Designer Deployment Guide

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Deploy Designer (versions v9012214 and above)

Contents

Learn how to deploy Designer as a service in a Kubernetes cluster (for **DesDepMnfst v9012214** and above).

1. About this document

This document guides you through the process of deploying and configuring Designer and Designer Application Server (DAS) as a service in a Kubernetes (K8s) cluster.

Information on the following topics is provided:

- Overview of Designer and DAS
- Configuration details
- Deployment process
- Enabling optional features
- Cleanup
- Known limitations

1.1 Intended audience

This document is intended for use primarily by system engineers and other members of an implementation team who will be involved in configuring and installing Designer and DAS, and system administrators who will maintain Designer and DAS installations.

To successfully deploy and implement applications in Designer and DAS, you must have a basic understanding of and familiarity with:

- Network design and operation
- Network configurations in your organization
- Kubernetes
- Genesys Framework architecture and functions

1.2 Before you begin

1. Install Kubernetes. Refer to the Kubernetes documentation site for installation instructions. You can also refer to the Genesys Docker Deployment Guide for information on Kubernetes and High Availability.
2. Install Helm according to the instructions outlined in the Helm documentation site.

After you complete the above mandatory procedures, return to this document to complete an on-premise deployment of Designer and DAS as a service in a K8s cluster.

2. Product overview

The following sections provide a brief overview of Designer and DAS.

2.1 Designer

The Designer service provides a web UI to build and manage VXML and SCXML based self-service and assisted service applications for a number of media types. It stores data on the local file system and is synchronized across instances by using services like Network File System (NFS). Genesys customers can build applications using a simple drag and drop method, and assign contact points (Route Points and other media endpoints) to applications directly from the Designer UI. Insights into runtime behavior of applications and troubleshooting aid is provided by Designer Analytics, which includes a rich set of dashboards based on session detail records (SDR) from data stored in Elasticsearch.

Designer offers the following features:

- Applications for working with phone, chat, email, SMS (text messages), Facebook, Twitter, and open media types.
- Bots, ASR, TTS capabilities for self-service.
- Assisted service or routing.
- Callback.
- Business Controls.
- Audio, message management.
- Grammars management.
- Contact points management - route points, chat end points, email pop-client/mailboxes.
- Analytics dashboards through embedded Kibana.

Designer is an Express/Node.js application. The UI is designed using Angular powered Bootstrap. Application data (SCXML and VXML) is stored as a file system. Designer Analytics and Audit data is stored in Elasticsearch.

2.2 Designer Application Server (DAS)

Designer Application Server (DAS) hosts and serves the Designer generated application files (SCXML and VXML), audio, and grammars. It also provides:

- Runtime evaluation of Business Controls (business hours, special days, emergency flags and data tables).
- Callback interface to GES.

DAS uses built-in NGINX to front requests. It consists of 3 modules: NGINX, PHP, and Node.js.

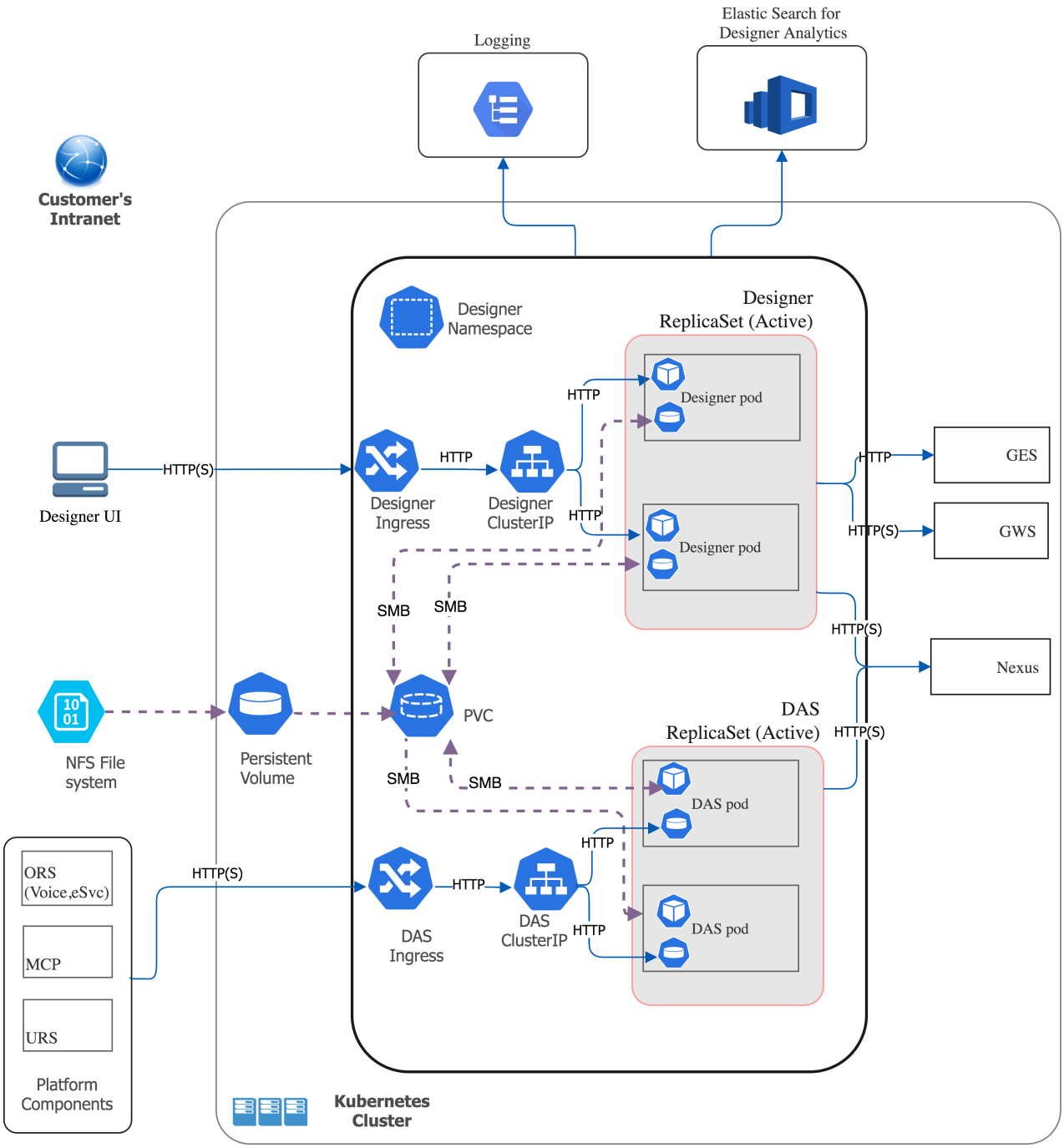
- Requests for static workspace content (SCXML, VXML, JS, audio, grammar, etc) are handled by the NGINX module.

- Requests for PHP content are processed by the FastCGI PHP module.
- SDR (Analytics) processing requests are handled by the DAS Node.js module.

> **Important**
> Files generated by Designer can be served only by DAS. Designer will work only with DAS.

2.3 Deployment architecture

The below architecture diagram illustrates a sample premise deployment of Designer and DAS:



2.4 High Availability (HA), Disaster Recovery (DR), and Scalability

Designer and DAS must be deployed as highly available in order to avoid single points of failure. A minimum of 2 replicas of each service must be deployed to achieve HA.

The Designer and DAS service pods can be automatically scaled up or down based on metrics such as CPU and memory utilization. The *Deployment configuration settings* section explains how to

configure HA and auto-scaling.

Refer to the Genesys Docker Deployment Guide for more information on general HA recommendation for Kubernetes.

3. Prerequisites

Before deploying Designer, ensure the following resources are deployed, configured, and accessible:

3.1 Mandatory prerequisites

- Kubernetes 1.12+
- Helm 3.0
- Docker
  - To store Designer and DAS docker images to the local docker registry.
- Ingress Controller
  - If Designer and DAS are accessed from outside of a K8s cluster, it is recommended to deploy/configure an ingress controller (for example, NGINX), if not already available. Also, the Blue-Green deployment strategy works based on the ingress rules.
  - The Designer UI requires *Session Stickiness*. Configure session stickiness in the *annotations* parameter in the **values.yaml** file during Designer installation.
- Persistent Volumes (PVs)
  - Create persistent volumes for workspace storage (5 GB minimum) and logs (5 GB minimum)
  - Set the access mode for these volumes to *ReadWriteMany*.
  - The Designer manifest package includes a sample YAML file to create Persistent Volumes required for Designer and DAS.
  - Persistent volumes must be shared across multiple K8s nodes. Genesys recommends using NFS to create Persistent Volumes.
- Shared file System - NFS
  - For production, deploy the NFS server as highly available (HA) to avoid single points of failure. It is also recommended that the NFS storage be deployed as a Disaster Recovery (DR) topology to achieve continuous availability if one region fails.
  - By Default, Designer and DAS containers run as a Genesys user (`uid:gid 500:500`). For this reason, the shared volume must have permissions that will allow write access to `uid:gid 500:500`. The optimal method is to change the NFS server host path to the Genesys user: `chown -R genesys:genesys`.
  - The Designer manifest package includes a sample YAML file to create an NFS server. Use this only for a demo/lab setup purpose.
  - Azure Files Storage - If you opt for Cloud storage, then Azure Files Storage is an option to consider and has the following requirements:
    A Zone-Redundant Storage for RWX volumes replicated data in zone redundant (check this), shared

across multiple pods.

- Provisioned capacity : 1 TiB
- Baseline IO/s : 1424
- Burst IO/s : 4000
- Egress Rate : 121.4 MiBytes/s
- Ingress Rate : 81.0 MiBytes/s

- Genesys Web Services (GWS) 9.x
  - Configure GWS to work with a compatible version of Configuration Server.
- Other Genesys Components
  - ORS ORS 8.1.400.x
  - Nexus 9.x
  - URS 8.1.400.x

3.2 Optional prerequisites

- Elasticsearch 7.8.0
  - Elasticsearch is used for Designer Analytics and audit trail.
- Redis 3.2.x
  - Redis is used for resource index caching and multi-user collaboration locks on Designer resources.

4. Deployment configuration settings (Helm values)

This section provides information on the various settings that have to be configured in Designer and DAS. The configuration settings listed below will be used during the deployment of Designer and DAS. That is, these settings will be used during initial deployment / upgrade. These settings can be configured in the **values.yaml** Helm file.

4.1 Designer deployment settings

The following table provides information on the Designer deployment settings. These settings are configured in the **designer-values.yaml** file.

Parameter	Description	Mandatory?	Default Value
`designer.deployment.replicaCount`	Number of service instances to be created.	Mandatory	`2`
`designer.deployment.maxReplicaCount`	The maximum number of replicas to be created. It is recommended to configure this setting if	Optional	`10`

	auto-scaling is used.		
`designer.deployment.strategy`	The deployment strategy to follow. This determines which type of resources are deployed. Valid values are: `rollingupdate, blue-green, blue-green-volume, blue-green-ingress, grafana`. • **rollingupdate** - default Kubernetes update strategy where resources will be updated using the rolling upgrade strategy. • **blue-green** - for deploying and upgrading the Designer service using the blue-green strategy. • **blue-green-volume** - for the blue/green upgrade, this is to create a Persistent Volume Claim (PVC) for the very first time. • **blue-green-ingress** - for the blue/green upgrade, this is to create an ingress for the first time and update the ingress during a service cutover. • **grafana** - for deploying the Grafana dashboard.	Mandatory	`rollingupdate`
`designer.deployment.color`	This is to deploy/ upgrade the Designer service in a blue-green upgrade strategy. Valid values are: `blue, green`.	Optional	
`designer.deployment.type`	This is to specify the type of deployment. Valid value:	Optional	`Deployment`

	`Deployment`.		
`designer.image.registry`	The registry that the organization uses for storing images.	Mandatory	
`designer.image.repository`	Docker repository that contains the images for Designer.	Mandatory	
`designer.image.tag`	Designer image version.	Mandatory	9.0.110.07.7
`designer.image.PullPolicy`	Designer image pull policy (imagePullPolicy). Valid values: `Always, IfNotPresent, Never`. • **Always** - always pull the image. • **IfNotPresent** - pull the image only if it does not already exist on the node. • **Never** - never pull the image.	Mandatory	`IfNotPresent`
`designer.image.imagePullSecrets`	Secret name containing credentials for authenticating access to the Docker repository.	Mandatory	
`designer.volumes.workspacePvc.create`	If a persistent volume is to be created, this value has to be `true`.	Mandatory	`true`
`designer.volumes.workspacePvc.mountPath`	The path where the workspace volume is to be mounted inside the Designer container.	Mandatory	`/designer/workspace` (Changing this value is not recommended.)
`designer.volumes.workspacePvc.claimName`	Persistent volume claim name for the workspace.	Mandatory	`designer-managed-disk`
`designer.volumes.workspacePvc.claimSize`	Size of the persistent volume claim for the workspace. The persistent volume must be equal to or greater than this size.	Mandatory	
`designer.volumes.workspacePvc.storageClass`	storageClassName provided in the persistent volume that is created for the Designer workspace (example, **nfs**).	Mandatory	
`designer.volumes.logsPvc.create`	If a PVC volume is to be created, this value has	Mandatory	`true`

	to be `true`, else `false`.		
`designer.volumes.logsPvc.mountPath`	The path where the Designer logs volume is to be mounted inside the Designer container.	Mandatory	`/designer/logs`
`designer.volumes.logsPvc.claim`	Persistent volume claim name for logs.	Mandatory	`designer-logs`
`designer.volumes.logsPvc.claimSize`	Size of the persistent volume claim for the Designer logs. The persistent volume must be equal to or greater than this size.	Mandatory	
`designer.volumes.logsPvc.storageClass`	storageClassName provided in the persistent volume that is created for the Designer logs (example, **nfs**).	Mandatory	

`designer.podVolumes`	Log and workspace persistent volume claim names and name of the volumes attached to the pod.	Mandatory	`designer:`
			`  podVolumes:`
			`    - name: designer-pv-volume`
			
			`persistentVolumeClaim:`
			`        claimName: designer-managed-disk`
			`    - name: designer-log-volume`
			
			`persistentVolumeClaim:`
			`        claimName: designer-logs`

`designer.volumeMounts`	Name and mount path of the volumes to be attached to the Designer pods.	Mandatory	`volumeMounts:`
			`    - name: designer-pv-volume`
			`      mountPath: /designer/workspace`
			`    - name: designer-log-volume`
			`      mountPath: /designer/logs`

`designer.livenessProbe.path`	Designer liveness probe API path.	Mandatory	`/health`
`designer.livenessProbe.containerPort`	Port running the container.	Mandatory	`8888`
`designer.livenessProbe.startupDelay`	The liveness probe will start after a given delay as specified here.	Mandatory	`20`
`designer.livenessProbe.checkInterval`	The interval between	Mandatory	`5`

	each liveness probe request.		
`designer.livenessProbe.failureThreshold`	Number of liveness probe failures after which to mark the container as unstable or restart.	Mandatory	`5`
`designer.readinessProbe.path`	Designer readiness probe API path.	Mandatory	`/health`
`designer.readinessProbe.containerPort`	Port running the container.	Mandatory	`8888`
`designer.readinessProbe.initialDelay`	The readiness probe will be started after a given delay as specified here.	Mandatory	`20`
`designer.readinessProbe.checkInterval`	The interval between each readiness probe request.	Mandatory	`5`
`designer.readinessProbe.failureThreshold`	Number of readiness probe failures after which to mark the container as unstable or restart.	Mandatory	`5`
`designer.designerSecretsEnabled`	This enables providing the GWS Client ID and Secret as an input to the Designer pods. Kubernetes Secrets is used to store the GWS client credentials.	Mandatory	`true`
`designer.designerSecrets.secrets`	GWS Client ID and GWS Client Secret. Create a new GWS Client if it does not exist. A link to information on creating a new GWS Client is provided in the *Platform settings* section.	Mandatory	
`designer.service.enabled`	Set to `true` if the service must be created.	Optional	`true`
`designer.service.type`	Service type. Valid values are: `ClusterIP`, `NodePort`, `LoadBalancer`.	Mandatory	`NodePort`
`designer.service.port`	The Designer service port to be exposed in the cluster.	Mandatory	`8888`
`designer.service.targetPort`	The Designer application port running inside the container.	Mandatory	`http`
`designer.service.nodePort`	Port to be exposed in	Mandatory for	`30180`

	case service type is `NodePort`.	`designer.service.type=NodePort`.	
`designer.service.termination_grace_period`	The period after which Kubernetes starts to delete the pods after service termination.	Optional	`30` seconds.
`designer.ingress.enabled`	Set to `true` to enable ingress. Ingress should be enabled for all cases except for a lab/ demo setup.	Mandatory	`true`
`designer.ingress.annotations`	Annotations added for ingress. The Designer UI requires Session Stickiness if the replica count is more than 1. Configure Session Stickiness based on the ingress controller type. Configuration specific to ingress such as Session Stickiness can be provided here.	Optional	
`designer.ingress.paths`	Ingress path	Mandatory	`[/]`
`designer.ingress.hosts`	Hostnames to be configured in ingress for the Designer service.	Mandatory	- .example.com - .blue.example.com - .green.example.com
`designer.ingress.tls`	TLS configuration for ingress.	Optional	`[]`
`designer.resources.limits.cpu`	Maximum amount of CPU that K8s allocates for the container.	Mandatory	`600m`
`designer.resources.limits.memory`	Maximum amount of memory that K8s allocates for the container.	Mandatory	`1Gi`
`designer.resources.requests.cpu`	Guaranteed CPU allocation for the container.	Mandatory	`500m`
`designer.resources.requests.memory`	Guaranteed memory allocation for the container.	Mandatory	`512Mi`
`designer.securityContext.runAsUser`	This setting controls which user ID the containers are run with. This can be configured to run Designer as a non-root user. You can either use the **Genesys** user or arbitrary UIDs.	Optional	

	Both are supported by the Designer base image. `500` is the ID of the Genesys user. The file system must reside within the Genesys user account in order to run Designer as a Genesys user. Change the NFS server host path to the Genesys user: `chown -R genesys:genesys`.		
`designer.securityContext.runAsGroup`	Controls which primary group ID the containers are run with. This can be configured to run Designer as a non-root user. You can either use the **Genesys** userGroup (GID - `500`) or arbitrary GIDs. Both are supported by the Designer base image.	Optional	

`designer.nodeSelector`	To allow pods to be scheduled based on the labels assigned to the nodes.	Optional	Default value:
			`nodeSelector: {}`
			Sample value:
			`nodeSelector:`
			`  :`

`designer.affinity`	The K8s standard node affinity and anti-affinity configurations can be added here. Refer to the this topic in the Kubernetes documentation site for sample values.	Optional	`{}`
`designer.tolerations`	Tolerations work with taints to ensure that pods are not scheduled on to inappropriate nodes. Refer to the Taints and Tolerations topic in the Kubernetes documentation site for sample values.	Optional	`[]`
`designer.podDisruptionBudget.enabled`	Set to `true` if a pod disruption budget is to be created.	Optional	`false`
`designer.podDisruptionBudget.minAvailable`	The number of pods that should always be available during a disruption.	Optional	`1`
`designer.dnsPolicy`	The DNS policy that	Optional	

	should be applied to the Designer pods.		
`designer.dnsConfig`	The DNS configuration that should be applied to the Designer pods.	Optional	
`designer.priorityClassName`	The priority class name that the pods should belong to.	Optional	
`designer.hpa.enabled`	Enables K8s Horizontal Pod Autoscaler (HPA). It automatically scales the number of pods based on average CPU utilization and average memory utilization. For more information on HPA refer to this topic in the Kubernetes documentation site.	Optional	`false`
`designer.hpa.targetCPUPercent`	The K8s HPA controller will scale up or scale down pods based on the target CPU utilization percentage specified here. It scales up or scales down pods between the range - `designer.deployment.replicaCount` and `designer.deployment.maxreplicaCount`.	Optional	`70`
`designer.hpa.targetMemoryPercent`	The K8s HPA controller will scale up or scale down pods based on the target memory utilization percentage specified here. It scales up or scales down pods between the range - `designer.deployment.replicaCount` and `designer.deployment.maxreplicaCount`.	Optional	`70`
`designer.labels`	Labels that will be added to the Designer pods.	Optional	`{}`
`designer.annotations`	Annotations added to the Designer pods.	Optional	`{}`
`designer.prometheus.enabled`	Set to `true` if Prometheus metrics must be enabled.	Optional	`false`
`designer.prometheus.tagName`	Label key assigned to the pods/service to filter out.	Optional	`service`

`designer.prometheus.tagValue`	Label value assigned to the pods/service to filter out.	Optional	`designer`
`designer.prometheus.instance`		Optional	`{{instance}}`
`designer.prometheus.serviceMonitor.enabled`	Set to `true` if a service monitor resource is needed to monitor the pods through the Kubernetes service.	Optional	`false`
`designer.prometheus.serviceMonitor.path`	The path in which the metrics are exposed.	Optional	`/metrics`
`designer.prometheus.serviceMonitor.interval`	The scrape interval specified for the Prometheus server. That is, the time interval at which the Prometheus server will fetch metrics from the service.	Optional	`10s`
`designer.prometheus.serviceMonitor.labels`	Labels to be specified for the service monitor resource.	Optional	
`designer.prometheus.alerts.enabled`	Set to `true` if Prometheus alerts must to be created.	Optional	`false`
`designer.prometheus.alerts.customAlerts`	Any custom alerts that are created must be specified here.	Optional	
`designer.prometheus.alerts.labels`	Labels to be specified for the alerts resource.	Optional	

`designer.prometheus.alerts`	Scenarios for which alerts need to be created.	Optional	**designer.prometheus.alerts**
			
			`containerRestartAlert:`
			`interval: 3m`
			`threshold: 5`
			
			`AlertPriority:`
			`CRITICAL`
			
			`MemoryUtilization:`
			`interval: 1m`
			`threshold: 70`
			
			`AlertPriority:`
			`CRITICAL`
			
			`endpointAvailable:`
			`interval: 1m`
			
			`AlertPriority:`
			`CRITICAL`
			`CPUUtilization:`
			`interval: 1m`
			`threshold: 70`

			AlertPriority: CRITICAL containerReadyAlert: interval: 1m readycount: 1 AlertPriority: CRITICAL WorkspaceUtilization: interval: 3m threshold: 80 workspaceClaim: designer-managed-disk AlertPriority: CRITICAL AbsentAlert: interval: 1m AlertPriority: CRITICAL Health: interval: 3m AlertPriority: CRITICAL WorkspaceHealth: interval: 3m AlertPriority: CRITICAL ESHealth: interval: 3m AlertPriority: CRITICAL GWSHealth: interval: 3m AlertPriority: CRITICAL
`designer.grafana.enabled`	Set to `true` if the Grafana dashboard is to be created.	Optional	`true`
`designer.grafana.labels`	Labels that have to be added to the Grafana ConfigMap.	Optional	
`designer.grafana.annotations`	Annotations that have to be added to the Grafana ConfigMap.	Optional	
`annotations`	Enables Kubernetes Annotations and adds it	Optional	`{}`

	to all the resources that have been created. For more information, refer to the Annotations topic in the Kubernetes documentation site.		
`labels`	Any custom labels can be configured here. It is a key and value pair, for example, key:"value". These labels are added to all resources.	Optional	`{}`
`podLabels`	Labels that will be added to all application pods.	Optional	`{}`
`podAnnotations`	Annotations that will be added to all application pods.	Optional	`{}`

4.1.1 Designer ConfigMap settings

The following table provides information on the environment variables and service-level settings stored in the Designer ConfigMap.

