVpZCI6IjQ3OGVhZTExLWYwZjQtMTFlNy1iOTM2LTAyMjM0Njg2OWE4MiIsInN1YiI6InN5c3RlbTpzZXJ2aWNlYWNjb3VudDpkZWZhdWx0OmRlZmF1bHQifQ.
Fjv6hA1Kzurr-Cie5EZmxMOoxm-3Uh3zMGvoA4Xu6h2U1-NBp_fw_YW7nSECnI7ttGz67mxAjknsgfze-
1JtgbIUtyPP31Hp1iscaieu5r4gAc_booBdkV8Eb8gia6sF84Ye10lsS4nkmmjKA30BdqH9qjWspChLPdGdG3_RmjApIHEOjCqQSEHGBOMvY98_uO3jiJ_
XlJBwLL4uydjhpoANrS0xlS_Evn0evLdits7_piklbc-uqKJBdZ6rWyaRbkaIbwNYYhg7O-
CLlUVuExynAAp1J7Mo3qITNV_F7f4l4OIzmEf3XLho4a1KIGb76P1AOvSrXgTzBq0Uvh5fUw
```

Auto Scaling

Using the example on page 122 of Kubernetes Up & Running.

```
kubectl run nginx --image=nginx:1.7.12
kubectl get deployments nginx
kubectl scale deployments nginx --replicas=3
kubectl get deployments nginx
kubectl get replicasets --selector=run=nginx
kubectl get pods --all-namespaces
kubectl scale deployments nginx --replicas=64
```

Developer Deployment

running parts of onap using multiple yaml overrides

```
order of multiple -f yaml overrides  (talked with mike a couple months ago) but until now I only run with -f
disable-allcharts and some --set s - verified in my adjusted cd.sh the following works - would only see aai if
the order was right to left - so command line order for -f looks right

sudo helm deploy onap local/onap --namespace $ENVIRON -f onap/resources/environments/disable-allcharts.yaml -f ~
/dev.yaml --set aai.enabled=true
```

Deployment Integrity

ELK containers

Logstash port

Elasticsearch port

```
# get pod names and the actual VM that any pod is on
ubuntu@ip-10-0-0-169:~$ kubectl get pods --all-namespaces -o wide | grep log-
onap          onap-log-elasticsearch-756cfb559b-wk8c6                           1/1       Running
0          2h        10.42.207.254   ip-10-0-0-227.us-east-2.compute.internal
onap          onap-log-kibana-6bb55fc66b-kxtg6                                  0/1       Running
16         1h        10.42.54.76     ip-10-0-0-111.us-east-2.compute.internal
onap          onap-log-logstash-689ccb995c-7zmcq                                1/1       Running
0          2h        10.42.166.241   ip-10-0-0-111.us-east-2.compute.internal
onap          onap-vfc-catalog-5fbdfc7b6c-xc84b                                 2/2       Running
0          2h        10.42.206.141   ip-10-0-0-227.us-east-2.compute.internal
# get nodeport
ubuntu@ip-10-0-0-169:~$ kubectl get services --all-namespaces -o wide | grep log-
onap          log-es                    NodePort       10.43.82.53     <none>
9200:30254/TCP                                                              2h        app=log-elasticsearch,
release=onap
onap          log-es-tcp                ClusterIP      10.43.90.198    <none>
9300/TCP                                                                    2h        app=log-elasticsearch,
release=onap
onap          log-kibana                NodePort       10.43.167.146   <none>
5601:30253/TCP                                                              2h        app=log-kibana,
release=onap
onap          log-ls                    NodePort       10.43.250.182   <none>
5044:30255/TCP                                                              2h        app=log-logstash,
release=onap
onap          log-ls-http               ClusterIP      10.43.81.173    <none>
9600/TCP                                                                    2h        app=log-logstash,
release=onap
# check nodeport outside container
ubuntu@ip-10-0-0-169:~$ curl ip-10-0-0-111.us-east-2.compute.internal:30254
{
  "name" : "-pEf9q9",
  "cluster_name" : "onap-log",
  "cluster_uuid" : "ferqW-rdR_-Ys9EkWw82rw",
  "version" : {
    "number" : "5.5.0",
    "build_hash" : "260387d",
    "build_date" : "2017-06-30T23:16:05.735Z",
    "build_snapshot" : false,
    "lucene_version" : "6.6.0"
  }, "tagline" : "You Know, for Search"
}
# check inside docker container - for reference
ubuntu@ip-10-0-0-169:~$ kubectl exec -it -n onap onap-log-elasticsearch-756cfb559b-wk8c6 bash
[elasticsearch@onap-log-elasticsearch-756cfb559b-wk8c6 ~]$ curl http://127.0.0.1:9200
{
  "name" : "-pEf9q9",


