Genesys 8.1

Orchestration Server Migration Guide

TEMPORARY DOCUMENT: Available until the information contained herein is integrated into the *Genesys Migration Guide*.

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Orchestration Server Migration Procedures

This chapter describes the migration process of Orchestration Server (ORS) from previous releases to the 8.1.3 release. It also discusses component changes, and the other Genesys software that supports and enables routing functionality with Orchestration Server.

This migration chapter assumes that you have read and are familiar with the information in the *Genesys Orchestration Server 8.1 Deployment Guide.*

This chapter contains the following sections:

- Introduction to Orchestration Server Migration, page 2 discusses the preliminary migration procedures and the migration order for Orchestration Server.
- Changes in Orchestration Server, page 4 provides information about changes in features, configuration object, and configuration options in Orchestration Server from release 8.1.2 to 8.1.3.
- Orchestration Server Migration Procedures, page 7 explains the migration procedures from release 8.1.2 to 8.1.3.

Introduction to Orchestration Server Migration

This section discusses the preliminary migration procedures and component compatibility for Orchestration Server 8.1.3. It contains the following sections:

Preliminary Migration Procedures

Preliminary migration procedures include:

- Determine wherever a database or operating system upgrade is needed.

> **Note:** If you need to upgrade your operating system or database, you must do this before migrating your Genesys product. If you need to upgrade your operating system, consult your vendor documentation.

- Examine changes in Orchestration Server (see "New Features in Orchestration Server" on page 4).
- Examine option changes (see"Orchestration Server Configuration Option Changes" on page 5).
- Check the ORS interoperability (see "Interoperability Among Orchestration Server Components" on page 3).

Reference Materials

The following is a list of documentation relevant to the migration of this product. The documentation is available on the Genesys Documentation web site at docs.genesyslab.com.

- *Genesys Orchestration Server 8.1 Deployment Guide,* which contains both getting-started and deployment information specific to ORS 8.1.3.
- *Genesys Interoperability Guide*
- *Genesys Supported Operating Environment Reference Guide*
- *Genesys Orchestration Server 8.1 Developer's Guide*
- *Cassandra Installation/Configuration Guide*
- *Genesys Orchestration Server 8.1 Release Notes*

Interoperability Among Orchestration Server Components

The term “interoperable” refers to whether it is possible for different versions of Genesys solutions, components, or options to work together compatibly during the migration process.

- Interoperability at the suite-level means combining various versions of Genesys products during the migration process.
- Interoperability at the product level means combining different versions of the components of a particular product, such as Orchestration Server, while migrating them sequentially.
- Interoperability of Orchestration Server components can occur with these restrictions: In order to obtain the full functionality of session failover and Data Center failover, the same version of Orchestration Server must be installed for all nodes within a cluster.

Orchestration Server Component Compatibility

A Genesys Routing Solution is designed to work with the components in Table 1.

Table 1: Genesys Routing Solution Components

Component	Version	Comments
DB Server	8.1	
Configuration Server	8.1	
Configuration Manager	8.1	
Local Control Agent	8.1.2	
Message Server	8.1	
Solution Control Server	8.1.2	
Solution Control Interface	8.1.2	
Media Control Platform	8.1.7	
SIP-Server	8.1	
Stat Server	8.1	
Universal Routing Server	8.1.3	
Composer	8.1.2	8.1.3 is recommended.
Interaction Server	8.0.2	If working with eServices.

Changes in Orchestration Server

This section provides information about changes in Orchestration Server 8.1.3 in the following topics:

New Features in Orchestration Server

This section contains a brief description of the new features in Genesys Orchestration Server (ORS) 8.1.3 release. For more information, see the *Genesys Orchestration Server 8.1 Deployment Guide.*