Parameter	Description	Mandatory?	Default Value
`designer.designerConfig.create`	This enables providing environment variables as an input to the Designer pods. It uses a ConfigMap to store the environment variables.	Mandatory	`true`
`designer.designerConfig.envs.DES_PORT`	Designer port for container (`"port"` in flowsettings.json). The input should be a string, within double quotes.	Mandatory	`"8888"`
`designer.designerConfig.envs.DES_APPSERVER_HOST`	DAS hostname (`"applicationHost"` in flowsettings.json).	Mandatory	`das`
`designer.designerConfig.envs.DES_APPSERVER_PORT`	DAS port (`"applicationPort"` in flowsettings.json). The input should be a string, within double quotes.	Mandatory	`"80"`
`designer.designerConfig.envs.DES_DEPLOY_URL`	This is normally not changed. It is the relative path to the workspace on DAS. The default value `"/workspaces"` should be used always (`"deployURL"` in	Mandatory	`"/workspaces"`

	flowsettings.json).		
`designer.designerConfig.envs.DES_USE_HTCC`	Set to `"true"` so Designer works with GWS. If set to `"false"`, Designer defaults to a local mode and may be used if GWS is unavailable (`"usehtcc"` in flowsettings.json). Input should be "true" or "false".	Mandatory	`"false"`
`designer.designerConfig.envs.DES_HTCC_SERVER`	GWS server host (`"htccserver"` in flowsettings.json). For example, "gws.genhtcc.com". The input should be a string, within double quotes.	Mandatory	`" "`
`designer.designerConfig.envs.DES_HTCC_PORT`	GWS server port (`"htccport"` in flowsettings.json). For example, `"80"`. The input should be a string, within double quotes.	Mandatory	`" "`
`designer.designerConfig.envs.DES_ENABLE_ANALYTICS`	To enable or disable Designer Analytics (`"enableAnalytics"` in flowsettings.json). Input should be "true" or "false".	Optional	`"false"`
`designer.designerConfig.envs.DES_ES_URL`	Elasticsearch URL (`"esUrl"` in flowsettings.json). For example, "es-service:9200". The input should be a string, within double quotes.	Optional	`" "`
`designer.designerConfig.envs.DES_ES_SERVER`	Elasticsearch Server Host Name (`"esServer"` in flowsettings.json). For example, "es-service"). The input should be a string, within double quotes.	Optional	`" "`
`designer.designerConfig.envs.DES_ES_PORT`	Elasticsearch port (`"esPort"` in flowsettings.json). For example, `"9200"`. The input should be a string, within double quotes.	Optional	`" "`
`designer.designerConfig.envs.DES_FILE_LOGGING_ENABLED`	Enable file logging. If not enabled, Designer	Mandatory	`"false"`

	will create only verbose logs. Input should be "true" or "false".		
`designer.designerFlowSettings.create`	Set to `true` to include the contents of the flowsettings.yaml file in a separate ConfigMap. Input should be true or false.	Optional	`false`
`designer.designerFlowSettingsConfigMap`	The flowsettings.yaml file should contain these keys, so that the file's contents will be included in the ConfigMap. Refer to the Updating the flowsettings file section in the *Deploy Designer* topic for more information on this.	Optional	`{}`

4.2 DAS deployment settings

The following table provides information on the DAS deployment settings. These settings are configured in the **das-values.yaml** file. DAS Deployment Settings

Parameter	Description	Mandatory?	Default Value
`das.deployment.replicaCount`	Number of pods to be created.	Mandatory	`2`
`das.deployment.maxreplicaCount`	The maximum number of replicas to be created. It is recommended to configure this setting if auto-scaling is used.	Optional	`10`
`das.deployment.strategy`	The deployment strategy to follow. This determines which type of resources are deployed. Valid values are: `rollingupdate, blue-green, blue-green-ingress, blue-green-service, canary`. • **rollingupdate** - default Kubernetes update strategy where resources will be updated using the rolling update	Mandatory	`rollingupdate`

	strategy. • **blue-green** - for deploying and upgrading the DAS service using the blue-green strategy. • **blue-green-ingress** - for the blue-green upgrade, this is to create an ingress for the first time. • **blue-green-service** - for the blue-green upgrade, this is to create a service for the first time, and update the service during a service cutover. • **canary** - to deploy canary pods along with the blue-green pods.		
`das.deployment.color`	This is to deploy/ upgrade the DAS service using the blue-green upgrade strategy. Valid values are: `blue, green`.	Mandatory for `blue-green` and `blue-green-service` strategies.	
`das.deployment.type`	Type of Kubernetes controller. Valid value is: `Deployment` • **Deployment** - if the Designer workspace is stored in the local filesystem (same network where Designer is running) and mounted as NFS.	Optional	`StatefulSet`
`das.image.repository`	Docker repository that contains the images for DAS.	Mandatory	
`das.image.tag`	DAS image version.	Mandatory	
`das.image.pullPolicy`	DAS image pull policy (imagePullPolicy). Valid values are: `Always, IfNotPresent, Never`.	Optional	`IfNotPresent`

	• **Always** - always pull the image. • **IfNotPresent** - pull the image only if it does not already exist on the node. • **Never** - never pull the image.		
`das.image.imagePullSecrets`	Secret name containing the credentials for authenticating access to the Docker repository.	Mandatory	

`das.podVolumes`	Provides the name of the volume and name of the persistent volume claim to be attached to the pods	Mandatory	`das:`
			`podVolumes:`
			`- name: workspace`
			
			`persistentVolumeClaim:`
			`claimName: designer-managed-disk`
			`- name: logs`
			
			`persistentVolumeClaim:`
			`claimName: designer-logs`

`das.volumes.podPvc.create`	This volume is usually created to mount a local disk to a DAS container for syncing data in case cloud storage is used for storing Designer files. This value has to be `true` or `false` depending on whether the local disk is needed or not	Optional	`false`
`das.volumes.podPvc.mountPath`	The path where the workspace volume is to be mounted inside the DAS container.	Optional	
`das.volumes.podPvc.claim`	Persistent volume claim name for the volume.	Optional	`local-workspace`
`das.volumes.podPvc.claimSize`	Size of the persistent volume claim for the pod. The persistent volume must be equal to or greater than this size.	Optional	
`das.volumes.podPvc.storageClass`	storageClassName provided in the	Optional	

	persistent volume that is created for DAS (example, **nfs**).		
`das.volumes.podPvc.accessModes`	The read/write priveleges and mount priveleges of the volume claim with respect to the nodes. Valid types are: `ReadWriteOnce`, `ReadOnlyMany`, `ReadWriteMany`. • **ReadWriteOnce** - the volume can be mounted as read-write by a single node. • **ReadOnlyMany** - the volume can be mounted as read-only by many nodes. • **ReadWriteMany** - the volume can be mounted as read-write by many nodes. For more information, refer to the access modes topic in the Kubernetes documentation site.	Optional	`ReadWriteOnce`

`das.volumeMounts`	The name of the volume and the mount path to be used by the pods.	Mandatory	`volumeMounts:`
			`- mountPath: /das/www/workspaces`
			`name: workspace`
			`- mountPath: /das/log`
			`name: logs`

`das.dasSecrets.enabled`	Set to `true` if Kubernetes secrets must be created to store keys/credentials/tokens.	Optional	`false`
`das.dasSecrets.secrets`	Key and value pairs containing the secrets, such as a username and password.	Optional	
`das.livenessProbe.path`	DAS liveness probe API path.	Mandatory	`/health`
`das.livenessProbe.containerPort`	Port running the container.	Mandatory	`8081`
`das.livenessProbe.startDelay`	The liveness probe will	Mandatory	`10`

	be started after a given delay as specified here.		
`das.livenessProbe.checkInterval`	The interval between each liveness probe request.	Mandatory	`5`
`das.livenessProbe.failureCount`	Number of liveness probe failures after which to mark the container as unstable or restart.	Mandatory	`3`
`das.readinessProbe.path`	DAS readiness probe API path.	Mandatory	`/health`
`das.readinessProbe.containerPort`	Port running the container.	Mandatory	`8081`
`das.readinessProbe.startupDelay`	The readiness probe will be started after a given delay as specified here.	Mandatory	`10`
`das.readinessProbe.checkInterval`	The interval between each readiness probe request.	Mandatory	`5`
`das.readinessProbe.failureCount`	Number of readiness probe failures after which to mark the container as unstable or restart.	Mandatory	`3`
`das.service.enabled`	Set to `true` if the service must be created.	Optional	`true`
`das.service.type`	Service type. Valid values are: `ClusterIP`, `NodePort`, `LoadBalancer`.	Mandatory	`NodePort`
`das.service.port`	The DAS service port to be exposed in the cluster.	Mandatory	`80`
`das.service.targetPort`	The DAS application port running inside the container.	Mandatory	`http`
`das.service.nodePort`	Port to be exposed in case service type is `NodePort`.	Mandatory if `das.service.type` is `NodePort`.	`30280`
`das.service.terminationGracePeriod`	The period after which Kubernetes starts to delete the pods in case of deletion.	Optional	`30` seconds.
`das.ingress.enabled`	Set to `true` to enable ingress. Ingress should be enabled for all cases except for a lab/	Optional	`false`

	demo setup.		
`das.ingress.annotations`	Annotations added for the ingress resources.	Optional	
`das.ingress.paths`	Ingress path.	Optional	`[/]`
`das.ingress.hosts`	Hostnames to be configured in ingress for the DAS service.	Mandatory if ingress is enabled.	
`das.ingress.tls`	TLS configuration for ingress.	Optional	`[]`
`das.resources.limits.cpu`	Maximum amount of CPU that K8s allocates for the container.	Mandatory	`600m`
`das.resources.limits.memory`	Maximum amount of memory that K8s allocates for the container.	Mandatory	`1Gi`
`das.resources.requests.cpu`	Guaranteed CPU allocation for the container.	Mandatory	`400m`
`das.resources.requests.memory`	Guaranteed memory allocation for the container.	Mandatory	`512Mi`
`das.securityContext.runAsUser`	This setting controls which user ID the containers are run with and can be configured to run DAS as a non-root user. You can either use the **Genesys** user or arbitrary UIDs. Both are supported by the DAS base image. `500` is the ID of the Genesys user. For more information refer to the Security Context topic in the Kubernetes documentation site.	Optional	
`das.securityContext.runAsGroup`	This setting controls which primary group ID the containers are run with and can be configured to run DAS as a non-root user. You can either use the **Genesys** userGroup (GID - `500`) or arbitrary GIDs. Both are supported by the DAS base image.	Optional	
`das.nodeSelector`	To allow pods to be	Optional	Default value:

	scheduled based on the labels assigned to the nodes.		`nodeSelector: {}` Sample value:
			
			`nodeSelector:`
			`  :`

`das.affinity`	The K8s standard node affinity and anti-affinity configurations can be added here. Refer to the this topic in the Kubernetes documentation site for sample values.	Optional	`{}`
`das.tolerations`	Tolerations work with taints to ensure that pods are not scheduled on to inappropriate nodes. Refer to the Taints and Tolerations topic in the Kubernetes documentation site for sample values.	Optional	`[]`
`das.podDisruptionBudget.enabled`	Set to `true` if a pod disruption budget is to be created.	Optional	`false`
`das.podDisruptionBudget.minAvailable`	The number of pods that should always be available during a disruption.	Optional	`1`
`das.dnsPolicy`	The DNS policy that should be applied to the DAS pods.	Optional	
`das.dnsConfig`	The DNS configuration that should be applied to the DAS pods.	Optional	
`das.priorityClassName`	The priority class name that the pods should belong to.	Optional	
`das.hpa.enabled`	Set to `true` if a K8s Horizontal Pod Autoscaler (HPA) is to be created.	Optional	`false`
`das.hpa.targetCPUPercent`	The K8s HPA controller will scale up/down pods based on the target CPU utilization percentage specified. It scale up/down pods between the range `deployment.replicaCount` to `deployment.maxReplicas`	Optional	75

`das.hpa.targetMemoryPercent`	The K8s HPA controller will scale up or scale down pods based on the target CPU utilization percentage specified here. It scales up or scales down pods between the range - `deployment.replicaCount` and `deployment.maxReplicas`.	Optional	`70`
`das.labels`	Labels that will be added to the DAS pods.	Optional	`{}`
`das.annotations`	Annotations added to the DAS pods.	Optional	`{}`
`das.prometheus.enabled`	Set to `true` if Prometheus metrics must be enabled.	Optional	`false`
`das.prometheus.tagName`	Label key assigned to the pods/service to filter out.	Optional	`service`
`das.prometheus.tagValue`	Label key assigned to the pods/service to filter out.	Optional	`designer`
`das.prometheus.pod`		Optional	`{{pod}}`
`das.prometheus.instance`		Optional	`{{instance}}`
`das.prometheus.serviceM`	Set to `true if a service monitor resource is needed to monitor the pods through the Kubernetes service.`	Optional	`false`
`das.prometheus.serviceMonitor.path`	The path in which the metrics are exposed.	Optional	`/metrics`
`das.prometheus.serviceMonitor.interval`	The scrape interval specified for the Prometheus server. That is, the time interval at which the Prometheus server will fetch metrics from the service.	Optional	`10s`
`das.prometheus.serviceMonitor.labels`	Labels to be specified for the service monitor resource.	Optional	
`das.prometheus.alerts.e`	Set to `true if Prometheus alerts must to be created.`	Optional	`false`
`das.prometheus.alerts.labels`	Labels to be specified for the alerts resource.	Optional	
`das.prometheus.alerts.customAlerts`	Any custom alerts that	Optional	

	are created must be specified here.		
`das.prometheus.alerts.`	Scenarios for which alerts need to be created.	Optional	**das.prometheus.alerts.** containerRestartAlert: interval: 3m threshold: 5 AlertPriority: CRITICAL MemoryUtilization: interval: 1m threshold: 75 AlertPriority: CRITICAL endpointAvailable: interval: 1m AlertPriority: CRITICAL CPUUtilization: interval: 1m threshold: 75 AlertPriority: CRITICAL containerReadyAlert: interval: 5m readycount: 1 AlertPriority: CRITICAL rsyncContainerReadyAlert: interval: 5m readycount: 1 AlertPriority: CRITICAL WorkspaceUtilization: interval: 3m threshold: 70 workspaceClaim: designer-managed-disk AlertPriority: CRITICAL AbsentAlert: interval: 1m AlertPriority: CRITICAL LocalWorkspaceUtilization:

			interval: 3m threshold: 70 AlertPriority: CRITICAL Health: interval: 3m AlertPriority: CRITICAL WorkspaceHealth: interval: 3m AlertPriority: CRITICAL PHPHealth: interval: 3m AlertPriority: CRITICAL ProxyHealth: interval: 3m AlertPriority: CRITICAL PhpLatency: interval: 1m threshold: 10 AlertPriority: CRITICAL HTTPLatency: interval: 1m threshold: 60 AlertPriority: CRITICAL HTTP4XXCount: interval: 5m threshold: 100 AlertPriority: CRITICAL HTTP5XXCount: interval: 5m threshold: 100 AlertPriority: CRITICAL
das.grafana.enabled	Set to `true` if the Grafana dashboard is to be created.	Optional	`true`
das.grafana.labels	Labels that must be added to the Grafana ConfigMap.	Optional	

das.grafana.annotations	Annotations that must be added to the Grafana ConfigMap.	Optional	
`annotations`	Enables Kubernetes Annotations and adds it to all the resources that have been created. For more information, refer to the Annotations topic in the Kubernetes documentation site.	Optional	`{}`
`labels`	Any custom labels can be configured here. It is a key and value pair, for example, key:"value". These labels are added to all resources.	Optional	`{}`
`podLabels`	Labels that will be added to all application pods.	Optional	`{}`
`podAnnotations`	Annotations that will be added to all application pods.	Optional	`{}`

4.2.1 DAS ConfigMap settings

Parameter	Description	Mandatory?	Default Value
`das.dasConfig.create`	This setting enables providing environment variables as an input to the DAS pods. It uses a ConfigMap to store the environment variables.	Mandatory	`true`
`das.dasConfig.envs.DAS_FILE_LOGGING_ENABLED`	Enables file logging. DAS supports only std out logging. This should always be set to `false`. Input should be "true" or "false".	Mandatory	`"false`
`das.dasConfig.envs.DAS_`	Enables log levels. Valid values are: `"FATAL", "ERROR", "WARN", "INFO", "DEBUG", "TRACE"`.	Optional	`"DEBUG"`
`das.dasConfig.envs.DAS_STDOUT_LOGGING_ENABLE`	Enables standard output console logging. Input should be "true" or "false".	Mandatory	`"true"`
`das.dasConfig.envs.DAS_SERVICES_ELASTICSEARCH_ENABLED`	To enable Designer Analytics. This configuration is required for DAS to initialize ES	Mandatory	`"false"`

	templates. Input should be "true" or "false".		
`das.dasConfig.envs.DAS_SERVICES_ELASTICSEARCH_HOST`	Elasticsearch server host name with http:// prefix. For example, http://es-service. The input should be a string, within double quotes.	Optional	" "
`das.dasConfig.envs.DAS_SERVICES_ELASTICSEARCH_PORT`	Elasticsearch port. For example, "80". The input should be a string, within double quotes.	Optional	" "

5. Post deployment Designer configuration settings

Post deployment, Designer configuration is managed from the following 3 locations:

5.1 Flow settings

Flow Settings is used for controlling global Designer settings that are applicable to all tenants and it contains bootstrap configuration settings such as port, GWS info, and DAS URL.

Configuration path - `/workspace/designer/flowsettings.json`.

This will be configured using the helm install. Refer to the *Updating the flowsettings file* section under *9. Post deployment procedures* for more information on updating the **flowsettings.json** file.

5.2 Tenant settings

These are tenant specific settings if the Designer service is configured with multi-tenancy .

Configuration path - `workspace//config/tenantsettings.json`.

The user should logout and log back in after any changes to the **tenantsettings.json** file. The Designer UI will continue to show the older features until the user logs out and logs back in.

Tenant specific settings are configured by directly editing the file in the above path.

5.3 DesignerEnv transaction list

The **DesignerEnv** transaction list is available in Configuration Server (`Tenant/Transactions/DesignerEnv`). This is mostly used to control the run-time settings. Any change to the **DesignerEnv** transaction list does not require the application to be published again or a new build for the application.

The user should log out and log back in for the changes to reflect in the Designer UI.

The **DesignerEnv** transaction list is configured using Agent Setup.

