GENESYS™

Deployment Guide

Configuring Cassandra

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Configuring Cassandra

Contents

Genesys Web Engagement version 8.1.2 includes an embedded Cassandra database (version 1.2.15). To enable Cassandra to function optimally, you must configure the embedded data storage on your Backend Server environment by completing the procedures on this page.

Configuring the Java Heap Size

Start

1. Navigate to your installation directory for the Backend Server and open the **setenv.bat** file with a text editor.

2. Find the "Java Virtual machine settings" section.

3. Modify the **-Xmx** and **-Xms** parameters according to your hardware configuration. Genesys recommends that you specify a Java Heap size of 1/4 of your system memory, but not greater than 8 GB. For example, your configuration could look like the following:

   ```
   set JAVA_OPTS=%JAVA_OPTS% '''-Xms4096m -Xmx4096m''' -XX:MaxPermSize=250m
    -XX:+HeapDumpOnOutOfMemoryError
   ```

   Consult the Cassandra documentation at http://www.datastax.com/documentation/cassandra/1.2/cassandra/operations/ops_tune_jvm_c.html for more information about Cassandra clusters and memory.

4. Save your changes.

End

Configuring the Embedded Cassandra Server Properties

Prerequisites

- You completed Building your Application

Start

1. Navigate to the Web Engagement installation directory and edit the **\apps*application name*\environment\environment.local.properties** file. The values specified in this file are inserted into the **cassandra.yaml** and **wmbackend.properties** files during the application build step. All configuration parameters for Cassandra in **environment.local.properties** start with **wmdb.cassandra.cluster**. The parameters and their default values:

   ```
   # WMDB-Cassandra
   # Tokens in cassandra.yaml and wmbackend.properties files will be substituted by these
   parameter values.
   wmdb.cassandra.cluster.name=Cluster
   wmdb.cassandra.cluster.keyspaceName=WebMonitoring
   wmdb.cassandra.cluster.defaultStrategyParams=
   wmdb.cassandra.cluster.defaultStrategy=SimpleStrategy
   wmdb.cassandra.cluster.defaultReplicationFactor=3
   wmdb.cassandra.cluster.listenAddress=localhost
   wmdb.cassandra.cluster.rpcAddress=localhost
   wmdb.cassandra.cluster.rpcPort=19160
   ```

```
wmdb.cassandra.cluster.sslStoragePort=17001
wmdb.cassandra.cluster.storagePort=17000
wmdb.cassandra.cluster.seedNodes=127.0.0.1
wmdb.cassandra.cluster.dataDirectory=DATA_DIR_PLACEHOLDER
wmdb.cassandra.cluster.commitLogDirectory=COMMITLOG_DIR_PLACEHOLDER
wmdb.cassandra.cluster.savedCachesDirectory=SAVED_CACHES_DIR_PLACEHOLDER
```

For information about all the Cassandra configuration properties, refer to the Cassandra documentation: http://www.datastax.com/documentation/cassandra/1.2/cassandra/configuration/configCassandra_yaml_r.html

Note: Making changes in the **environment.local.properties** file keeps the client and server connection parameters synchronized.

2. Update the Cassandra configuration parameters with values appropriate for your deployment. You will need to modify the following parameters:

- **wmdb.cassandra.cluster.defaultStrategy**—The default value is `SimpleStrategy`, but if you plan to deploy the cluster across multiple data centers, consider using `org.apache.cassandra.locator.NetworkTopologyStrategy`.

  - **SimpleStrategy**

    - **wmdb.cassandra.cluster.defaultReplicationFactor**—The keyspace replication factor, for use with `SimpleStrategy` only. When choosing a replication factor value, take into account that by default Genesys Web Engagement instructs Cassandra to use the QUORUM consistency level for both writes and reads. Genesys recommends that you set the replication factor to a value of not less than 3. You can get a sense of the data consistency and cluster high availability of a configuration by using the Cassandra calculator that is available at http://www.ecyrd.com/cassandracalculator/.

  - **org.apache.cassandra.locator.NetworkTopologyStrategy**

    - **wmdb.cassandra.cluster.defaultStrategyParams**—Cross–data center replication strategy parameters for `NetworkTopologyStrategy`. For example, `DataCenter1:3`, `DataCenter2:2` indicates a replication factor of 3 for `DataCenter1` and 2 for `DataCenter2`.

    - The endpoint_snitch parameter in cassandra.yaml must be set to GossipingPropertyFileSnitch.

    - A **cassandra-rackdc.properties** file with the name of the selected data center MUST be placed in the **<webengagement_root>/servers/backend/resources** folder for every Backend Server.

      Details for **cassandra-rackdc.properties** are available at http://docs.datastax.com/en/cassandra/2.0/cassandra/architecture/architectureSnitchGossipPF_c.html.

> ## Important
>
> If you are using a multi–data center configuration, the consistency level applies to every data center. You must select the appropriate consistency level for your specific configuration.
>
> In particular, please note that the QUORUM consistency levels have limitations when applied to a multi–data center configuration. Note also that **NetworkTopologyStrategy** is not compatible with some QUORUM consistency levels when they are applied to a single node in a selected data center. For example:
> DC1:1, DC2:1 does not work with LOCAL_QUORUM, QUORUM and EACH_QUORUM consistency levels
> DC1:2, DC2:1 works with LOCAL_QUORUM for DC1 clients, but not with QUORUM and EACH_QUORUM
> DC1:1, DC2:2 works with LOCAL_QUORUM for DC2 clients, but not with QUORUM and EACH_QUORUM
>
> DC1:2, DC2:2 works with all QUORUM consistency levels.

- **wmdb.cassandra.cluster.seedNodes**—Choose your seed nodes, keeping in mind that if you plan to deploy the Cassandra cluster across multiple data centers, you should have at least one seed node from each data center. Set the value of **wmdb.cassandra.cluster.seedNodes** to a comma-separated list of the IPs for your seed nodes. For example, `135.225.54.236`, `135.225.54.245`.

- **listen_address** and **rpc_address**—These parameters are likely to be different for each Backend Server / Cassandra node in the cluster and must be set directly in the **\servers\backend\etc\ cassandra.yaml** file for each Backend Server. See Configuring Cassandra for the Cluster for details on setting these parameters.

3. Save your changes.

End

Next Steps

- If you are completing the Standalone deployment scenario, the next step is to install the GWE plug-ins for Interaction Workspace and Genesys Administrator Extension.

- If you are completing the Clustering deployment scenario, you can return to Configuring Cassandra for the Cluster.