# check indexes
ubuntu@ip-172-31-54-73:~$ curl http://dev.onap.info:30254/_cat/indices?v
health status index               uuid                   pri rep docs.count docs.deleted store.size pri.store.
size
yellow open   logstash-2018.07.23 knMYfzh2Rdm_d5ZQ_ij00A   5   1    1953323            0      262mb
262mb
yellow open   logstash-2018.07.26 DRAjpsTPQOaXv1O7XP5Big   5   1     322022            0    100.2mb        100.2
mb
yellow open   logstash-2018.07.24 gWR7l9LwSBOYtsGRs18A_Q   5   1      90200            0     29.1mb         29.1
mb
yellow open   .kibana             Uv7razLpRaC5OACPl6IvdA   1   1          2            0     10.5kb         10.5
kb
yellow open   logstash-2018.07.27 MmqCwv1ISliZS79mvFSHSg   5   1      20406            0      7.2mb          7.2
mb


# check records in elasticsearch
ubuntu@ip-172-31-54-73:~$ curl http://dev.onap.info:30254/_search?q=*
{"took":3,"timed_out":false,"_shards":{"total":21,"successful":21,"failed":0},"hits":{"total":2385953,"
max_score":1.0,"hits":[{"_index":".kibana","_type":"index-pattern","_id":"logstash-*","_score":1.0,"_source":
{"title":"logstash-*","timeFieldName":"@timestamp","notExpandable":true,"fields":"[{\"name\":\"@timestamp\",\"
type\":\"date\",\"count\":0,\
```

Kibana port

ONAP Ports

component	port	example	
consul	30270/ui/#/dc1/services		

Running Robot Commands

Make sure the robot container is deployed - you may run directly from the kubernetes folder outside of the container - see https://git.onap.org/logging-analytics/tree/deploy/cd.sh#n297

```
# make sure the robot container is up via --set robot.enabled=true
cd oom/kubernetes/robot
./ete-k8s.sh $ENVIRON health
```

however if you need to adjust files inside the container without recreating the docker image do the following

```
root@ubuntu:~/_dev/62405_logback/oom/kubernetes# kubectl exec -it onap-robot-7c84f54558-fxmvd -n onap bash
root@onap-robot-7c84f54558-fxmvd:/# cd /var/opt/OpenECOMP_ETE/robot/resources
root@onap-robot-7c84f54558-fxmvd:/var/opt/OpenECOMP_ETE/robot/resources# ls
aaf_interface.robot   browser_setup.robot    demo_preload.robot       json_templater.robot
music                policy_interface.robot  sms_interface.robot  test_templates
aai                   clamp_interface.robot  dr_interface.robot       log_interface.robot   nbi_interface.
robot  portal-sdk              so_interface.robot   vid
appc_interface.robot  cli_interface.robot    global_properties.robot  mr_interface.robot    oof_interface.
robot  portal_interface.robot  ssh                  vnfsdk_interface.robot
asdc_interface.robot  dcae_interface.robot   heatbridge.robot         msb_interface.robot
openstack            sdngc_interface.robot   stack_validation
```

Pairwise Testing

AAI and Log Deployment

AAI, Log and Robot will fit on a 16G VM

Deployment Issues

ran into an issue running champ on a 16g VM (AAI/LOG/Robot only)
master 20180509 build
but it runs fine on a normal cluster with the rest of ONAP