5.4 Post deployment configuration settings reference table

Category: Analytics					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`enableAnalytics` (optional)	Yes	Yes	No	This flag enables or disables the analytics feature.	Sample value: `true` Default value: `false`
`esUrl` (optional)	Yes	Yes	No	Elasticsearch URL	Sample value: http://es-spot.usw1.genhtcc.com:80
`esServer` (optional)	Yes	Yes	No	Elasticsearch server host name (for example, `es-service`).	Sample value: es-spot.usw1.genhtcc.com
`esPort` (optional)	Yes	Yes	No	Elasticsearch port.	Sample value: `80`
`ReportingURL` (optional)	No	No	Yes Section: `reporting`	URL of Elasticsearch where Designer applications will report data.	Sample value: http://es-spot.usw1.genhtcc.com:80
`esMaxQueryDuration` (optional)	Yes	Yes	No	The maximum time range (in days) to query in Designer Analytics. Each day's data is stored in a separate index in Elasticsearch.	Sample value: `90` Default value: `90`
`sdrMaxObjCount` (optional)	Yes	Yes	No	The maximum count of nested type objects that will be captured in SDRs. When set to -1, which is the default value, no objects will be trimmed. All the *milestones* or *activities* visited in runtime are expected to be	Sample value: `20`

				captured in an SDR.	
`SdrTraceLevel` (optional)	Yes	Yes	No	Value are: • **100** — Debug level and up. Currently, there are no Debug messages. • **200** — Standard level and up. This setting will show all blocks that are entered during a call in the `blocks` array. • **300** — Important level and up. This setting filters out all blocks from the `blocks` array, except those containing data that will change from call to call (such as the Menu block and User Input block).	Sample value: `300` Default value: `300`
Category: Audit					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`enableESAuditLogs` (optional)	Yes	Yes	No	Enable or disable audit logs captured in Elasticsearch.	Sample value: `false` Default value: `false`

`enableFSAuditLogs` (optional)	Yes	Yes	No	Enable or Disable audit logs captured in the file system under the **logs** directory or in standard output.	Sample value: `true` Default value: `true`
`maxAppSizeCompare` (optional)	Yes	Yes	No	The maximum size of data object for which a difference will be captured in the audit logs, value in bytes. That is, the difference between the Designer object's old value and new value.	Sample value: `1000000` Default value: `1000000`
`enableReadAuditLogs` (optional)	Yes	Yes	No	Control whether reading of Designer objects is captured in audit trails. If enabled any Designer object viewed in the UI will be recorded in the audit logs.	Sample value: `false` Default value: `false`
Category: Authorization					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`disableRBAC` (optional)	Yes	Yes	No	Controls if Designer reads and enforces permissions associated with the logged in user's roles.	Sample value: `false` Default value: `false`
`rbacSection` (optional)	Yes	Yes	No	In a Role object, the name of the section within the Annex where the privileges are stored.	Sample value: `CfgGenesysAdministratorServer` Default value: `CfgGenesysAdministratorServer`

`disablePBAC` (optional)	Yes	Yes	No	Controls if Designer allows partitioning of the Designer workspace and restricts a user's access to Designer objects in the user's partitions.	Sample value: `false` Default value: `false`
Category: Collaboration					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`locking` (optional)	Yes	No	No	The type of locking used, in an editing session for applications, modules, or data tables. Valid values are: `file, redis, none`. • **none** - resources are not locked and can be edited simultaneously by multiple users which can result in one user overwriting another user's changes. • **file** - uses files to keep track of locks and relies on shared storage (for example, NFS) to make lock files available to each Designer	Sample value: `file` Default value: `file`

				pod. Lock files are stored in the same location as the user's Designer workspace. • **redis** - uses Redis for storing resource locks and is recommended for production environments.	
Category: DAS					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`applicationHost` (mandatory)	Yes	No	No	The server name Designer uses to generate the URL to the application. ORS and MCP fetch the application code and other resources from this URL.	Sample value: `das.usw1.genhtcc.com` Default value: `localhost`
`applicationPort`	Yes	No	No	The corresponding port to be used with applicationHost.	Sample value: `80` Default value: `80`
`deployURL`	Yes	No	No	This is normally not changed. It is the relative path to the workspace on DAS.	Sample value: `/workspace` Default value: `/workspace`
Category: Digital					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`rootsSRL` (optional)	Yes	Yes	No	If specified, this is used to filter which Root Categories to display when	Sample value: Any REGular EXpression (REGEX).

				selecting Standard Responses.	
`maxFlowEntryCount` (optional)	Yes	No	Yes Section: `flowsettings`	Specify how many times the same application can process a specific digital interaction.	Sample value: `20` Default value: `20`
Category: External APIs					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`httpProxy` (optional)	Yes	Yes	Yes Secion: `flowsettings`	Specify the proxy used for external requests and nexus API calls (if `enable_proxy` is `true`).	Sample value: [http://vpcproxy-000-int.geo.genprim.
`redundantHttpProxy` (optional)	Yes	Yes	Yes Section: `flowsettings`	Specify the backup proxy used for external requests and nexus API calls (if `enable_proxy` is `true`), when httpProxy is down.	Sample value: [http://vpcproxy-001-int.geo.genprim.
Category: Features					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value

`features`	Yes	Yes	No	This is an object. See the **5.5 Features** section for a list of supported features.	Default value:
					
					`{`
					`  nexus: true,`
					
					`enableBulkAudioImport: true`
					`}`

Category: GWS					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`usehtcc`	Yes	No	No	Set to `true` so that Designer works with GWS. If set to `false`, Designer defaults to a	Sample value: `true` Default value: `false`

				local mode and may be used temporarily if GWS is unavailable.	
`htccServer`	Yes	No	No	GWS Server	Sample value: gws-usw1-int.genhtcc.com Default value: gws-usw1-int.genhtcc.com
`htccport`	Yes	No	No	GWS port.	Sample value: `80` Default value: `80`
`ssoLoginUrl`	Yes	No	No	URL of GWS authentication UI. Designer redirects to this URL for authentication.	Sample value: https://gws-usw1.genhtcc.com Default value: https://gws-usw1.genhtcc.com
`maxConcurrentHTCCRequest` (optional)	Yes	No	No	For batch operations to GWS, the max number of concurrent requests that Designer will send to GWS.	Sample value: `5` Default value: `5`
`batchOperationResultTTL` (optional)	Yes	No	No	For batch operations to GWS, the time, in milliseconds, for which duration Designer stores the results of a batch operation on the server, before deleting them.	Sample value: `100000` Default value: `100000`
Category: Help					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`docsMicroserviceURL` (optional)	Yes	No	No	URL for Designer documentation.	Default value: https://docs.genesys.com/Documentation/PSAAS/Public/Administrator/Designer
Category: IVR					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value

`recordingType` (optional)	Yes	Yes	No	Specify the recording type to be used in Record block. Set as `GIR`. If the option is missing or blank, `Full Call Recording` type will be used.	Sample value: `GIR` Default value: `GIR`
Category: Logging					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value

`logging: { designer: { level: debug }, audit: { level: trace}, auditdebug: { level: debug }, cli: { level: debug } }`
 	
(optional)
	Yes	No	No	Specify Designer log levels. Each field has valid values: `trace, debug, info, warn, error, or fatal`.
				
				• **designer** - log level of Designer.
				• **audit** - log level of audit.
				• **auditdebug** - log level of audit debug, this will log detailed audit information.
				• **cli** - log level for cli commands executed on Designer.
					Sample value:
					`logging: { designer: { level: debug}, audit: { level: trace }, auditdebug: { level: debug}, cli: { level: debug } }`
					
					Default value:
					`logging: { designer: { level: debug }, audit: { level: trace }, auditdebug: { level: debug }, cli: { level: debug } }`

Category: Nexus					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`url` (optional)	No	No	Yes Section: nexus	URL of Nexus that typically includes the API version path. For example,	Default value: http://nex-dev.usw1.genhtcc.com

				https://nexus-server/nexus/api/v3.	
`password` (optional)	No	No	Yes Section: `nexus`	The Nexus x-api-key created by Nexus deployment.	Default value: `dc4qeiro13nsof569dfn234smf`
`enable_proxy` (optional)	No	No	Yes Section: `nexus`	Boolean value to indicate if httpProxy is used to reach Nexus. Default value: `false`	
profile (optional)	No	No	Yes Section: `nexus`	Enable Contact Identification via Nexus (for example, to enable Last Called Agent routing).	
Category: Process					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`port`	Yes	No	No	Designer process port in the container. Normally, the default value should be left as is.	Sample value: `8888` Defualt value: `3000`
Category: Provisioning					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`primarySwitch` (optional)	Yes	Yes	No	Specify the primary switch name if more than one switch is defined for the tenant. Designer fetches and works with route points from this switch.	Default value: `us-west-1`
Category: Routing					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`ewtRefreshTimeout` (optional)	NO	No	Yes Section:	Specify the interval (in seconds) at	Sample value: `5` Default value: `1`

			`flowsettings`	which to refresh the Estimated Waiting Time when routing an interaction.	
Category: Redis					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value

`redis: { host: "", port: "", tlsEnabled: true, lockTimeout: 120, listTimeout: 1800 }`
 	
(optional)
	Yes	No	No	Used by Designer for resource index caching and multi-user collaboration locks on Designer resources.
				
				It is a separate object that contains:
				
				• **host** - Redis host name.
				• **port** - Redis port.
				• **tlsEnabled** - TLS enabled or not.
				• **lockTimeout** - Timeout, in seconds, before a resource lock is released for an editing session of applications, modules, or data tables.
				• **listTimeout** - The cache expiry timeout (in seconds) of the application list and shared modules list. By
					Sample value:
					
					`redis: { host: "", port: "", tlsEnabled: true, lockTimeout: 120, listTimeout: 1800 }`
					
					Default value:
					
					`redis: { host: redis.server.genhtcc.com, port: 6379, tlsEnabled: true, lockTimeout: 120, listTimeout: 1800 }`

				default, it is 30 minutes. That is, any new application/ modules created in the UI will be seen in the listing page after 30 mins. It can be reduced to a smaller value. This is to improve the page loading performance of the Applications and Shared Modules page. A better performance is achieved with a higher value.	
Category: Security					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`zipFileSizeLimitInMegaBytes` (optional)	Yes	Yes	No	Defines the maximum zipFile size limit (in megabytes) during bulk audio import.	Sample value: `50`
`disableCSRF` (optional)	Yes	Yes	No	Disable CSRF attack protection. For more information, refer to this topic in the CWE site. By default, CSRF attack protection is enabled. It can be disabled by setting	Sample value: `false` Default value: `false`

				this flag to `true`.	
`disableSecureCookie` (optional)	Yes	No	No	Disables the secure cookies header.	Sample value: `false` Default value: `false`
Category: Session					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`idleTimeout` (optional)	Yes	Yes	No	Idle timeout, in seconds, before a user session is terminated while editing applications, modules, or data tables.	Sample value: `840` Default value: `840`
`lockTimeout` (optional)	Yes	Yes	No	Timeout, in seconds, before a resource lock is released, for an editing session of applications, modules, or data tables.	Sample value: `120` Default value: `120`
`lockKeepalive` (optional)	Yes	Yes	No	Interval, in seconds, before the client sends a ping to the server, to refresh the lock for an editing session of applications, modules, or data tables.	Sample value: `15` Default value: `15`
Category: Workflow					
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	Description	Value
`maxBuilds` (optional)	Yes	Yes	No	Specify the maximum number of builds allowed per application.	Sample value: `20` Default value: `20`
`enablePTE` (optional)	No	No	Yes Section: `flowsettings`	Boolean value to indicate if PTE objects are enabled at runtime.	Sample value: `true` Default value: `false`

5.5 Features

The features specified in this section are configured under the `features` object in the **flowsettings.json** file or the **tenantsettings.json** file.

For example,

```
"features": {
          "nexus": true,
..
}
```

> **Important**
>
> These features are configured only in the **flowsettings.json** file and the **tenantsettings.json** file, and not in the **DesignerEnv** transaction list.

Category	Feature Setting Name	Mandatory	flowsettings.json	tenantsettings.json	Description	Default Value
Audio	`enableBulkAudioImport`	Optional	Yes	Yes	Enable/ disable the bulk audio import feature.	`false`
	`grammarValidation`	Optional	Yes	yes	If this feature is enabled, Designer will validate invalid grammar files during grammar upload and you can upload only valid grammar files (GRXML or Nuance compiled binary grammar files).	`false`
	`externalAudioSupport`	Optional	Yes	Yes	If this feature is enabled, a new audio type, External Audio, is	`false`

					available in the Play Message block. It accepts a single variable that contains a URL to the audio resource. MCP will fetch this resource directly and play it. The only supported value of **Play As** is *Audio URI*. There is no automatic language switching for this audio type.	
Nexus	`nexus`	Optional	Yes	Yes	Enable/ disable the Nexus feature.	`false`
Survey	`survey`	Optional	Yes	Yes	Enable/ disable the survey feature.	`true`
UI Plugins	`plugins`	Optional	Yes	Yes	Plugin configuration details. (Steps are given below the table.)	`{}`
	`plugins`	Optional	Yes	Yes	Enable or disable the plugin feature.	`false`
Milestone	`enableImplicitModuleMilestones`	Optional	Yes	Yes	Enable reporting each Shared Module call as an internal milestone. If disabled, Shared	`false`

					Module calls will not generate a milestone.	
Bots	`enableDialogFlowCxBot`	Dialogflow CX Bot	Yes	Yes	When enabled, Dialogflow CX bot type is added to the bot registry and available for selection in the **Bot provider** drop-down when you configure a new bot.	`false`

5.6 Adding a UI plugin to Designer

1. Add the `plugins` array object in the **flowsettings.json** file (*/ofs/designer/flowsettings.json*).
   The `plugins` object contains all the input properties for the plugin app. This is a required property. Whenever there is a change in this object, refresh the browser for the changes to take effect.
   Example:

```
"plugins": [
     {
       "url": "http://genesysexample.com/",
       "displayName": "Nexus PII Management",
       "placement": "messageCollections",
       "id":   "nexuspii",
       "mappings": {
             "prod": {
                 "G1-AUS4": "https://genesysexample.com/admin/ux"
             },
             "staging": {
                 "G1-USW1": "http://genesysexample.com/"
             },
         }
     },
     {
        ...
     }]
```

2. Add the `csplist` array object in the **flowsettings.json** file (*/ofs/designer/flowsettings.json*).
   The `cspList` object contains the URL forms to be allowed by Designer's security policy. This is a required property. Whenever there is a change in this object, re-start the node container for the changes to take effect.
   Example:
   If the URL is `http://genesysexample.com/`, the `cspList` would be:
   `"cspList": ["*.genexample1.com:*", "*.genexample2.com:*", "*.genexample3.com:*"]`
3. Turn on the `plugins` and `nexus` feature flags in the Designer **tenantSettings.json** file (*/ofs//config/tenantSettings.json*).
   This is a required property. Whenever there is a change in this object, log out of Designer and log in

again for the changes to take effect.

> **Important**
>
> If you want to enable the plugins feature for all tenants, add this feature flag in the **flowsettings.json** file. The feature is enabled for all the tenants under that bucket.

Example:

```
{
    "features": {
        "plugins": true,
        "nexus": true
}}
```

4. Add the `url_` property under the `plugins` section, in Agent Setup. If there is no `plugins` section, create one. This section is for the tenant URL override. If the `DesignerEnv` setting (*Transactions/Internal/DesignerEnv*) is not provided, the plugin URL from the **flowsettings.json** file is considered.
   This is an optional property. Whenever there is a change in this object, log out of Designer and log in again for the changes to take effect.
   Example:
   `{"url_" : "https://plugin-genesysexample.com"}`

6. Logging

Designer and DAS support console output (stdout) logging. Genesys recommends configuring console output logging to minimize the host IOPs and PVCs consumption by using log volumes. Console output logs can be extracted using log collectors like *fluentbit/fluentd* and *Elasticsearch*.

Ensure the below setttings are configured in the respective **values.yaml** overrides for console logging:

1. Designer
   `designerEnv.envs.DES_FILE_LOGGING_ENABLED = false`
2. DAS
   `dasEnv.envs.DAS_FILE_LOGGING_ENABLED = false`
   `dasEnv.envs.DAS_STDOUT_LOGGING_ENABLE = true`

6.1 Log levels

Post deployment, Designer and DAS log levels can be modified as follows:

6.1.1 Designer

1. Configure the `logging` setting in the flowsettings override (**flowsettings.yaml**) - Refer to the *5.4 Post deployment configuration settings reference table* section for option descriptions.
2. Execute the steps in the *Flowsettings.json update* section (see *Designer* under *8.8 Blue-Green deployment*) for the changes to take effect .

6.1.2 DAS

1. Configure the `dasEnv.envs.DAS_LOG_LEVEL` setting in the Helm **das-values.yaml** file. Refer to section *4.2 DAS deployment settings* for setting descriptions.
2. Execute the steps in the *Upgrade non production color* section (see *DAS* under *8.8 Blue-Green deployment*). The same DAS version running in production can be used for the upgrade,
3. Execute the steps in the *Cutover* section (see *DAS* under *8.8 Blue-Green deployment*).

7. Platform / Configuration Server and GWS settings

This section explains the Configuration Server objects and settings required for Designer.

7.1 Create Roles for Designer

Designer uses roles and access groups to determine permissions associated with the logged-in user. To enable this, you must make these changes in GAX or CME.

Designer supports a number of bundled roles suitable for various levels of users.

- **Designer Developer** - Most users fall into this category. These users can create Designer applications, upload audio, and create business controls. They have full access to Designer Analytics.
- **Designer Business User** - These users cannot create objects but they can manage them (for example, upload audio, change data tables, and view analytics).
- **Designer Analytics** - These users only have access to Designer Analytics.
- **Designer Admin** - These users can set up and manage partitions associated with users and Designer objects.
- **Designer Operations** - Users with this role have full access to all aspects of the Designer workspace. This includes the **Operations** menu (normally hidden), where they can perform advanced operational and maintenance tasks.

To create these roles, import the **.conf** files included in the **Designer Deployment** package. They are located in the **packages/roles/** folder.

In addition, ensure the following for user accounts that need access to Designer:

- The user must have read permissions on its own Person object.
- Users must be associated with one or more roles via access groups.
- The on-Premises user must have at least read access on the user, access group(s), and roles(s).
- The access groups must have read/write permissions to the Agent Setup folders - Scripts and Transactions.

7.2 Create the DesignerEnv transaction list

Designer requires a transaction list for configuration purposes as described in other sections of this document. To set this up:

1. Create a transaction list called **DesignerEnv**.
2. Import the file **configuration/DesignerEnv.conf**, located in the Designer Deployment Manifest package.
3. Edit any values according to the descriptions provided in *5.4 Post deployment configuration settings reference table*.
4. Save the list.
5. Ensure Designer users have at least read access to the **DesignerEnv** transaction list.

7.3 Platform settings

The platform settings listed below must be configured if the Designer application is used for voice calls.

Component	Config Key	Value	Description
SIP Switch -> Voip Services -> msml service	userdata-map-format	sip-headers-encoded	Option needs to set to pass JSON data as user data in SIPS.
SIP Switch -> Voip Services -> msml service	userdata-map-filter	*	To allow userdata passing to MSML service.
SIPServer --> TServer	divert-on-ringing	false	RONA is handled by the platform.
	agent-no-answer-timeout	12	
	agent-no-answer-action	notready	
	agent-no-answeroverflow	""	No value, empty.
	after-routing-timeout	24	
	sip-treatments-continuous	true	
	msml-record-support	true	To allow routed calls recording via the Media Server.
Switch object annex --> gts	ring-divert	1	
ORS --> orchestration	new-session-on-reroute	false	Required for SIPS Default Routing (Default Routing handling (Voice)).
MCP	[vxmli] transfer.allowed	TRUE	Required for Transfer block (allows VXML

			Transfer in MCP).
MCP	[cpa] outbound.method	NATIVE	Required for Transfer block (allow CPA detection for Transfer).
UCS	[cview] enabled	TRUE	Enables Customer Context Services.

7.4 GWS configuration

Ensure that the following steps are performed in GWS.

7.4.1 Create Contact Center

Create a contact center in GWS if it is not already created. Refer to the GWS documentation for more information on this.

7.4.2 Create GWS Client

Create new GWS client credentials if they are not already created . Refer to the GWS documentation for more information on this.

8. Deployment

This section describes the deployment process for Designer and DAS.

8.1 Preparation

Before you deploy Designer and DAS using Helm charts, complete the following preparatory steps:

1. Ensure the Helm client is installed.
2. Set up an Ingress Controller, if not already done.
3. Setup an NFS server, if not already done.
4. Create Persistent Volumes - a sample YAML file is provided in the Designer manifest package.
5. Download the Designer and DAS docker images and push to the local docker registry.
6. Download the Designer package and extract to the current working directory.
7. Configure Designer and DAS value overrides (**designer-values.yaml** and **das-values.yaml**); ensure the mandatory settings are configured. If the Blue-Green deployment process is used, Ingress settings are explained in the *8.8 Blue-Green deployment* section.

8.2 Set up Ingress

Given below are the requirements to set up an Ingress for the Designer UI:

- Cookie name - designer.session.

- Header requirements - client IP & redirect, passthrough.
- Session stickiness - enabled.
- Allowlisting - optional.
- TLS for ingress - optional (should be able to enable or disable TLS on the connection).

8.3 Set up Application Gateway (WAF) for Designer

Designer Ingress must be exposed to the internet using Application Gateway enabled with WAF.

When WAF is enabled, consider the following exception in the WAF rules for Designer:

- Designer sends a JSON payload with data, for example, `{profile . {} }`. Sometimes, this is detected as `OSFileAccessAttempt`, which is a false positive detection. Disable this rule if you encounter a similar issue in your WAF setup.

8.4 Storage

8.4.1 Designer storage

Designer requires storage to store designer application workspaces. Designer storage is a shared file storage that will be used by the Designer and DAS services.

> **Important**
> This storage is critical. Ensure you take backups and snapshots at a regular interval, probably, each day.

A Zone-Redundant Storage system is required to replicate data from the RWX volumes and must be shared across multiple pods:

- Capacity - 1 TiB
- Tier - Premium
- Baseline IO/s - 1424
- Burst IO/s - 4000
- Egress Rate - 121.4 MiBytes/s
- Ingress Rate - 81.0 MiBytes/s

8.4.2 Permission considerations for Designer and DAS storage

NFS

For NFS RWX storages, the mount path should be owned by `genesys:genesys`, that is, `500:500` with

`0777` permissions. It can be achieved by one of the below methods:

- From the NFS server, execute the **chmod -R 777** and **chown -R 500:500** commands to set the required permissions.
- Create a dummy Linux based pod that mounts the NFS storage. From the pod, execute the **chmod -R 777** and **chown -R 500:500** commands. This sets the required permissions. However, this method might require the Linux based pods to be run as privileged.

SMB / CIFS

For SMB / CIFS based RWX storages, for instance, Azure file share, the below `mountOptions` must be used in the **StorageClass** or the **PersistentVolume** template:

`mountOptions`

```
- dir_mode=0777
- file_mode=0777
- uid=500
- gid=500
- mfsymlinks
- cache=strict
```

8.5 Set up Secrets

Secrets are required by the Designer service to connect to GWS and Redis (if you are using them).

GWS Secrets:

- GWS provides a Client ID and secrets to all clients that can be connected. You can create Secrets for the Designer client as specified in the *Set up secrets for Designer* section below.

Redis password:

- If Designer is connected to Redis, you must provide the Redis password to Designer to authenticate the connection.

8.5.1 Set up Secrets for Designer

Use the `designer.designerSecrets` parameter in the **values.yaml** file and configure Secrets as follows:

```
designerSecrets:
  enabled: true
  secrets:
    DES_GWS_CLIENT_ID: xxxx
    DES_GWS_CLIENT_SECRET: xxxx
    DES_REDIS_PASSWORD: xxxxx
```

8.6 Deployment strategies

Designer supports the following deployment strategies:

- Rolling Update (default).

- Blue-Green (recommended).

DAS (Designer Application Server) supports the following deployment strategies:

- Rolling Update (default).
- Blue-Green (recommended).
- Canary (must be used along with Blue-Green and is recommended in production).

8.7 Rolling Update deployment

The rolling update deployment is the standard default deployment to Kubernetes. It works slowly, one by one, replacing pods of the previous version of your application with pods of the new version without any cluster downtime. It is the default mechanism of upgrading for both Designer and DAS.

8.7.1 Designer

Initial deployment

To perform the initial deployment for a rolling upgrade in Designer, use the Helm command given below. The values.yaml file can be created as required.

- `helm upgrade --install designer -f designer-values.yaml designer-100.0.112+xxxx.tgz --set designer.image.tag=9.0.1xx.xx.xx`

The values.yaml overrides passed as an argument to the above Helm upgrade command:

`designer.image.tag=9.0.1xx.xx.xx` - This is the new Designer version to be installed, for example, `9.0.111.05.5`.

