Kubernetes Example Install Journal 3.3.0 GA install with 1.0.0 helm charts

Monday, 7 March 2022 4:44 PM

Update 7 Mar 2022

- Updated labelling to use the Azure CLI API (az commands) as kubectl labeling of nodes does not hold between shutdown/startup.
- Pin Neo4j 3.5.30 since there are breaking changes in 3.5.31

Objective

To take an existing CluedIn 3.2.5 environment standard setup that was manually installed in Azure Kuberenetes Services (AKS) and fresh install 3.3.0 GA with latest cluedin-platform 1.0.0 helm charts reusing the node pools.

Kubectl, Azure Portal and Lens (https://k8slens.dev/) will be used.

Note: to perform an upgrade requires the careful following of CluedIn provided upgrade instructions (which are WIP as of the time of writing)

Overview

- Tear down cluster while keeping what we can
- Delete what we know we don't need or will potentially confuse the process or us
- Use helm to deploy 3.3.0 with cluedin-platform 1.0.0 charts
- Create additional orgs as desired

Journal

The charts have been split into



this is part of decoupling the application version from the charts and utilizing 3rd party subcharts where possible

deploying cluedin-platform will co-ordinate deploying infrastructure then application on top

Doco starting points:

https://documentation.cluedin.net/release-notes

https://github.com/CluedIn-io/Charts

 $\underline{https://github.com/CluedIn-io/Charts/releases/tag/cluedin-platform-1.0.0}$

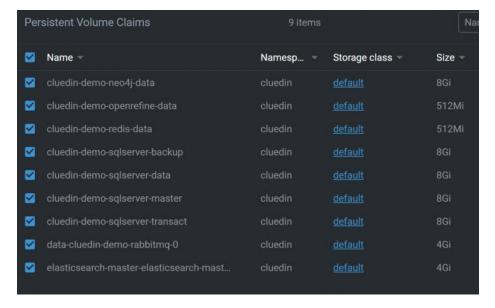
Prep Work

Shutdown existing cluster

kubectl scale deploy -n cluedin --replicas=0 --all kubectl scale statefulset -n cluedin --replicas=0 --all PS C:\Users\rudi> kubectl get pods -n cluedin NAME STATUS RESTARTS AGE cluedin-demo-bs-cluedin-911wl Completed Running cluedin-demo-prometheus-node-exporter-4xdmb cluedin-demo-prometheus-node-exporter-7kxbc 41h 41h Running cluedin-demo-prometheus-node-exporter-br66w cluedin-demo-prometheus-node-exporter-cqznc cluedin-demo-prometheus-node-exporter-hbbpf 1/1 1/1 1/1 1/1 Running Running 41h Running cluedin-demo-prometheus-node-exporter-jrnr6 Running

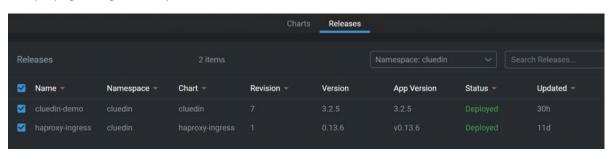
Delete volumes since we want a fresh install

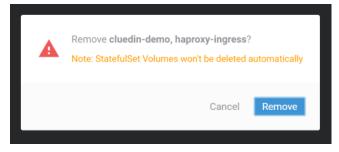
note: if we were upgrading we would follow those steps to ensure these are NOT deleted



delete releases

we could keep the haproxy-ingress but I want the new one nevertheless as part of checking the haproxy-ingress integrated install process

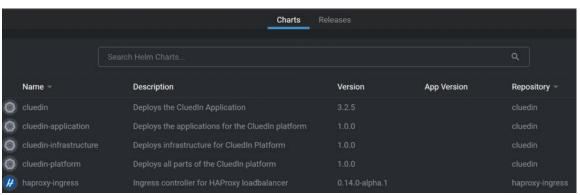




update helm charts from the repos

PS C:\rudi.harris\k8s\cluedin\apac-demo> helm repo list
NAME URL
haproxy-ingress https://haproxy-ingress.github.io/charts
cluedin https://cluedin-io.github.io/Charts/