```
19:56:05 onap onap-aai-champ-85f97f5d7c-zfkdp 1/1 Running 0 2h 10.42.234.99 ip-10-0-0-227.us-east-2.compute.
internal
```

http://jenkins.onap.info/job/oom-cd-master/2915/consoleFull

OOM-1015 - Getting issue details... STATUS

```
Every 2.0s: kubectl get pods --all-
namespaces                                                                                                  Thu
May 10 13:52:47 2018

NAMESPACE     NAME                                    READY     STATUS        RESTARTS   AGE
kube-system   heapster-76b8cd7b5-9dg8j                1/1       Running       0          10h
kube-system   kube-dns-5d7b4487c9-fj2wv               3/3       Running       2          10h
kube-system   kubernetes-dashboard-f9577fffd-c9nwp    1/1       Running       0          10h
kube-system   monitoring-grafana-997796fcf-jdx8q      1/1       Running       0          10h
kube-system   monitoring-influxdb-56fdcd96b-zpjmz     1/1       Running       0          10h
kube-system   tiller-deploy-54bcc55dd5-mvbb4          1/1       Running       2          10h
onap          dev-aai-babel-6b79c6bc5b-7srxz          2/2       Running       0          10h
onap          dev-aai-cassandra-0                     1/1       Running       0          10h
onap          dev-aai-cassandra-1                     1/1       Running       0          10h
onap          dev-aai-cassandra-2                     1/1       Running       0          10h
onap          dev-aai-cdc9cdb76-mmc4r                 1/1       Running       0          10h
onap          dev-aai-champ-845ff6b947-l8jqt          0/1       Terminating   0          10h
onap          dev-aai-champ-845ff6b947-r69bj          0/1       Init:0/1      0          25s
onap          dev-aai-data-router-8c77ff9dd-7dkmg     1/1       Running       3          10h
onap          dev-aai-elasticsearch-548b68c46f-djmtd  1/1       Running       0          10h
onap          dev-aai-gizmo-657cb8556c-z7c2q          2/2       Running       0          10h
onap          dev-aai-hbase-868f949597-xp2b9          1/1       Running       0          10h
onap          dev-aai-modelloader-6687fcc84-2pz8n     2/2       Running       0          10h
onap          dev-aai-resources-67c58fbdc-g22t6       2/2       Running       0          10h
onap          dev-aai-search-data-8686bbd58c-ft7h2    2/2       Running       0          10h
onap          dev-aai-sparky-be-54889bbbd6-rgrr5      2/2       Running       1          10h
onap          dev-aai-traversal-7bb98d854d-2fhjc      2/2       Running       0          10h
onap          dev-log-elasticsearch-5656984bc4-n2n46  1/1       Running       0          10h
onap          dev-log-kibana-567557fb9d-7ksdn         1/1       Running       50         10h
onap          dev-log-logstash-fcc7d68bd-49rv8        1/1       Running       0          10h
onap          dev-robot-6cc48c696b-875p5              1/1       Running       0          10h