Release 8.1.3

- Starting with release 8.1.3, ORS provides an enhanced high-availability (HA) environment architecture. The enhancement to a high-availability (HA) architecture implies the existence of redundant ORS applications: a primary and a backup (i.e., nodes). If the primary application fails, the backup can take over its operations without significant loss of data or impact to business operations.
- Multiple Data Center architecture. ORS now supports a Data Center architecture where each Data Center is served by a cluster of ORS nodes. ORS supports Data Center failover.
- A single Cassandra instance across multiple Data Centers. The Apache Cassandra open source solution packaged with Genesys Orchestration Solution now supports a single Cassandra instance across multiple Data Centers.
- Support of new version of Cassandra. ORS 8.1.3 supports Apache Cassandra 1.1.x, beginning with Version 1.1.12.
- Enhanced voice interaction action. The <createcall> action with type "predictive" was extended by providing Call Progress Detection (CPD) results for voice interactions in Interaction interface events. The CPD result shows the outcome, either positive (live voice), semi-positive (answering machine, fax or silence), or negative (busy, no answer, etc.) of an attempt to reach an intended party. This allows ORS to determine the next actions for this interaction, such as redialing at the later time for negative call results or connecting an established outbound call to pre-recorded message instead of an agent for 'answering machine' call result. Refer to the *Genesys Orchestration Server Developer's Guide* for more information.

- Infinite loop prevention. A change has been implemented in ORS behavior called *infinite loop prevention*. This modification prevents ORS from infinite loops between states or from an endless number of times a state is entered as a direct result of a transition element.
- Enhanced multi-site support. Simplification of processing multi-site interactions by separating interactions objects from different sites between different SCXML strategies.

Orchestration Server Configuration Option Changes

Table 2 summarizes the changes to the configuration options specific to Orchestration Server from ORS 8.1.2 to 8.1.3.

Table 2: Orchestration Server Configuration Option Changes

Section Name/Option	Type of Change	Use
cluster/name	removed	No longer needed with new 8.1.3 cluster design.
cluster/super_node	removed	No longer needed with new 8.1.3 cluster design.
orchestration/mcr-pull-by-msn-only	removed	No longer needed with new 8.1.3 cluster design.
orchestration/external-url	added	Used for HTTP redirects.
orchestration/mcr-pull-by-this-node	added	Used for eServices.
orchestration/scxml-log-filter-level	added	Used for log events.
orchestration/send-retries	added	Used for resending events.
persistence/cassandra-connect-attempt-timeout	added	Used for Cassandra interoperation.

Table 2: Orchestration Server Configuration Option Changes

Section Name/Option	Type of Change	Use
persistence/cassandra-keyspace-name	added	Used for single Cassandra instance.
persistence/cassandra-max-latency	added	Used for Cassandra interoperation.
persistence/cassandra-schema-version	added	Used for Cassandra interoperation.
persistence/cassandra-strategy-class	added	Used for Cassandra interoperation.
persistence/cassandra-strategy-options	added	Used for Cassandra interoperation.
scxml/max-session-age	added	Prevents sessions from never terminating.
scxml/max-microstep-count	added	Maximum number of microsteps allowed to be taken following the processing of one event.
scxml/max-pending-events	added	Maximum number of events allowed to be queued to a session (inclusive of internal, external, delayed and undelivered events).

Table 2: Orchestration Server Configuration Option Changes

Section Name/Option	Type of Change	Use
scxml/max-state-entry-count	added	Maximum number of times that a state may be entered through the life a session.
scxml/process-event-timeout	added	Specifies the maximum time allowed for the processing of the event queue.

Orchestration Server Migration Procedures

This section describes Orchestration Server migration procedures.

Warnings!
- Before preparing for migration, it is important to note that persistence for all sessions, as well as session-to-server information, will be lost during migration.
  To prevent this loss from being an issue, before shutting down the current 8.1.2 ORS deployment, all sessions should be allowed to end.
  For voice, this means stopping calls from entering ORS managed route points.
  For eServices, this means stopping multimedia interactions from entering ORS managed interaction queues.
  When all voice and multimedia sessions have completed, the 8.1.2 environment may be stopped, and migration to 8.1.3 with a new Cassandra deployment may be completed.
- When upgrading an existing component, you should not create a new Application object. Instead, use the existing Application object, keeping the original name.

Start of procedure

1. Export current configuration options to a configuration file.
   a. In Configuration Manager, open the `Properties` dialog box for the ORS Application object.

Starting in ORS 8.0, Genesys Administrator can also be used for configuration. Refer to the *Genesys Framework 8.1 Genesys Administrator Help* for more information.

b. From the `Options` tab, export the current configuration options to a configuration file.

This new configuration file can also be used for rollback purposes, if needed. See "Orchestration Server, Rolling Back the Installation" on page 12 for more information.

2. Delete options not used in ORS 8.1.3.

a. Delete option `orchestration/mcr-pull-by-msn-only`.

b. Delete section `cluster` with options `name` and `super_node`.

