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# Genesys Pulse Private Edition Guide

Tenant Provisioning

7/26/2024

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- Administrator

Learn how to provision Genesys Pulse.

**Related documentation:**

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## Prerequisites

Before performing the steps described on this page, complete the Before you begin instructions, and ensure that you have the following information:

- Versions:
  - = 100.0.000.0015
  - = 100.0.000+0015
- K8S namespace pulse
- Project Name pulse
- Postgres credentials:
  - 
  - 
  - 
  - 
  - 
  -
- Docker credentials:
  - 
  -
- Redis credentials:
  - 
  - 
  - 
  -
- Tenant service variables:
  - 
  - 
  -

- 
- GAAuth/GWS service variables:
    - 
    - 
    - 
    - 
    -
  - Storage class:
    - 
    -
  - Pulse:
    -

## Single namespace

Single namespace deployments have a software-defined networking (SDN) with multitenant mode, where namespaces are network isolated. If you plan to deploy Pulse into the single namespace, ensure that your environment meets the following requirements for inputs:

- Back-end services deployed into the single namespace must include the string *pulse*:
  - 
  -
- The hostname used for Ingress must be unique, and must include the string *pulse*:
  -
- Internal service-to-service traffic must use the service endpoints, rather than the Ingress Controller:
  - 
  -

## Tenant provisioning

### Install init tenant chart

#### Get the **init-tenant** helm chart:

```
helm repo update
helm search repo /init-tenant
```

#### Prepare the **override file**:

- Update the `values-override-init-tenant.yaml` file (AKS):

```
# Default values for init-tenant.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

# * Images
# Replace for your values: registry and secret
```

---

```

image:
  tag: ""
  pullPolicy: IfNotPresent
  registry: ""
  imagePullSecrets: [name: ""]

configurator:
  enabled: true
  # set service domain used to access voice service
  # example for GKE VPC case: voice.svc.gke1-uswest1.gcpe002.gencpe.com
  voiceDomain: "voice.svc."
  # set service domain used to access ixn service
  # example for GKE VPC case: ixn.svc.gke1-uswest1.gcpe002.gencpe.com
  ixnDomain: "ixn.svc."
  # set service domain used to access pulse service
  # example for GKE VPC case: pulse.svc.gke1-uswest1.gcpe002.gencpe.com
  pulseDomain: "pulse.svc."
  # set configuration server password, used when create secrets
  cfgUser: "default"
  # set configuration server user, used when create secrets
  cfgPassword: "password"
  # common log configuration
  cfgHost: "tenant-9350e2fc-ald-4c65-8d40-1f75a2e080dd.voice.svc."

log:
  # target directory where log will be stored, leave empty for default
  logDir: ""
  # path where volume will be mounted
  volumeMountPath: /data/log
  # log volume type: none | hostpath | pvc
  volumeType: none
  # log volume hostpath, used with volumeType "hostpath"
  volumeHostPath: /mnt/log
  # log PVC parameters, used with volumeType "pvc"
  pvc:
    name: pulse-init-tenant-logs
    accessModes:
      - ReadWriteMany
    capacity: 10Gi
    class:

# * Tenant info
# Replace for your values
tenant:
  # Tenant UUID
  id:
  # Tenant SID (like 0001)
  sid:

# common configuration.
config:
  dbName: ""
  # set "true" when need @host added for username
  dbUserWithHost: true
  # set "true" for CSI secrets
  mountSecrets: false
  # Postgres config map name
  postgresConfig: "pulse-postgres-configmap"
  # Postgres secret name
  postgresSecret: "pulse-postgres-secret"
  # Postgres secret key for user
  postgresSecretUser: "META_DB_ADMIN"
  # Postgres secret key for password

```

---

---

```
    postgresSecretPassword: "META_DB_ADMINPWD"

## Service account settings
serviceAccount:
  # Specifies whether a service account should be created
  create: false
  # Annotations to add to the service account
  annotations: {}
  # The name of the service account to use.
  # If not set and create is true, a name is generated using the fullname template
  name: ""

## Add annotations to all pods
##
podAnnotations: {}

## Specifies the security context for all Pods in the service
##
podSecurityContext: {}

## Resource requests and limits
## ref: http://kubernetes.io/docs/user-guide/compute-resources/
##
resources:
  limits:
    memory: 256Mi
    cpu: 200m
  requests:
    memory: 128Mi
    cpu: 100m

## Priority Class
## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-preemption/
##
priorityClassName: ""

## Node labels for assignment.
## ref: https://kubernetes.io/docs/user-guide/node-selection/
##
nodeSelector: {}

## Tolerations for assignment.
## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-toleration/
##
tolerations: []

# * Templates
templates:
  - Agent_Group_Status.gpb
  - Agent_KPIs.gpb
  - Agent_Login.gpb
  - Alert_Widget.gpb
  - Callback_Activity.gpb
  - Campaign_Activity.gpb
  - Campaign_Callback_Status.gpb
  - Campaign_Group_Activity.gpb
  - Campaign_Group_Status.gpb
  - Chat_Agent_Activity.gpb
  - Chat_Queue_Activity.gpb
  - Chat_Service_Level_Performance.gpb
  - Chat_Waiting_Statistics.gpb
  - Email_Agent_Activity.gpb
  - Email_Queue_Activity.gpb
```

---

- Facebook\_Media\_Activity.gpb
- IFRAME.gpb
- IWD\_Agent\_Activity.gpb
- IWD\_Queue\_Activity.gpb
- Queue\_KPIs.gpb
- Queue\_Overflow\_Reason.gpb
- Static\_Text.gpb
- Twitter\_Media\_Activity.gpb
- eServices\_Agent\_Activity.gpb
- eServices\_Queue\_KPIs.gpb

- Update the values-override-init-tenant.yaml file (GKE):

## Important

Enable configurator only for configurations in GKE with VPC scoped DNS.