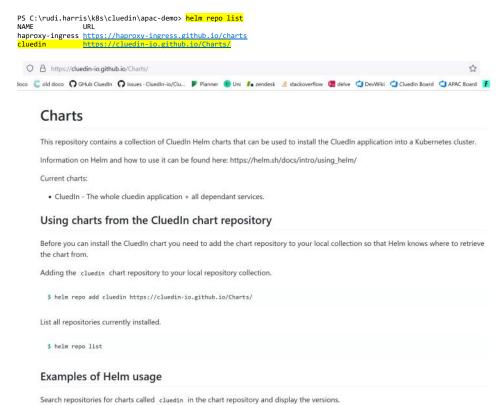
PS C:\rudi.harris\k8s\cluedin\apac-demo> helm repo update
Hang tight while we grab the latest from your chart repositories...
...Successfully got an update from the "cluedin" chart repository
Update Complete. *Happy Helming!*



new charts, including cluedin-platform, are here

note: I probably don't need haproxy-ingress anymore, but no harm in leaving it

follow the repo location



let's go to the github repo

https://github.com/CluedIn-io/Charts

click the release info on the right for latest release

https://github.com/CluedIn-io/Charts/releases/tag/cluedin-platform-1.0.0







Initial Release!

Features

- (cluedin-application) EngineRoom feature is now enabled by default
- (cluedin-infrastructure) Kube-Prometheus-Stack added as sub-chart (for engine-room)
- (cluedin-application) Custom Grafana charts can be added to the dashboards section (Remember to surround JSON with {{\``}})
- (cluedin-application) Metrics are > enabled < by default .. to disable set:

monitoring:
 enabled: false

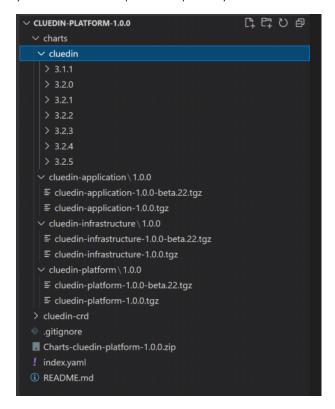
• (cluedin-infrastructure) Metrics are > enabled < by default .. to disable (wont install services) set:

monitoring: enabled: false

rabbitmq:

if we want to inspect the charts we could download zip file from assets at the bottom and unzip to inspect

you would then untar the platform one potentially



Build New Values Yaml

Let's use our existing 3.3.0 values yaml as a reference point to reimplement from the 3.2.5 charts to the cluedin-platform-1.0.0 charts

So, we have <u>values.3.2.5charts</u> <u>3.3.0app.redacted.example.yml</u> as an example chart for this exact environment as sized in <u>202202_sizing.xlsx</u>

method, let's create a new one based on internal CluedIn training and tailor it to match the refinements from the above reference (and thus provide the public with a good new example) - if we have any issues with the deploy we can use the command helm template to output what helm would have done in the case where helm upgrade doesn't work

pool labeling

the recommendation is to label all nodes node pools with cluedin.com based pooltypes and then reference these in the yaml

Jpdate!

Use az API - either on pool creation or you can use the following to update the existing pools

```
az aks nodepool update --cluster-name APAC-demo-k8s --name corepool --resource-group APAC-demo-k8s-rg --labels kubernetes.cluedin.com/pooltype=core

az aks nodepool update --cluster-name APAC-demo-k8s --name datapool --resource-group APAC-demo-k8s-rg --labels kubernetes.cluedin.com/pooltype=data

az aks nodepool update --cluster-name APAC-demo-k8s --name generalpool --resource-group APAC-demo-k8s-rg --labels kubernetes.cluedin.com/pooltype=general

az aks nodepool update --cluster-name APAC-demo-k8s --name processpool --resource-group APAC-demo-k8s-rg --labels kubernetes.cluedin.com/pooltype=process
```

