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# SIP Feature Server Deployment Guide

## Appendix: Add new Datacenter when running Feature Server with Embedded Cassandra

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# Appendix: Add new Datacenter when running Feature Server with Embedded Cassandra

If your Cassandra Cluster of Feature Servers *already meets the prerequisites*, then follow the steps to add a new data center to the cluster.

## Prerequisites

### Important

This is not a to-do list; these actions must have been completed before (or when) enabling your Cassandra Cluster. You cannot do them "now".

- All Feature Servers must be installed in Standalone mode with embedded Cassandra cluster.
- The Cassandra cluster must be using Network Topology Strategy.  
The `replicationStrategyClassName` option in the `TServer/Cassandra` section of the master, Feature Server must have been set to `NetworkTopologyStrategy` before the schema was created (before the first/initial start of the 'master' Feature Server).
- The Cassandra cluster must be using the `PropertyFileSnitch` type or the `GossipingPropertyFileSnitch` type of the endpoint snitch.  
You define this option in the `cassandra.yaml` configuration file(s) of all the Feature Servers in the cluster. See [the Cassandra documentation](#) for details.

Do this only when the new data center is created:

- Set one of the new data center's Feature Server nodes to `confSync`.

## Using PropertyFileSnitch

### cassandra-topology.properties file configuration

```
# Cassandra Node IP=Data Center:Rack
#Data Center One
999.999.99.99=us_west:RAC1
999.999.99.98=us_west:RAC2
#Data Center Two
999.999.99.97=us_east:RAC1
999.999.99.96=us_east:RAC2
#Data Center Three
999.999.99.95=eu_east:RAC1
999.999.99.94=eu_east:RAC2
#Data Center Four
999.999.99.93=eu_west:RAC1
999.999.99.92=eu_west:RAC2
# default for unknown nodes
default=us_west:RAC1
```

1. Deploy new Feature Server nodes for the new data center. [Use this process](#) but ignore the instructions for single data centers.
2. Update Cassandra topology in the `cassandra-topology.properties` file on every Feature Server within the Cassandra Cluster that includes the new nodes.  
**[+] Read instructions:**

In a Cassandra cluster, each Feature Server is a node, and each has an identical `cassandra-topology.properties` file that describes the network topology. When you created the Cassandra Cluster, you created this file and placed a duplicate in the `/resources/` directory of each Feature Server deployment.

You must now update each of these files to enable the new data centers.

The example below began as a single-node configuration. It defined only Data Center One. To configure a new data center, you simply add those same defining lines—modified to contain the correct data. The example below **(modifications in red)** now defines four data centers.

```
# Cassandra Node IP=Data Center:Rack
# Data Center One
999.999.99.99=us_west:RAC1
999.999.99.98=us_west:RAC2
<span style="color: red;"># Data Center Two
999.999.99.97=us_east:RAC1
999.999.99.96=us_east:RAC2
# Data Center Three
999.999.99.95=eu_east:RAC1
999.999.99.94=eu_east:RAC2
# Data Center Four
999.999.99.93=eu_west:RAC1
```

```
999.999.99.92=eu_west:RAC2 </span>
# default for unknown nodes
default=us_west:RAC1
```

-To finish your configuration, restart the Feature Servers in existing data center(s).

Read the Cassandra documentation [for additional details](#).

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3. Restart the existing Feature Server nodes.
4. Change the value of the endpoint\_snitch type to PropertyFileSnitch in newly deployed Feature Servers, then start the new Feature Server nodes [using these instructions](#).
5. Change the Cassandra cluster's keyspace replication options to accommodate the added new data center: specify the replication factor. Be certain that you understand [the Cassandra Keyspace Properties documentation](#) before undertaking this action.
6. The replication options change in the previous step automatically triggers the rebuild process for each new Feature Server/node.  
This process:
  - Runs automatically on all new nodes that you configured in step 2.
  - Streams data for the new nodes from existing nodes.

## Using GossipingPropertyFileSnitch

### cassandra-rackdc-properties file configuration for node1 in new datacenter (DC2)

```
# dc=dc name
# rack=rack name
dc=DC2
rack=RAC1
```

### cassandra-rackdc-properties file configuration for node2 in new datacenter (DC2)

```
# dc=dc name
# rack=rack name
dc=DC2
rack=RAC2
```

1. Deploy new Feature Server nodes for the new data center.
2. Add `cassandra-rackdc.properties` files to the new Feature Server nodes with data center and rack information specific to that node as mentioned in the example below.  
Example: The figure depicts `cassandra-rackdc.properties` files for two Feature Server nodes in a new data center (DC2) to be placed in the Feature Server nodes.
3. Configure `endpoint_snitch` type to `GossipingPropertyFileSnitch` in the **`cassandra.yaml`** file on the newly deployed Feature Server nodes.
4. Modify the **`replicationOptions`** option to accommodate the newly added data center in the **[Cassandra]** section of the Feature Server application. Be certain that you understand [the Cassandra Keyspace Properties documentation](#) before undertaking this action.

### Important

When adding a new node to an existing Cassandra cluster:

- Add only one node at a time.
- New nodes must be in the same snitch as the existing nodes snitch. Genesys does not recommend using mixed snitch mode clusters.