ubuntu@obrien-cluster:~$ kubectl describe pod dev-aai-champ-845ff6b947-l8jqt -n onap
Name:           dev-aai-champ-845ff6b947-l8jqt
Namespace:      onap
Node:           obrien-cluster/10.69.25.12
Start Time:     Thu, 10 May 2018 03:32:21 +0000
Labels:         app=aai-champ
                pod-template-hash=4019926503
                release=dev
Annotations:    kubernetes.io/created-by={"kind":"SerializedReference","apiVersion":"v1","reference":{"kind":"
ReplicaSet","namespace":"onap","name":"dev-aai-champ-845ff6b947","uid":"bf48c0cd-5402-11e8-91b1-020cc142d4...
Status:         Pending
IP:             10.42.23.228
Created By:     ReplicaSet/dev-aai-champ-845ff6b947
Controlled By:  ReplicaSet/dev-aai-champ-845ff6b947
Init Containers:
  aai-champ-readiness:
    Container ID:  docker://46197a2e7383437ed7d8319dec052367fd78f8feb826d66c42312b035921eb7a
    Image:         oomk8s/readiness-check:2.0.0
    Image ID:      docker-pullable://oomk8s/readiness-check@sha256:
7daa08b81954360a1111d03364febcb3dcfeb723bcc12ce3eb3ed3e53f2323ed
    Port:          <none>
    Command:
      /root/ready.py
    Args:
      --container-name
      aai-resources
      --container-name
      message-router-kafka
    State:          Running
      Started:      Thu, 10 May 2018 03:46:14 +0000
    Last State:     Terminated
      Reason:       Error
      Exit Code:    1
      Started:      Thu, 10 May 2018 03:34:58 +0000
      Finished:     Thu, 10 May 2018 03:45:04 +0000
    Ready:          False
    Restart Count:  1
    Environment:
```

```
      NAMESPACE:  onap (v1:metadata.namespace)
    Mounts:
      /var/run/secrets/kubernetes.io/serviceaccount from default-token-2jccm (ro)
Containers:
  aai-champ:
    Container ID:
    Image:          nexus3.onap.org:10001/onap/champ:1.2-STAGING-latest
    Image ID:
    Port:           9522/TCP
    State:          Waiting
      Reason:       PodInitializing
    Ready:          False
    Restart Count:  0
    Readiness:      tcp-socket :9522 delay=10s timeout=1s period=10s #success=1 #failure=3
    Environment:
      CONFIG_HOME:           /opt/app/champ-service/appconfig
      GRAPHIMPL:             janus-deps
      KEY_STORE_PASSWORD:    <set to the key 'KEY_STORE_PASSWORD' in secret 'dev-aai-champ-pass'>    Optional:
false
      KEY_MANAGER_PASSWORD:  <set to the key 'KEY_MANAGER_PASSWORD' in secret 'dev-aai-champ-pass'>  Optional:
false
      SERVICE_BEANS:         /opt/app/champ-service/dynamic/conf
    Mounts:
      /etc/localtime from localtime (ro)
      /logs from dev-aai-champ-logs (rw)
      /opt/app/champ-service/appconfig/auth from dev-aai-champ-secrets (rw)
      /opt/app/champ-service/appconfig/champ-api.properties from dev-aai-champ-config (rw)
      /opt/app/champ-service/dynamic/conf/champ-beans.xml from dev-aai-champ-dynamic-config (rw)
      /var/run/secrets/kubernetes.io/serviceaccount from default-token-2jccm (ro)
Conditions:
  Type           Status
  Initialized    False
  Ready          False
  PodScheduled   True
Volumes:
  localtime:
    Type:  HostPath (bare host directory volume)
    Path:  /etc/localtime
  dev-aai-champ-config:
    Type:      ConfigMap (a volume populated by a ConfigMap)
    Name:      dev-aai-champ
    Optional:  false
  dev-aai-champ-secrets:
    Type:        Secret (a volume populated by a Secret)
    SecretName:  dev-aai-champ-champ
    Optional:    false
  dev-aai-champ-dynamic-config:
    Type:      ConfigMap (a volume populated by a ConfigMap)
    Name:      dev-aai-champ-dynamic
    Optional:  false
  dev-aai-champ-logs:
    Type:    EmptyDir (a temporary directory that shares a pod's lifetime)
    Medium:
  default-token-2jccm:
    Type:        Secret (a volume populated by a Secret)
    SecretName:  default-token-2jccm
    Optional:    false
QoS Class:       BestEffort
Node-Selectors:  <none>
Tolerations:     node.alpha.kubernetes.io/notReady:NoExecute for 300s
                 node.alpha.kubernetes.io/unreachable:NoExecute for 300s
Events:          <none>
ubuntu@obrien-cluster:~$ kubectl delete pod dev-aai-champ-845ff6b947-l8jqt -n onap
pod "dev-aai-champ-845ff6b947-l8jqt" deleted
```

Developer Use of the Logging Library

Logging With Spring AOP

see ONAP Application Logging Specification v1.2 (Casablanca)#DeveloperGuide

Logging Without Spring AOP