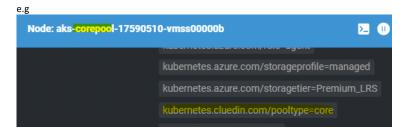
To be explicit about assignments you can also add nodeSelectors—example can be found in values-deploy.yaml inside the root of each chart. You will need to label each node accordingly:

- kubectl label node <node-name> -n cluedin kubernetes.cluedin.com/pooltype=data
- kubectl label node <node-name> -n cluedin kubernetes.cluedin.com/pooltype=processing

so label them

PS C:\rudi.harris\k8s\cluedin\apac-de	mo> <mark>kube</mark>	tl get	nodes	
NAME	STATUS	ROLES	AGE	VERSION
aks-corepool-17590510-vmss00000b	Ready	agent	2d	v1.20.9
aks-datapool-17590510-vmss00000m	Ready	agent	2d	v1.20.9
aks-datapool-17590510-vmss00000n	Ready	agent	2d	v1.20.9
aks-generalpool-17590510-vmss00000m	Ready	agent	2d	v1.20.9
aks-generalpool-17590510-vmss00000n	Ready	agent	2d	v1.20.9
aks-processpool-17590510-vmss00000b	Ready	agent	2d	v1.20.9
aks-processpool-1/590510-vmss000000	- Keady -	agent	- 2a -	V1.20.9

```
PS C:\rudi.harris\k8s\cluedin\apac-demo> kubectl label node aks-corepool 17590510-
vmss00000b -n cluedin kubernetes.cluedin.com/pooltype=core
node/aks-corepool-17590510-wmss00000b labeled
PS C:\rudi.harris\k8s\cluedin\apac-demo> kubectl label node aks-datapool-17590510-
vmss00000m n cluedin kubernetes.cluedin.com/pooltype=data
node/aks-datapool-17590510-wmss00000m labeled
PS C:\rudi.harris\k8s\cluedin\apac-demo> kubectl label node aks-datapool-17590510-
vmss00000m n cluedin kubernetes.cluedin.com/pooltype=data
node/aks-datapool-17590510-vmss00000m labeled
PS C:\rudi.harris\k8s\cluedin\apac-demo> kubectl label node aks-generalpool-17590510-
vmss00000m -n cluedin kubernetes.cluedin.com/pooltype=general
node/aks-generalpool-17590510-vmss00000m labeled
PS C:\rudi.harris\k8s\cluedin\apac-demo> kubectl label node aks-generalpool-17590510-
vmss00000m -n cluedin kubernetes.cluedin.com/pooltype=general
node/aks-generalpool-17590510-vmss00000m labeled
PS C:\rudi.harris\k8s\cluedin\apac-demo> kubectl label node aks-generalpool-17590510-
vmss00000m -n cluedin kubernetes.cluedin.com/pooltype=general
node/aks-generalpool-17590510-vmss00000n labeled
PS C:\rudi.harris\k8s\cluedin\apac-demo> kubectl label node aks-processpool-17590510-
vmss00000b -n cluedin kubernetes.cluedin.com/pooltype=general
```



values yml created

 $\frac{https://github.com/CluedIn-io/ImpTools/blob/master/k8s/pwsh/values.3.3.0.cluedin-platform-1.0.0.vml}{}$

based on this sizing and allocations

https://github.com/CluedIn-io/ImpTools/raw/master/k8s/pwsh/202202 sizing.xlsx in AKS

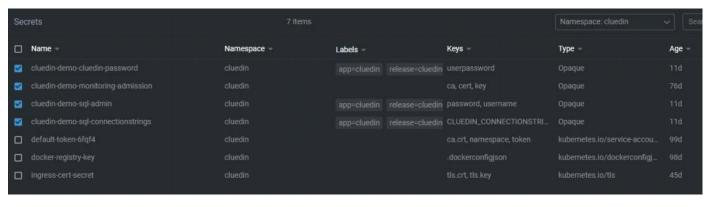
values yml copied and passed at the end for reference

helm update script updated to match new files and chart update

PS C:\rudi.harris\k8s\cluedin\apac-demo> cat .\helm_upgrade-3.3.0.ps1

helm upgrade cluedin-demo cluedin/cluedin-platform `
-n cluedin `
--install `
--version 1.0.0 `
--values values.3.3.0.cluedin-platform-1.0.0.yml

