Boomerang RTP4 to IBM ROKS EU Migration

After a long journey with Boomerang Team, Development Server RTP4 retires on 30th September 2021. The event brings bit criticality since the plan was not in forecasting and a big bunch of members in development team go out of system, once RTP4 stops the journey on 30th

To uphold this crit-sit, SRE team in India puts a war footing plan to bring a new IBM RedHat OpenShift Kubernetes Service (ROKS) based development environment. This is going to be the development space for the team, who will be routed out from RTP4 system on 30th.

This new environment brings Boomerang essentials over ROKS to retain same look and feel of RTP4, along with comfort and facilities, which developers enjoyed over essentials in RTP4.

Migration Plan splits among below steps in high level

1. Provisioning a new ROKS environment over IBM Cloud in Europe region, at Frankfurt
2. Installing Boomerang Essentials on ROKS EU
3. Registering Boomerang Essentials on ROKS with W3SSO Authentication Provider
4. Importing all applications and services from RTP4 to ROKS
5. Adjusting Boomerang CI/CD to Point to ROKS for Deploying Applications/Services
6. Handover Applications to owners for Testing and Managing
7. **Provisioning IBM ROKS**

Create an IBM Functional ID Automation.Platform.Services@ibm.com to form an IBM Cloud account, where all necessary resource provisioning will take place. Upgrade it to IBM Internal Paid Account to allow provisioning business standard resources, like OpenShift Clusters, etc. This upgradation requires functional manager’s approval to activate. Once the activation is done, SRE creates an IBM RedHat OpenShift Kubernetes Services (ROKS) cluster with 6 worker nodes, each with 8 vCPU (Virtual CPU) and 64 GB Memory for running essentials and applications on it. Along with that a separate worker node with 16 vCPU and 64 GB memory, dedicated (Tainted) for EFK installations.

Stepwise activities are as follows

1. Create function id Automation.Platform.Services@ibm.com
2. Logging into IBM Cloud Account
3. Upgrading IBM Account to IBM Internal Paid Account, which completes on account’s functional manager’s approval
4. Provisioning of 6 Worker Nodes with 8 vCPU and 64 GB RAM
5. Provisioning of a dedicated tainted worker node with 16 vCPU and 64 GB RAM for EFK Installations
6. Create a dedicated service id and API key for it, along with admin access to this newly created cluster for using it in OC Login via CLI [reference: account-details.txt]
7. **Installing Boomerang Essentials**

Installing Boomerang Essentials over new ROKS environment is one of most critical steps in the entire initiative. Boomerang team reserves a separate repository for preserving docker images of all necessary artifacts for essentials [us.icr.io/boomerang-lib-docker-external/ise], for which API Key based access is provided for installing essentials. MongoDB is a prerequisite for essentials platform, which needs to be installed over ROKS in first place.

Stepwise activities are as follows

1. Create a namespace called iap-core-dev
2. Installing Mongo using values file from RTP4 [ref: ocp-core-dev-mdb001-mongodb.yaml file in essentials folder] in iap-core-dev
3. Installing Essentials using values file from RTP4 [ref: ess-core-values-ibm-v1.yaml file in essentials folder] in iap-core-dev

Prerequisites:

1. Create a secret for remote registry, from where essentials docker images are to be fetched [ocp.registry.v1]

The steps may be as follows

kubectl create secret docker-registry ocp.registry.v1 --docker-server=us.icr.io \

--docker-username=iamapikey --docker-password=4acB4UTzy4Sjp2QQcdYz72p6XOTKDpeeV6eh8pexzgr3 \

--docker-email=Automation.Platform.Services@ibm.com

1. Create a TLS secret [ocp-tls-cloud-dev]

We can get TLS secret inside openshift-ingress namespace, which we can copy as yaml and deploy it in iap-core-dev namespace as ocp-tls-cloud-dev secret

For example, steps are as follows

Copy original secret

oc get secret devcluster-9fb7e40700ceec3a76e70fdb30f06230-0000 -n openshift-ingress -o yaml > iap-core-dev.yaml

oc create ocp-tls-cloud-dev -f iap-core-dev.yaml -n iap-core-name

1. Add repository boomerang-charts and boomerang-io

Chart name URL

---------------- -------

boomerang-io https://raw.githubusercontent.com/boomerang-io/charts/index

boomerang-charts https://tools.boomerangplatform.net/artifactory/boomeranglib-helm

1. Installing Boomerang Core

Installing ESS Core:

helm3 upgrade --install ocp-core-dev -f ess-core-values-ibm-v1.yaml boomerang-charts/ess-core --version 5.9.6 --debug

1. Installing Boomerang Auth Proxy

Installing Auth Proxy [mentioned in step 6]

helm3 upgrade --install ocp-auth-proxy-dev -f iap-auth-proxy-dev-3.3.1-w3id.yaml boomerang-io/bmrg-auth-proxy --version 3.3.2 --debug

1. Installing ingress controller in kube-system namespace of ROKS [ref: ingress-controller.yaml file in essentials folder]

Command:

helm3 install nginx-controller -f ingress-controller.yaml bitnami/nginx-ingress-controller --namespace kube-system

1. Installing ingress controller route in kube-system namespace of ROKS [ref: ingress-controller-route.yaml file in essentials folder]

Command:

oc apply -f ingress-controller-route.yaml -n kube-system

1. Installing Boomerang Auth Proxy [ref: iap-auth-proxy-dev-3.3.1-ibmid.yaml for IBMid and iap-auth-proxy-dev-3.3.1-w3id.yaml for W3id in essentials folder]

Command:

helm3 upgrade --install ocp-auth-proxy-dev -f iap-auth-proxy-dev-3.3.1-w3id.yaml boomerang-io/bmrg-auth-proxy --version 3.3.2 --debug

1. Start launchpad for essentials after decoding activation code

Activation code retrieval

1. helm3 get notes ocp-core-dev
2. kubectl get secret --namespace iap-core-dev iap-core-secrets -o jsonpath="{.data.CORE\_OTC}" | base64 –decode
3. Open your favourite browser to open launchpad

https://devcluster-9fb7e40700ceec3a76e70fdb30f06230-0000.eu-de.containers.appdomain.cloud/dev/launchpad

Activate with activation code, found in step B above. Domain represents the new ROKS cluster endpoint.

1. **Registering Boomerang Essentials in W3SSO Authentication Provider**
2. **Importing Applications from RTP4 to ROKS**
3. **Adjusting Boomerang CI/CD for Application Deployment in ROKS**