- # Default values for init-tenant.  
# This is a YAML-formatted file.  
# Declare variables to be passed into your templates.  
  
# \* Images  
# Replace for your values: registry and secret  
image:  
  tag: ""  
  pullPolicy: IfNotPresent  
  registry: ""  
  imagePullSecrets: [name: ""]  
  
configurator:  
  enabled: true  
  # set service domain used to access voice service  
  # example for GKE VPC case: voice.svc.gke1-uswest1.gcpe002.gcpe.com  
  voiceDomain: "voice.svc."  
  # set service domain used to access ixn service  
  # example for GKE VPC case: ixn.svc.gke1-uswest1.gcpe002.gcpe.com  
  ixnDomain: "ixn.svc."  
  # set service domain used to access pulse service  
  # example for GKE VPC case: pulse.svc.gke1-uswest1.gcpe002.gcpe.com  
  pulseDomain: "pulse.svc."  
  # set configuration server password, used when create secrets  
  cfgUser: "default"  
  # set configuration server user, used when create secrets  
  cfgPassword: "password"  
  # common log configuration  
  cfgHost: "tenant-.voice.svc."  
  
log:  
  # target directory where log will be stored, leave empty for default  
  logDir: ""  
  # path where volume will be mounted  
  volumeMountPath: /data/log  
  # log volume type: none | hostpath | pvc  
  volumeType: none  
  # log volume hostpath, used with volumeType "hostpath"  
  volumeHostPath: /mnt/log  
  # log PVC parameters, used with volumeType "pvc"  
  pvc:  
    name: pulse-init-tenant-logs

---

```
    accessModes:
      - ReadWriteMany
    capacity: 10Gi
    class: nfs-client

# * Tenant info
# Replace for your values
tenant:
  # Tenant UUID
  id:
  # Tenant SID (like 0001)
  sid:

# common configuration.
config:
  dbName: ""
  # set "true" when need @host added for username
  dbUserWithHost: true
  # set "true" for CSI secrets
  mountSecrets: false
  # Postgres config map name
  postgresConfig: "pulse-postgres-configmap"
  # Postgres secret name
  postgresSecret: "pulse-postgres-secret"
  # Postgres secret key for user
  postgresSecretUser: "META_DB_ADMIN"
  # Postgres secret key for password
  postgresSecretPassword: "META_DB_ADMINPWD"

## Service account settings
serviceAccount:
  # Specifies whether a service account should be created
  create: false
  # Annotations to add to the service account
  annotations: {}
  # The name of the service account to use.
  # If not set and create is true, a name is generated using the fullname
template
  name: ""

## Add annotations to all pods
##
podAnnotations: {}

## Specifies the security context for all Pods in the service
##
podSecurityContext:
  fsGroup: null
  runAsUser: null
  runAsGroup: 0
  runAsNonRoot: true

## Resource requests and limits
## ref: http://kubernetes.io/docs/user-guide/compute-resources/
##
resources:
  limits:
    memory: 256Mi
    cpu: 200m
  requests:
    memory: 128Mi
    cpu: 100m
```

---



---

```

## Priority Class
## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-preemption/
##
priorityClassName: ""

## Node labels for assignment.
## ref: https://kubernetes.io/docs/user-guide/node-selection/
##
nodeSelector: {}

## Tolerations for assignment.
## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-toleration/
##
tolerations: []

# * Templates
templates:
  - Agent_Group_Status.gpb
  - Agent_KPIs.gpb
  - Agent_Login.gpb
  - Alert_Widget.gpb
  - Callback_Activity.gpb
  - Campaign_Activity.gpb
  - Campaign_Callback_Status.gpb
  - Campaign_Group_Activity.gpb
  - Campaign_Group_Status.gpb
  - Chat_Agent_Activity.gpb
  - Chat_Queue_Activity.gpb
  - Chat_Service_Level_Performance.gpb
  - Chat_Waiting_Statistics.gpb
  - Email_Agent_Activity.gpb
  - Email_Queue_Activity.gpb
  - Facebook_Media_Activity.gpb
  - IFRAME.gpb
  - IWD_Agent_Activity.gpb
  - IWD_Queue_Activity.gpb
  - Queue_KPIs.gpb
  - Queue_Overflow_Reason.gpb
  - Static_Text.gpb
  - Twitter_Media_Activity.gpb
  - eServices_Agent_Activity.gpb
  - eServices_Queue_KPIs.gpb

```

**Install the init-tenant helm chart:**

To install the init-tenant helm chart, run the following command:

```
helm upgrade --install "pulse-init-tenant-" pulsehelmrepo/init-tenant --wait --wait-for-jobs --version="" --namespace=pulse -f values-override-init-tenant.yaml
```

If installation is successful, the exit code 0 appears.

