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# Web Services and Applications Deployment Guide

Initializing Cassandra

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# Initializing Cassandra

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### Creating the Cassandra keyspace

The procedures below describe how to create the Cassandra keyspace for the following scenarios:

- Development — 1 Cassandra node (appropriate for a development or lab environment)
- Single Data Center — 1 data center with a minimum of three Cassandra nodes
- Two Data Centers — 2 data centers with a minimum of three Cassandra nodes in each data center

#### Important

For more complex Cassandra deployments, please consult with Genesys.

Select a tab below for the procedure that matches your deployment scenario.

### Development

#### Creating the Cassandra keyspace (1 Cassandra node)

##### Start

1. Copy the **ks-schema-local.cql** file from */installation\_path/gws/data* to the Cassandra node host.
2. By default, the replication factor is set to 1. Since this is a single node deployment, you don't need to modify this value. Refer to the [Cassandra documentation](#) for more information about replication factors.

```
and strategy_options = {replication_factor : 1}
```

3. Create the Cassandra schema. Choose one of the following options:
  - If you are using Web Services and Applications v8.5.2.## or later, run the following command:  
`cqlsh cassandra_host --file ks-schema-local.cql`
  - If you are using Web Services and Applications v8.5.2.41 or earlier, run the following command:  
`cassandra_install_dir/bin/cassandra-cli -h cassandra_host --file ks-schema-local.txt`  
...where *cassandra\_host* is the host name (fully qualified domain name) or IP address of the Cassandra node.

##### End

### Single Data Center

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## Creating the Cassandra keyspace (1 data center)

Complete the following procedure on one node in your Cassandra cluster.

### Start

1. Copy the **ks-schema-prod.cql** file from */installation\_path/gws/data* to the Cassandra node host.
2. For fault tolerance, Genesys recommends that you use at least 3 Cassandra nodes and set the replication factor to 3. Refer to the [Cassandra documentation](#) for more information about replication factors. To modify this value, change the following line:

```
and strategy_options = {replication_factor : <replication-factor-in-your-lab>}
```

3. Create the Cassandra schema. Choose one of the following options:

- If you are using Web Services and Applications v8.5.2.## or later, run the following command:  
`cqlsh cassandra_host --file ks-schema-prod.cql`
- If you are using Web Services and Applications v8.5.2.41 or earlier, run the following command:  
`cassandra_install_dir/bin/cassandra-cli -h cassandra_host --file ks-schema-prod.txt`

*cassandra\_host* is the host name (fully qualified domain name) or IP address of the Cassandra node.

### End

## Two Data Centers

### Creating the Cassandra keyspace (2 data centers)

Complete the following procedure on one node in your Cassandra cluster.

### Start

1. Copy the **ks-schema-prod\_HA.cql** file from */installation\_path/gws/data* to the Cassandra node host.
2. Modify the following line:

```
with strategy_options ={ AZ1 : 3, AZ2 : 3 }
```

- a. Add the data center name. You can use `nodetool` to find the name of the data center by examining the output of "nodetool ring" (the tool is located in the **bin** directory of Cassandra). The following is sample output from the `nodetool`:

```
nodetool ring
Address      DC           Rack  Status  State  Load      Owns    Token
192.0.2.10   datacenter1 rack1  Up      Normal 14.97 MB 100.00% 0
198.51.100.10 datacenter2 rack1  Up      Normal 14.97 MB 100.00% 100
192.0.2.11   datacenter1 rack1  Up      Normal 14.97 MB 100.00%
56713727820156410577229101238628035242
198.51.100.11 datacenter2 rack1  Up      Normal 14.97 MB 100.00%
56713727820156410577229101238628035242
192.0.2.12   datacenter1 rack1  Up      Normal 14.97 MB 100.00%
113427455640312821154458202477256070484
```

```
198.51.100.12 datacenter2 rack1 Up      Normal  14.97 MB  100.00%  
113427455640312821154458202477256070484
```

- b. Add the replication factor. Refer to the [Cassandra documentation](#) for more information about replication factors.

Based on the nodetool output above, your line might be:

```
with strategy_options ={ datacenter1 : 3, datacenter2 : 3 }
```

3. Create the Cassandra schema. Choose one of the following options:
    - If you are using Web Services and Applications v8.5.2.## or later, run the following command:  
`cqlsh cassandra_host --file ks-schema-prod_HA.cql`
    - If you are using Web Services and Applications v8.5.2.41 or earlier, run the following command:  
`cassandra_install_dir/bin/cassandra-cli -h cassandra_host --file ks-schema-prod_HA.txt`
- cassandra\_host* is the host name (fully qualified domain name) or IP address of the Cassandra node.

**End**

## Creating the column families

Complete the following procedure on one node in your Cassandra cluster.

**Start**

1. Copy the **cf-schema.cql** file from ***/installation\_path/gws/data*** to the Cassandra node host.
2. Run one of the following commands to create the Cassandra schema:
  - If you are using Web Services and Applications v8.5.2.## or later, run the following command:  
`cqlsh cassandra_host --file cf-schema.cql`
3. If you are using Web Services and Applications v8.5.2.41 or earlier, run the following command:  
`cassandra_install_dir/bin/cassandra-cli -h cassandra_host --file cf-schema.txt`

**End**

## Next step

- [Starting and Testing Web Services](#)