FCUBS GridLink Datasource Configuration
Oracle FLEXCUBE Universal Banking
Release 14.4.0.0.0
[May] [2020]

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1. Weblogic JDBC GridLink Datasource

1.1 Preface

You need to carry out certain tasks manually before Oracle FLEXCUBE deployment. This document details out the pre-deployment tasks based on GridLink Datasource configuration in Weblogic Application Server.

1.2 Purpose

Purpose of this document is to give understanding and configuration of Weblogic GridLink Datasource for Oracle FLEXCUBE.

1.3 Weblogic Data-Grid Datasource Overview

In WebLogic Server 12c (12.1.2), JDBC GridLink includes Oracle Database 12c integration, having the latest functionalities of Application Continuity, Database Resident Connection Pool, Pluggable Database and Global Data Services.

The RAC integration capabilities of Universal Connection Pool (UCP) have been utilized by the WebLogic Server GridLink Data Source implementation to provide the Fast Connection Failover (FCF), Runtime Connection Load-Balancing (RCLB),

The active management of the connections in the pool is based on static settings configured on the connection pool itself (min/max capacity, timeouts, etc.) and real time information the connection pool receives from the RAC Oracle Notification Service (ONS) subsystem that advises the “client” of any state changes within the RAC cluster.

WebLogic GridLink Data Sources and JDBC connection pools leverage the load balancing functionality provided by an Oracle RAC database to provide better throughput and more efficient use of resources.

1.4 Introduction

FLEXCUBE is a financial application which needs fast connection failover on runtime to ensure zero downtime and proper disaster recovery.

FLEXCUBE will use GridLink data source for Fast Connection Failover and responds to Oracle RAC events using Oracle Notification Service (ONS). This ensures that the connection pool in the GridLink data source contains valid connections (including reserved connections) without the need to poll and test connections. It also ensures that connections are created on new nodes as they become available.

A GridLink data source uses Fast Connection Failover to:

- Provide rapid failure detection.
- Abort and remove invalid connections from the connection pool.
- Perform graceful shutdown for planned and unplanned Oracle RAC node outages. See Graceful Handling for Oracle RAC Outages.

- Adapt to changes in topology, such as adding or removing a node.
- Distribute runtime work requests to all active Oracle RAC instances, including those rejoining a cluster.

WebLogic GridLink Data Sources and JDBC connection pools leverage the runtime load balancing functionality provided by an Oracle RAC database to provide better throughput and more efficient use by FLEXCUBE application.

Runtime connection load balancing provides the following benefits:

- Manages pooled connections for high performance and scalability.
- Receives continuous recommendations on the percentage of work to route to database instances.
- Adjusts distribution of work based on different back-end node capacities such as CPU capacity or response time.
- Reacts quickly to changes in cluster reconfiguration, application workload, overworked nodes, or hangs.
- Receives metrics from the Oracle RAC Load Balance by ONS. Connections to well performing instances are used most often. New and unused connections to under-performing instances will gravitate away over time.

1.5 Database Related Configuration

1.5.1 ONS Setup

Make Sure ONS service is running in each of the database servers by issuing the below command.(To be run from GRID home)

ONS Status Check:

```
$ORACLE_HOME/opmn/bin/onsctl ping
ons is not running ...
```

Starting ONS:

```
$ORACLE_HOME/opmn/bin/onsctl start
onsctl start: ons started
$ORACLE_HOME/opmn/bin/onsctl ping
ons is running ...
```

By default ONS runs on port 6200.

1.5.2 Database Service Modification and Monitoring

For the database service that we use in the Datasource which makes use of Active Grid Link, goal needs to be defined which defaults to none.

The below sql block needs to be run in the database where the service is created.