Upgrade

To perform an upgrade, the image version has to be upgraded in the **designer-values.yaml** file or can be set using the `--set` flag through the command given below. Once the **designer-values.yaml** file is updated, use this Helm command to perform the upgrade:

- `helm upgrade --install designer -f designer-values.yaml designer-100.0.112+xxxx.tgz --set designer.image.tag=9.0.1xx.xx.xx`

The values.yaml overrides passed as an argument to the above Helm upgrade command:

`designer.image.tag=9.0.1xx.xx.xx` - This is the new Designer version to be installed, for example, `9.0.111.05.5`.

Rollback

To perform a rollback, the image version in the **designer-values.yaml** file can be downgraded. Or you can use the `--set` flag through the command given below. Once the **designer-values.yaml** file is updated, use this Helm command to perform the rollback:

- `helm upgrade --install designer -f designer-values.yaml designer-100.0.112+xxxx.tgz --`

```
set designer.image.tag=9.0.1xx.xx.xx
```

The values.yaml overrides passed as an argument to the above Helm upgrade command:

`designer.image.tag=9.0.1xx.xx.xx` - This is the Designer version to be rolled back to, for example, `9.0.111.05.5`.

8.7.2 DAS

Initial deployment

To perform the initial deployment for a rolling upgrade in DAS, use the Helm command given below. The values.yaml file can be created as required.

- `helm upgrade --install designer-das -f designer-das-values.yaml designer-das-100.0.112+xxxx.tgz --set das.image.tag=9.0.1xx.xx.xx`

The values.yaml overrides passed as an argument to the above Helm upgrade command:

`das.image.tag=9.0.1xx.xx.xx` - This is the new DAS version to be installed, for example, `9.0.111.05.5`.

Upgrade

To perform an upgrade, the image version has to be upgraded in the **designer-das-values.yaml** file or can be set using the `--set` flag through the command given below. Once the **designer-das-values.yaml** file is updated, use this Helm command to perform the upgrade:

- `helm upgrade --install designer-das -f designer-das-values.yaml designer-das-100.0.112+xxxx.tgz --set das.image.tag=9.0.1xx.xx.xx`

The values.yaml overrides passed as an argument to the above Helm upgrade command:

`das.image.tag=9.0.1xx.xx.xx` - This is the new DAS version to be installed, for example, `9.0.111.05.5`.

Rollback

To perform a rollback, the image version in the **designer-das-values.yaml** file can be downgraded. Or you can use the `--set` flag through the command given below. Once the **designer-das-values.yaml** file is updated, use this Helm command to perform the rollback:

- `helm upgrade --install designer-das -f designer-das-values.yaml designer-das-100.0.112+xxxx.tgz --set das.image.tag=9.0.1xx.xx.xx`

The values.yaml overrides passed as an argument to the above Helm upgrade command:

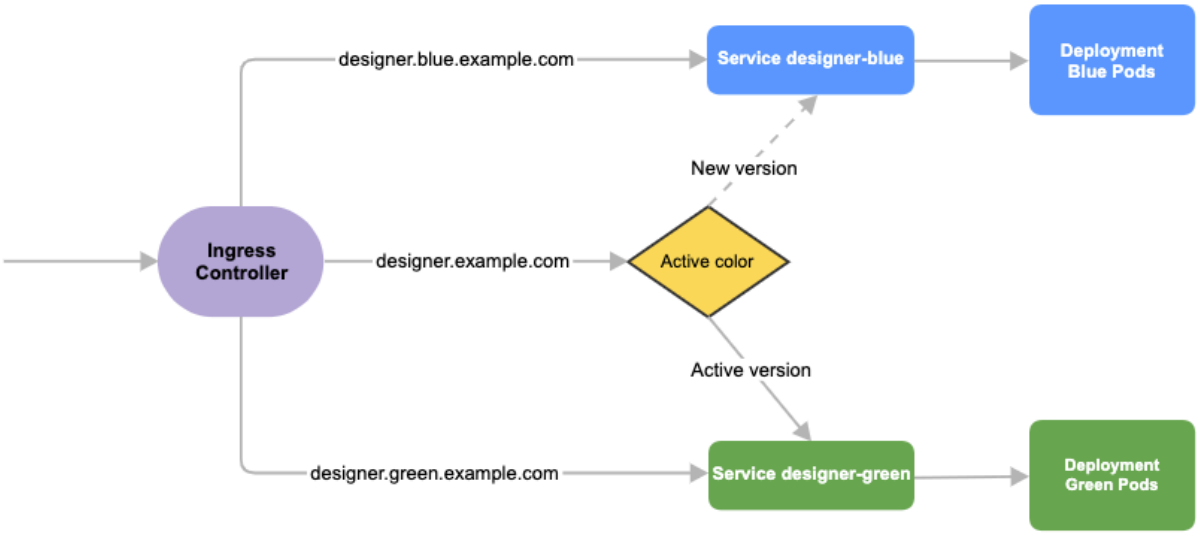
`das.image.tag=9.0.1xx.xx.xx` - This is the DAS version to be rolled back to, for example, `9.0.111.05.5`.

8.8 Blue-Green deployment

Blue-Green deployment is a release management technique that reduces risk and minimizes downtime. It uses two production environments, known as Blue and Green or active and inactive, to provide reliable testing, continuous no-outage upgrades, and instant rollbacks.When a new release needs to be rolled out, an identical deployment of the application will be created using the Helm package and after testing is completed, the traffic is moved to the newly created deployment which becomes the active environment, and the old environment becomes inactive. This ensures that a fast rollback is possible by just changing route if a new issue is found with live traffic. The old inactive deployment is removed once the new active deployment becomes stable.

8.8.1 Designer

Service cutover is done by updating the Ingress rules. The diagram below shows the high-level approach to how traffic can be routed to Blue and Green deployments with Ingress rules.



Preparation

Before you deploy Designer using the blue-green deployment strategy, complete the following preparatory steps:

1. Create 3 hostnames as given below. The blue service hostname must contain the string *blue*. For example, *designer.blue.example.com* or *designer-blue.example.com*. The green service hostname must contain the string *green*. For example, *designer.green.example.com* or *designer-green.example.com*. The blue/green services can be accessed separately with the blue/green hostnames:
   - `designer.example.com` - For the production host URL, this is used for external access.
   - `designer.blue.example.com` - For the blue service testing.
   - `designer.green.example.com` - For the green service testing.
2. Configure the hostnames in the **designer-values.yaml** file under `ingress`. Annotations and paths can be modified as required.

```
ingress:
  enabled: true
  annotations: {}
  paths: [/]
  hosts:
    - designer.example.com
    - designer.blue.example.com
    - designer.green.example.com
```

Initial deployment

The resources - ingress and persistent volume claims (PVC) - must be created initially before deploying the Designer service as these resources are shared between blue/green services and they are required to be created at the very beginning of the deployment. These resources are not required for subsequent upgrades. The required values are passed using the `-- set` flag in the following steps. Values can also be directly changed in the values.yaml file.

1. Create Persistent Volume Claims required for the Designer service (assuming the volume service name is `designer-volume`).
   `helm upgrade --install designer-volume -f designer-values.yaml designer-9.0.xx.tgz --set designer.deployment.strategy=blue-green-volume`
   The values.yaml overrides passed as an argument to the above Helm upgrade command:
   `designer.deployment.strategy=blue-green-volume` - This denotes that the Helm install will create a persistent volume claim in the blue/green strategy.
2. Create Ingress rules for the Designer service (assuming the ingress service name will be designer-ingress):
   `helm upgrade --install designer-ingress -f designer-values.yaml designer-100.0.112+xxxx.tgz --set designer.deployment.strategy=blue-green-ingress --set designer.deployment.color=green`
   The values.yaml overrides passed as an argument to the above Helm upgrade command:
   `designer.deployment.strategy=blue-green-ingress` - This denotes that the Helm install will create ingress rules for the Designer service.
   `designer.deployment.color=green` - This denotes that the current production (active) color is green.
3. Deploy the Designer service color selected in step 2. In this case, green is selected and assuming the service name is `designer-green`:
   `helm upgrade --install designer-green -f designer-values.yaml designer-100.0.112+xxxx.tgz --set designer.deployment.strategy=blue-green --set designer.image.tag=9.0.1xx.xx.xx --set designer.deployment.color=green`

Upgrade

1. Identify the current production color by checking the Designer ingress rules (`kubectl describe ingress designer-ingress`). Green is the production color in the below example as the production host name points to the green service.

kubectl describe ingress designer-ingress

```
Host                        Path  Backends
----                        ----  --------
designer.example.com        /     designer-green:http (10.244.0.23:8888)
designer.green.example.com  /     designer-green:http (10.244.0.23:8888)
designer.blue.example.com   /     designer-blue:http (10.244.0.45:8888)
```

2. Deploy the Designer service on to the non-production color. In the above example, blue is the non-production color and assuming the service name will be designer-blue:
`helm upgrade --install designer-blue -f designer-values.yaml designer-100.0.112+xxxx.tgz --set designer.deployment.strategy=blue-green --set designer.image.tag=9.0.1xx.xx.xx --set designer.deployment.color=blue`
The values.yaml overrides passed as an argument to the above Helm upgrade command:
`designer.deployment.strategy=blue-green` - This denotes that the Designer service is installed using the blue-green strategy.
`designer.image.tag=9.0.1xx.xx.xx` - This denotes the new Designer version to be installed, for example, `9.0.116.08.12`.
`designer.deployment.color=blue` - This denotes that the blue color service is installed.
The non-production color can be accessed with the non-production host name (for example, `designer.blue.example.com`). Testing can be done using this URL.

NodePort Service

The `designer-green` release creates a service called `designer-green` and the `designer-blue` release creates a service called `designer-blue`. If you are using NodePort services, ensure that the value of `designer.service.nodePort` is not the same for both the releases. In other words, you should assign dedicated node ports for the releases. The default value for `designer.service.nodePort` is **30180**. If this was applied to `designer-green`, use a different value for `designer-blue`, for example, **30181**. Use the below helm command to achieve this:

```
helm upgrade --install designer-blue -f designer-values.yaml
designer-100.0.112+xxxx.tgz --set designer.deployment.strategy=blue-green --set
designer.image.tag=9.0.1xx.xx.xx --set designer.deployment.color=blue --set
designer.service.nodePort=30181
```

Cutover

Once testing is completed on the non-production color, traffic can be moved to the new version by updating the Ingress rules:

1. Update the Designer Ingress with the new deployment color by running the following command (in this case, blue is the new deployment color, that is, the non-production color):
`helm upgrade --install designer-ingress -f designer-values.yaml designer-100.0.112+xxxx.tgz --set designer.deployment.strategy=blue-green-ingress --set designer.deployment.color=blue`
The values.yaml overrides passed as an argument to the above Helm upgrade command:
`designer.deployment.strategy=blue-green-ingress` - This denotes that the helm install will create ingress rules for the Designer service.
`designer.deployment.color=blue` - This denotes that the current production (active) color is blue.
2. Verify the ingress rules by running the following command:

`kubectl describe ingress designer-ingress`
The production host name must point to the new color service.

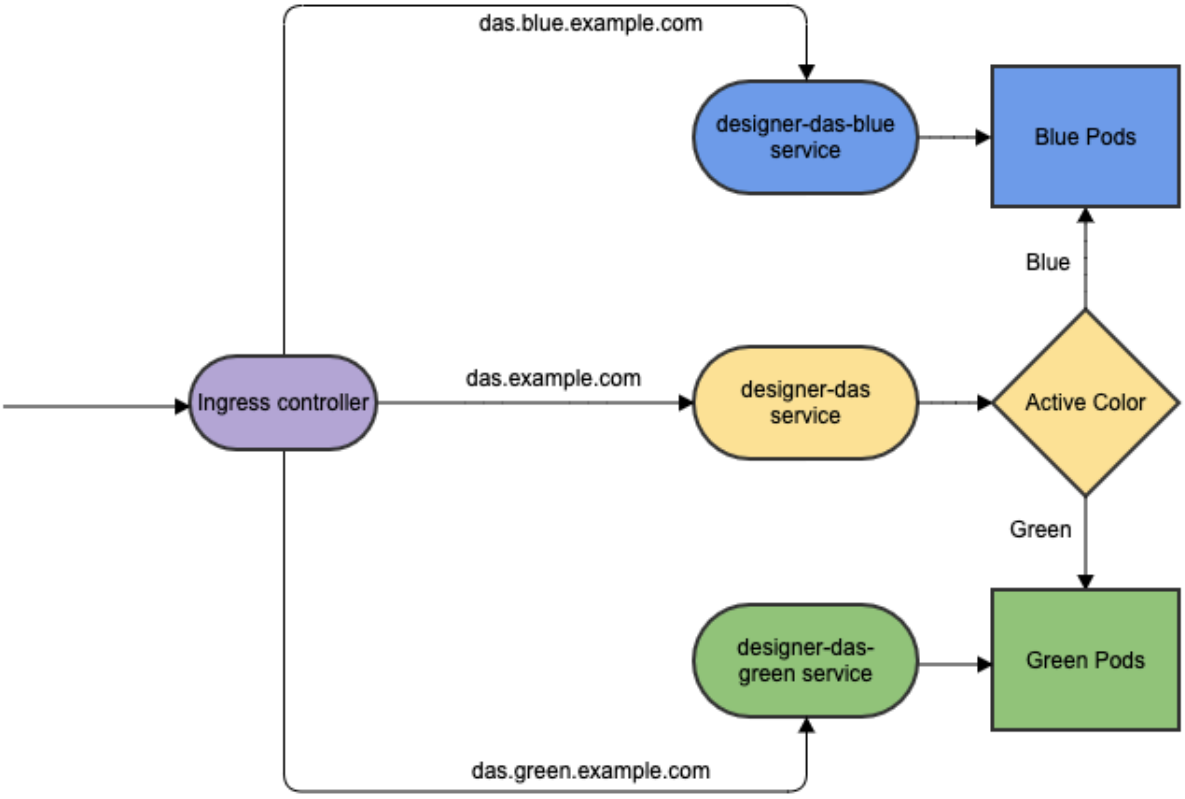
Rollback

If the upgrade must be rolled back, the ingress rules can be modified to point to the old deployment pods (green, in this example) by performing a cutover again.

1. Perform a cutover using the following command:
   `helm upgrade --install designer-ingress -f designer-values.yaml designer-100.0.112+xxxx.tgz --set designer.deployment.strategy=blue-green-ingress --set designer.deployment.color=green`
   The values.yaml overrides passed as an argument to the above Helm upgrade command:
   `designer.deployment.strategy=blue-green-ingress` - This denotes that the Helm install will create Ingress rules for the Designer service.
   `designer.deployment.color=green` - This denotes that the the current production (active) color is green.
2. Verify the Ingress rules by running the following command:
   `kubectl describe ingress designer-ingress`
   The production host name must point to the green service.

8.8.2 DAS

As with Designer, the Blue-Green strategy can be adopted for DAS as well. The Blue-Green architecture used for DAS is given below. Here, the cutover mechanism is controlled by Service, the Kubernetes manifest responsible for exposing the pods. The Ingress, when enabled, will point to the appropriate service based on the URL.



Ingress setup

> **Important**
>
> Ingress for DAS must be enabled only if DAS has to be reached from outside the Kubernetes cluster. If you don't intend to expose DAS outside the cluster, then ingress need not be enabled and you can skip these steps.

1. Configure Ingress Host names for DAS.
   Create 3 hostnames as follows: The blue service host name must contain the string *blue*; for instance, `das.blue.example.com` or `das-blue.example.com`, The green service host name must contain the string *green*; for instance, `das.green.example.com` or `das-green.example.com`. The green/blue services can be accessed separately with these blue/green hostnames.

   * `das.example.com` - This is the production host url, and is used for external access.

   * `das.blue.example.com` - This is for blue service testing.

   * `das.green.example.com` - This is for green service testing.

2. Configure the hostnames in the **das-values.yaml** file under ingress, annotations, and paths (can be modified based on the requirement).

```
ingress:
  enabled: true
  annotations: {}
  paths: ["/"]
  hosts:
    - das.example.com
    - das.blue.example.com
    - das.green.example.com
```

Initial deployment

The Ingress must be created initially before deploying the DAS service since it is shared between blue/green services and it is required to be created at the very beginning of the deployment. The Ingress is not required for subsequent upgrades. The required values are passed using the `-- set` flag in the following steps. Values can also be directly changed in the values.yaml file.

1. Deploy initial DAS pods and other resources by choosing an active color, in this example, green. Use the below command to create a `designer-das-green` service:
   `helm upgrade --install designer-das-green -f designer-das-values.yaml designer-das-100.0.106+xxxx.tgz --set das.deployment.strategy=blue-green --set das.image.tag=9.0.1xx.xx.xx --set das.deployment.color=green`
   The values.yaml overrides passed as an argument to the above Helm upgrade command:
   `das.deployment.strategy=blue-green` - This denotes that the DAS service will be installed using the blue-green deployment strategy.
   `das.image.tag=9.0.1xx.xx.xx` - This denotes the DAS version to be installed, for example, `9.0.111.04.4`.
   `das.deployment.color=green` - This denotes that the green color service is installed.
2. Once the initial deployment is done, the pods have to be exposed to the `designer-das` service. Execute the following command to create the `designer-das` service:
   `helm upgrade --install designer-das designer-das-100.0.106+xxx.tgz -f designer-das-values.yaml --set das.deployment.strategy=blue-green-service --set das.deployment.color=green`
   The values.yaml overrides passed as an argument to the above helm upgrade
   `das.deployment.strategy=blue-green-service` - This denotes that the designer-das service will be installed and exposed to the active color pods.
   `das.deployment.color=green` - This denotes that the designer-das service will point to green pods.
3. Create ingress rules for the DAS service (assuming the ingress service is `das-ingress`):

```
helm upgrade --install das-ingress designer-das-100.0.106+xxxx.tgz -f designer-das-values.yaml --set das.deployment.strategy=blue-green-ingress
```

The values.yaml overrides passed as an argument to the above command
`das.deployment.strategy=blue-green-ingress` - This denotes that the helm install will create ingress rules for the DAS service.

> **Important**
>
> Step 3 is required only when ingress is to be created to expose DAS outside the cluster.

NodePort Service

The `designer-das-green` release creates a service called `designer-das-green` and the `designer-das-blue` release creates a service called `designer-das-blue`. If you are using NodePort services, ensure that the value of `designer.service.nodePort` is not the same for both the releases. In other words, you should assign dedicated node ports for the releases. The default value for `designer.service.nodePort` is **30280**. If this was applied to `designer-das-green`, use a different value for `designer-das-blue`, for example, **30281**. Use the below helm command to achieve this:
`helm upgrade --install designer-das designer-das-100.0.106+xxx.tgz -f designer-das-values.yaml --set das.deployment.strategy=blue-green-service --set das.deployment.color=green --set das.service.nodePort=30281`

8.9 Canary

Canary is optional and is only used along with Blue-Green. It is recommended in production. Canary pods are generally used to test new versions of images with live traffic. If you are not opting for Canary, skip the steps in this section.

Canary deployment

1. Identify the current production color by checking the `designer-das` service selector labels (`kubectl describe service designer-das`). Green is the production color in the below example as the selector label is `color=green`.

   kubectl describe service designer-das

   ```
   Selector:                 color=green
   ```

2. To deploy canary pods, the `das.deployment.strategy` value must be set to `canary` in the **designer-das-values.yaml** file or using the `--  set` flag as shown in the command below:
   `helm upgrade --install designer-das-canary -f das-values.yaml designer-das-100.0.106+xxxx.tgz --set das.deployment.strategy=canary --set das.image.tag=9.0.1xx.xx.xx --set das.deployment.color=green`
   The values.yaml overrides passed as an argument to the above Helm upgrade command:
   `das.deployment.strategy=canary` - This denotes that the Helm install will create canary pods.
   `das.deployment.color=green` - This denotes that the current production (active) color is green.

   > **Important**
   > To make sure Canary pods receive live traffic, they have to be exposed to the `designer-das` service by setting `das.deployment.color=`, which is obtained from step 1.

3. Once canary pods are up and running, ensure that the designer-das service points to the canary pods using the `kubectl describe svc designer-das` command.

   ```
   Endpoints: 10.206.0.101:8081,10.206.0.162:8081,10.206.0.90:8081
   ```

   The IP address present in the Endpoints must match the IP address of the canary pod. The canary pod's IP address is obtained using the `kubectl describe pod` command.

```
IP: 10.206.0.90
IPs:
  IP: 10.206.0.90
```

Cleaning up

After completing canary testing, the canary pods must be cleaned up.

The `das.deployment.replicaCount` must be made zero and the release is upgraded. It can be changed in the **designer-das-values.yaml** file or through the `--set` flag as follows:

- `helm upgrade --install designer-das-canary -f das-values.yaml designer-das-100.0.106+xxxx.tgz --set das.deployment.strategy=canary --set das.image.tag=9.0.1xx.xx.xx --set das.deployment.color=blue --set das.deployment.replicaCount=0`

Upgrade

1. Identify the current production color by checking the `designer-das` service selector labels (`kubectl describe service designer-das`). Green is the production color in the below example as the selector label is `color=green`.

   kubectl describe service designer-das

   ```
   Selector:                 color=green
   ```

2. Deploy the DAS service on to the non-production color. For the above example, blue is the non-production color and assuming the service name is `designer-das-blue`):
   `helm upgrade --install designer-das-blue -f das-values.yaml designer-das-100.0.106+xxxx.tgz --set das.deployment.strategy=blue-green --set das.image.tag=9.0.1xx.xx.xx --set das.deployment.color=blue`
   The values.yaml overrides passed as an argument to the above Helm upgrade command:
   `das.deployment.strategy=blue-green` - This denotes that the DAS service is installed using the blue-green strategy.
   `das.image.tag=9.0.1xx.xx.xx` - This denotes the new DAS version to be installed, for example, `9.0.111.05.5`.
   `das.deployment.color=blue` - This denotes that the blue color service is installed.
   The non-production color can be accessed with the non-production service name.

Cutover

Once testing is completed on the non-production color, traffic can be moved to the new version by updating the `designer-das` service.

1. Update the `designer-das` service with the new deployment color by executing the below command. In this example, blue is the new deployment color (non-production color).
   `helm upgrade --install designer-das-service -f designer-das-values.yaml designer-das-100.0.106+xxxx.tgz --set das.deployment.strategy=blue-green-service --set das.deployment.color=blue`
2. Verify the service by executing the `kubectl describe service designer-das` command. The type

label must have the active color's label, that is, `color=blue`.