**Validate the init-tenant helm chart:**

To validate the init-tenant helm chart, run the following command:

```
kubectl get pods -n="pulse" -l "app.kubernetes.io/name=init-tenant,app.kubernetes.io/instance=pulse-init-tenant"
```

If the deployment was successful, the pulse-init-tenant job is listed as Completed/. For example:

NAME	READY	STATUS	RESTARTS	AGE
pulse-init-tenant-100-job-qszgl	0/1	Completed	0	2d20h

---

## Install dcu helm chart

### Get the dcu helm chart:

```
helm repo update
helm search repo /dcu
```

### Prepare the override file:

- Update the values-override-dcu.yaml file (AKS):

```
# Default values for dcu.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

replicaCount: ""

# * Tenant info
# tenant identification, or empty for shared deployment
tenant:
  # Tenant UUID
  id: ""
  # Tenant SID (like 0001)
  sid: ""

# * Common log configuration
log:
  # target directory where log will be stored, leave empty for default
  logDir: ""
  # path where volume will be mounted
  volumeMountPath: /data/log
  # log volume type: none | hostpath | pvc
  volumeType: pvc
  # log volume hostpath, used with volumeType "hostpath"
  volumeHostPath: /mnt/log
  # log PVC parameters, used with volumeType "pvc"
  pvc:
    name: pulse-dcu-logs
    accessModes:
      - ReadWriteMany
    capacity: 10Gi
    class:

# * Config info
# Set your values.
config:
  dbName: ""
  # set "true" when need @host added for username
  dbUserWithHost: true
  mountSecrets: false
  postgresConfig: "pulse-postgres-configmap"
  # Postgres secret name
  postgresSecret: "pulse-postgres-secret"
  # Postgres secret key for user
  postgresSecretUser: "META_DB_ADMIN"
  # Postgres secret key for password
  postgresSecretPassword: "META_DB_ADMINPWD"
  redisConfig: "pulse-redis-configmap"
  # Redis secret name
  redisSecret: "pulse-redis-secret"
  # Redis secret key for access key
  redisSecretKey: "REDIS01_KEY"
```

---

```
# * Image
# container image common settings
image:
  tag: ""
  pullPolicy: IfNotPresent
  registry: ""
  imagePullSecrets: [name: ""]

## Service account settings
serviceAccount:
  # Specifies whether a service account should be created
  create: false
  # Annotations to add to the service account
  annotations: {}
  # The name of the service account to use.
  # If not set and create is true, a name is generated using the fullname
  template
  name: ""

## Add annotations to all pods
##
podAnnotations: {}

## Specifies the security context for all Pods in the service
##
podSecurityContext: {}

## Add labels to all pods
##
podLabels: {}

## HPA Settings
## Not supported in this release!
hpa:
  enabled: false

## Priority Class
## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-
preemption/
##
priorityClassName: ""

## Node labels for assignment.
## ref: https://kubernetes.io/docs/user-guide/node-selection/
##
nodeSelector: {}

## Tolerations for assignment.
## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-
toleration/
##
tolerations: []

## Pod Disruption Budget Settings
podDisruptionBudget:
  enabled: false

## Affinity for assignment.
## Ref: https://kubernetes.io/docs/concepts/configuration/assign-pod-
node/#affinity-and-anti-affinity
##
affinity: {}
```

---

```

# * Monitoring settings
monitoring:
  # enable the Prometheus metrics endpoint
  enabled: false
  # enable golden signals metrics (not supported for PE)
  goldenSignals:
    enabled: false
  # port number of the Prometheus metrics endpoint
  port: 9091
  # HTTP path to scrape for metrics
  path: /metrics
  # additional annotations required for monitoring PODs
  # you can reference values of other variables as
  {{.Values.variable.full.name}}
  podAnnotations: {}
  # prometheus.io/scrape: "true"
  # prometheus.io/port: "{{.Values.monitoring.port}}"
  # prometheus.io/path: "/metrics"
  podMonitor:
    # enables PodMonitor creation for the POD
    enabled: true
    # interval at which metrics should be scraped
    scrapeInterval: 30s
    # timeout after which the scrape is ended
    scrapeTimeout:
    # namespace of the PodMonitor, defaults to the namespace of the POD
    namespace:
    additionalLabels: {}
  alerts:
    # enables alert rules
    enabled: true
    # alert condition duration
    duration: 5m
    # namespace of the alert rules, defaults to the namespace of the POD
    namespace:
    additionalLabels: {}

#####

# * Configuration for the Collector container
collector:
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "300Mi"
      # minimal CPU to reserve
      cpu: "200m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "4Gi"
      # maximum amount of CPU resources that can be used and should be tuned
      # to reflect
      # what the application can effectively use before needing to be
      # horizontally scaled out
      cpu: "8000m"
    # securityContext: {}

# * Configuration for the StatServer container

```

---

---

```

statsserver:
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "300Mi"
      # minimal CPU to reserve
      cpu: "100m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "4Gi"
      # maximum amount of CPU resources that can be used and should be tuned
to reflect
      # what the application can effectively use before needing to be
horizontally scaled out
      cpu: "4000m"
    # securityContext: {}

# * Configuration for the monitor sidecar container
monitorSidecar:
  # resource limits for container
  resources:
    # disabled: true
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "30Mi"
      # minimal CPU to reserve
      cpu: "2m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "70Mi"
      # maximum amount of CPU resources that can be used and should be tuned
to reflect
      # what the application can effectively use before needing to be
horizontally scaled out
      cpu: "10m"
    # securityContext: {}

#####

# * Configuration for the Configuration Server Proxy container
csproxy:
  # define domain for the configuration host
  params:
    cfgHost: "tenant-.voice."
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "200Mi"
      # minimal CPU to reserve
      cpu: "50m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer