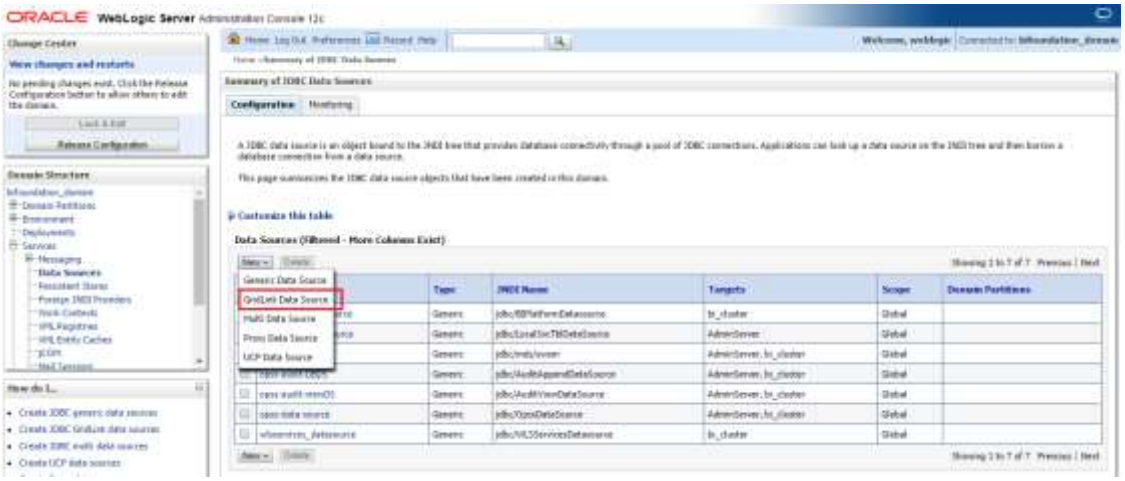
```
BEGIN
 DBMS_SERVICE.MODIFY_SERVICE ( service_name       => 'psrcbt'
                    , aq_ha_notifications => true
                    , goal               => DBMS_SERVICE.GOAL_THROUGHPUT
                    , clb_goal           => DBMS_SERVICE.CLB_GOAL_SHORT
                    );
END;
```

Also we can monitor the metric generation for our service via v$servicemetric

1.6 Configuring GridLink Datasource

1.6.1 Non-XA Gridlink Datasource

1) Navigate to Domain → Services → Data Sources → select New **> GridLink data source**

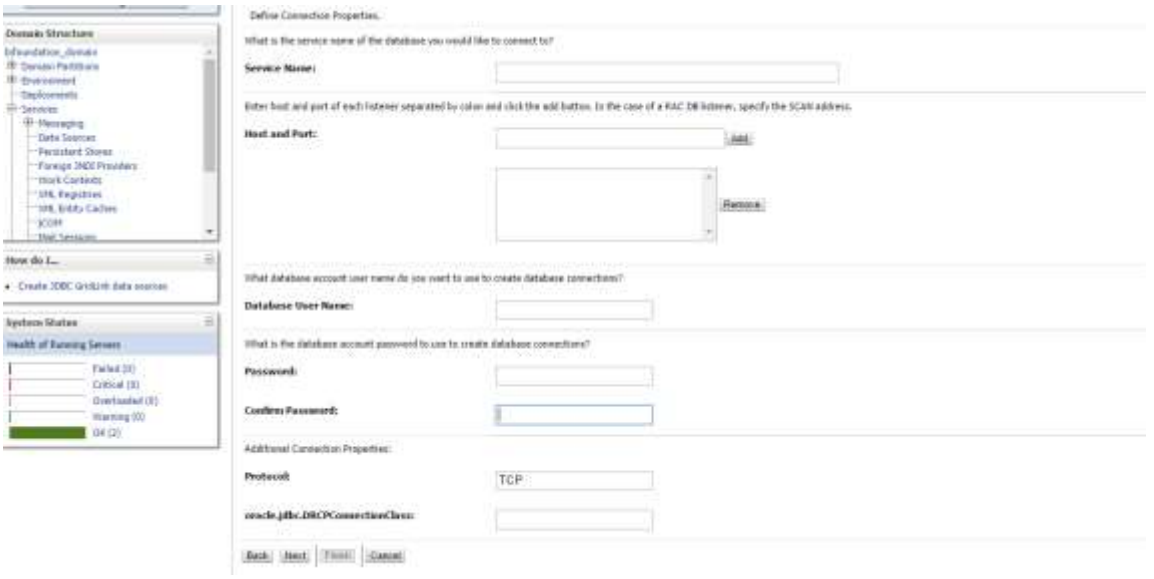


2) Enter the **Name**, **JNDI Name**. Choose Database Driver as Oracle's Driver (Thin) for GridLink Connection. Click on **Next**