```
# pending annotation level weaving of the library
import org.onap.logging.ref.slf4j.ONAPLogAdapter;
import org.slf4j.LoggerFactory;
import org.springframework.stereotype.Service;
@Service("daoFacade")
public class ApplicationService implements ApplicationServiceLocal {
    @Override
    public Boolean health(HttpServletRequest servletRequest) {
            Boolean health = true;
            // TODO: check database
            final ONAPLogAdapter adapter = new ONAPLogAdapter(LoggerFactory.getLogger(this.getClass()));
            try {
                adapter.entering(new ONAPLogAdapter.HttpServletRequestAdapter(servletRequest));
            } finally {
                adapter.exiting();
            }
            return health;
    }
MDC's are set for example


this        LogbackMDCAdapter  (id=282)
        copyOnInheritThreadLocal        InheritableThreadLocal<T>  (id=284)
        lastOperation        ThreadLocal<T>  (id=287)
key        "ServerFQDN" (id=273)
val        "localhost" (id=272)


{InstanceUUID=aa2d5b18-e3c2-44d3-b3ae-8565113a81b9, RequestID=788cf6a6-8008-4b95-af3f-61d92d9cbb4e,
ServiceName=, InvocationID=dade7e58-fa24-4b2d-84e8-d3e89af9e6e1, InvokeTimestamp=2018-07-05T14:25:05.739Z,
PartnerName=, ClientIPAddress=0:0:0:0:0:0:0:1, ServerFQDN=localhost}


in
LogbackMDCAdapter.put(String, String) line: 98
MDC.put(String, String) line: 147
ONAPLogAdapter.setEnteringMDCs(RequestAdapter<?>) line: 327
ONAPLogAdapter.entering(ONAPLogAdapter$RequestAdapter) line: 156
ApplicationService.health(HttpServletRequest) line: 38
RestHealthServiceImpl.getHealth() line: 47

# fix
get() returned        "" (id=201)
key        "ServiceName" (id=340)

Daemon Thread [http-nio-8080-exec-12] (Suspended)
        owns: NioEndpoint$NioSocketWrapper  (id=113)
        MDC.get(String) line: 203
        ONAPLogAdapter.setEnteringMDCs(RequestAdapter<?>) line: 336
        ONAPLogAdapter.entering(ONAPLogAdapter$RequestAdapter) line: 156
        ApplicationService.health(HttpServletRequest) line: 38
        RestHealthServiceImpl.getHealth() line: 47

        if (MDC.get(ONAPLogConstants.MDCs.SERVICE_NAME) == null) {
            MDC.put(ONAPLogConstants.MDCs.SERVICE_NAME, request.getRequestURI());