delete old secrets with cluedin-demo- prefix



try to install using our new values yml

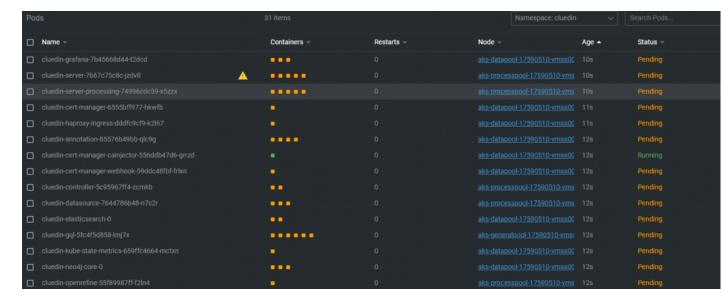
the output of helm can be inspected to ensure what we intended and what was parsed match

```
: [INSTALL]
====[ Mode
                                                  cluedin-platform [v1.0.0]
           Chart
                                                [ENABLED] Cert Secret: ingress-cert-secret
           Domain
           TLS
=====[ Global Image Tag
          Global Registry
Global Pull Policy
Global ImagePullSecret
-----
                                              : docker.io
-----
=====[
          Global ServiceAccount :
                                                 cluedin-serviceaccount
                                                 Production
RollingUpdate
           Global Environment
====[ Global Strategy
=====[ Global UploadLimit
                                              : 1gb
                                                 docker.io/cluedin/cluedin-server:3.3.0
          CluedIn Server
          CluedIn Nuget Install :
CluedIn Controller :
                                                docker.io/cluedin/nuget-installer:3.3.0
docker.io/cluedin/controller:3.3.0
docker.io/cluedin/cluedin-micro-annotation:3.3.0
docker.io/cluedin/cluedin-micro-clean:3.3.0
=====[
          Annotation
====i
           Prepare
----
          DataSource
Submitter
                                                 docker.io/cluedin/cluedin-micro-datasource:3.3.0
docker.io/cluedin/cluedin-micro-submitter-node:3.3.0
                                                 docker.io/cluedin/cluedin-ui-gql:3.3.0
docker.io/cluedin/ui:3.3.0
docker.io/cluedin/app:3.3.0
          GQL
UI
=====[
           WebAPI
                                                 docker.io/groundnuty/k8s-wait-for:v1.3
docker.io/bitnami/kubectl:latest
docker.io/cluedin/sqlserver-init:3.3.0
=====
           InitWait
           InitCleanUp
           InitSQL
                                              : docker.io/cluedin/neo4j-init:3.3.0
          InitNeo4J
====[ SQL Server
          OpenRefine
                                                docker.io/cluedin/openrefine:3.3.0
           ElasticSearch
                                                 docker.elastic.co/elasticsearch/elasticsearch:7.8.0
----
           Neo4J
                                                 neo4j:3.5
                                                 docker.io/bitnami/rabbitmq:3.9.11-debian-10-r28
docker.io/bitnami/redis:6.2.6-debian-10-r81
quay.io/prometheus/alertmanager:v0.23.0
=====i
           RabbitMQ
          AlertManager
=====
           Prometheus
                                                 quay.io/prometheus/prometheus:v2.31.1 grafana/grafana:8.2.3
          Prometheus Operator
                                                 quay.io/prometheus-operator/prometheus-operator:v0.52.0
                                                 [ENABLED]
====[ Cluedin
                                              . [chabet]

: Main ☑ - Processing ☑ - Crawling ⊙

: AuthenticationStore (DataStore.Db.Authentication) - User:
====[ Roles
====[ Connection (mssql)
clientUser
====[ Connection (mssql)
=====[ Connection (mssql)
=====[ Connection (mssql)
                                              : AuditLog (DataStore.Db.AuditLog) - User: clientUser
: BlobStorage (DataStore.Db.BlobStorage) - User: clientUser
: ConfigurationStore (DataStore.Db.Configuration) - User:
clientUser
  ====[ Connection (mssql)
                                              : CluedInEntities (DataStore.Db.OpenCommunication) - User:
clientUser
                                                TokenStore (DataStore.Db.TokenStore) - User: clientUser