Rollback

1. If the upgrade must be rolled back, cutover has to performed again to make the service point to the old deployment (green) again. Use the below command to perform the cutover:
   `helm upgrade --install designer-das-service -f designer-das-values.yaml designer-das-100.0.106+xxxx.tgz --set das.deployment.strategy=blue-green-service --set das.deployment.color=green`
   The values.yaml overrides passed as an argument to the above Helm upgrade command:
   `das.deployment.strategy=blue-green-service` - This denotes that the Helm install will create ingress rules for the DAS service.
   `das.deployment.color=green` - This denotes that the current production (active) color is green.
2. Verify the service by executing the `kubectl describe service designer-das` the command. The type label must have the active color's label, that is, `color=green`.

8.10 Validations and checks

Here are some common validations and checks that can be performed to know if the deployment was successful.

- Check if the application pods are in running state by using the `kubectl get pods` command.
- Try to connect to the Designer or DAS URL as per the ingress rules from your browser. You must be able to access the Designer and DAS webpages.

9. Post deployment procedures

Upgrading the Designer workspace

> **Warning**
>
> - It is mandatory to upgrade the Designer workspace for all Contact Center IDs.
> - Genesys strongly recommends that you first back up the current workspace before performing the upgrade. This ensures that you can rollback to a previous state, if required.

Workspace resources must be upgraded after cutover. This will upgrade the system resources in the Designer workspace:

1. Login to one of the Designer pods using the `kubectl exec -it` bash command.

2. Execute the following migration command (this will create new directories/new files introduced in the new version):
   `node ./bin/cli.js workspace-upgrade -m -t`
3. Execute the workspace resource upgrade command (this will upgrade system resources, such as system service PHP files, internal audio files and callback resources):
   `node ./bin/cli.js workspace-upgrade -t`
   In the above command, `contact_center_id` , is the Contact Center ID created in GWS for this tenant (workspace resources are located under the Contact Center ID folder (*/workspaces//workspace*)).

> **Important**
> The above steps will also be used for further upgrades.

Updating the flowsettings file

Post deployment, the **flowsettings.json** file can be modified through a Helm install as follows:

1. Extract the Designer Helm Chart and find the **flowsettings.yaml** file under the *Designer Chart > Config* folder.
2. Modify the necessary settings (refer to the *Post deployment configuration settings reference table* for the different settings and their allowed values).
3. Execute the below Helm upgrade command on the non-production color service. It can be done as part of the Designer upgrade by passing the **flowsettings.yaml** file using the `--values` flag. In this case, a new Designer version can be used for the upgrade. If it is only a **flowsettings.json** update, the same Designer version is used.
   ```
   helm upgrade --install designer-blue -f designer-values.yaml -f flowsettings.yaml
   designer-9.0.xx.tgz --set designer.deployment.strategy=blue-green --set
   designer.image.tag=9.0.1xx.xx.xx --set designer.deployment.color=blue
   ```
4. Once testing is completed on the non-production service, perform the cutover step as mentioned in the Cutover section (Designer Blue-Green deployment). After cutover, the production service will contain the updated settings. The non-active color Designer must also be updated with the updated settings after the cutover.

10. Enabling optional features

10.1 Enable Designer Analytics and Audit Trail

Post Designer deployment, features such as Analytics and Audit Trail can be enabled by performing the below steps.

> **Important**

> Ensure Elasticsearch is deployed before proceeding.

10.1.1 Designer changes

1. Configure the following settings in flowsettings override (**flowsettings.yaml**) - Refer to the *5.4 Post deployment configuration settings reference table* section for option descriptions.
   - enableAnalytics: true
   - enableESAuditLogs: true
   - esServer
   - esPort
   - esUrl
2. Configure the below setting in the DesignerEnv transaction list:
   `ReportingURL` in the **reporting** section.
3. Perform the steps in the *Updating the flowsettings file* section under *9. Post deployment procedures*.

10.1.2 DAS changes

1. Configure the following settings in the helm **das-values.yaml** file. Refer to the *4.2 DAS deployment settings* section for setting descriptions.
   `dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_ENABLED = true`
   `dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_HOST`
   `dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_PORT`
2. Perform the steps in the *Upgrade non production color* section (see *DAS* under *8.8 Blue-Green deployment*). The same DAS version running in production can be used for the upgrade.
3. Perform the steps in the *Cutover* section (see *DAS* under *8.8 Blue-Green deployment*).

10.2 Enable Personas

You can enable the Personas feature in Designer by following the below steps.

10.2.1 Deploy personas.json

- Deploy the **personas.json** file in the workspace location, `/workspace/{tenantID}/workspace/personas/personas.json.`
- Create the **personas** directory if it does not exist.

Given below is a sample **personas.json** file:

```
[
    {
        "id": "1",
        "name": "Samantha",
        "gender": "female",
        "tags": ["female", "middle-age", "default"],
```

```
        "displayPersona": "female, 30-40s, professional, calm",
        "voice": [{
                "name": "samantha",
                "language": "en-US",
                "ttsname": "Samantha",
                "ttsengine": "NuanceTTS",
                "displayName": "Samantha"
            }, {
                "name": "karen",
                "language": "en-AU",
                "ttsname": "Karen",
                "ttsengine": "NuanceTTS",
                "displayName": "Karen"
            }, {
                "name": "amelie",
                "language": "fr-CA",
                "ttsname": "Amelie",
                "ttsengine": "NuanceTTS",
                "displayName": "Amelie"
            }, {
                "name": "paulina",
                "language": "es-MX",
                "ttsname": "Paulina",
                "ttsengine": "NuanceTTS",
                "displayName": "Paulina"
            }
        ],
        "digital": {},
        "email": {},
        "chat": {},
        "web": {}
    },
    {
        "id": "2",
        "name": "Tom",
        "gender": "male",
        "tags": ["male", "middle-age"],
        "displayPersona": "male, 30-40s, polite, professional",
        "voice": [{
                "name": "tom",
                "language": "en-US",
                "ttsname": "Tom",
                "ttsengine": "NuanceTTS",
                "displayName": "Tom"
            }, {
                "name": "lee",
                "language": "en-AU",
                "ttsname": "Lee",
                "ttsengine": "NuanceTTS",
                "displayName": "Lee"
            }, {
                "name": "felix",
                "language": "fr-CA",
                "ttsname": "Felix",
                "ttsengine": "NuanceTTS",
                "displayName": "Felix"
            }, {
                "name": "javier",
                "language": "es-MX",
                "ttsname": "Javier",
                "ttsengine": "NuanceTTS",
                "displayName": "Javier"
            }
```

```
        ],
        "digital": {},
        "email": {},
        "chat": {},
        "web": {}
    },
    {
        "id": "3",
        "name": "Gabriela",
        "gender": "female",
        "tags": ["female", "young", "engaging"],
        "displayPersona": "female, 20-30s, engaging",
        "voice": [{
                "name": "gabriela",
                "language": "en-US",
                "ttsname": "en-US-Standard-E",
                "ttsengine": "GTTS",
                "displayName": "Gabriela"
            }, {
                "name": "sheila",
                "language": "en-AU",
                "ttsname": "en-AU-Standard-A",
                "ttsengine": "GTTS",
                "displayName": "Sheila"
            }, {
                "name": "lili",
                "language": "fr-CA",
                "ttsname": "fr-CA-Standard-A",
                "ttsengine": "GTTS",
                "displayName": "Lili"
            }
        ],
        "digital": {},
        "email": {},
        "chat": {},
        "web": {}
    },
    {
        "id": "4",
        "name": "Michael",
        "gender": "male",
        "tags": ["male", "young"],
        "displayPersona": "male, 20-30s, curious, geeky",
        "voice": [{
                "name": "michael",
                "language": "en-US",
                "ttsname": "en-US-Standard-B",
                "ttsengine": "GTTS",
                "displayName": "Michael"
            }, {
                "name": "royce",
                "language": "en-AU",
                "ttsname": "en-AU-Standard-B",
                "ttsengine": "GTTS",
                "displayName": "Royce"
            }, {
                "name": "alexandre",
                "language": "fr-CA",
                "ttsname": "fr-CA-Standard-B",
                "ttsengine": "GTTS",
                "displayName": "Alexandre"
            }
        ],
```

```
        "digital": {},
        "email": {},
        "chat": {},
        "web": {}
    },
    {
        "id": "5",
        "name": "Diane",
        "gender": "female",
        "tags": ["female", "mature"],
        "displayPersona": "female, 40-50s, soothing, silky",
        "voice": [{
                "name": "diane",
                "language": "en-US",
                "ttsname": "en-US-Standard-C",
                "ttsengine": "GTTS",
                "displayName": "Diane"
            }, {
                "name": "muriel",
                "language": "en-AU",
                "ttsname": "en-AU-Standard-C",
                "ttsengine": "GTTS",
                "displayName": "Muriel"
            }, {
                "name": "chloe",
                "language": "fr-CA",
                "ttsname": "fr-CA-Standard-C",
                "ttsengine": "GTTS",
                "displayName": "Chloe"
            }
        ],
        "digital": {},
        "email": {},
        "chat": {},
        "web": {}
    },
    {
        "id": "6",
        "name": "David",
        "gender": "male",
        "tags": ["male", "mature"],
        "displayPersona": "male, 40-50s, professional, confident",
        "voice": [{
                "name": "david",
                "language": "en-US",
                "ttsname": "en-US-Standard-D",
                "ttsengine": "GTTS",
                "displayName": "David"
            }, {
                "name": "austin",
                "language": "en-AU",
                "ttsname": "en-AU-Standard-D",
                "ttsengine": "GTTS",
                "displayName": "Austin"
            }, {
                "name": "pierre",
                "language": "fr-CA",
                "ttsname": "fr-CA-Standard-D",
                "ttsengine": "GTTS",
                "displayName": "Pierre"
            }
        ],
        "digital": {},
```

```
        "email": {},
        "chat": {},
        "web": {}
    }
]
```

10.2.2 Update Designer flowsettings.json

- Enable the persona `feature` flag in the **flowsettings.json** override file.

```
"features": {
  "persona": true
```

Update application settings

Perform the following steps to enable the persona in the required Designer application:

1. Open the required Designer application and navigate to the **Settings** tab.
2. In **Application Settings**, select the **Enable Persona** checkbox in the **Persona** tab.
3. Re-publish the application and create a new build.

11. Cleanup

11.1 Elasticsearch maintenance recommendations

To help you better manage your indexes and snapshots, and to prevent too many indexes from creating an overflow of shards, Genesys recommends that you set up a scheduled execution of Elasticsearch Curator with the following two actions:

- Delete indexes older than the given threshold according to the index name and mask.
  - `sdr-*` (3 months)
  - `audit-*` (12 months)
- Make a snapshot of each index:
  - `sdr-*` (yesterday and older)
  - `audit-*`
  - `kibana-int-*`

12. Limitations

Designer currently supports multi-tenancy provided by the tenant Configuration Server. That is, each tenant should have a dedicated Configuration Server, and Designer can be shared across the multiple tenants.

Deploy Designer (versions v9010005 and above)

Contents

Learn how to deploy Designer as a service in a Kubernetes cluster (for **DesDepMnfst v9010005** and above).

1. About this document

This document guides you through the process of deploying and configuring Designer and Designer Application Server (DAS) as a service in a Kubernetes (K8s) cluster.

Information on the following topics is provided:

- Overview of Designer and DAS
- Configuration details
- Deployment process
- Enabling optional features
- Cleanup
- Known limitations

1.1 Intended audience

This document is intended for use primarily by system engineers and other members of an implementation team who will be involved in configuring and installing Designer and DAS, and system administrators who will maintain Designer and DAS installations.

To successfully deploy and implement applications in Designer and DAS, you must have a basic understanding of and familiarity with:

- Network design and operation
- Network configurations in your organization
- Kubernetes
- Genesys Framework architecture and functions

1.2 Before you begin

1. A Kubernetes cluster must be deployed. Refer to the Kubernetes documentation site for installation instructions.
2. Install Helm according to the instructions outlined in the Helm documentation site.

After you complete the above mandatory procedures, return to this document to complete an on-premise deployment of Designer and DAS as a service in a K8s cluster.

2. Product overview

The following sections provide a brief overview of Designer and DAS.

2.1 Designer

The Designer service provides a web UI to build and manage VXML and SCXML based self-service and assisted service applications for a number of media types. It stores data on the local file system and is synchronized across instances by using services like Network File System (NFS). Genesys customers can build applications using a simple drag and drop method, and assign contact points (Route Points and other media endpoints) to applications directly from the Designer UI. Insights into runtime behavior of applications and troubleshooting aid is provided by Designer Analytics, which includes a rich set of dashboards based on session detail records (SDR) from data stored in Elasticsearch.

Designer offers the following features:

- Applications for working with phone, chat, email, SMS (text messages), Facebook, Twitter, and open media types.
- Bots, ASR, TTS capabilities for self-service.
- Assisted service or routing.
- Callback.
- Business Controls.
- Audio, message management.
- Grammars management.
- Contact points management - route points, chat end points, email pop-client/mailboxes.
- Analytics dashboards through embedded Kibana.

Designer is an Express/Node.js application. The UI is designed using Angular powered Bootstrap. Application data (SCXML and VXML) is stored as a file system. Designer Analytics and Audit data is stored in Elasticsearch.

2.2 Designer Application Server (DAS)

Designer Application Server (DAS) hosts and serves the Designer generated application files (SCXML and VXML), audio, and grammars. It also provides:

- Runtime evaluation of Business Controls (business hours, special days, emergency flags and data tables).
- Callback interface to GES.
- Interface to External APIs.

DAS uses built-in NGINX to front requests. It consists of 3 modules: NGINX, PHP, and Node.js.

- Requests for static workspace content (SCXML, VXML, JS, audio, grammar, etc) are handled by the

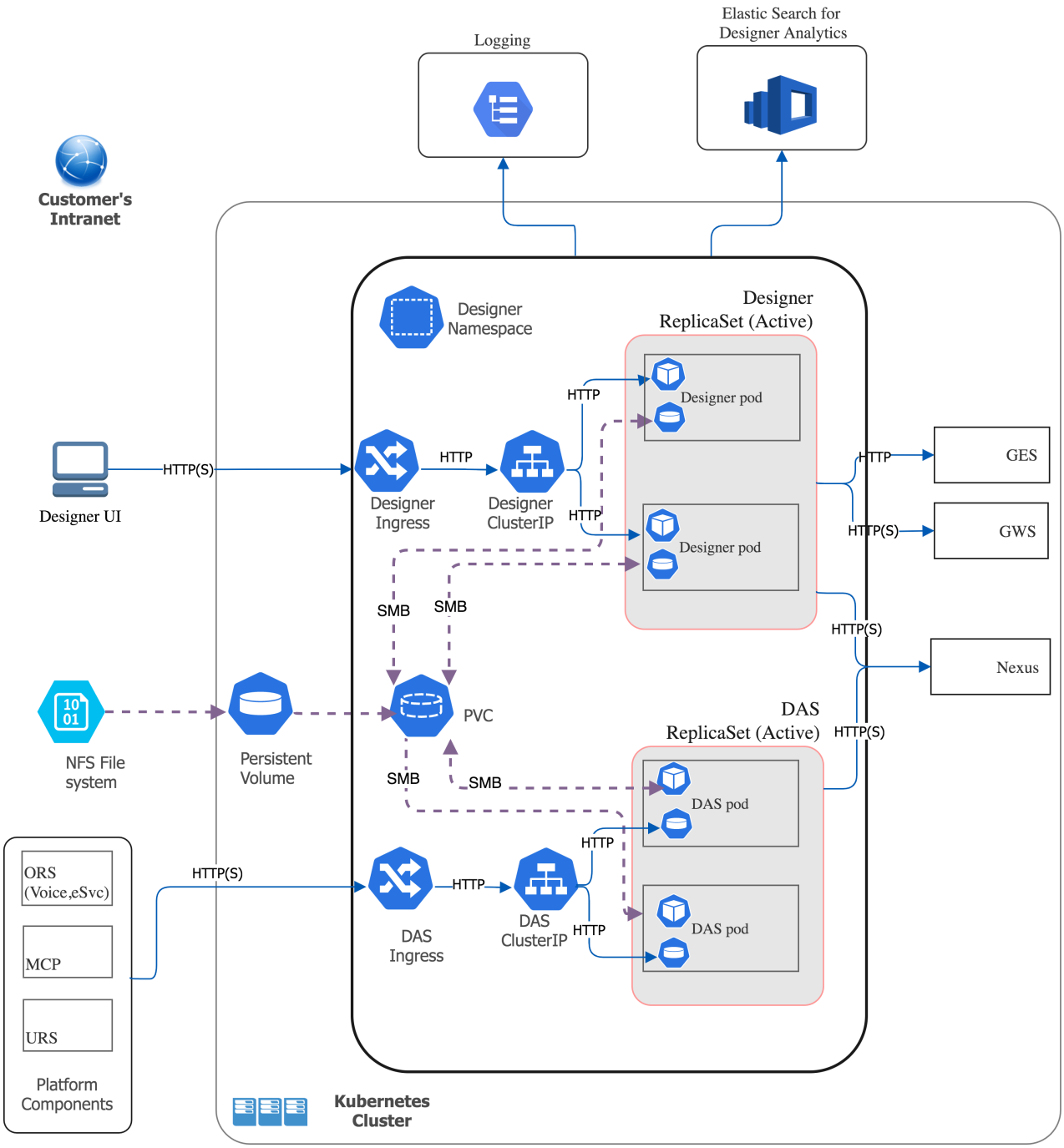
NGINX module.

- Requests for PHP content are processed by the FastCGI PHP module.
- SDR (Analytics) processing requests are handled by the DAS Node.js module.

> **Important**
>
> Files generated by Designer can be served only by DAS. Designer will work only with DAS.

2.3 Deployment architecture

The below architecture diagram illustrates a sample premise deployment of Designer and DAS:



2.4 High Availability (HA) and Scalability

Designer and DAS must be deployed as highly available in order to avoid single points of failure. A minimum of 2 replicas of each service must be deployed to achieve HA.

The Designer and DAS service pods can be automatically scaled up or down based on metrics such as CPU and memory utilization. The *Deployment configuration settings* section explains how to

configure HA and auto-scaling.

Refer to the Genesys Docker Deployment Guide for more information on general HA recommendation for Kubernetes.

3. Prerequisites

Before deploying Designer, ensure the following resources are deployed, configured, and accessible:

3.1 Mandatory prerequisites

- Kubernetes 1.12+
- Helm 3.0
- Docker Registry
  - Setup a local docker registry to store Designer and DAS docker images.
- Ingress Controller
  - If Designer and DAS are accessed from outside of a K8s cluster, it is recommended to deploy/configure an ingress controller (for example, NGINX), if not already available. Also, the Blue-Green deployment strategy works based on the ingress rules.
  - The Designer UI requires *Session Stickiness*. Configure session stickiness in the *annotations* parameter in the **values.yaml** file during Designer installation.
- Persistent Volumes (PVs)
  - Create persistent volumes for workspace storage (5 GB minimum) and logs (5 GB minimum)
  - Set the access mode for these volumes to *ReadWriteMany*.
  - The Designer manifest package includes a sample YAML file to create Persistent Volumes required for Designer and DAS.
  - Persistent volumes must be shared across multiple K8s nodes. Genesys recommends using NFS to create Persistent Volumes.
- Shared file System - NFS
  - For production, deploy the NFS server as highly available (HA) to avoid single points of failure. It is also recommended that the NFS storage be deployed as a Disaster Recovery (DR) topology to achieve continuous availability if one region fails.
  - By Default, Designer and DAS containers run as a Genesys user (`uid:gid 500:500`). For this reason, the shared volume must have permissions that will allow write access to `uid:gid 500:500`. The optimal method is to change the NFS server host path to the Genesys user: `chown -R genesys:genesys`.
  - The Designer manifest package includes a sample YAML file to create an NFS server. Use this only for a demo/lab setup purpose.
- Genesys Web Services (GWS) 9.x
  - Configure GWS to work with a compatible version of Configuration Server.

- Other Genesys Components
  - ORS ORS 8.1.400.x
  - Nexus 9.x
  - URS 8.1.400.x

3.2 Optional prerequisites

- Elasticsearch 7.8.0
  - Elasticsearch is used for Designer Analytics and audit trail.
- Redis 3.2.x
  - Redis is used for resource index caching and multi-user collaboration locks on Designer resources.

4. Deployment configuration settings (Helm values)

This section provides information on the various settings that have to be configured in Designer and DAS. The configuration settings listed below will be used during the deployment of Designer and DAS. That is, these settings will be used during initial deployment / upgrade. These settings can be configured in the **values.yaml** Helm file.

4.1 Designer deployment settings

The following table provides information on the Designer deployment settings. These settings are configured in the **designer-values.yaml** file.

Parameter	Description	Mandatory?	Default Value
`deployment.replicaCount`	Number of services to be created.	Mandatory	2
`deployment.maxReplicas`	Maximum number of replicas created. It is recommended to configure this setting if auto-scaling is used.	Optional	10
`deployment.strategy`	The strategy to select which type of resources to deploy. Valid values are: `default, service, volume, ingress`. • **volume** - for blue/ green upgrade, this is to create a Persistent Volume Claim (PVC) for the first time.	Mandatory	service

	• **ingress** - for the blue/green upgrade, this is to create an ingress for the first time and update the ingress during service cutover. • **service** - for upgrading the blue/green Designer service. • **default** - for performing a rolling upgrade		
`deployment.green`	This is to deploy/upgrade the Designer service in a blue-green upgrade strategy. Valid values are: `blue, green`.	Optional	green
`desImage.repository`	Docker repository for the Designer image.	Mandatory	pureengage-docker-staging.jfrog.io/designer/designer
`desImage.tag`	Designer image version.	Mandatory	9.0.109.08.20
`desImage.pullPolicy`	Designer image pull policy (imagePullPolicy). Valid values: `Always, IfNotPresent, Never`. • **Always** - always pull the image. • **IfNotPresent** - pull the image only if it does not already exist on the node. • **Never** - never pull the image.	Mandatory	IfNotPresent
`volumes.workspaceMountPath`	The path where the workspace volume is to be mounted inside the Designer container.	Mandatory	/designer/workspace (Changing this value is not recommended.)
`volumes.workspaceClaim`	Persistent volume claim name for the workspace.	Mandatory	designer-managed-disk
`volumes.workspaceClaimSize`	Size of the persistent volume claim for the workspace.	Mandatory	5Gi

	The persistent volume must be equal to or greater than this size.		
`volumes.workspaceStorageClass`	storageClassName provided in the persistent volume that is created for the Designer workspace (example, *nfs*).	Mandatory	manual
`volumes.logMountPath`	The path where the Designer logs volume is to be mounted inside the Designer container.	Mandatory	/designer/logs
`volumes.logClaim`	Persistent volume claim name for logs.	Mandatory	designer-logs
`volumes.logClaimSize`	Size of the persistent volume claim for the Designer logs. The persistent volume must be equal to or greater than this size.	Mandatory	5Gi
`volumes.logStorageClass`	storageClassName provided in the persistent volume that is created for the Designer logs (example, nfs).	Mandatory	manual
`healthApi.path`	Designer Health Check API path.	Mandatory	/health (Changing this value is not recommended.)
`healthApi.containerPort`	Container running port.	Mandatory	8888 (Changing this value is not recommended.)
`healthApi.startupDelay`	Health check will be started after a delay as specified in this setting.	Mandatory	20
`healthApi.checkInterval`	The interval between each health check request.	Mandatory	5
`healthApi.failureCount`	Number of health check failures to be considered before marking the container as instable or restart.	Mandatory	5
`designerEnv.enabled`	This enables providing environment variables as an input to Designer pods.	Mandatory	true (Changing this value is not recommended.)

