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# Genesys Customer Experience Insights Private Edition Guide

Architecture

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Learn about Genesys Customer Experience Insights architecture

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## Introduction

### RAA

Genesys Customer Experience Insights (GCXI) relies on the Reporting and Analytics Aggregates (RAA) aggregation layer, which aggregates Genesys Info Mart data, and then stores the aggregated data in Genesys Info Mart. The RAA container contains only RAA and Netcat. Netcat is used by RAA to expose Prometheus metrics, which optionally provide internal monitoring of RAA performance, containers, and so on. Prometheus metrics are for administrator and troubleshooting use only.

### GCXI

GCXI includes the following containers:

- **gcxi** - The main GCXI container, which runs as a StatefulSet.
- **gcxi-control** - A supplementary container, which is used for GCXI first-install initialization and for cleanup.
- **alpine / ubi8-minimal** - An init container, used to set up log volume permissions. You can instead use any suitable container able to run simple bash commands.

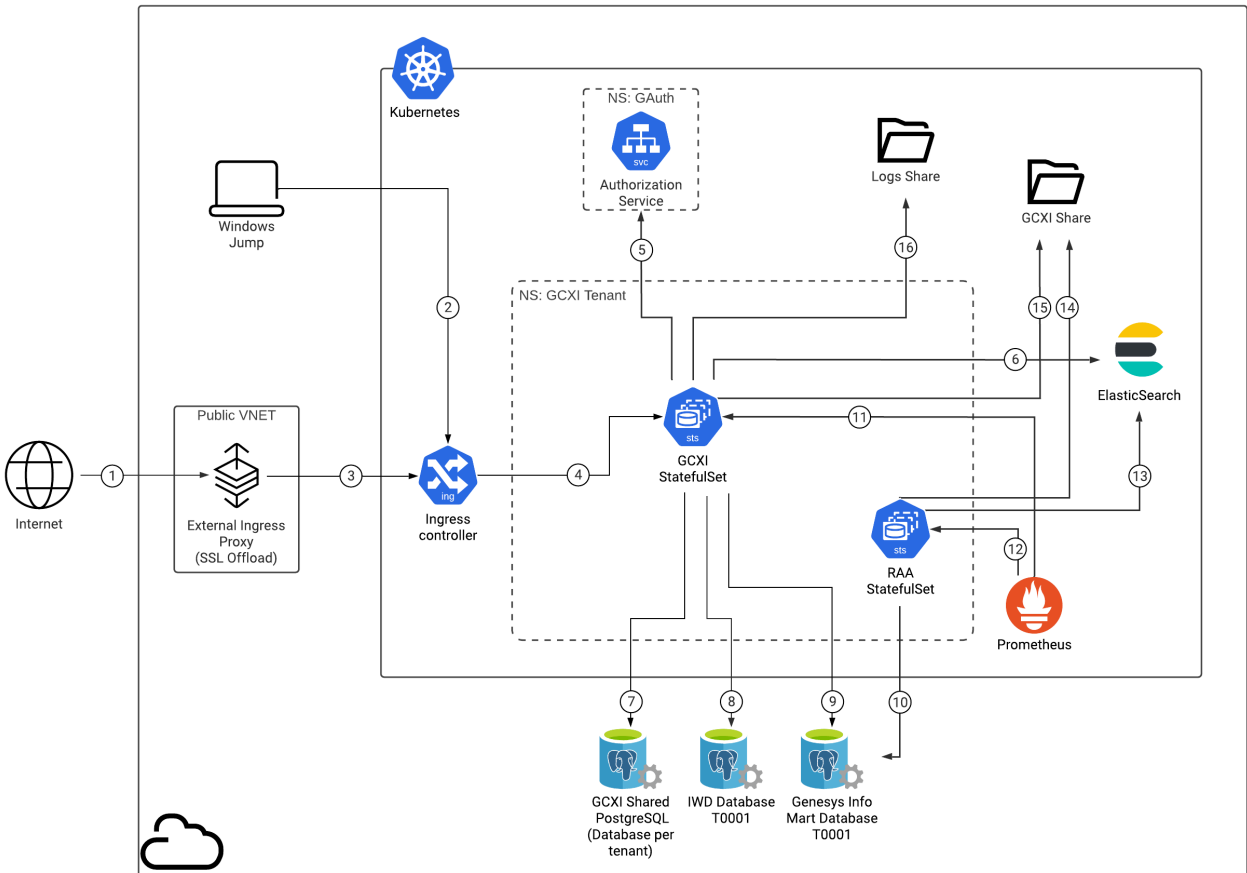
GCXI does not support Disaster Recovery, cross-regional deployment, or auto-scaling.