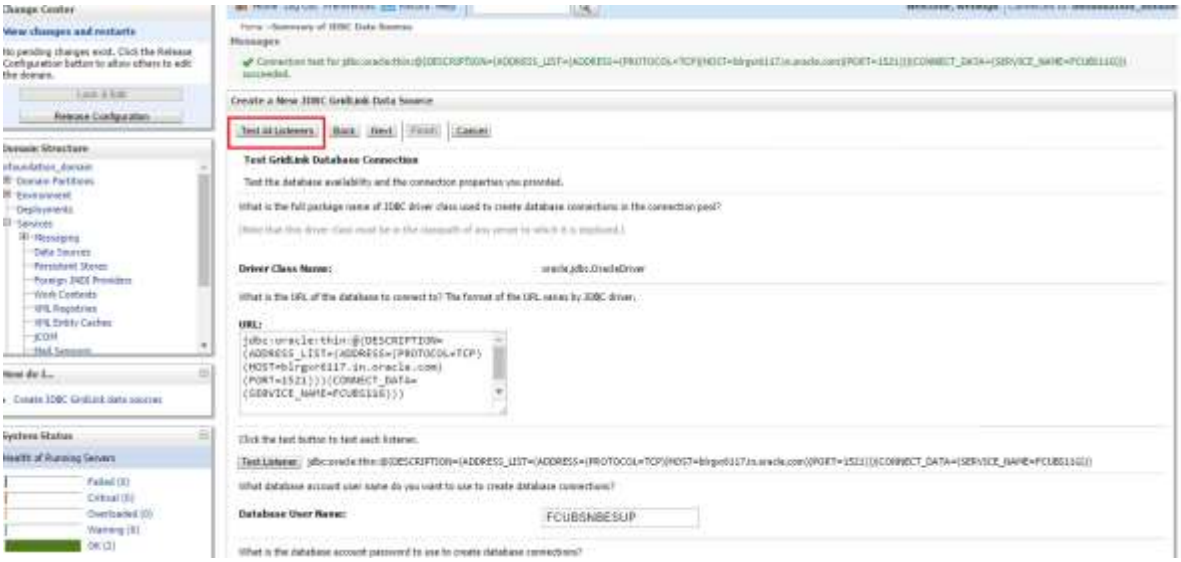
3) Uncheck the "**Supports Global Transactions**" and click on **Next**

4) Select first option "**Enter individual listener information**" and click **Next**

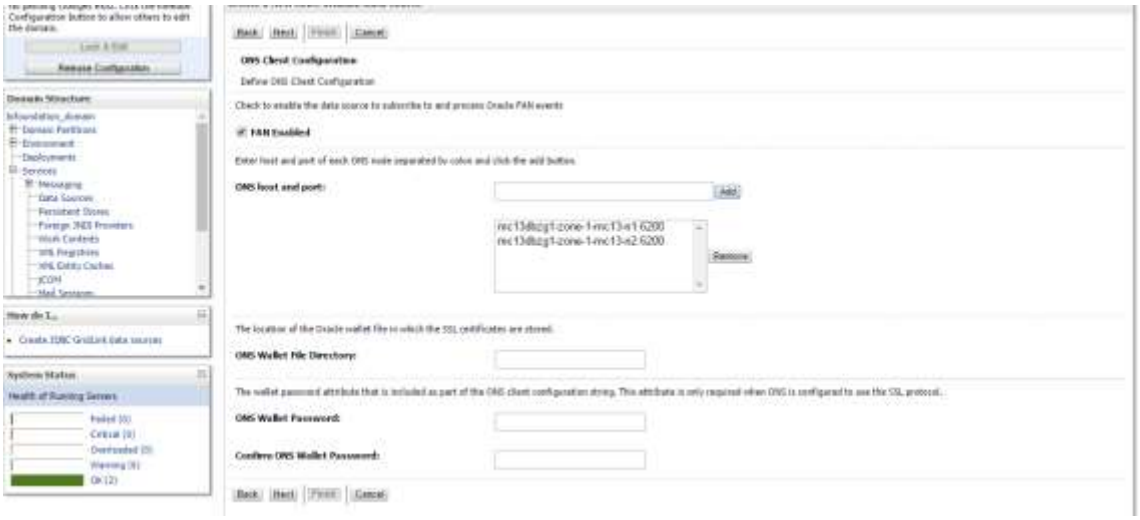
5) Enter the Database Name, Host Name, Port, User Name, Password, Confirm Password and Click on **Next**