	It uses `ConfigMap` to store the environment variables.		
`designerEnv.envs.DES_PORT`	Designer port for container (`port` in flowsettings.json).	Mandatory	8888
`designerEnv.envs.DES_APPLICATIONHOST`	DAS hostname (`applicationHost` in flowsettings.json).	Mandatory	das
`designerEnv.envs.DES_APPLICATIONPORT`	DAS port (`applicationPort` in flowsettings.json).	Mandatory	80
`designerEnv.envs.DES_DEPLOY_URL`	This is normally not changed. It is the relative path to the workspace on DAS. The default value `/workspaces` should be always be used (`deployURL` in flowsettings.json).	Mandatory	/workspaces
`designerEnv.envs.DES_USE_HTCC`	Set to `true` so Designer works with GWS. If set to `false`. Designer defaults to a local mode and may be used temporarily if GWS is unavailable (`usehtcc` in flowsettings.json).	Mandatory	true (Changing this value is not recommended.)
`designerEnv.envs.DES_HTCC_SERVER`	GWS server host (`htccserver` in flowsettings.json), for example, `gws.genhtcc.com`.	Mandatory	gws-usw1-int.genhtcc.com
`designerEnv.envs.DES_HTCC_PORT`	GWS server port (`htccport` in flowsettings.json), for example, 80.	Mandatory	80
`designerEnv.envs.DES_ENABLE_ANALYTICS`	To enable or disable Designer Analytics (`enableAnalytics` in flowsettings.json).	Optional	false
`designerEnv.envs.DES_ES_URL`	Elasticsearch URL (for example, http://es-service:9200), `esUrl` in flowsettings.json.	Optional	http://es-spot.usw1.genhtcc.com
`designerEnv.envs.DES_ES_SERVER`	Elasticsearch Server HostName (for example, es-service), `esServer` in flowsettings.json.	Optional	es-spot.usw1.genhtcc.com
`designerEnv.envs.DES_ES_PORT`	Elasticsearch port (for example, 9200), `esPort`	Optional	80

	in flowsettings.json.		
`designerEnv.envs.DES_FILE_LOGGING_ENABLED`	Enable file logging. If not enabled, Designer will output only verbose logs.	Mandatory	false
`designerSecrets.enabled`	This enables providing the GWS client ID / secret as an input to Designer pods. It uses Kubernetes Secrets to store the GWS client credentials.		true
`designerSecrets.GWS_Client_id`	GWS Client ID, create a new GWS client if it doesn't exist, steps are explained in the platform settings section.	Mandatory	designer-secret
`designerSecrets.GWS_Client_secret`	GWS client secret	Mandatory	ZXh0ZXJuYWxfYXBpX2NsaWVudA== (This value is valid only for lab deployments.)
`service.type`	Service type (either `ClusterIP` or `NodePort` or `LoadBalancer`).	Mandatory	ClusterIP
`service.port`	Designer service port to be exposed in the cluster.	Mandatory	8888
`service.targetPort`	Designer application port running inside the container.	Mandatory	8888
`service.nodePort`	Port to be exposed in case `service.type=NodePort`.	Optional	Sample value : 30180
`ingress.enabled`	Enable/Disable ingress. Ingress should be enabled for all cases except a lab/demo setup.	Mandatory	true
`ingress.paths`	Ingress path	Mandatory	[/]
`ingress.hosts`	Hostnames to be configured in ingress for the Designer service.	Mandatory	ssdev1.genhtcc.com
`ingress.tls`	TLS config for ingress.	Optional	[]
`resources.limits.cpu`	Maximum amount of CPU processing power that K8s allocates for the container.	Mandatory	600m
`resources.limits.memory`	Maximum amount of	Mandatory	1Gi

	memory K8s allocates for the container.		
`resources.requests.cpu`	Guaranteed CPU allocation for the container.	Mandatory	500m
`resources.requests.memory`	Guaranteed memory allocation for the container.	Mandatory	512Mi
`securityContext.runAsUser`	Controls which user ID the containers are run with. This can be configured to run Designer as a non-root user. Currently, only a **Genesys** user is supported by the Designer base image. 500 is the ID of the Genesys user and it cannot be modified. The file system must reside within the Genesys user account in order to run Designer as a Genesys user. Change the NFS server host path to the Genesys user: `chown -R genesys:genesys`	Optional	500
`securityContext.runAsGroup`	Controls which primary group ID the containers are run with. This can be configured to run Designer as a non-root user. Currently, only a **Genesys** user group (GID - 500) is supported by the Designer base image.	Optional	500

`nodeSelector`	To allow pods to be scheduled on the nodes based labels assigned to the nodes.	Optional	Default value:
			`nodeSelector: {}`
			Sample value:
			`nodeSelector:`
			`:`

`affinity`	The K8s standard node affinity and anti-affinity configurations can be added here. Refer to this K8s document for sample values.	Optional	{}
`tolerations`	Tolerations works with taints to ensure that	Optional	[]

	pods are not scheduled onto inappropriate nodes. Refer to this K8s document for sample values.		
`hpa.enabled`	Enables K8s Horizontal Pod Autoscaler (HPA). It automatically scales the number of pods based on average CPU utilization and average memory utilization. More information about HPA is available here.	Optional	false
`hpa.targetCPUPercent`	The K8s HPA controller will scale up/down pods based on the target CPU utilization percentage specified. It scales up/down pods between the range `deployment.replicaCount` to `deployment.maxReplicas`.	Optional	70
`hpa.targetMemoryPercent`	The K8s HPA controller will scale up/down pods based on the target memory utilization percentage specified. It scales up/down pods between the range `deployment.replicaCount` to `deployment.maxReplicas`.	Optional	70
`annotations`	Enables Kubernetes Annotations. Refer to this document for more information on K8s Annotations. The Designer UI requires Session Stickiness if the replica count is more than 1. Configure session stickiness based on the ingress controller type. Ingress configuration like session stickiness can be configured here.	Optional	{}
`labels`	Any custom labels can be configured. It is a key and value, for example, key:value.	Optional	tenant: shared

4.2 DAS deployment settings

The following table provides information on the DAS deployment settings. These settings are configured in the **das-values.yaml** file.

Parameter	Description	Mandatory?	Default Value
`deployment.replicaCount`	Number of services to be created.	Mandatory	2
`deployment.maxReplicas`	Maximum number of replicas created. It is recommended to configure this setting if auto-scaling is used.	Optional	10
`deployment.strategy`	The strategy to select which type of resources to deploy. Valid values are : `default, service, volume, ingress`. • **ingress** - for the blue/green upgrade, this is to create an ingress for the first time and update the ingress during service cutover. • **service** - for upgrading the blue/green DAS service. • **default** - for performing a rolling upgrade.	Mandatory	service
`deployment.green`	This is to deploy/upgrade the DAS service in a blue-green upgrade strategy. Valid values are: `blue, green`.	Optional	green
`dasImage.repository`	Docker repository for the DAS image.	Mandatory	pureengage-docker-staging.jfrog.io/designer/das
`dasImage.tag`	DAS image version.	Mandatory	9.0.111.05.5
`dasVolumes.workapceMountPath`	DAS workspace path inside the container.	Mandatory	/das/www/workspaces
`dasVolumes.workspaceClaim`	Persistent volume claim name for the workspace (must be the same as Designer's claim name).	Mandatory	designer-managed-disk
`dasVolumes.logMountPath`	DAS log path inside the	Mandatory	/das/log

	container.		
`dasVolumes.logClaim`	Persistent volume claim name for logs (must be the same as Designer's claim name).	Mandatory	designer-logs
`dasHealthApi.path`	DAS Health Check API path.	Mandatory	/health
`dasHealthApi.containerPort`	Container running port.	Mandatory	8081
`dasHealthApi.startupDelay`	Health check will be started after a delay as specified in this setting.	Mandatory	10
`dasHealthApi.checkInterval`	The interval between each health check request.	Mandatory	5
`dasHealthApi.failureCount`	Number of health check failures to consider before marking the container as instable or restart.	Mandatory	5
`dasService.type`	Service port (either `ClusterIP` or `NodePort` or `LoadBalancer`).	Mandatory	ClusterIP
`dasService.port`	DAS service to be exposed in the cluster.	Mandatory	8081
`dasService.targetPort`	DAS application port running inside the container.	Mandatory	8081
`dasService.nodePort`	Port to be exposed in case `service.type=NodePort`.	Optional	Sample value : 30280
`dasEnv.enabled`	This enables providing environment variables as an input to DAS pods. It uses `ConfigMap` to store the environment variables.	Mandatory	true
`dasEnv.envs.DAS_FILE_LOGGING_ENABLED`	Enable file logging. DAS supports only stdout logging, this must always be false.	Mandatory	false
`dasEnv.envs.DAS_LOG_LEVEL`	Enables log levels. Valid values are: `FATAL, ERROR, WARN, INFO, DEBUG, TRACE`.	Optional	DEBUG
`dasEnv.envs.DAS_STDOUT_LOGGING_ENABLE`	Enables standard output console logging.	Mandatory	true
`dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_ENABLED`	To enable or disable Designer Analytics. This config is required for DAS to initialize ES	Optional	false

	templates.		
`dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_HOST`	Elasticsearch Server HostName with http:// prefix (for example, http://es-service)	Optional	http://designer-es-client-service
`dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_PORT`	Elasticsearch port (for example, 80)	Optional	9200
`dasresources.limits.cpu`	Maximum amount of CPU processing power that K8s allocates for the container.	Mandatory	600m
`dasresources.limits.memory`	Maximum amount of memory K8s allocates for the container.	Mandatory	1Gi
`dasresources.requests.cpu`	Guaranteed CPU allocation for container.	Mandatory	400m
`dasresources.requests.memory`	Guaranteed Memory allocation for the container.	Mandatory	512Mi
`securityContext.runAsUser`	Controls which user ID the containers are run with. This can be configured to run DAS as a non-root user. Currently, only a **Genesys** user is supported by the DAS base image. 500 is the ID of the Genesys user and it cannot be modified.	Optional	500
`securityContext.runAsGroup`	Controls which primary group ID the containers are run with. This can be configured to run DAS as a non-root user. Currently, only a **Genesys** user group (GID - 500) is supported by the DAS base image.	Optional	500

nodeSelector	To allow pods to be scheduled on the nodes-based labels assigned to the nodes.	Optional	Default value:
			`nodeSelector: {}`
			Sample value:
			`nodeSelector:`
			`:`

`affinity`	The K8s standard node affinity and anti-affinity configurations can be added here. Refer to	Optional	{}

	this K8s document for sample values.		
`tolerations`	Tolerations works with taints to ensure that pods are not scheduled onto inappropriate nodes. Refer to this K8s document for sample values.	Optional	[]
`hpa.enabled`	Enables K8s Horizontal Pod Autoscaler (HPA). It automatically scales the number of pods based on average CPU utilization and average memory utilization. More information about HPA is available here.	Optional	false
`hpa.targetCPUPercent`	The K8s HPA controller will scale up/down pods based on the target CPU utilization percentage specified. It scales up/down pods between the range `deployment.replicaCount` to `deployment.maxReplicas`.	Optional	75
`hpa.targetMemoryPercent`	The K8s HPA controller will scale up/down pods based on the target memory utilization percentage specified. It scales up/down pods between the range `deployment.replicaCount` to `deployment.maxReplicas`.	Optional	70
`annotations`	Enables Kubernetes Annotations. Refer to this document for more information on K8s Annotations.	Optional	{}
`labels`	Any custom labels can be configured. It is a key and value, for example, key:value.	Optional	tenant: shared

5. Post deployment Designer settings

Post deployment, Designer configuration is managed from the following 3 locations:

5.1 Flow settings

Flow Settings is used for controlling global Designer settings that are applicable to all tenants and it contains bootstrap configuration settings such as port, GWS info, and DAS URL.

Configuration path - `/workspace/designer/flowsettings.json`.

This will be configured using the helm install. The *Flowsettings.json update* section (*8.2.2 Designer deployment process*) describes the steps to update the **flowsettings.json** file.

5.2 Tenant settings

These are tenant specific settings if the Designer service is configured with multi-tenancy .

Configuration path - `workspace//config/tenantsettings.json`.

The user should logout and log back in after any changes to the **tenantsettings.json** file. The Designer UI will continue to show the older features until the user logs out and logs back in.

Tenant specific settings are configured by directly editing the file in the above path.

5.3 DesignerEnv transaction list

The DesignerEnv transaction list is available in Configuration Server (`Tenant/Transactions/DesignerEnv`). This is mostly used to control the run-time settings. Any change to the DesignerEnv transaction list does not require the application to be published again or a new build for the application.

The user should log out and log back in for the changes to reflect in the Designer UI.

The DesignerEnv transaction list is configured using CME or GAX.

5.4 Configuration settings reference table

> **Tip**
> As the following table extends beyond the margin of the page, use the horizontal scroll bar at the bottom of your browser window to view the complete table.

Category: Analytics							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
enableAnalytics (optional)	Yes	Yes			This flag enables or disables	true	false

					the analytics feature.		
esUrl (optional)	Yes	Yes			Elasticsearch URL	http://es-spot.usw1.genhtcc.com:80	
esServer (optional)	Yes	Yes			Elasticsearch Server HostName (for example, es-service)	es-spot.usw1.genhtcc.com	
esPort (optional)	Yes	Yes			Elasticsearch port	80	
ReportingURL (optional)			Yes	reporting	URL of Elasticsearch where Designer applications will report data.	http://es-spot.usw1.genhtcc.com:80	
esMaxQueryDuration (optional)	Yes	Yes			The maximum time range (in days) to query in Designer Analytics. Each day's data is stored in a separate index in Elasticsearch.	90	90
sdrMaxObjCount (optional)	Yes	Yes			The maximum count of nested type objects that will be captured in SDRs. When set to -1, which is the default value, no objects will be trimmed. All the *milestones* or *activities*	20	

					visited in runtime are expected to be captured in an SDR.		
SdrTraceLevel (optional)	Yes	Yes			It controls the level of SDR detail that is recorded by the `blocks` array for each application. Currently, the valid values are: • **100** — Debug level and up. Currently, there are no Debug messages. • **200** — Standard level and up. This setting will show all blocks that are entered during a call in the `blocks` array. • **300** — Important level and up.	300	300

					This setting filters out all blocks from the `blocks` array, except those containing data that will change from call to call (such as the Menu block and User Input block).		
Category: Audit							
Setting Name	lowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
enableESAuditLogs (optional)	Yes	Yes			Enable or Disable audit logs captured in Elasticsearch.	false	false
enableFSAuditLogs (optional)	Yes	Yes			Enable or Disable audit logs captured in the file system under the **logs** directory or in standard output.	true	true
maxAppSizeCompare (optional)	Yes	Yes			The maximum size of data object for	1000000	1000000

					which a difference will be captured in the audit logs, value in bytes. That is, the difference between the Designer object's old value and new value.		
enableReadAuditLogs (optional)	Yes	Yes			Control whether reading of Designer objects is captured in audit trails. If enabled any Designer object viewed in the UI will be recorded in the audit logs.	false	false
Category: Authorization							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
disableRBAC (optional)	Yes	Yes			Controls if Designer reads and enforces permissions associated with the logged in user's roles.	false	false
rbacSection (optional)	Yes	Yes			In a Role object, the name of the section within the Annex	CfgGenesysAdministrator	CfgGenesysAdministrator

					where the privileges are stored.		
disablePBAC (optional)	Yes	Yes			Controls if Designer allows partitioning of the Designer workspace and restricts a user's access to Designer objects in the user's partitions.	false	false
Category: Collaboration							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
locking (optional)	Yes				The type of locking used, for an editing session of applications, modules, or data tables. Valid values : `file, redis, none`	file	file
Category: DAS							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
applicationHost (mandatory)	Yes				The server name Designer uses to generate the URL to the application. ORS and MCP fetch the application code and other resources from this URL.	das.usw1.genhost.com	localhost

applicationPort	Yes				The corresponding port to be used with applicationHost.	80	80
deployURL	Yes				This is normally not changed. It is the relative path to the workspace on DAS.	/workspace	/workspace
Category: Digital							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
rootsSRL (optional)	Yes	Yes			If specified, this is used to filter which Root Categories to display when selecting Standard Responses.	A REGular EXpression (REGEX).	
maxFlowEntryCount (optional)	Yes		Yes	flowsettings	Specify how many times the same application can process a specific digital interaction.	20	20
Category: External APIs							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
httpProxy (optional)	Yes	Yes	Yes	flowsettings	Specify the proxy used for external requests and nexus API calls (if `enable_proxy` is `true`).	http://vpcproxy-000-int.geo.genprim.co	
redundantHttpProxy (optional)	Yes	Yes	Yes	flowsettings	Specify the	http://vpcproxy-001-int.geo.genprim.co	

					backup proxy used for external requests and nexus API calls (if `enable_proxy` is `true`), when httpProxy is down.		
Category: Features							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
features	Yes	Yes			This is an object. See the **5.5 Features** section for a list of supported features.		{ nexus: true, enableBulkAudioImport: true }
Category: GWS							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
usehtcc	Yes				Set to `true` so that Designer works with GWS. If set to `false`, Designer defaults to a local mode and may be used temporarily if GWS is unavailable.	true	false
htccServer	Yes				GWS Server	gws-usw1-int.genhtcc.com	gws-usw1-int.genhtcc.com
htccport	Yes				GWS Port	80	80
ssoLoginUrl	Yes				URL of GWS authentication UI. Designer redirects to this URL	https://gws-usw1.genhtcc.com	https://gws-usw1.genhtcc.com

					for authentication.		
maxConcurrentHTCCRequest (optional)	Yes				For batch operations to GWS, the max number of concurrent requests that Designer will send to GWS.	5	5
batchOperationResultTTL (optional)	Yes				For batch operations to GWS, the time, in milliseconds, for which duration Designer stores the results of a batch operation on the server, before deleting them.	100000	100000
Category: Help							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
docsMicroserviceURL (optional)	Yes				URL for Designer documentation.		https://docs.genesys.com/Documentation/PSAAS/Public/Administrator/Designer
Category: IVR							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
recordingType (optional)	Yes	Yes			Specify the recording type to be used in Record block. Set as GIR. If the option is missing	GIR	GIR

					or blank, `Full Call Recording` type will be used.		
Category: Logging							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
`logging: { designer: { level: debug }, audit: { level: trace}, auditdebug: { level: debug }, cli: { level: debug } }` (optional)	Yes				Specify Designer log levels. Each field has valid values - `trace, debug, info, warn, error, or fatal`. **designer** - log level of Designer. **audit** - log level of audit. **auditdebug** - log level of audit debug, this will log detailed audit information. **cli** - log level for cli commands executed on Designer.	`logging: { designer: { level: debug}, audit: { level: trace }, auditdebug: { level: debug}, cli: { level: debug } }`	`logging: { designer: { level: debug }, audit: { level: trace }, auditdebug: { level: debug }, cli: { level: debug } }`
Category: Nexus							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
url (optional)			Yes	nexus	URL of Nexus that typically includes the API version path. For example, https://nexus-server/nexus/api/v3.		http://nex-dev.usw1.genhtcc.com
password (optional)			Yes	nexus	nexus x-api-key		dc4qeiro13nsof569dfn234

					created by Nexus deployment		
enable_proxy (optional)			Yes	nexus	Boolean value to indicate if httpProxy is used to reach Nexus.		false
profile (optional)			Yes	nexus	Enable Contact Identification via Nexus (for example, to enable Last Called Agent routing).		
Category: Process							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
port	Yes				Designer process port in the container. Normally, the default value should be left as is.	8888	3000
Category: Provisioning							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
primarySwitch (optional)	Yes	Yes			Specify the primary switch name if more than one switch is defined for the tenant. Designer fetches and works with route points from this switch.		us-west-1
Category: Routing							

Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
ewtRefreshTimeout (optional)			Yes	flowsettings	Specify the interval (in seconds) at which to refresh the Estimated Waiting Time when routing an interaction.	5	1
Category: Redis							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
redis: { host: "", port: "", tlsEnabled: true, lockTimeout: 120, listTimeout: 1800 } (optional)					Used by Designer for resource index caching and multi-user collaboration locks on Designer resources. It is a separate object and contains: **host** - Redis host name. **port** - Redis port. **tlsEnabled** - TLS enabled or not. **lockTimeout** - Timeout, in seconds, before a resource lock is released for an editing session of applications, modules, or data tables. **listTimeout** - The cache expiry timeout (in seconds) of the	redis: { host: "", port: "", tlsEnabled: true, lockTimeout: 120, listTimeout: 1800 }	redis: { host: redis.server.genhtcc.com port: 6379, tlsEnabled: true, lockTimeout: 120, listTimeout: 1800 }

					application list and shared modules list. By default, it is 30 minutes. That is, any new application/ modules created in the UI will be seen in the listing page after 30 mins. It can be reduced to a smaller value. This is to improve the page loading performance of the Applications and Shared Modules page. A better performance is achieved with a higher value.		
Category: Security							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
zipFileSizeLimitInMegaBytes (optional)	Yes	Yes			Defines the maximum zipFile size limit (in megabytes) during bulk audio import.	50	No default.
disableCSRF (optional)	Yes	Yes			Disable CSRF attack protection. http://cwe.mitre.org/data/definitions/352.html By default, CSRF attack protection is enabled. It can be disabled by setting this	false	false

					flag to `true`.		
disableSecureCookie (optional)	Yes				Disable the secure cookies header	false	false
Category: Session							
Setting Name	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv Section	Description	Sample Value	Default Value
idleTimeout (optional)	Yes	Yes			Idle timeout, in seconds, before a user session is terminated while editing applications, modules, or data tables.	840	840
lockTimeout (optional)	Yes	Yes			Timeout, in seconds, before a resource lock is released, for an editing session of applications, modules, or data tables.	120	120
lockKeepalive (optional)	Yes	Yes			Interval, in seconds, before the client sends a ping to the server, to refresh the lock for an editing session of applications, modules, or data tables.	15	15
Category: Workflow							
Setting	flowsettings.json	tenantsettings.json	DesignerEnv	DesignerEnv	Description	Sample	Default

Name				Section		Value	Value
maxBuilds (optional)	Yes	Yes			Specify the maximum number of builds allowed per application.	20	20
enablePTE (optional)			Yes	flowsettings	Boolean value to indicate if PTE objects are enabled at runtime.	true	false

5.5 Features

The features specified here must be configured under the `features` object in the `flowsettings.json` file.