          Connection (mssal)
                                                Tokenstore (Datastore.Db., Tokenstore) - User: clientUser
Training (Datastore.Db.Training) - User: clientUser
ExternalSearch (DataStore.Db.ExternalSearch) - User: clientUser
ML-Logging (DataStore.Db.Mt-Logging) - User: clientUser
Metrics (DataStore.Db.Metrics) - User: clientUser
WebAppStore (DataStore.Db.WebApp) - User: clientUser
          Connection (mssql)
Connection (mssql)
=====[
=====[
          Connection (mssql)
           Connection (mssql)
          Connection (rabbitmq)
Connection (rabbitmq)
Connection (rabbitmq)
                                                     MessageBus () - User: cluedin
MessageBusManagement () - User: cluedin
SignalRScaleOut () - User: cluedin
=====
                                                : SignalRScaleOut () - User: cluedin
GRAPHSTORE_READ () - User: neo4j
GRAPHSTORE_WRITE () - User: neo4j
CACHESTORE () - User: redis
ETAGSTORE () - User: redis
JOBSTORE () - User: redis
DATAPROTECTIONPERSISTENCE () - User: redis
ch) : SEARCHSTORE () - User: elastic
          Connection (neo4j)
Connection (neo4j)
=====
          Connection (redis)
Connection (redis)
Connection (redis)
Connection (redis)
=====[
----[
====[ Connection (elasticsearch)
          SOL SERVER
                                              : [ENABLED]
=====
          Host Name
                                                  cluedin-sqlserver
          Host Port
                                                 1433
====[
           TimeOut
                                              : 15
          Encrypted ?
Extra Parameters
=====
                                                 MultipleActiveResultSets=True;Max Pool Size=200;Pooling=True;
                                                clientUser (cluedin-sqlserver-clientuser-secret)
sa (cluedin-sqlserver-secret)
=====[
          User
====[ User
                                              : [ENABLED]
====[ OpenRefine
          Host Name
Host Port
                                                 cluedin-openrefine
=====[ Redis
                                                 [ENABLED]
          Host Name
Host Port
----[
                                                 cluedin-redis-master
                                              : 6379
          Encrypted ?
User Secret
                                                 false
=====
-----
                                                 cluedin-redis (redis-password)
----
          Neo47
                                              : [ENABLED]
           Host Name
                                                  cluedin-neo4j
====[ Host HTTP Port
                                                7474
----[
----[
          Host BOLT Port
User
                                                 7687
neo4j
=====[ User Secret
                                                 cluedin-neo4j-secrets (neo4j-password)
 ====[ ElasticSearch
          Host Name
                                                 cluedin-elasticsearch
----i
          Host Port
                                                 9200
====[ User Secret
                                                elasticsearch-credentials (password)
                                              : [ENABLED]
: cluedin-rabbitmq
====[ RabbitMQ
          Host Name
=====[ Host Port
                                                5672
-----
          liser
                                                 cluedin
====[ User Secret
                                                 cluedin-rabbitmq (rabbitmq-password)
----
          Bootstrap Org ?
SSO
                                              : [YES => cluedin]
: [DISABLED]
```