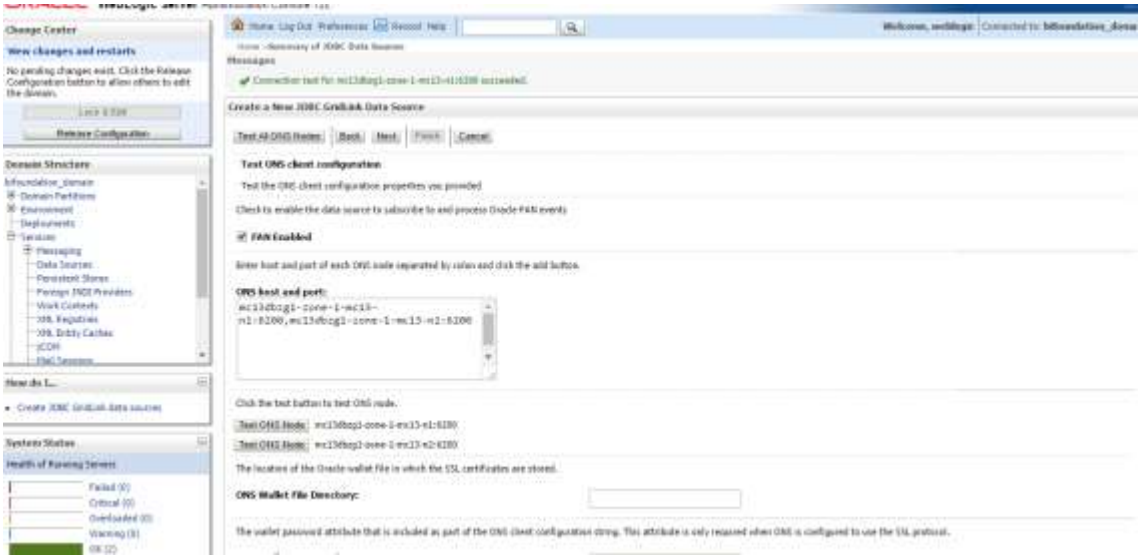
6) Click “Test All Listners” and check the connection is established properly with the database and Click **Next**



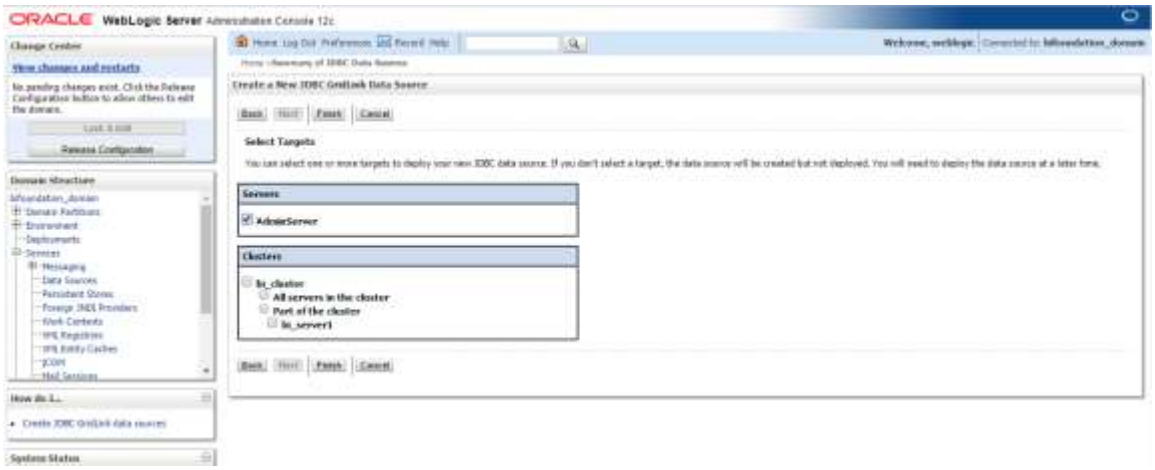
7) Enter the ONS host:port details which has already been configured in database



8) Click “Test ONS Nodes” to check the connection with ONS.