to
        if (MDC.get(ONAPLogConstants.MDCs.SERVICE_NAME) == null ||
                MDC.get(ONAPLogConstants.MDCs.SERVICE_NAME).equalsIgnoreCase(EMPTY_MESSAGE)) {
```

In progress

LOG-552 - Getting issue details... STATUS

Developer Debugging

Local Tomcat via Eclipse/IntelliJ

Run as "debug"/deploy to Tomcat via Eclipse - https://git.onap.org/logging-analytics/tree/reference/logging-demo

Exercise the health endpoint which invokes Luke Parker's logging library

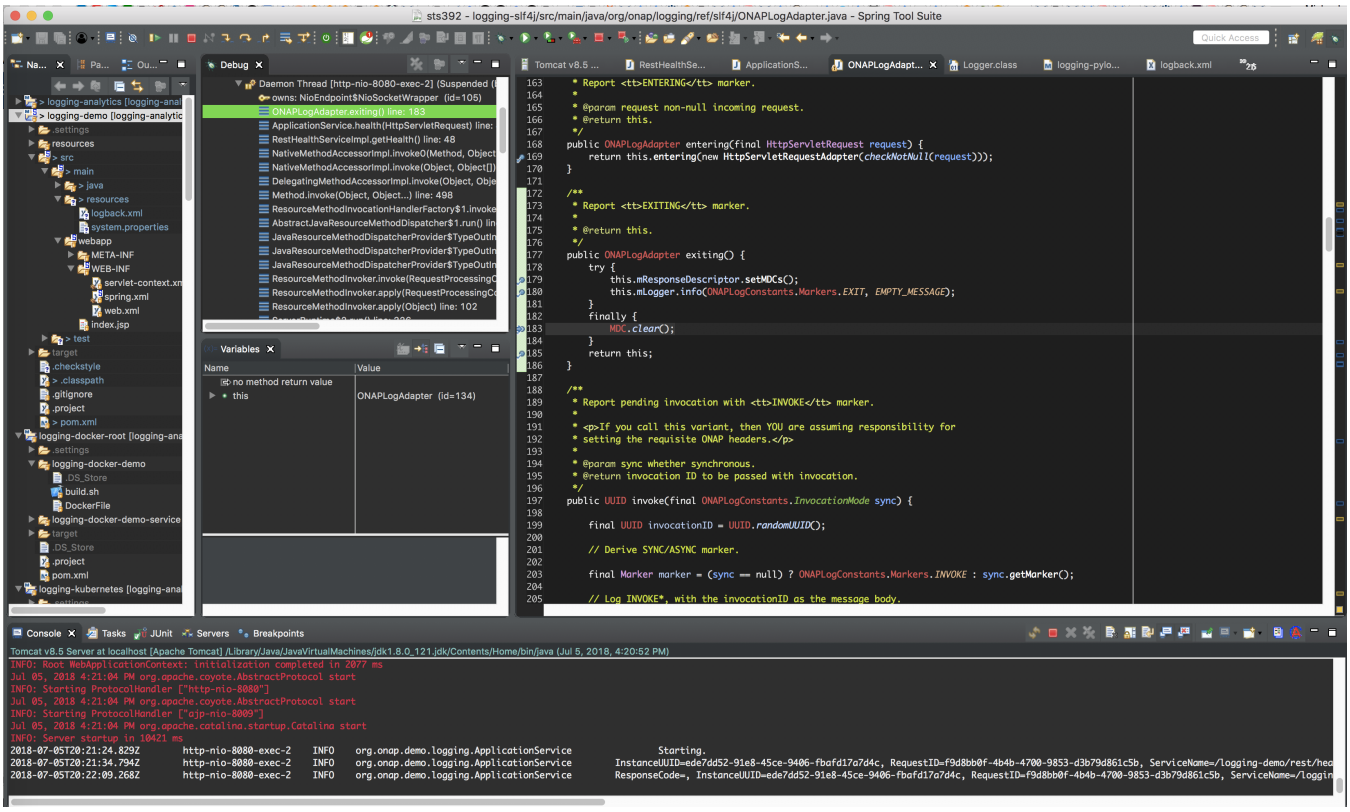
http://localhost:8080/logging-demo/rest/health/health

Hit preset breakpoints - try

```
this        ONAPLogAdapter  (id=130)
        mLogger        Logger  (id=132)
        mResponseDescriptor        ONAPLogAdapter$ResponseDescriptor  (id=138)
        mServiceDescriptor        ONAPLogAdapter$ServiceDescriptor  (id=139)
request        ONAPLogAdapter$HttpServletRequestAdapter  (id=131)
requestID        "8367757d-59c2-4e3e-80cd-b2fdc7a114ea" (id=142)
invocationID        "967e4fe8-84ea-40b0-b4b9-d5988348baec" (id=170)
partnerName        "" (id=171)