For example,

```
        features: {
callbackv2: true,
..
..
}
```

> **Important**
>
> These features are configured only in the flowsettings.json file and the tenantsettings.json file, and not in DesignerEnv.

Category	Feature Setting Name	Mandatory	flowsettings.json	tenantsettings.json	Description	Default Value
Audio	enableBulkAudioImport	Optional	Yes	Yes	Enable/ disable the bulk audio import feature.	false
	grammarValidation	Optional	Yes	yes	If this feature is enabled, Designer will	false

					validate invalid grammar files during grammar upload and you can upload only valid grammar files (GRXML or Nuance compiled binary grammar files).	
	`externalAudioSupport`	Optional	Yes	Yes	If this feature is enabled, a new audio type, External Audio, is available in the Play Message block. It accepts a single variable that contains a URL to the audio resource. MCP will fetch this resource directly and play it. The only supported value of **Play As** is *Audio URI*. There is no automatic language switching for this audio type.	false
Nexus	nexus	Optional	Yes	Yes	Enable/ disable the Nexus feature.	false
Survey	survey	Optional	Yes	Yes	Enable/ disable the	true

					survey feature.	
Milestone	enableImplicitModuleMilestones	Optional	Yes	Yes	Enable reporting each Shared Module call as an internal milestone. If disabled, Shared Module calls will not generate a milestone.	false
Bots	enableDialogflowCxBot	Optional	Yes	Yes	When enabled, Dialogflow CX bot type is added to the bot registry and available for selection in the **Bot provider** drop-down when you configure a new bot.	false

6. Logging

Designer and DAS support console output (stdout) logging. Genesys recommends configuring console output logging to minimize the host IOPs and PVCs consumption by using log volumes. Console output logs can be extracted using log collectors like *fluentbit/fluentd* and *Elasticsearch*.

Ensure the below setttings are configured in the respective **values.yaml** overrides for console logging:

1. Designer
   ```
   designerEnv.envs.DES_FILE_LOGGING_ENABLED = false
   ```
2. DAS
   ```
   dasEnv.envs.DAS_FILE_LOGGING_ENABLED = false
   dasEnv.envs.DAS_STDOUT_LOGGING_ENABLE = true
   ```

6.1 Log levels

Post deployment, Designer and DAS log levels can be modified as follows:

6.1.1 Designer

1. Configure the `logging` setting in the flowsettings override (**flowsettings.yaml**) - Refer to section *5.4 Configuration settings reference table* for option descriptions.
2. Execute the steps in the *Flowsettings.json update* section (*8.2.2 Designer deployment process*) for the changes to take effect .

6.1.2 DAS

1. Configure the `dasEnv.envs.DAS_LOG_LEVEL` setting in the Helm **das-values.yaml** file. Refer to section *4.2 DAS deployment settings* for setting descriptions.
2. Execute the steps in the *Upgrade non production color* section (*8.2.3 DAS deployment process*). The same DAS version running in production can be used for the upgrade,
3. Execute the steps in the *Cutover* section (*8.2.3 DAS deployment process*).

7. Platform / Configuration Server and GWS settings

This section explains the Configuration Server objects and settings required for Designer.

7.1 Create Roles for Designer

Designer uses roles and access groups to determine permissions associated with the logged-in user. To enable this, you must make these changes in GAX or CME.

Designer supports a number of bundled roles suitable for various levels of users.

- **DesignerDeveloper** - Most users fall into this category. These users can create Designer applications, upload audio, and create business controls. They have full access to Designer Analytics.
- **DesignerBusinessUser** - These users cannot create objects but they can manage them (for example, upload audio, change data tables, and view analytics).
- **DesignerAnalytics** - These users only have access to Designer Analytics.
- **DesignerAdmin** - These users can set up and manage partitions associated with users and Designer objects.
- **DesignerOperations** - Users with this role have full access to all aspects of the Designer workspace. This includes the **Operations** menu (normally hidden), where they can perform advanced operational and maintenance tasks.

To create these roles, import the **.conf** files included in the **Designer Deployment Manifest** package. They are located in the **packages/roles/** folder.

In addition, ensure the following for user accounts that need access to Designer:

- The user must have read permissions on its own Person object.

- Users must be associated with one or more roles via access groups.
- The on-Premises user must have at least read access on the user, access group(s), and roles(s).
- The access groups must have read/write permissions to the CME folders - Scripts and Transactions.

7.2 Create the DesignerEnv transaction list

Designer requires a transaction list for configuration purposes as described in other sections of this document. To set this up:

1. Create a transaction list called **DesignerEnv**.
2. Import the file **configuration/DesignerEnv.conf**, located in the Designer Deployment Manifest package.
3. Edit any values according to the descriptions provided in the **Designer settings** section.
4. Save the list.
5. Ensure Designer users have at least read access to the **DesignerEnv** transaction list.

7.3 Platform Settings

The platform settings listed below must be configured if the Designer application is used for voice calls.

Component	Config Key	Value	Description
SIP Switch -> Voip Services -> msml service	userdata-map-format	sip-headers-encoded	Option needs to set to pass JSON data as user data in SIPS.
SIP Switch -> Voip Services -> msml service	userdata-map-filter	*	To allow userdata passing to MSML service
SIPServer --> TServer	divert-on-ringing	false	RONA is handled by the platform.
	agent-no-answer-timeout	12	
	agent-no-answer-action	notready	
	agent-no-answeroverflow	""	no value, empty.
	after-routing-timeout	24	
	sip-treatments-continuous	true	
	msml-record-support	true	To allow routed calls recording via the Media Server
Switch object annex --> gts	ring-divert	1	
URS	'http' port, protocol = 'http'		Required only for Route Agent block to work.

ORS --> orchestration	new-session-on-reroute	false	Required for SIPS Default Routing (Default Routing handling (Voice))
MCP	[vxmli] transfer.allowed	TRUE	Required for Transfer block (allows VXML Transfer in MCP)
MCP	[cpa] outbound.method	NATIVE	Required for Transfer block (allow CPA detection for Transfer)
UCS	[cview] enabled	TRUE	Enables Customer Context Services

7.4 GWS Configuration

7.4.1 Create Contact Center

Create a contact center in GWS if it is not already created. Refer to the GWS documentation for more information on this.

7.4.2 Create GWS Client

Create new GWS client credentials if they are not already created . Refer to the GWS documentation for more information on this.

8. Deployment

This section describes the deployment process for Designer and DAS.

8.1 Preparation

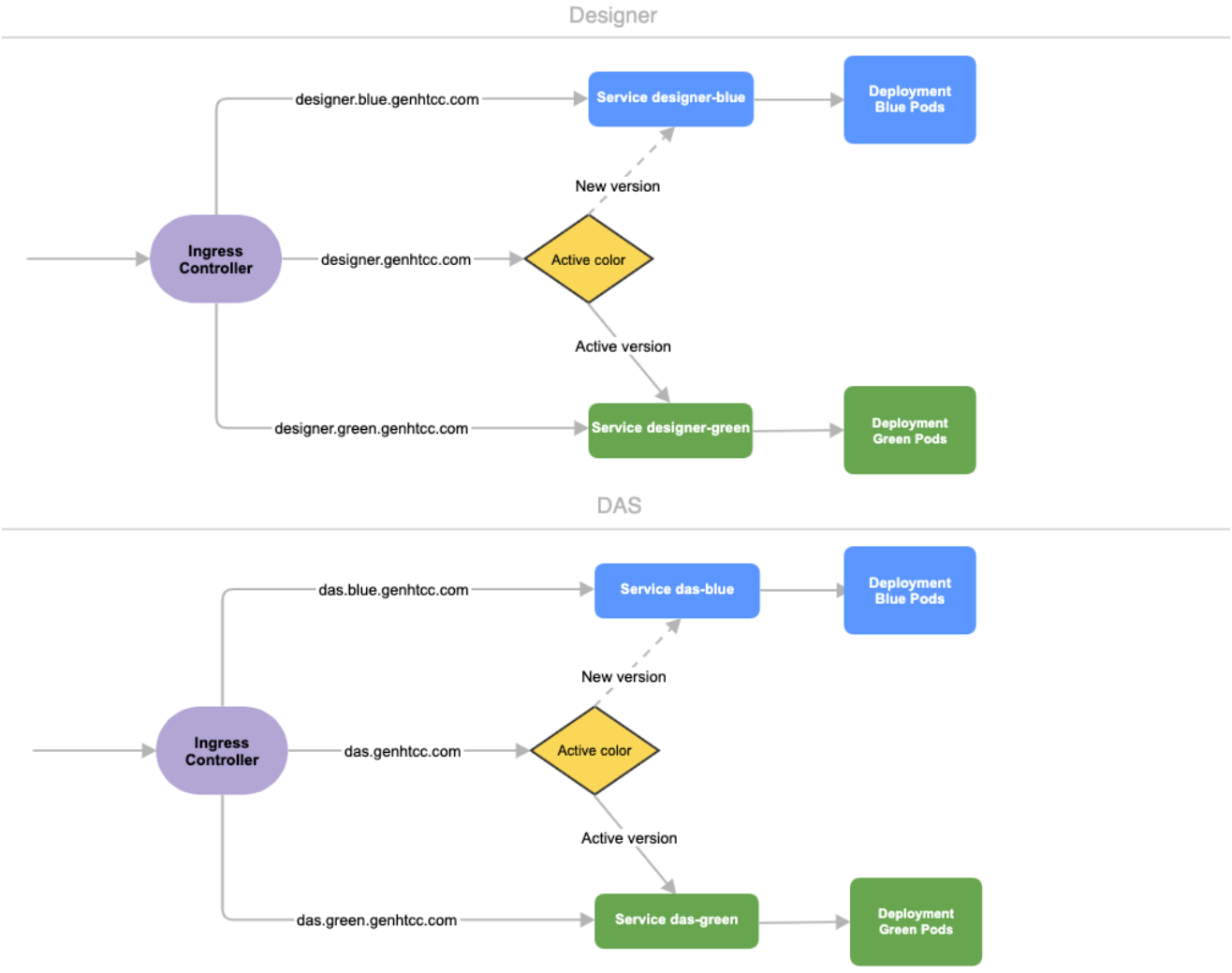
Before you deploy Designer and DAS using Helm charts, complete the following preparation steps:

1. Ensure the Helm client is installed.
2. Set up an Ingress controller, if not already done.
3. Setup an NFS server, if not already done.
4. Create Persistent Volumes - a sample YAML file is provided in the Designer manifest package.
5. Download the Designer and DAS docker images and push to the local docker registry.
6. Download the Designer manifest package and extract to the current working directory.
7. Configure Designer and DAS value overrides (designer-values.yaml and das-values.yaml) - please ensure the mandatory settings are configured. If the blue-green deployment process is used, Ingress settings are explained in the following section.

8.2 Blue-Green deployment

Blue-Green deployment is a release management technique that reduces risk and minimizes downtime. It uses two production environments, known as Blue and Green or active and inactive, to provide reliable testing, continuous no-outage upgrades, and instant rollbacks. When a new release needs to be rolled out, an identical deployment of the application will be created using a Helm package and after the testing is completed, the traffic is moved to the newly created deployment, which becomes the ACTIVE environment, and the old environment becomes INACTIVE. This way, a fast rollback is possible by just changing route if a new issue is found with live traffic. The old inactive deployment can be removed once the new active deployment becomes stable.

The service cutover is done by updating the Ingress rules. The below diagram shows the high level approach on how the traffic can be routed to Blue and Green deployments with Ingress rules.



8.2.1 Preparation for Blue-Green deployment

Before you deploy Designer and DAS using the Blue-Green deployment strategy, complete the following preparation steps:

1. Configure the Ingress host names for Designer. Create 3 host names as shown below.
   The Blue service host name must contain the string *blue*, for example, `designer.blue.genhtcc.com` or `designer-blue.genhtcc.com`. The Green service host name must contain the string *green*, for example, `designer.green.genhtcc.com` or `designer-green.genhtcc.com`. The Blue/Green services can be accessed separately with the Blue/Green host names as shown in this example:
   `designer.genhtcc.com` (production host URL used for external access).
   `designer.blue.genhtcc.com` (URL for Blue service testing).
   `designer.green.genhtcc.com` (URL for Green service testing).
2. Configure the host names in the **designer-values.yaml** file under ingress. Annotations and paths can be modified based on the requirement.
   For example,
   ```
   ingress:
   enabled: true
   annotations: {}
   paths: [/]
   hosts:
   - designer.genhtcc.com
   - designer.blue.genhtcc.com
   - designer.green.genhtcc.com
   ```
3. Configure the Ingress host names for DAS. Create 3 host names as shown below.
   The Blue service host name must contain the string *blue*, for example, `das.blue.genhtcc.com` or `das-blue.genhtcc.com`. The Green service host name must contain the string *green*, for example, `das.green.genhtcc.com` or `das-green.genhtcc.com`. he Blue/Green services can be accessed separately with the Blue/Green host names as shown in this example:
   `das.genhtcc.com` (the production host URL used for external access).
   `das.blue.genhtcc.com` (URL for Blue service testing).
   `das.green.genhtcc.com` (URL for Blue service testing).
4. Configure the host names in the **das-values.yaml** file under ingress. Annotations and paths can be modified based on the requirement.
   For example,
   ```
   ingress:
   enabled: true
   annotations: {}
   paths: [/]
   hosts:
   - das.genhtcc.com
   - das.blue.genhtcc.com
   - das.green.genhtcc.com
   ```

8.2.2 Designer deployment process

Initial deployment

The resources's ingress and persistent volume claims (PVC) must be created initially before deploying the Designer service as these resources are shared between the Blue/Green services and must be created at the very beginning of the deployment. They will not be needed for subsequent upgrades. The required values are passed using the SET command as shown below or by modifying the **values.yaml** file.

1. Create Persistent Volume Claims required for the Designer service (assuming the volume service name is `designer-volume`):
   `helm upgrade --install designer-volume -f designer-values.yaml designer-9.0.xx.tgz --set deployment.strategy=volume`
   Note: The overrides passed as an argument to the above helm upgrade command:
   `deployment.strategy=volume` - indicates that this helm install will create persistent volume claim.
2. Create ingress rules for the Designer service (assuming the ingress service name is `designer-ingress`):
   `helm upgrade --install designer-ingress -f designer-values.yaml designer-9.0.xx.tgz --set deployment.strategy=ingress --set-string deployment.color=green`
   Note: The overrides passed as an argument to the above helm upgrade command:
   `deployment.strategy=ingress` - indicates that this helm install will create ingress rules for the Designer service.
   `deployment.color=green` - indicates that the current production instance (active) color is Green.
3. Deploy the Designer service to the color selected in step 2. In this case, Green is selected and assuming the service name is `designer-green`:
   `helm upgrade --install designer-green -f designer-values.yaml designer-9.0.xx.tgz --set deployment.strategy=service --set desImage.tag=9.0.1xx.xx.xx --set-string deployment.color=green`
   Note: The overrides passed as an argument to the above helm upgrade command:
   `deployment.strategy=service` - indicates that the Designer service will be installed.
   `desImage.tag=9.0.1xx.xx.xx` - indicates the Designer version to be installed, for example, 9.0.116.07.10.
   `deployment.color=green` - indicates that the Green color service will be installed.

Upgrade non-production color

1. Identify the current production color by checking the Designer ingress rules (`kubectl describe ingress designer-ingress`). Green is the production color in the below example as the production host name points to the Green service.

kubectl describe ingress designer-ingress

```
Host                        Path  Backends
----                        ----  --------
designer.genhtcc.com        /     designer-green:http (10.244.0.23:8888)
designer.green.genhtcc.com  /     designer-green:http (10.244.0.23:8888)
designer.blue.genhtcc.com   /     designer-blue:http (10.244.0.45:8888)
```

2. Deploy the Designer service into the non-production color. In the above example, Blue is the non-production color (assuming the service name is `designer-blue`):
   `helm upgrade --install designer-blue -f designer-values.yaml designer-9.0.xx.tgz --set deployment.strategy=service --set desImage.tag=9.0.1xx.xx.xx --set-string deployment.color=blue`
   Note: The overrides passed as an argument in the above helm upgrade:
   `deployment.strategy=service` - indicates that the Designer service will be installed.
   `desImage.tag=9.0.1xx.xx.xx` - indicates the Designer version to be installed, for example, 9.0.116.08.12.
   `deployment.color=blue` - indicates that the Blue color service will be installed.
3. The non-production color can be accessed with the non-production host name (for example - `designer.blue.genhtcc.com`), any testing can be done using this URL.

Cutover

Once testing is completed on the non-production color, traffic can be moved to the new version by updating the ingress rules.

1. Update the Designer Ingress with the new deployment color by running the below command (in this case, Blue is the new deployment color, that is, the non-production color):
   `helm upgrade --install designer-ingress -f designer-values.yaml designer-9.0.xx.tgz --set deployment.strategy=ingress --set-string deployment.color=blue`
   Note: The overrides passed as an argument to the above helm upgrade command:
   `deployment.strategy=ingress` - indicates that this helm install will create ingress rules for the Designer service.
   `deployment.color=blue` - indicates that the current production (active) color is Blue.
2. Verify the ingress rules by executing the command `kubectl describe ingress designer-ingress`. The production host name should point to the new color service.

Workspace upgrade

Workspace resources must be upgraded after cutover. This will upgrade the system resources in the Designer workspace.

1. Log in to one of the Designer pods with the command: `kubectl exec -it bash`.
2. Execute the migration command (this will create new directories/new files introduced in the new version):
   `node ./bin/cli.js workspace-upgrade -m -t`
3. Execute the workspace resource upgrade command (this will upgrade system resources, such as system service PHP files, internal audio files, and callback resources):
   `node ./bin/cli.js workspace-upgrade -t`
   `contact_center_id` is the contact center ID created in GWS for this tenant. The workspace resources are located within the contact center ID folder *(/workspaces//workspace)*.

> **Important**
>
> The above steps - upgrade non production color, cutover, and workspace upgrade will also be used for further upgrades.

Flowsettings.json update

Post deployment, the **flowsettings.json** file can be modified via helm install using the below steps:

1. Download the current **flowsettings.json** file from the location: */designer/flowsettings.json*.
2. Modify the necessary settings (refer to section *5.4 Configuration settings reference table*).
3. Create a new YAML file, for example, **flowsettings.yaml**.
4. Copy and paste the above modified **flowsettings.json** content in the new **flowsettings.yaml** file:
   `flowsettings:`
   For example:
   `flowsettings: {`
   `port:8888,`

```
usehtcc:true,
htccserver:gws-int-genhtcc.com,
htccport:80,
....
....
}
```

5. Run the below helm upgrade command on the non-production color service. It can be done as part of Designer upgrade by passing the **flowsettings.yaml** in the extra argument `--values`. In this case, the new Designer version can be used for the upgrade. If it is only a **flowsettings.json** update, the same Designer version will be used.
   `helm upgrade --install designer-blue -f designer-values.yaml designer-9.0.xx.tgz --set deployment.strategy=service --set desImage.tag=9.0.1xx.xx.xx --set-string deployment.color=blue --values flowsettings.yaml`
   The non-active color Designer will have updated settings after the above upgrade.
6. Once testing is completed on the non-production service, perform the cutover steps as mentioned in the Cutover section. Now, the production service will contain the changed settings.

Rollback

- If any blocking issues are noticed in the current production service, traffic can be rolled back to the previous active color by updating the ingress rules:
  `helm upgrade --install designer-ingress -f designer-values.yaml designer-9.0.xx.tgz --set deployment.strategy=ingress --set-string deployment.color=green`
  Rollback of workspace resources is generally not required as the workspace resources shipped with Designer are backward and forward compatible. If required, the workspace can be upgrade from the old version, but it is not necessary. Future new version upgrades must run the workspace upgrade as per the normal process.
  Rollback of applications and shared modules is also not required as these resources are also backward and forward compatible with Designer.

8.2.3 DAS deployment process

Initial deployment

The ingress must be created initially before deploying the DAS service as it is shared between the Blue/Green services and must be created at the very beginning of the deployment. It will not be needed for subsequent upgrades. The required values are passed using the `SET` command as shown below or by modifying the **values.yaml** file.

1. Create ingress rules for the Designer service (assuming the ingress service name is `das-ingress`):
   `helm upgrade --install das-ingress -f das-values.yaml das-9.0.xx.tgz --set deployment.strategy=ingress --set-string deployment.color=green`
   Note: The overrides passed as an argument to the above helm upgrade command:
   `deployment.strategy=ingress` - indicates that this helm install will create ingress rules for the DAS service.
   `deployment.color=green` - indicates that the current production instance (active) color is Green.
2. Deploy the DAS service to the color selected in step 1. In this case, Green is selected and assuming the service name is `das-green`:
   `helm upgrade --install das-green -f das-values.yaml das-9.0.xx.tgz --set deployment.strategy=service --set dasImage.tag=9.0.1xx.xx.xx --set-string deployment.color=green`
   Note: The overrides passed as an argument to the above helm upgrade command:
   `deployment.strategy=service` - indicates that the DAS service will be installed.

`dasImage.tag=9.0.1xx.xx.xx` - indicates the DAS version to be installed, for example, 9.0.111.04.4.
`deployment.color=green` - indicates that the Green color service will be installed.