3. Configure HA.

a. For each instance of Primary Orchestration Server application, create a Backup application with the same connectivity and configuration settings as its Primary application.

b. In the Primary application, specify ORS Backup with Warm Standby Redundancy type.

4. Configure ORS Cluster.

The next step will be to create a `Transaction` of the type `List`, and create a new section in `List` to represent a single Orchestration cluster. Each of the key/value pairs in that section will link a specific Orchestration application to a Data Center.

In multi-tenant deployment the `Transactions` folder is located under `Tenant: Environment`. In single-tenant deployment the `Transaction` object is configured under the `Tenant: Resources`.

a. In Configuration Manager, in the `Tenant: Environment`, open the `Transactions` folder.

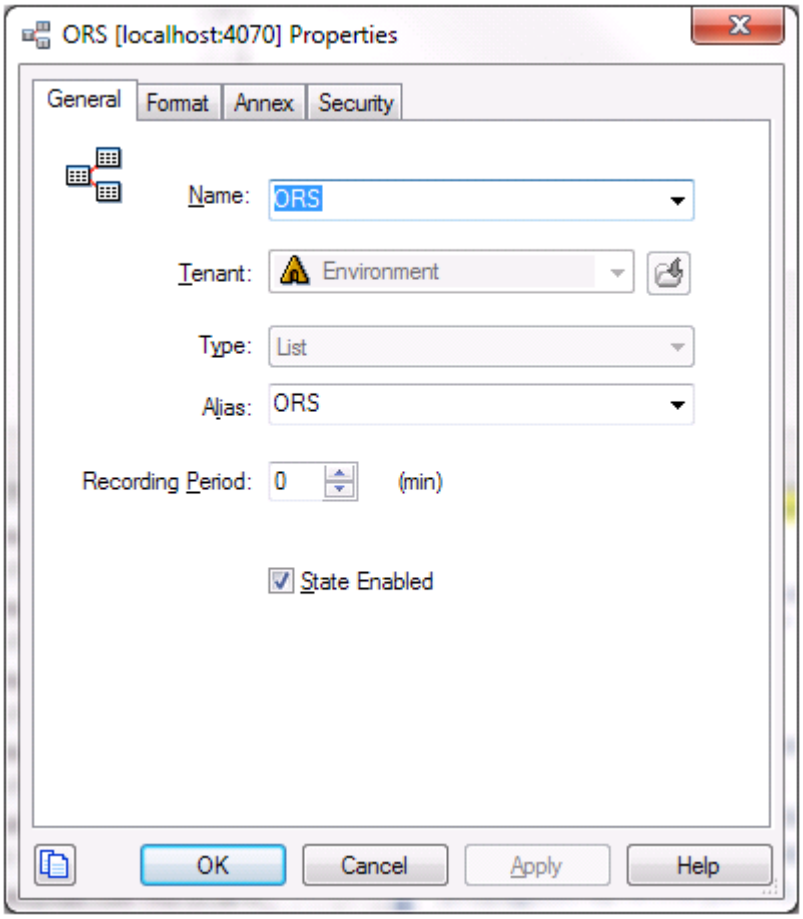

Figure 1: Setting the new transaction `List` object in the ORS `Tenant: Environment`

b. In the `Transactions` window, create a `New --> transaction` from the shortcut menu.

c. On the `General` tab, enter the following information:

- Name: `ORS` (the name of the `Transaction` object must be `ORS` in uppercase).
- Alias: `ORS`
- Type: `List`
- Recording Period: `0`
- State Enabled should be checked.

An example is shown in Figure 1.

d. On the `Annex` tab, create a new section with the name of the cluster:

i. In the `Option Name` field, enter the name of an Orchestration application configured as Primary.

ii. In the `Option Value` field, enter the name of the Data Center the Orchestration Node belongs to.

iii. Repeat Steps 1- 6 for all Orchestration Nodes that belong to this cluster.

e. Repeat Steps a - d for all clusters.

An example is shown in Figure 2.