Tomcat v8.5 Server at localhost [Apache Tomcat]
        org.apache.catalina.startup.Bootstrap at localhost:50485
                Daemon Thread [http-nio-8080-exec-3] (Suspended)
                        owns: NioEndpoint$NioSocketWrapper  (id=104)
                        ONAPLogAdapter.setEnteringMDCs(RequestAdapter<?>) line: 312
                        ONAPLogAdapter.entering(ONAPLogAdapter$RequestAdapter) line: 156
                        ApplicationService.health(HttpServletRequest) line: 37
                        RestHealthServiceImpl.getHealth() line: 47
                        NativeMethodAccessorImpl.invoke0(Method, Object, Object[]) line: not available [native
method]
...
                        JavaResourceMethodDispatcherProvider$TypeOutInvoker
(AbstractJavaResourceMethodDispatcher).invoke(ContainerRequest, Object, Object...) line: 161
...
                        ServletContainer.service(URI, URI, HttpServletRequest, HttpServletResponse) line:
388
...
                        CoyoteAdapter.service(Request, Response) line: 342
...
                Daemon Thread [http-nio-8080-exec-5] (Running)
        /Library/Java/JavaVirtualMachines/jdk1.8.0_121.jdk/Contents/Home/bin/java (Jul 4, 2018, 12:12:04
PM)


output - note there are 3 tabs (see p_mak in logback.xml) delimiting the MARKERS (ENTRY and EXIT) at the end of
each line
2018-07-05T20:21:34.794Z        http-nio-8080-exec-2        INFO        org.onap.demo.logging.
ApplicationService        InstanceUUID=ede7dd52-91e8-45ce-9406-fbafd17a7d4c, RequestID=f9d8bb0f-4b4b-4700-9853-
d3b79d861c5b, ServiceName=/logging-demo/rest/health/health, InvocationID=8f4c1f1d-5b32-4981-b658-e5992f28e6c8,
InvokeTimestamp=2018-07-05T20:21:26.617Z, PartnerName=, ClientIPAddress=0:0:0:0:0:0:0:1,
ServerFQDN=localhost                        ENTRY
2018-07-05T20:22:09.268Z        http-nio-8080-exec-2        INFO        org.onap.demo.logging.
ApplicationService        ResponseCode=, InstanceUUID=ede7dd52-91e8-45ce-9406-fbafd17a7d4c, RequestID=f9d8bb0f-
4b4b-4700-9853-d3b79d861c5b, ServiceName=/logging-demo/rest/health/health, ResponseDescription=,
InvocationID=8f4c1f1d-5b32-4981-b658-e5992f28e6c8, Severity=, InvokeTimestamp=2018-07-05T20:21:26.617Z,
PartnerName=, ClientIPAddress=0:0:0:0:0:0:0:1, ServerFQDN=localhost, StatusCode=
EXIT
```



Remote Docker container in Kubernetes deployment

Developer Commits

Developer Reviews

PTL Activities

Releasing Images

- merge change to update pom version
- magic word "please release"
- send mail to help@onap.org - and to Jessica of the LF to release the image - post the build job and the gerrit review
- branch the repo if required - as late in the release as possible - using the gerrit ui
- After the release prepare another review to bump the version and add -SNAPSHOT - usually to master
- examples around 20181112 in the logging-analytics repo - LOG-838 - Getting issue details... STATUS

FAQ

License Files

Do we need to put license files everywhere - at the root of java, pom.xml, properties, yamls?

In reality just put them in active code files interpreted/compiled - like java, javascript, sh/bat, python, go - leave out pom.xml, yamls

Some types have compile checks (properties but not sh)

from Jennie Jia

```
            <checkstyle.skip>true</checkstyle.skip>
```