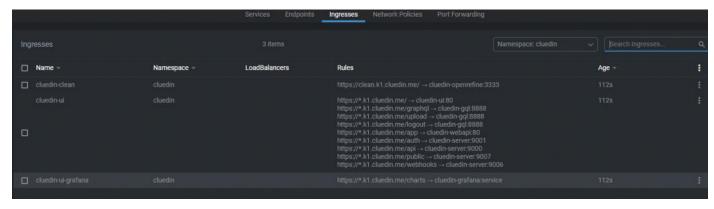
watching in lens - it's coming up



new volumes created

Persistent Volume Claims	9	items		Namespace: cluedin	♥ Se	earch Persistent
□ Name ~	Namespace -	Storage class	Size	Pods -	Age -	Status
cluedin-elasticsearch-cluedin-elasticsearch-0						
☐ cluedin-openrefine-data						
☐ cluedin-sqlserver-backup						
☐ cluedin-sqlserver-data						
cluedin-sqlserver-master						
☐ cluedin-sqlserver-translog						
data-cluedin-rabbitmq-0						
datadir-cluedin-neo4j-core-0						
redis-data-cluedin-redis-master-0						

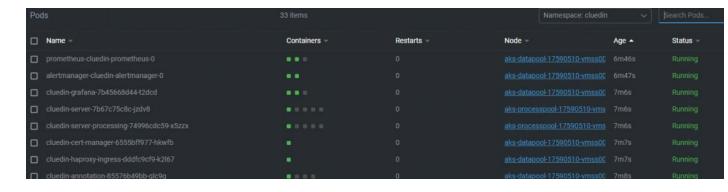
ingresses created



check public ip

update dns k1 and *.k1 A records for cluedin.me

all pods up



Manually Create Additional Orgs

```
kubectl run -i --tty --rm debug --image=alpine --restart=Never -- sh
apk --no-cache add curl jq
export org=cluedin
export password=<redacted>
```

```
"Active": true,
   "ApplicationSubDomain": "cluedin",
   "CustomerId": null,
   "ExternalAuthenticationId": null,
   "ExternalAuthenticationId": null,
   "EmailDomainName": "cluedin.com",
   "Id": "719047d7-3488-413b-a780-8b98de94057f",
   "IsEmailDomainSignupActivated": true,
   "LastLoginTime": "2022-02-22T14:51:53.2361614Z",
   "Name": "cluedin",
   "Plan": "6749e7a5-da15-47e2-918b-6a385e288865",
   "PlanISAndDate": "2022-03-24T14:51:53.2361615Z",
   "PlanISActive": true,
   "PlanStartDate": "2022-02-22T14:51:53.236162Z",
   "RefreshTokenLifeTime": 14400,
   "SubscriptionId": null
}
```

Successful Result - 3.3.0 GA

Sign in

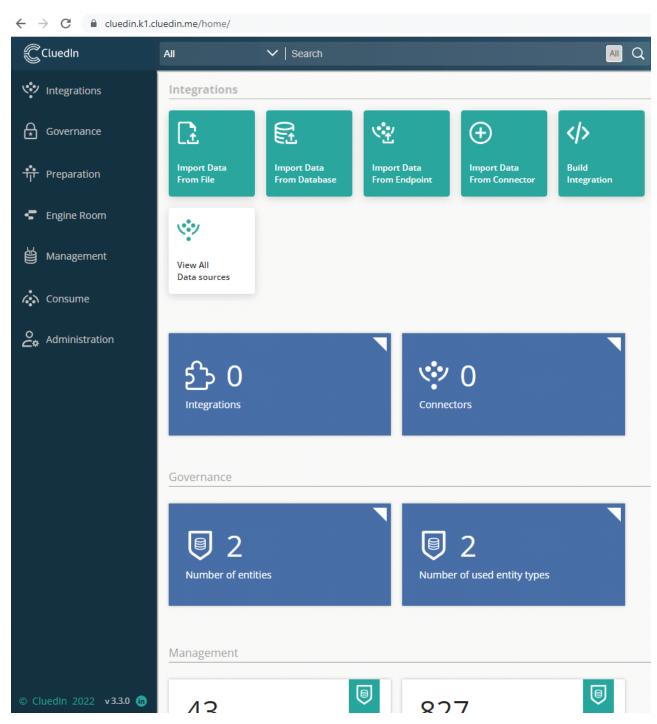
Welcome back, you are signing into the cluedin account.