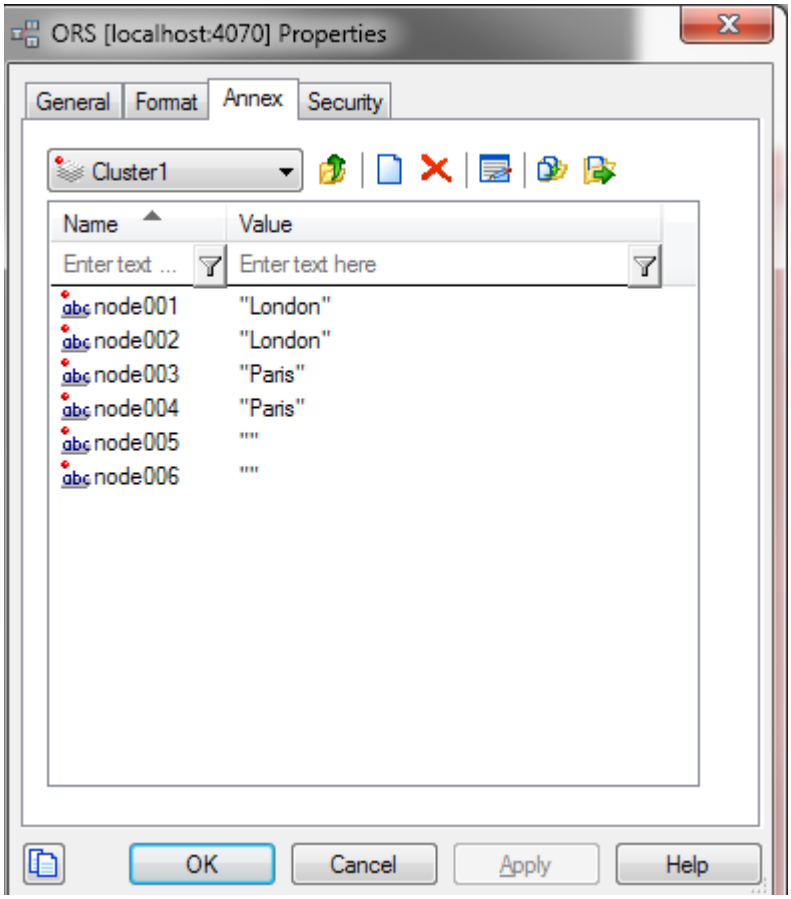

Figure 2: Defining Nodes within a new Orchestration Server Cluster

Only ORS applications configured as Primary should be listed in an ORS cluster.

In the example in Figure 2, `Cluster1` consists of six node pairs presented by Primary instances of Orchestration Servers:

`node001` and `node002`, which are linked to Data Center `London`.

`node003` and `node004`, which are linked to Data Center `Paris`.

`node005` and `node006`, which are linked to a “nameless” Data Center.

When a Data Center value is left empty, the nodes default to a “nameless” Data Center.

It is recommended to have at least two node pairs in each Data Center.

In ORS 8.1.3, work allocation happens automatically, based on the configuration of the cluster described above.

5. Install Apache Cassandra.

ORS 8.1.3 requires Apache Cassandra 1.1.x beginning with version 1.1.12. For information on installation and configuration for Cassandra, see the *Cassandra Installation/Configuration Guide*.

6. Configure ORS persistence.

   Set the new Cassandra configuration options in Orchestration Server 8.1.3 `persistence` section.

   - `cassandra-keyspace-name`: Specify the name of Cassandra keyspace.
   - `cassandra-schema-version`: Enter the Cassandra schema version.
   - `cassandra-strategy-class`: Set to `SimpleStrategy` if Cassandra is deployed as a single cluster. Set to `NetworkTopologyStrategy` in the case of Data Centers Cassandra cluster deployment.
   - `cassandra-strategy-options`: Set the replication factor for a given keyspace.

   Note: Starting with 8.1.3 Orchestration Server, connection with Cassandra is not mandatory if you do not want to use persistence storage in your deployment.

7. Configure the ORS application to work with multimedia interactions (if needed). Set `mcr-pull-by-this-node` option to `true` if application should work with multimedia interactions.
8. Install Orchestration Server 8.1.3.
9. Test your ORS deployment.

End of procedure

Orchestration Server, Rolling Back the Installation

Procedure:
Rollback the Installation

Prerequisites

- Use this procedure ONLY if you need to restore your previous ORS configuration.

Start of procedure

If you experience problems upgrading ORS, you can return to your existing previous ORS configuration by doing the following:

1. In Configuration Manager, open the `Properties` dialog box for the ORS Application object.
2. On the `Options` tab, click the `Import from Configurations File` icon and locate the configuration file you exported in Step 1. b on page 8. This procedure overwrites the options on this tab with those in the configuration file.
3. If you changed settings on other tabs, return them to their previous settings.

End of procedure