```

---

---

```

        memory: "2Gi"
        # maximum amount of CPU resources that can be used and should be tuned
to reflect
        # what the application can effectively use before needing to be
horizontally scaled out
        cpu: "1000m"
        # securityContext: {}

# volumeClaims contains persistent volume claims for services
# All available storage classes can be found here:
# https://github.com/genesysengage/tfm-azure-core-aks/blob/master/k8s-module/
storage.tf
volumeClaims:
  # statserverBackup is storage for statserver backup data
  statserverBackup:
    name: statserver-backup
    accessModes:
      - ReadWriteOnce
    # capacity is storage capacity
    capacity: "1Gi"
    # class is storage class. Must be set explicitly.
    class:

```

- Update the values-override-dcu.yaml file (GKE):

```

# Default values for dcu.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

replicaCount: ""

# * Tenant info
# tenant identification, or empty for shared deployment
tenant:
  # Tenant UUID
  id: ""
  # Tenant SID (like 0001)
  sid: ""

# * Common log configuration
log:
  # target directory where log will be stored, leave empty for default
  logDir: ""
  # path where volume will be mounted
  volumeMountPath: /data/log
  # log volume type: none | hostpath | pvc
  volumeType: pvc
  # log volume hostpath, used with volumeType "hostpath"
  volumeHostPath: /mnt/log
  # log PVC parameters, used with volumeType "pvc"
  pvc:
    name: pulse-dcu-logs
    accessModes:
      - ReadWriteMany
    capacity: 10Gi
    class:

# * Config info
# Set your values.
config:
  dbName: ""
  # set "true" when need @host added for username
  dbUserWithHost: true

```

---

```
mountSecrets: false
postgresConfig: "pulse-postgres-configmap"
# Postgres secret name
postgresSecret: "pulse-postgres-secret"
# Postgres secret key for user
postgresSecretUser: "META_DB_ADMIN"
# Postgres secret key for password
postgresSecretPassword: "META_DB_ADMINPWD"
redisConfig: "pulse-redis-configmap"
# Redis secret name
redisSecret: "pulse-redis-secret"
# Redis secret key for access key
redisSecretKey: "REDIS01_KEY"

# * Image
# container image common settings
image:
  tag: ""
  pullPolicy: IfNotPresent
  registry: ""
  imagePullSecrets: [name: ""]

## Service account settings
serviceAccount:
  # Specifies whether a service account should be created
  create: false
  # Annotations to add to the service account
  annotations: {}
  # The name of the service account to use.
  # If not set and create is true, a name is generated using the fullname
  name: ""

## Add annotations to all pods
##
podAnnotations: {}

## Specifies the security context for all Pods in the service
##
podSecurityContext:
  runAsNonRoot: true
  runAsUser: 500
  runAsGroup: 500
  fsGroup: 0

## Add labels to all pods
##
podLabels: {}

## HPA Settings
## Not supported in this release!
hpa:
  enabled: false

## Priority Class
## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-preemption/
##
priorityClassName: ""

## Node labels for assignment.
## ref: https://kubernetes.io/docs/user-guide/node-selection/
##
```

---

```

nodeSelector: {}

## Tolerations for assignment.
## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-
toleration/
##
tolerations: []

## Pod Disruption Budget Settings
podDisruptionBudget:
  enabled: false

## Affinity for assignment.
## Ref: https://kubernetes.io/docs/concepts/configuration/assign-pod-
node/#affinity-and-anti-affinity
##
affinity: {}

# * Monitoring settings
monitoring:
  # enable the Prometheus metrics endpoint
  enabled: false
  # enable golden signals metrics (not supported for PE)
  goldenSignals:
    enabled: false
  # port number of the Prometheus metrics endpoint
  port: 9091
  # HTTP path to scrape for metrics
  path: /metrics
  # additional annotations required for monitoring PODs
  # you can reference values of other variables as
  {{.Values.variable.full.name}}
  podAnnotations: {}
  # prometheus.io/scrape: "true"
  # prometheus.io/port: "{{.Values.monitoring.port}}"
  # prometheus.io/path: "/metrics"
  podMonitor:
    # enables PodMonitor creation for the POD
    enabled: true
    # interval at which metrics should be scraped
    scrapeInterval: 30s
    # timeout after which the scrape is ended
    scrapeTimeout:
    # namespace of the PodMonitor, defaults to the namespace of the POD
    namespace:
    additionalLabels: {}
  alerts:
    # enables alert rules
    enabled: true
    # alert condition duration
    duration: 5m
    # namespace of the alert rules, defaults to the namespace of the POD
    namespace:
    additionalLabels: {}

#####

# * Configuration for the Collector container
collector:
  # resource limits for container
  resources:
    # minimum resource requirements to start container

```

---



---

```
requests:
  # minimal amount of memory required to start a container
  memory: "300Mi"
  # minimal CPU to reserve
  cpu: "200m"
# resource limits for containers
limits:
  # maximum amount of memory a container can use before being evicted
  # by the OOM Killer
  memory: "4Gi"
  # maximum amount of CPU resources that can be used and should be tuned
to reflect
  # what the application can effectively use before needing to be
horizontally scaled out
  cpu: "8000m"
# securityContext:
# runAsUser: 500
# runAsGroup: 500

# * Configuration for the StatServer container
statsserver:
# resource limits for container
resources:
  # minimum resource requirements to start container
requests:
  # minimal amount of memory required to start a container
  memory: "300Mi"
  # minimal CPU to reserve
  cpu: "100m"
# resource limits for containers
limits:
  # maximum amount of memory a container can use before being evicted
  # by the OOM Killer
  memory: "4Gi"
  # maximum amount of CPU resources that can be used and should be tuned
to reflect
  # what the application can effectively use before needing to be
horizontally scaled out
  cpu: "4000m"
# securityContext:
# runAsUser: 500
# runAsGroup: 500

# * Configuration for the monitor sidecar container
monitorSidecar:
# resource limits for container
resources:
  # disabled: true
  # minimum resource requirements to start container
requests:
  # minimal amount of memory required to start a container
  memory: "30Mi"
  # minimal CPU to reserve
  cpu: "2m"
# resource limits for containers
limits:
  # maximum amount of memory a container can use before being evicted
  # by the OOM Killer
  memory: "70Mi"
  # maximum amount of CPU resources that can be used and should be tuned
to reflect
  # what the application can effectively use before needing to be
horizontally scaled out
```