Email

admin@cluedin.com	
Password	

	SIGN IN

I forgot my password



Let's ingest some mock data

https://mockaroo.com/

a 1000 entries will do

Name*

User friendly name to help you finc

MOCK_DATA.csv

Group* ②

Data is generally grouped by depar domains (e.g. Financial)

rudi-test-mockdata

MOCK_DATA.csv

Unfinished Mapping Created by A admin@cluedin.com a few seconds ago

Preview Map Prepare Validate Process

id	first_name	last_name	email
1	Micky	Reeve	mreeve0
2	Joelie	Conachy	jconachy
3	Chryste	Kirdsch	ckirdsch2
4	Rosemarie	Laphorn	rlaphorn
5	Eli	Sherrington	esherrin _{
6	Margarette	Ellerbeck	mellerbe
7	Jessamyn	O'Moylane	jomoylar

Create mapping



Choose mapping type



This step will create auto mapping which will decide the typ to create when the data is processed. In CluedIn we call thi:

Choose Entity Type

Select from the list or enter name to create new entity type

Person

View more details on Person 🔼

Choose vocabulary

Select from the list or enter name to create new vocabulary

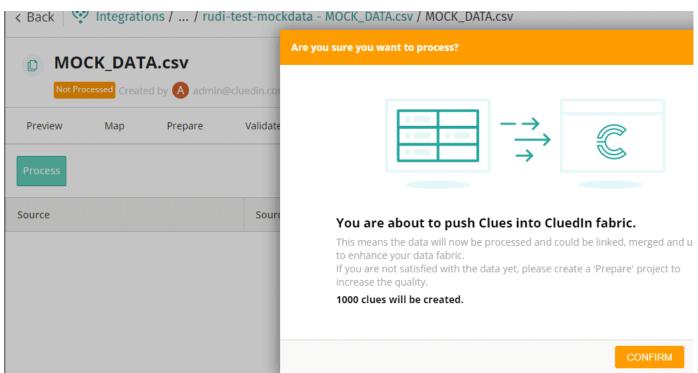
Person

View more details on Person 🔼









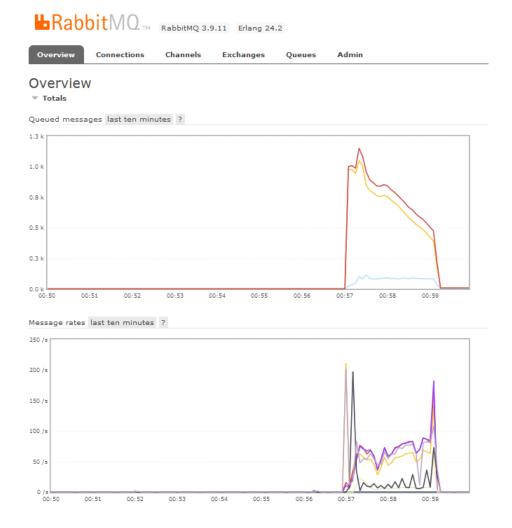


create rabbitmq

the password is stored in the cluster secrets



set graphs to large and last ten minutes so we can see a summary of the activity



3.3GA Values Yaml Example

See https://github.com/CluedIn-io/ImpTools/blob/master/k8s/pwsh/values.3.3.0.cluedin-platform-1.0.0.yml

```
# based on migrating https://github.com/CluedIn-
io/ImpTools/blob/master/k8s/pwsh/values.3.2.5charts
3.3.0app.redacted.example.yml from old 3.2.5 charts to
# platform based charts
# rha@cluedin.com Feb 2022
global:
    tag: "3.3.0" # what version of cluedin application we install pullPolicy: "IfNotPresent" # I like to not pull newer images unless I
really want them now
  ingress: # enabled HTTPS - I have my certs in the secret name as per 3.2.5
instructions - cert reused
    forceHttps: true
    annotations:
      ingress.kubernetes.io/ssl-redirect: "true"
    tls:
      secretName: "ingress-cert-secret"
  dns:
    hostname: "k1.cluedin.me"
```

```
# all sorts of create object type stuff can be done here
#platform:
# we could define docker-registry-key here if need be
# my cluster already has this defined
application:
  bootstrap:
    organization:
      name: cluedin
      email: admin@cluedin.com
      password: "<redacted>"
  cluedin:
    # this node selector is how we bind the pods to particular node pools
    nodeSelector:
     kubernetes.cluedin.com/pooltype: process
    roles:
     main:
        count: 1
         # all these resource sections were copy and pasted from the older
         values yml and intended as required
        resources:
          limits:
cpu: "2"
            memory: "10Gi"
          requests:
           cpu: "1.5"
            memory: "4Gi"
      processing:
        count: 1
        resources:
          limits:
           cpu: "4"
            memory: "8Gi"
          requests:
           cpu: "4"
            memory: "4Gi"
      crawling:
        count: 0
        resources:
          limits:
   cpu: "2"
            memory: "12Gi"
          requests:
