Genesys Interaction Recording Solution Guide

Upgrading Cassandra to 4.1.4

5/6/2025

Upgrading Cassandra to 4.1.4

> ## Important
>
> - If you are using GIR with Workspace Web Edition, refrain from using a shared deployment of Cassandra. This is because Web Services and Applications support Cassandra 2.2 only and do not support Cassandra 4.1.4. For details, see: Installing and configuring Cassandra.
>
> - Genesys Interaction Recording Web Services (GIR RWS) version 8.5.500.14 (or higher) supports Cassandra 4.1.4 only.

If you are using Cassandra 2.2, you must upgrade to Cassandra 4.1.4. Upgrading directly from 2.2.x to 4.1.4 is not supported. You must upgrade your Cassandra versions incrementally for schema portability, for example, from version 2.2.x -> 3.11.11 -> 4.1.4. Requires Python 3.6 (or higher) and Java 8 for Cassandra 4.1.4.

For more information about upgrading Cassandra, refer the **Upgrade to Cassandra 4.1.4** section.

> ## Important
>
> No screen recordings are made during the upgrade of Cassandra.
>
> To minimize the risk of losing screen recordings, upgrade Cassandra during off-hours. It's a best practice to perform a cluster upgrade during a scheduled maintenance window that occurs when application loads are typically lower. During the migration, GIR still operates with voice recording capabilities. After the Cassandra cluster is back in service, you can process the metadata information for voice recordings that was saved during the migration by initiating the recovery procedure of the Recording Processor Script.

Pre-requisites:

1. Ensure that the Recording Processor Script (RPS) or GIR Voice Processor (GIR VP), and Recording Web Services (RWS) nodes debug level logs are stored for any debugging or troubleshooting issues related to migration.
2. Back up all your Cassandra configuration files.
3. Take snapshots of all keyspaces on each existing Cassandra node. For more information, refer Cassandra Documentation.
4. Confirm that your Cassandra environment satisfies all of the necessary prerequisites.

Upgrade to Cassandra 4.1.4:

The following section provides the instructions for performing in-place upgrade from Cassandra 2.2.X to Cassandra 4.1.4. The recommendation procedure should be followed for quicker rollback and

minimal downtime.

Recommendation:

> ## Warning
> Genesys is not responsible for migration of existing data to the replicated Cassandra cluster on premise environments.

1. Create a replica of existing Cassandra 2.2 cluster with the data. For more information refer to Cassandra Documentation.

2. Ensure that replicated Cassandra 2.2 cluster data is validated with existing RWS nodes by updating the following parameters in `application.yaml` .

nodes: [ToBeChanged: <CASSANDRA_PRIMARY_DC_NODES>] and backup_nodes: [ToBeChangedOrRemoved: <CASSANDRA_BACKUP_DC_NODES>] to respective replicated nodes. For more information, check RWS Options for cassandraCluster.

1. Execute Migration plan on replicated Cassandra 2.2 new Cluster.

Migration Plan:

1. Stop all Interaction Recording Web Services nodes.

2. Run the schema upgrade application. This will be packaged with the RWS IP installation files. This application need to be run against one of the Cassandra 2.2 cluster nodes.
   ```
   java -jar upgrade.jar [options]
   options:
   -cassandraHost <host> - required, no default
   -thriftPort <port number> - optional, default=9160
   -nativePort <port number> - optional, default=9042
   -keyspace <keyspace name> - optional, default=sipfs
   -datacenter <datacenter name> - optional, default=datacenter1. The required value can be found via "nodetool status".
   -cassandraUser <username> - optional, but required if -cassandraPassword is set in cassandra.yaml
   -cassandraPassword <password> - optional, but required if -cassandraUser is set in cassandra.yaml
   Example: java -jar upgrade.jar -cassandraHost <hostname> -datacenter DC1
   ```

   Earlier versions of RWS communicated with Cassandra 2 using the thrift protocol. Cassandra has discontinued support for the thrift protocol, so the new version of RWS uses CQL. The upgrade application will make schema changes to the *call_recording_by_contact_center* table and all call/screen recording and log tables referenced by this table so that the data inserted via thrift will be available via CQL.

3. Perform Cassandra upgrade according to the Cassandra Upgrade Guide.

4. When configuring Cassandra 4.1.4, you must set the following both parameters in the **cassandra.yaml** file:

   - **batch_size_warn_threshold** to `200KiB`

   - **batch_size_fail_threshold** to `250KiB`

   - Save and apply all the changes.
     These parameters are related to the size of CQL batches. The default for these parameters is quite low and need to be increased to accommodate RWS inserts and update batches.

5. Upgrade the Interaction Recording Web Service nodes to the IP version 8.5.500.14 (or higher).

6. Configure Cassandra 4.1.4 parameters in **application.yaml** of Interaction Recording Web Service nodes. For more information, see Configuring Interaction Recording Web Services.

7. Start all Interaction Recording Web Service nodes. Validate the health of RWS and Cassandra.

8. After the upgrade,

   - If using Recording Processor Script(RPS), run the LVR Recovery Script to recover recordings from the each **Recording Processor Script failed** folder and repost the recordings to Interaction Recording Web Services, as failed voice recordings accumulate while the Cassandra cluster is unavailable.

   - If using GIR Voice Processor (GIR VP), the GIR Voice Processor automatically retries the recording posts for up to 40 days.

Rollback:

If we are seeing unresolved errors at any phase of the migration, please rollback back the Interaction Recording Web Service nodes to the previous RWS version and previous existing Cassandra 2.2 cluster until the issue is resolved.

Limitation:

If rollback is performed once the migration procedure is done and new voice recordings are directed to Cassandra 4.1.4, the following scenarios will result in errors :

- Playback of the new recordings

- Backup and purge of the new recordings

- Querying of the new recordings through API.