For information about the overall architecture of Genesys Multicloud CX private edition, see the high-level Architecture page.

See also High availability and disaster recovery for information about high availability/disaster recovery architecture.

## Architecture diagram — Connections

The numbers on the connection lines refer to the connection numbers in the table that follows the diagram. The direction of the arrows indicates where the connection is initiated (the source) and where an initiated connection connects to (the destination), from the point of view of Genesys Customer Experience Insights as a service in the network.



## Connections table

The connection numbers refer to the numbers on the connection lines in the diagram. The **Source**, **Destination**, and **Connection Classification** columns in the table relate to the direction of the arrows in the Connections diagram above: The source is where the connection is initiated, and the destination is where an initiated connection connects to, from the point of view of Genesys Customer Experience Insights as a service in the network. *Egress* means the Genesys Customer Experience Insights service is the source, and *Ingress* means the Genesys Customer Experience Insights service is the destination. *Intra-cluster* means the connection is between services in the cluster.

Connection	Source	Destination	Protocol	Port	Classification	Data that travels on this connection
1	Public Internet	Inbound Gateway	HTTPS	443	Ingress	Inbound web traffic.
2	Windows Jump	Ingress controller*	TCP	34952	Ingress	Connection from MicroStrategy Developer (an optional tool, installed on Windows).  *This connection does not pass through the ingress controller in some configurations.
3	Ingress Proxy	Ingress controller	HTTPS	443	Intra-cluster	Inbound web traffic.
4	Ingress controller	GCXI StatefulSet	HTTP	8080	Intra-cluster	Ingress controller connects to GCXI StatefulSet.
5	GCXI StatefulSet	GAuth: Authorization Service	HTTP	80	Intra-cluster	GCXI queries the Genesys Authentication Service to validate user identity and obtain privilege information for the authenticated user.
6	GCXI StatefulSet	Logging destination, such as ElasticSearch	TCP	Logical connection only	Intra-cluster	Writes container logs.
7	GCXI StatefulSet	GCXI Shared PostgreSQL (Database per tenant)	TCP	5432	Egress	Exchanges internal information with the GCXI MicroStrategy meta database.

Connection	Source	Destination	Protocol	Port	Classification	Data that travels on this connection
8	GCXI StatefulSet	IWD Database	TCP	5432	Egress	Retrieves report data from Genesys intelligent Workload Distribution (iWD) database.
9	GCXI StatefulSet	Genesys Info Mart Database	TCP	5432	Egress	Retrieves report data from Genesys Info Mart database.
10	RAA StatefulSet	Genesys Info Mart Database	TCP	5432	Egress	Performs data processing in Genesys Info Mart database.
11	Prometheus	GCXI StatefulSet	HTTP	9101	Intra-cluster	Collects GCXI metrics for monitoring and alerting with Prometheus.
12	Prometheus	RAA StatefulSet	HTTP	9101	Intra-cluster	Collects RAA metrics for monitoring and alerting with Prometheus.
13	RAA StatefulSet	Logging destination, such as ElasticSearch	TCP	Logical connection only	Intra-cluster	Writes container logs.
14	RAA StatefulSet	GCXI Share	TCP	Logical connection only	Intra-cluster	Stores service files.
15	GCXI StatefulSet	GCXI Share	TCP	Logical connection only	Intra-cluster	Stores service files.
16	GCXI StatefulSet	Logs Share	TCP	Logical connection only	Intra-cluster	Writes log files to file share.