           cpu: "2"
            memory: "8Gi"
  webapi:
    nodeSelector:
     kubernetes.cluedin.com/pooltype: general
    resources:
     limits:
   cpu: "0.5"
        memory: "512Mi"
      requests:
        cpu: "0.25"
        memory: "256Mi"
  # note: this used to be called clean in 3.2.5 and below
    nodeSelector:
      kubernetes.cluedin.com/pooltype: core
    resources:
      limits:
       cpu: 1000m
        memory: 512Mi
      requests:
        cpu: 250m
        memory: 128Mi
  annotations:
    nodeSelector:
     kubernetes.cluedin.com/pooltype: general
    resources:
      limits:
        cpu: 1000m
        memory: 1000Mi
      requests:
        cpu: 512m
        memory: 512Mi
  datasource:
    nodeSelector:
     kubernetes.cluedin.com/pooltype: process
    resources:
     limits:
        cpu: 1
        memory: 4Gi
      requests:
        cpu: 125m
        memory: 2Gi
  submitter:
    nodeSelector:
      kubernetes.cluedin.com/pooltype: general
```

```
resources:
      limits:
        cpu: 1000m
        memory: 1Gi
      requests:
        cpu: 1000m
        memory: 1Gi
  gql:
    nodeSelector:
      kubernetes.cluedin.com/pooltype: general
    resources:
      limits:
       cpu: 1000m
        memory: 1Gi
      requests:
        cpu: 200m
        memory: 64Mi
 ui:
    nodeSelector:
      kubernetes.cluedin.com/pooltype: general
    resources:
      limits:
        cpu: 750m
        memory: 512Mi
      requests:
        cpu: 250m
        memory: 256Mi
infrastructure:
  elasticsearch:
    nodeSelector:
      kubernetes.cluedin.com/pooltype: data
    resources:
      limits:
        cpu: 5
        memory: 8Gi
    volumeClaimTemplate:
      resources:
        requests:
         # all the storage sizes were copied from particular places in the
         original yml and these were put based on understanding the 3rd party
         charts and internal samples
          storage: "4Gi"
  neo4j:
    # there is an issue with 3.5.31
    # so pinning to this one 3 Mar 2022
    imageTag: "3.5.30"
    nodeSelector:
      kubernetes.cluedin.com/pooltype: data
    resources:
     limits:
cpu: "7"
        memory: "8Gi"
      requests:
cpu: "7"
        memory: "8Gi"
      persistentVolume:
        size: "8Gi"
  # note: some of these used to be in sqlserver
    nodeSelector:
      kubernetes.cluedin.com/pooltype: data
    resources:
     limits:
cpu: "3"
        memory: "8Gi"
      requests:
        cpu: "3"
        memory: "8Gi"
    persistence:
dataSize: "8Gi"
      transactionLogSize: "8Gi"
      backupSize: "8Gi"
masterSize: "8Gi"
  redis:
    master:
      nodeSelector:
        kubernetes.cluedin.com/pooltype: general
      resources:
        limits:
cpu: "1"
          memory: "512Mi"
        requests:
          cpu: "0.1"
          memory: "128Mi"
      persistence:
        size: "512Mi"
  rabbitmq:
```

```
nodeSelector:
   kubernetes.cluedin.com/pooltype: process
resources:
   limits:
        cpu: "2"
        memory: "4Gi"
   requests:
        cpu: "1"
        memory: "4Gi"
persistence:
        size: "4Gi"
openrefine:
   nodeSelector:
   kubernetes.cluedin.com/pooltype: core
```