---

```

        cpu: "10m"
    # securityContext:
    #   runAsUser: 500
    #   runAsGroup: 500

#####

# * Configuration for the Configuration Server Proxy container
csproxy:
  # define domain for the configuration host
  params:
    cfgHost: "tenant-.voice."
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "200Mi"
      # minimal CPU to reserve
      cpu: "50m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "2Gi"
      # maximum amount of CPU resources that can be used and should be tuned
      # to reflect
      # what the application can effectively use before needing to be
      # horizontally scaled out
      cpu: "1000m"
    # securityContext:
    #   runAsUser: 500
    #   runAsGroup: 500

# volumeClaims contains persistent volume claims for services
# All available storage classes can be found here:
# https://github.com/genesysengage/tfm-azure-core-aks/blob/master/k8s-module/
# storage.tf
volumeClaims:
  # statserverBackup is storage for statserver backup data
  statserverBackup:
    name: statserver-backup
    accessModes:
      - ReadWriteOnce
    # capacity is storage capacity
    capacity: "1Gi"
    # class is storage class. Must be set explicitly.
    class:

```

#### Install the dcu helm chart

To install the dcu helm chart, run the following command:

```
helm upgrade --install "pulse-dcu-" pulsehelmrepo/dcu --wait --reuse-values --
version= --namespace=pulse -f values-override-dcu.yaml
```

#### Validate the dcu helm chart

To validate the dcu helm chart, run the following command:

```
kubectl get pods -n=pulse -l "app.kubernetes.io/name=dcu,app.kubernetes.io/
instance=pulse-dcu-"
```

Check the output to ensure that all pulse-dcu pods are running, for example:

NAME	READY	STATUS	RESTARTS	AGE
------	-------	--------	----------	-----

---

```
pulse-dcu-100-0 3/3 Running 0 5m23s
pulse-dcu-100-1 3/3 Running 0 4m47s
```

## Install lds helm chart

### Get the lds helm chart:

```
helm repo update
helm search repo /lds
```

### Prepare the override file:

- Update values in the values-override-lds.yaml file (AKS):

```
# Default values for lds.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

replicaCount: 2

# * Tenant info
# tenant identification, or empty for shared deployment
tenant:
  # Tenant UUID
  id: ""
  # Tenant SID (like 0001)
  sid: ""

# * Common log configuration
log:
  # target directory where log will be stored, leave empty for default
  logDir: ""
  # path where volume will be mounted
  volumeMountPath: /data/log
  # log volume type: none | hostpath | pvc
  volumeType: pvc
  # log volume hostpath, used with volumeType "hostpath"
  volumeHostPath: /mnt/log
  # log PVC parameters, used with volumeType "pvc"
  pvc:
    name: pulse-lds-logs
    accessModes:
      - ReadWriteMany
    capacity: 10Gi
    class:

# * Container image common settings
image:
  tag: ""
  pullPolicy: IfNotPresent
  registry: ""
  imagePullSecrets: [name: ""]

## Service account settings
serviceAccount:
  # Specifies whether a service account should be created
  create: false
  # Annotations to add to the service account
  annotations: {}
  # The name of the service account to use.
  # If not set and create is true, a name is generated using the fullname
  template
```

---

```
    name: ""

    ## Add annotations to all pods
    ##
    podAnnotations: {}

    ## Specifies the security context for all Pods in the service
    ##
    podSecurityContext: {}

    ## Add labels to all pods
    ##
    podLabels: {}

    ## HPA Settings
    ## Not supported in this release!
    hpa:
      enabled: false

    ## Priority Class
    ## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-
    ## preemption/
    ##
    priorityClassName: ""

    ## Node labels for assignment.
    ## ref: https://kubernetes.io/docs/user-guide/node-selection/
    ##
    nodeSelector: {}

    ## Tolerations for assignment.
    ## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-
    ## toleration/
    ##
    tolerations: []

    ## Pod Disruption Budget Settings
    podDisruptionBudget:
      enabled: false

    ## Affinity for assignment.
    ## Ref: https://kubernetes.io/docs/concepts/configuration/assign-pod-
    ## node/#affinity-and-anti-affinity
    ##
    affinity: {}

    # * Monitoring settings
    monitoring:
      # enable the Prometheus metrics endpoint
      enabled: false
      # enable golden signals metrics (not supported for PE)
      goldenSignals:
        enabled: false
      # port number of the Prometheus metrics endpoint
      port: 9091
      # HTTP path to scrape for metrics
      path: /metrics
      # additional annotations required for monitoring PODs
      # you can reference values of other variables as
      # {{.Values.variable.full.name}}
      podAnnotations: {}
      # prometheus.io/scrape: "true"
      # prometheus.io/port: "{{.Values.monitoring.port}}"
```