Upgrade non-production color

1. Identify the current production color by checking the DAS ingress rules (`kubectl describe ingress das-ingress`). Green is the production color in the below example as the production host name points to the Green service.

kubectl describe ingress das-ingress

```
Host                        Path  Backends
----                        ----  --------
das.genhtcc.com         /   das-green:http (10.244.0.5:8081)
das.green.genhtcc.com   /   das-green:http (10.244.0.5:8081)
das.blue.genhtcc.com    /   das-blue:http (10.244.0.37:8081)
```

2. Deploy the DAS service into the non-production color. In the above example, Blue is the non-production color (assuming the service name is `das-blue`):
`helm upgrade --install das-blue -f das-values.yaml das-9.0.xx.tgz --set deployment.strategy=service --set dasImage.tag=9.0.1xx.xx.xx --set-string deployment.color=blue`
Note: The overrides passed as an argument to the above helm upgrade command:
`deployment.strategy=service` - indicates that the DAS service will be installed.
`dasImage.tag=9.0.1xx.xx.xx` - indicates the DAS version to be installed , for example, 9.0.111.05.5.
`deployment.color=blue` - indicates that the Blue color service will be installed.
3. The non-production color can be accessed with the non-production host name (for example - `das.blue.genhtcc.com`), any testing can be done using this URL.

Cutover

Once testing is completed on the non-production color, traffic can be moved to the new version by updating the ingress rules.

1. Update the DAS Ingress with the new deployment color by running the below command (in this case, Blue is the new deployment color, that is, the non-production color):
`helm upgrade --install das-ingress -f das-values.yaml das-9.0.xx.tgz --set deployment.strategy=ingress --set-string deployment.color=blue`
Note: The overrides passed as an argument to the above helm upgrade command:
`deployment.strategy=ingress` - indicates that this helm install will create ingress rules for the DAS service.
`deployment.color=blue` - indicates that the current production (active) color is Blue.
2. Verify the ingress rules by running the command kubectl describe ingress das-ingress. The production host name should point to the new color service.

> **Important**

> The above steps - upgrade non production color and cutover will also be used for further upgrades.

Rollback

If any blocking issues are noticed in the current production service, traffic can be rolled back to the previous active color by updating the ingress rules:

```
helm upgrade --install das-ingress -f das-values.yaml das-9.0.xx.tgz --set
deployment.strategy=ingress --set-string deployment.color=green
```

8.3 Rolling upgrade

A rolling upgrade is not recommended. Use the Blue/Green upgrade procedure.

8.4 Uninstall

To uninstall a service/volume/ingress rules:

```
helm uninstall
```

9. Enabling optional features

9.1 Enable Designer Analytics and Audit Trail

Post Designer deployment, features such as Analytics and Audit Trail can be enabled by performing the below steps.

> **Important**
> Ensure Elasticsearch is deployed before proceeding.

9.1.1 Designer changes

1. Configure the following settings in flowsettings override (**flowsettings.yaml**) - Refer to section *5.4 Configuration settings reference table* for option descriptions.
   - enableAnalytics: true
   - enableESAuditLogs: true
   - esServer
   - esPort

- esUrl

2. Configure the below setting in the DesignerEnv transaction list:
   `ReportingURL` in the **reporting** section.
3. Perform the steps in the *Flowsettings.json update* section (*8.2.1 Designer deployment process*).

9.1.2 DAS changes

1. Configure the following settings in the helm **das-values.yaml** file. Refer to the *4.2 DAS deployment settings* section for setting descriptions.
   `dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_ENABLED = true`
   `dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_HOST`
   `dasEnv.envs.DAS_SERVICES_ELASTICSEARCH_PORT`
2. Perform the steps in the *Upgrade non production color* section (*8.2.2 DAS deployment process*). The same DAS version running in production can be used for the upgrade.
3. Perform the steps in the *Cutover* section (*8.2.2 DAS deployment process*).

10. Cleanup

10.1 Elasticsearch maintenance recommendations

To help you better manage your indexes and snapshots, and to prevent too many indexes from creating an overflow of shards, Genesys recommends that you set up a scheduled execution of Elasticsearch Curator with the following two actions:

- Delete indexes older than the given threshold according to the index name and mask.
  - `sdr-*` (3 months)
  - `audit-*` (12 months)
- Make a snapshot of each index:
  - `sdr-*` (yesterday and older)
  - `audit-*`
  - `kibana-int-*`

11. Limitations

Designer currently supports multi-tenancy provided by the tenant Configuration Server. That is, each tenant should have a dedicated Configuration Server, and Designer can be shared across the multiple tenants.

Deploy Designer (versions prior to v9010005)

Contents

Learn how to deploy Designer as a service in a Kubernetes cluster (for **DesDepMnfst** versions prior to **v9010005**).

> **Important**
>
> For deployment instructions for **DesDepMnfst v9010005** and above, click here.

1. Prerequisites

Before deploying Designer, make sure the following resources are deployed, configured, and accessible:

1.1 Kubernetes cluster prerequisites

- Kubernetes 1.12+
- Helm 3.0
- Persistent volumes for workspace storage (minimum 2GB) and logs (minimum 5GB) configured in the cluster.
  - Each Designer and DAS pod will make persistent volume claims for storage and logs.
  - The volumes must be on shared storage (such as NFS) to enable changes made on one pod to become available on all other pods.
  - If a NFS server is used for shared storage, it should be deployed as highly available (HA) in order to avoid single points of failure.

> **Important**
>
> Genesys recommends using the ObjectiveFS (OFS) file system or any variant of the Network File System (NFS).

> **Important**
>
> The Designer manifest package includes sample YAML files to create an NFS server and persistent volumes.

1.2 Genesys components dependencies

- GWS 9.x
  - Configured to work with a compatible version of Configuration Server.
  - Contact Center provisioned in GWS (contact center ID available from GWS).
- ORS 8.1.400.x
- Nexus 9.x
- URS 8.1.400.x
- StatServer 8.5.11x.yz

1.3 External prerequisites

ElasticSearch 7.4.2 and 6.2.x for Designer Analytics and audit trails (optional and can be enabled later).

2. Deployment Process Overview

The Designer deployment process consists of the following steps:

1. Create roles for Designer.
2. Set up a transaction list.
3. Install Designer.
4. Install DAS.
5. Change the default values of the configurable parameters for Designer and DAS, if required.
6. Change the default values of additional configuration settings, if required.
7. Enable additional features.

Each of the above steps is explained in detail in the following sections.

3. Configuration Server objects

Designer uses roles and access groups to determine permissions associated with the logged-in user. To enable this, you must make these changes in GAX or CME.

3.1 Create roles for Designer

Designer support a number of bundled roles suitable for various levels of users.

- **DesignerDeveloper**Most users fall into this category. These users can create Designer applications, upload audio, and create business controls. They have full access to Designer Analytics.
- **DesignerBusinessUser**These users cannot create objects but they can manage them (for example, upload audio, change data tables, and view analytics).
- **DesignerAnalytics**These users only have access to Designer Analytics.
- **DesignerAdmin**These users can set up and manage partitions associated with users and Designer objects.
- **DesignerOperations**Users with this role have full access to all aspects of the Designer workspace. This includes the **Operations** menu (normally hidden), where they can perform advanced operational and maintenance tasks.

To create these roles, import the **.conf** files included in the **Designer Deployment Manifest** package. They are located in the **packages/roles/** folder.

In addition, ensure the following for user accounts that need access to Designer:

- The user must have read permissions on its own Person object.
- Users must be associated with one or more roles via access groups.
- The on-Premises user must have at least read access on the user, access group(s), and roles(s).

3.2 Set up a transaction list

Designer requires a transaction list for configuration purposes as described in other sections of this document. To set this up:

1. Create a transaction list called **DesignerEnv**.
2. Import the file **configuration/DesignerEnv.conf**, located in the Designer Deployment Manifest package.
3. Edit any values according to the descriptions provided in the **Additional configuration settings** section.
4. Save the list.
5. Ensure Designer users have at least read access to the **DesignerEnv** transaction list.

> **Important**
>
> The DesignerEnv transaction list is created under the *Transaction* root folder if the *Internal* folder does not exist.

4. Deploying Designer

This section describes how to deploy Designer on your Kubernetes cluster.

Ensure the following:

- Designer helm package is downloaded.
- Designer and DAS images are accessible from the cluster.

4.1 Install Designer and DAS

Install Designer using the following command (replace `designer-service` if you are using a different name for your Designer service):

```
helm install designer-service designer-9.0.11.xx.xx.tgz
```

Or

```
helm install designer-service -f designer-values.yaml designer-9.0.11.xx.xx.tgz.tgz
```

Next, install DAS using the following command (replace `das-service` if you are using a different name for your DAS service):

```
helm install das-service das-9.0.11.xx.xx.tgz
```

Or

```
helm install das-service -f das-values.yaml das-9.0.11.xx.xx.tgz
```

These commands deploy Designer on the Kubernetes cluster using the default configuration.

The Parameters section lists the parameters for both Designer and Designer Application Server (DAS) that can be configured during installation. It is recommended to add changed settings into a separate file (for example, **designer-values.yaml*)*** and specify that file while installing the chart.

4.1 Running Designer as a Non-Root User

You can run Desinger as a non-root user. Currently, only a **Genesys** user is supported by the Designer base image.

- By default Designer is run as a root user. To run it as a **Genesys** user, you must add the security context in the helm chart and configure the following in the **values.yaml** file:

```
runAsUser: 500
runAsGroup: 500
```

500 is the ID of the Genesys user and cannot be modified.

- The file system must reside within the Genesys user in order to run Designer as a Genesys user. Change the NFS server host path to the Genesys user:

```
chown -R genesys:genesys
```

- After installation, log in to the container and run `ps -ef` to verify if all processes are running as a Genesys user.

4.2 Running DAS as a Non-Root User

You can run DAS as a non-root user. Currently, only a **Genesys** user is supported by the Designer base image.

- To run DAS as a **Genesys** user, you must add the security context in the helm chart and configure the following in the **values.yaml** file:

```
runAsUser: 500
runAsGroup: 500
```

500 is the ID of the Genesys user and cannot be modified.

- After installation, log in to the container and run `ps -ef` to verify if all processes are running as a Genesys user.

5. Parameters

This section lists the configurable parameters of the Designer and Designer Application Server (DAS) chart and their default values.

Designer

Parameter	Description	Default
`deployment.replicaCount`	No. of services to be created	2
`deployment.strategy`	Rolling update / re-create	RollingUpdate
`desImage.repository`	Docker repository for Designer	pureengage-docker-staging.jfrog.io/designer/designer
`desImage.tag`	Designer Image version	9.0.109.08.20
`volumes.workapceMountPath`	Designer workspace path inside the container	/designer/workspace
`volumes.workspaceClaim`	Persistent volume claim name for the workspace	designer-managed-disk
`volumes.logMountPath`	Designer log path inside the container	/designer/logs
`volumes.logClaim`	Persistent volume claim name for logs	designer-logs
`healthApi.path`	Health check request to be sent	/health
`healthApi.containerPort`	Container running port	8888

healthApi.startupDelay	Health will be started after a given delay	20
healthApi.checkInterval	The interval between each health check requests	5
healthApi.failureCount	No of health check failure to mark the container as instable or restart	5
designerEnv.enabled	Enables the ConfigMap based env input	true
designerEnv.configName	Name of the ConfigMap	designer-config
designerEnv.envs.DES_PORT	Designer port for container	8888
designerEnv.envs.DES_APPSERVER_DAS_HOST	DAS hostname	das
designerEnv.envs.DES_APPSERVER_DAS_PORT	DAS port	80
designerEnv.envs.DES_USE_HTCC	To enable GWS based auth	true
designerEnv.envs.DES_HTCC_SERVER	GWS server URL	gws-service-proxy
designerEnv.envs.DES_HTCC_PORT	GWS server port	80
designerEnv.DES_GWS_CLIENT_ID	GWS Client ID Create a new client ID if the default does not work. Follow the steps in the link below, to create new GWS client credentials: Creating Client for Provisioning Service	external_api_client
designerEnv.DES_GWS_CLIENT_SECRET	GWS Client secret	****
service.type	Service port either CluserIP/ NodePort/LoadBalancer	NodePort
service.port	Designer service to be exposed	8888
service.targetPort	Designer application port running inside the container	http
service.nodePort	Port to be exposed in case service.type=NodePort	30180
ingress.enabled	Enable/Disable ingress	true
ingress.paths	Ingress path	/
ingress.hosts	Hostname	ssdev1.genhtcc.com
ingress.tls	TLS based security enabling	nil
resources.limits.cpu	Maximum amount of CPU K8s allocates for container	600m
resources.limits.memory	Maximum amount of Memory K8s allocates for container	1Gi
resources.requests.cpu	Guaranteed CPU allocation for container	400m
resources.requests.memory	Guaranteed Memory allocation for container	512Mi
nodeSelector	To allow Pods to be scheduled on the nodes based labels assigned	Default value:

	to nodes.	`nodeSelector: {}` Sample value: `nodeSelector: :`

Designer Application Server (DAS)

Parameter	Description	Default	
`deployment.replicaCount`	No of service to be created	2	
`dasImage.repository`	Docker repository for DAS	pureengage-docker-staging.jfrog.io/designer/das	
`dasImage.tag`	DAS Image version	9.0.106.03.7	
`dasVolumes.workapceMountPath`	DAS workspace path inside the container	/das/www/workspaces	
`dasVolumes.workspaceClaim`	Persistent volume claim name for the workspace	designer-managed-disk	
`dasVolumes.logMountPath`	DAS log path inside the container	/das/log	
`dasVolumes.logClaim`	Persistent volume claim name for logs	designer-logs	
`dasHealthApi.path`	Health check request to be sent	/health	
`dasHealthApi.containerPort`	Container running port	80	
`dasHealthApi.startupDelay`	Health will be started after a given delay	20	
`dasHealthApi.checkInterval`	The interval between each health check requests	5	
`dasHealthApi.failureCount`	No of health check failure to mark the container as instable or restart	5	
`dasService.type`	Service port either CluserIP/NodePort/ LoadBalancer	NodePort	
`dasService.port`	DAS service to be exposed	80	
`dasresources.limits.cpu`	Maximum amount of CPU K8s allocates for container	600m	
`dasresources.limits.memory`	Maximum amount of Memory K8s allocates for container	1Gi	
`dasresources.requests.cpu`	Guaranteed CPU allocation for container	400m	
`dasresources.requests.memory`	Guaranteed Memory	512Mi	

	allocation for container		

`nodeSelector`	To allow Pods to be scheduled on the nodes based labels assigned to nodes.	Default value:
		`nodeSelector: {}`
		Sample value:
		`nodeSelector:`
		`:`	

6. Additional configuration settings

Post deployment, Designer configuration is managed in two locations:

- /designer/flowsettings.json
- Configuration Server in the Tenant/Transactions/Internal/DesignerEnv transaction list

Category	Setting Name	flowsettings.json	DesignerEnv	DesignerEnv Section	Description
Analytics	enableAnalytics	Yes			Flag to enable analytics.
Analytics	esUrl	Yes			Elasticsearch URL (for example, `http://es-service:9200`).
Analytics	esServer	Yes			Elasticsearch Server HostName (for example, `es-service`).
Analytics	esPort	Yes			Elasticsearch port (for example, `9200`).
Analytics	ReportingURL		Yes	reporting	URL of Elasticsearch where Designer applications will report data (for example, http://es-service:9200).
Analytics	esMaxQueryDuration				The maximum time range (in days) to query in Designer Analytics. Data for each day is stored in a

Category	Setting Name	flowsettings.json	DesignerEnv	DesignerEnv Section	Description
					separate index in Elasticsearch.
Analytics	sdrMaxObjCount				The maximum count of nested type objects to be captured in SDRs.
Analytics	SdrTraceLevel				This caps the level of detail captured in analytics.
Audio	useUserRecordedSystemAudio				
Audit	enableESAuditLogs	Yes			Enable or Disable Audit logs captured in Elasticsearch.
Audit	enableFSAuditLogs	Yes			Enable or Disable Audit logs captured in the file system.
Audit	maxAppSizeCompare				The maximum size of a data object for which a differential will be captured in audit logs.
Audit	enableReadAuditLogs	Yes			Control whether reading of objects is captured in audit trails.
Authorization	disableRBAC	Yes			Controls if Designer reads and enforces permissions associated with the logged in user's roles.
Authorization	disablePBAC	Yes			Controls if Designer allows partitioning of Designer workspace and restricts a

Category	Setting Name	flowsettings.json	DesignerEnv	DesignerEnv Section	Description
					user's access to Designer objects to the user's partitions.
Collboration	locking	Yes			The type of locking used, for an editing session of applications, modules, or data tables.
DAS	applicationHost	Yes			The server name Designer uses to generate the URL to the application. ORS and MCP fetch application code and other resources from this URL.
DAS	applicationPort	Yes			The corresponding port to be used with applicationHost.
DAS	deployURL	Yes			This is normally not changed. It is the relative path to the workspace on DAS.
Deployment	ssoLoginUrl	Yes			URL of GWS authentication UI. Designer redirects to this URL for authentication.
Digital	rootsSRL	Yes			If specified, this is used to filter which Root Categories to display when selecting Standard Responses.

Category	Setting Name	flowsettings.json	DesignerEnv	DesignerEnv Section	Description
Digital	maxFlowEntryCount		Yes	flowsettings	Specifies how many times the same application can process a specific digital interaction.
External APIs	httpProxy	Yes	Yes	flowsettings	Specifies the proxy used for external request and nexus API calls (if enable_proxy is `true`).
External APIs	redundantHttpProxy	Yes	Yes	flowsettings	Specifies the backup proxy used for external request and Nexus API calls (if enable_proxy is `true`), when httpProxy is down.
Features	features				This is an object. See the Features section for a list of supported features.
GWS	usehtcc	Yes			Set to `true` so Designer works with GWS. If set to `false`, Designer defaults to a local mode and may be used temporarily if GWS is unavailable.
GWS	htccServer	Yes			GWS Server
GWS	htccport	Yes			GWS Port
GWS	maxConcurrentHTCCRequest	Yes			For batch operations to GWS, the maximum number of

Category	Setting Name	flowsettings.json	DesignerEnv	DesignerEnv Section	Description
					concurrent requests that Designer will send to GWS.
GWS	batchOperationResultTTL	Yes			For batch operations to GWS, the time (in milliseconds) that Designer stores results of a batch operation on the server, before deleting it.
Help	docsMicroserviceURL	Yes			URL for Designer Documentation
IVR	recordingType				Specifies the recording type to be used in the Record block. Set as GIR. If the option is missing or blank, Full Call Recording type is used.
Nexus	url		Yes	nexus	URL of Nexus that typically includes the API version path (e.g. https://nexus-server/nexus/api/v3).
Nexus	password		Yes	nexus	Nexus x-api-key created by Nexus deployment.
Nexus	enable_proxy		Yes	nexus	Boolean value on whether httpProxy is used to reach Nexus.
Nexus	profile		Yes	nexus	Enable Contact Identification via Nexus (e.g. to enable Last

Category	Setting Name	flowsettings.json	DesignerEnv	DesignerEnv Section	Description
					Called Agent routing).
Process	port	Yes			Designer process port in the container. Typically, you should keep the default value.
Provisioning	primarySwitch				Specify the primary switch name if more than one switch is defined for the tenant. Designer fetches and works with route points from this switch.
Routing	ewtRefreshTimeout		Yes	flowsettings	Specifies the interval (in seconds) to refresh the Estimated Waiting Time when routing an interaction.
Security	zipFileSizeLimitInMegaBytes				Defines the maximum zipFile size limit (in megabytes) during bulk audio import.
Security	tempUploadDir				The path where the zipFile is stored during bulk audio import process.
Security	disableCSRF	Yes			
Security	disableSecureCookies	Yes			Disable the secure cookies header.
Session	idleTimeout	Yes			Idle timeout (in seconds) before a user session is terminated

Category	Setting Name	flowsettings.json	DesignerEnv	DesignerEnv Section	Description
					while editing applications, modules, or data tables.
Session	lockTimeout	Yes			Timeout (in seconds) before a resource lock is released, for an editing session of applications, modules, or data tables.
Session	lockKeepalive	Yes			Interval (in seconds) before the client sends a ping to the server, to refresh the lock for an editing session of applications, modules, or data tables.
Tenancy	multitenancy	Yes			Should be set to `true`.
Tenancy	localmode	Yes			Should be set to `false`.
Workflow	maxBuilds	Yes			Specifies the maximum number of builds permitted per application.
Workflow	enablePTE		Yes	flowsettings	Boolean value on whether PTE objects are enabled at runtime.

7. Features

The features specified here must be configured under the `features` object in the `flowsettings.json` file.

For example,

"features": {

"callbackv2": true,

..

..

}

> **Important**
> These features are configured only in the flowsettings.json file and not in DesignerEnv.

Category	Feature Setting Name	Description	Default Value
Audio	enableBulkAudioImport	Enable or disable the bulk audio import feature.	false
Audio	grammarValidation	If enabled, Designer will validate invalid grammar files during grammar upload. If it is enabled, only valid grammar files (.grxml or Nuance compiled binary grammar) can be uploaded.	false
Nexus	nexus	Enable or disable Nexus.	false

The Personas feature is enabled during a new tenant creation in Azure. The following are performed during workspace initialization:

- The Personas feature flag is enabled in `tenantsettings.json`.
- The GTTS only *personas.json* file is copied to `workspace/tenant ccid/workspace/personas/personas.json`.
- The defaultPersona setting is configured in the DesignerEnv transaction list (`flowsettings->defaultPersona = Gabriela`).

8. Upgrades

To upgrade the service when a new Designer/DAS Helm chart is released:

`helm upgrade`

To upgrade when a new Designer/DAS image version is released:

Option 1- Using the default settings (recommended)

1. Modify the image tag parameter in the **designer-values.yaml** file.
   For example, if you are upgrading the Designer version, modify `tag` under the `desImage` section. For upgrading DAS, modify the `tag` under `dasImage` section.
2. `helm upgrade -f designer-values.yaml`

Option 2 - Using the SET command for Helm

For Designer,

```
helm upgrade designer-service designer-9.0.11.xx.xx.tgz --set desImage.tag=
```

For DAS,

```
helm upgrade das-service das-9.0.11.xx.xx.tgz --set dasImage.tag=
```

9. Uninstall

To uninstall a service:

`helm uninstall`