---

---

```

    # prometheus.io/path: "/metrics"
podMonitor:
  # enables PodMonitor creation for the POD
  enabled: true
  # interval at which metrics should be scraped
  scrapeInterval: 30s
  # timeout after which the scrape is ended
  scrapeTimeout:
  # namespace of the PodMonitor, defaults to the namespace of the POD
  namespace:
  additionalLabels: {}
alerts:
  # enables alert rules
  enabled: true
  # alert condition duration
  duration: 5m
  # namespace of the alert rules, defaults to the namespace of the POD
  namespace:
  additionalLabels: {}

# * Configuration for the LDS container
lds:
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "50Mi"
      # minimal CPU to reserve
      cpu: "50m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "4Gi"
      # maximum amount of CPU resources that can be used and should be tuned
      # to reflect
      # what the application can effectively use before needing to be
      # horizontally scaled out
      cpu: "4000m"
    # securityContext: {}

# * Configuration for the monitor sidecar container
monitorSidecar:
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "30Mi"
      # minimal CPU to reserve
      cpu: "2m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "70Mi"
      # maximum amount of CPU resources that can be used and should be tuned
      # to reflect
      # what the application can effectively use before needing to be
      # horizontally scaled out
      cpu: "10m"
    # securityContext: {}

```

---

---

```

# * Configuration for the Configuration Server Proxy container
csproxy:
  # define domain for the configuration host
  params:
    cfgHost: "tenant-.voice."
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "200Mi"
      # minimal CPU to reserve
      cpu: "50m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "2Gi"
      # maximum amount of CPU resources that can be used and should be tuned
      # to reflect
      # what the application can effectively use before needing to be
      # horizontally scaled out
      cpu: "1000m"
    # securityContext: {}

```

- Update values in the values-override-lds.yaml file (GKE):

```

# Default values for lds.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

replicaCount: 2

# * Tenant info
# tenant identification, or empty for shared deployment
tenant:
  # Tenant UUID
  id: ""
  # Tenant SID (like 0001)
  sid: ""

# * Common log configuration
log:
  # target directory where log will be stored, leave empty for default
  logDir: ""
  # path where volume will be mounted
  volumeMountPath: /data/log
  # log volume type: none | hostpath | pvc
  volumeType: pvc
  # log volume hostpath, used with volumeType "hostpath"
  volumeHostPath: /mnt/log
  # log PVC parameters, used with volumeType "pvc"
  pvc:
    name: pulse-lds-logs
    accessModes:
      - ReadWriteMany
    capacity: 10Gi
    class:

# * Container image common settings
image:
  tag: ""
  pullPolicy: IfNotPresent

```

---

---

```
registry: ""
imagePullSecrets: [name: ""]

## Service account settings
serviceAccount:
  # Specifies whether a service account should be created
  create: false
  # Annotations to add to the service account
  annotations: {}
  # The name of the service account to use.
  # If not set and create is true, a name is generated using the fullname
template
  name: ""

## Add annotations to all pods
##
podAnnotations: {}

## Specifies the security context for all Pods in the service
##
podSecurityContext:
  runAsNonRoot: true
  runAsUser: 500
  runAsGroup: 500
  fsGroup: 0

## Add labels to all pods
##
podLabels: {}

## HPA Settings
## Not supported in this release!
hpa:
  enabled: false

## Priority Class
## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-
preemption/
##
priorityClassName: ""

## Node labels for assignment.
## ref: https://kubernetes.io/docs/user-guide/node-selection/
##
nodeSelector: {}

## Tolerations for assignment.
## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-
toleration/
##
tolerations: []

## Pod Disruption Budget Settings
podDisruptionBudget:
  enabled: false

## Affinity for assignment.
## Ref: https://kubernetes.io/docs/concepts/configuration/assign-pod-
node/#affinity-and-anti-affinity
##
affinity: {}

# * Monitoring settings
```

---

```

monitoring:
  # enable the Prometheus metrics endpoint
  enabled: false
  # enable golden signals metrics (not supported for PE)
  goldenSignals:
    enabled: false
  # port number of the Prometheus metrics endpoint
  port: 9091
  # HTTP path to scrape for metrics
  path: /metrics
  # additional annotations required for monitoring PODs
  # you can reference values of other variables as
  {{.Values.variable.full.name}}
  podAnnotations: {}
    # prometheus.io/scrape: "true"
    # prometheus.io/port: "{{.Values.monitoring.port}}"
    # prometheus.io/path: "/metrics"
  podMonitor:
    # enables PodMonitor creation for the POD
    enabled: true
    # interval at which metrics should be scraped
    scrapeInterval: 30s
    # timeout after which the scrape is ended
    scrapeTimeout:
    # namespace of the PodMonitor, defaults to the namespace of the POD
    namespace:
    additionalLabels: {}
  alerts:
    # enables alert rules
    enabled: true
    # alert condition duration
    duration: 5m
    # namespace of the alert rules, defaults to the namespace of the POD
    namespace:
    additionalLabels: {}

# * Configuration for the LDS container
lds:
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "50Mi"
      # minimal CPU to reserve
      cpu: "50m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "4Gi"
      # maximum amount of CPU resources that can be used and should be tuned
      # to reflect
      # what the application can effectively use before needing to be
      # horizontally scaled out
      cpu: "4000m"
    # securityContext:
    #   runAsUser: 500
    #   runAsGroup: 500

# * Configuration for the monitor sidecar container
monitorSidecar:
  # resource limits for container

```

---



---

```

resources:
  # minimum resource requirements to start container
  requests:
    # minimal amount of memory required to start a container
    memory: "30Mi"
    # minimal CPU to reserve
    cpu: "2m"
  # resource limits for containers
  limits:
    # maximum amount of memory a container can use before being evicted
    # by the OOM Killer
    memory: "70Mi"
    # maximum amount of CPU resources that can be used and should be tuned
to reflect
    # what the application can effectively use before needing to be
horizontally scaled out
    cpu: "10m"
  # securityContext:
  #   runAsUser: 500
  #   runAsGroup: 500

# * Configuration for the Configuration Server Proxy container
csproxy:
  # define domain for the configuration host
  params:
    cfgHost: "tenant-.voice."
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "200Mi"
      # minimal CPU to reserve
      cpu: "50m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "2Gi"
      # maximum amount of CPU resources that can be used and should be tuned
to reflect
      # what the application can effectively use before needing to be
horizontally scaled out
      cpu: "1000m"
    # securityContext:
    #   runAsUser: 500
    #   runAsGroup: 500

```

**Update values in the values-override-lds-vq.yaml file:**

```

# Default values for lds.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

```

```

lds:
  params:
    cfgApp: "pulse-lds-vq-$(K8S_POD_INDEX % 2)"

log:
  pvc:
    name: pulse-lds-vq-logs

```

**Install the lds helm chart:**

To install the lds helm chart, run the following command:

---

```
helm upgrade --install "pulse-lds-" pulsehelmrepo/lds --wait --version= --
namespace=pulse -f values-override-lds.yaml
helm upgrade --install "pulse-lds-vq-" pulsehelmrepo/lds --wait --version= --
namespace=pulse -f values-override-lds.yaml -f values-override-lds-vq.yaml
```

If the installation is successful, the exit code 0 appears.

**Validate the lds helm chart:**

To validate the lds helm chart, run the following command:

```
kubectl get pods -n=pulse -l "app.kubernetes.io/name=lds,app.kubernetes.io/
instance=pulse-lds-"
```

Verify that the command reports all pulse-lds-vq pods as Running, for example:

NAME	READY	STATUS	RESTARTS	AGE
pulse-lds-100-0	3/3	Running	0	2d20h
pulse-lds-100-1	3/3	Running	0	2d20h

## Install permissions helm chart

**Get the permissions helm chart**

```
helm repo update
helm search repo /permissions
```

**Prepare the override file:**

- Update values in the values-override-permissions.yaml file (AKS):

```
# Default values for permissions.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

# * Image configuration
image:
  tag: ""
  pullPolicy: IfNotPresent
  registry: ""
  imagePullSecrets: [name: ""]

# * Tenant info
# tenant identification, or empty for shared deployment
tenant:
  # Tenant UUID
  id: ""
  # Tenant SID (like 0001)
  sid: ""

# common configuration.
config:
  dbName: ""
  # set "true" when need @host added for username
  dbUserWithHost: true
  # set "true" for CSI secrets
  mountSecrets: false
  # Postgres config map name
  postgresConfig: "pulse-postgres-configmap"
  # Postgres secret name
  postgresSecret: "pulse-postgres-secret"
  # Postgres secret key for user
  postgresSecretUser: "META_DB_ADMIN"
  # Postgres secret key for password
```

---

```

    postgresSecretPassword: "META_DB_ADMINPWD"
    # Redis config map name
    redisConfig: "pulse-redis-configmap"
    # Redis secret name
    redisSecret: "pulse-redis-secret"
    # Redis secret key for access key
    redisSecretKey: "REDIS01_KEY"

# * Configuration for the Configuration Server Proxy container
csproxy:
  # define domain for the configuration host
  params:
    cfgHost: "tenant-.voice."
  # resource limits for container
  resources:
    # minimum resource requirements to start container
    requests:
      # minimal amount of memory required to start a container
      memory: "200Mi"
      # minimal CPU to reserve
      cpu: "50m"
    # resource limits for containers
    limits:
      # maximum amount of memory a container can use before being evicted
      # by the OOM Killer
      memory: "2Gi"
      # maximum amount of CPU resources that can be used and should be tuned
      # to reflect
      # what the application can effectively use before needing to be
      # horizontally scaled out
      cpu: "1000m"
    # securityContext: {}

# * Common log configuration
log:
  # target directory where log will be stored, leave empty for default
  logDir: ""
  # path where volume will be mounted
  volumeMountPath: /data/log
  # log volume type: none | hostpath | pvc
  volumeType: pvc
  # log volume hostpath, used with volumeType "hostpath"
  volumeHostPath: /mnt/log
  # log PVC parameters, used with volumeType "pvc"
  pvc:
    name: pulse-permissions-logs
    accessModes:
      - ReadWriteMany
    capacity: 10Gi
    class:

## Specifies the security context for all Pods in the service
##
podSecurityContext: {}

## Resource requests and limits
## ref: http://kubernetes.io/docs/user-guide/compute-resources/
##
resources:
  limits:
    memory: "1Gi"
    cpu: "500m"

```

---

---

```

requests:
  memory: "400Mi"
  cpu: "50m"

## HPA Settings
## Not supported in this release!
hpa:
  enabled: false

## Priority Class
## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-
preemption/
##
priorityClassName: ""

## Node labels for assignment.
## ref: https://kubernetes.io/docs/user-guide/node-selection/
##
nodeSelector: {}

## Tolerations for assignment.
## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-
toleration/
##
tolerations: []

## Pod Disruption Budget Settings
podDisruptionBudget:
  enabled: false

## Affinity for assignment.
## Ref: https://kubernetes.io/docs/concepts/configuration/assign-pod-
node/#affinity-and-anti-affinity
##
affinity: {}

```

- Update values in the values-override-permissions.yaml file (GKE):

```

# Default values for permissions.
# This is a YAML-formatted file.
# Declare variables to be passed into your templates.

# * Image configuration
image:
  tag: ""
  pullPolicy: IfNotPresent
  registry: ""
  imagePullSecrets: [name: ""]

# * Tenant info
# tenant identification, or empty for shared deployment
tenant:
  # Tenant UUID
  id: ""
  # Tenant SID (like 0001)
  sid: ""

# common configuration.
config:
  dbName: ""
  # set "true" when need @host added for username
  dbUserWithHost: true
  # set "true" for CSI secrets

```

---

```

mountSecrets: false
# Postgres config map name
postgresConfig: "pulse-postgres-configmap"
# Postgres secret name
postgresSecret: "pulse-postgres-secret"
# Postgres secret key for user
postgresSecretUser: "META_DB_ADMIN"
# Postgres secret key for password
postgresSecretPassword: "META_DB_ADMINPWD"
# Redis config map name
redisConfig: "pulse-redis-configmap"
# Redis secret name
redisSecret: "pulse-redis-secret"
# Redis secret key for access key
redisSecretKey: "REDIS01_KEY"

# * Configuration for the Configuration Server Proxy container
csproxy:
# define domain for the configuration host
params:
  cfgHost: "tenant-.voice."
# resource limits for container
resources:
# minimum resource requirements to start container
requests:
# minimal amount of memory required to start a container
memory: "200Mi"
# minimal CPU to reserve
cpu: "50m"
# resource limits for containers
limits:
# maximum amount of memory a container can use before being evicted
# by the OOM Killer
memory: "2Gi"
# maximum amount of CPU resources that can be used and should be tuned
to reflect
# what the application can effectively use before needing to be
horizontally scaled out
cpu: "1000m"
# securityContext:
# runAsUser: 500
# runAsGroup: 500

# * Common log configuration
log:
# target directory where log will be stored, leave empty for default
logDir: ""
# path where volume will be mounted
volumeMountPath: /data/log
# log volume type: none | hostpath | pvc
volumeType: pvc
# log volume hostpath, used with volumeType "hostpath"
volumeHostPath: /mnt/log
# log PVC parameters, used with volumeType "pvc"
pvc:
  name: pulse-permissions-logs
  accessModes:
    - ReadWriteMany
  capacity: 10Gi
  class:

## Specifies the security context for all Pods in the service

```

---

---

```

##
podSecurityContext:
  fsGroup: null
  runAsUser: null
  runAsGroup: 0
  runAsNonRoot: true

## Resource requests and limits
## ref: http://kubernetes.io/docs/user-guide/compute-resources/
##
resources:
  limits:
    memory: "1Gi"
    cpu: "500m"
  requests:
    memory: "400Mi"
    cpu: "50m"

## HPA Settings
## Not supported in this release!
hpa:
  enabled: false

## Priority Class
## ref: https://kubernetes.io/docs/concepts/configuration/pod-priority-preemption/
##
priorityClassName: ""

## Node labels for assignment.
## ref: https://kubernetes.io/docs/user-guide/node-selection/
##
nodeSelector: {}

## Tolerations for assignment.
## ref: https://kubernetes.io/docs/concepts/configuration/taint-and-toleration/
##
tolerations: []

## Pod Disruption Budget Settings
podDisruptionBudget:
  enabled: false

## Affinity for assignment.
## Ref: https://kubernetes.io/docs/concepts/configuration/assign-pod-node/#affinity-and-anti-affinity
##
affinity: {}

```

**Install the permissions helm chart:** To install the permissions helm chart, run the following command:

```
helm upgrade --install "pulse-permissions-" pulsehelmrepo/permissions --wait --version="" --namespace=pulse -f values-override-permissions.yaml
```

If installation is successful, the exit code 0 appears.

**Validate the permissions helm chart:**

To validate the permissions helm chart, run the following command:

```
kubectl get pods -n=pulse -l "app.kubernetes.io/name=permissions,app.kubernetes.io/instance=pulse-permissions-"
```

Verify that the command report all pulse-permissions pods as Running, for example:

---

NAME	READY	STATUS	RESTARTS	AGE
pulse-permissions-100-c5ff8bb7d-jl7d7	2/2	Running	2	2d20h

## Troubleshooting

### **Check init-tenant helm chart manifests:**

To output the manifest into the **helm-template** directory, run the following command:

```
helm template --version= --namespace=pulse --debug --output-dir helm-template pulse-init-tenant- pulsehelmrepo/init-tenant -f values-override-init-tenant.yaml
```

### **Check dcu helm chart manifests:**

To output the dcu Helm chart manifest into the **helm-template** directory, run the following command:

```
helm template --version= --namespace=pulse --debug --output-dir helm-template pulse-dcu-pulsehelmrepo/dcu -f values-override-dcu.yaml
```

### **Check lds helm chart manifests:**

To output the lds chart manifest into the **helm-template** directory, run the following command:

```
helm template --version= --namespace=pulse --debug --output-dir helm-template pulse-lds-pulsehelmrepo/lds -f values-override-lds.yaml
```

### **Check permissions Helm chart manifests:**

To output the Helm chart manifest into the **helm-template** directory, run the following command:

```
helm template --version= --namespace=pulse --debug --output-dir helm-template pulse-permissions pulsehelmrepo/permissions -f values-override-permissions.yaml
```