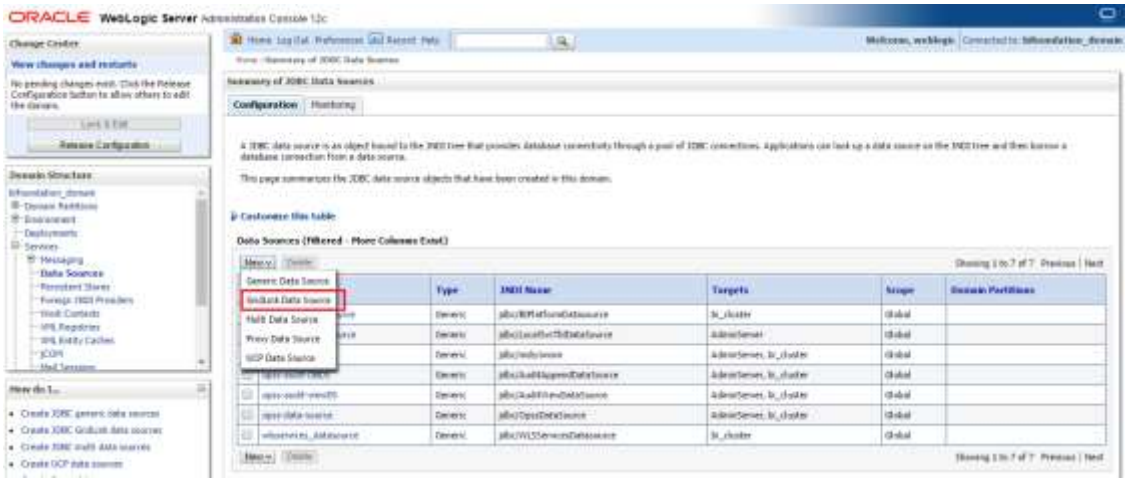


9) Select Target and click on **Finish**



1.6.2 XA Gridlink Datasource

1) Navigate to Domain → Services → Data Sources → select New **> GridLink data source**

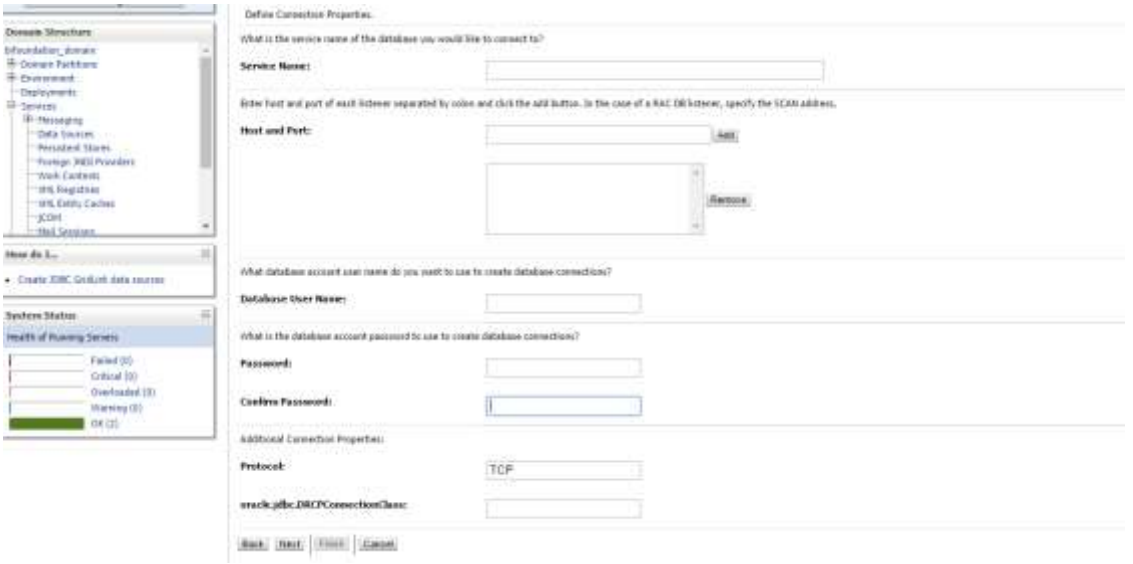


2) Enter the **Name**, **JNDI Name**. Choose Database Driver as Oracle's Driver (XA Thin) for GridLink Connection. Click on **Next**

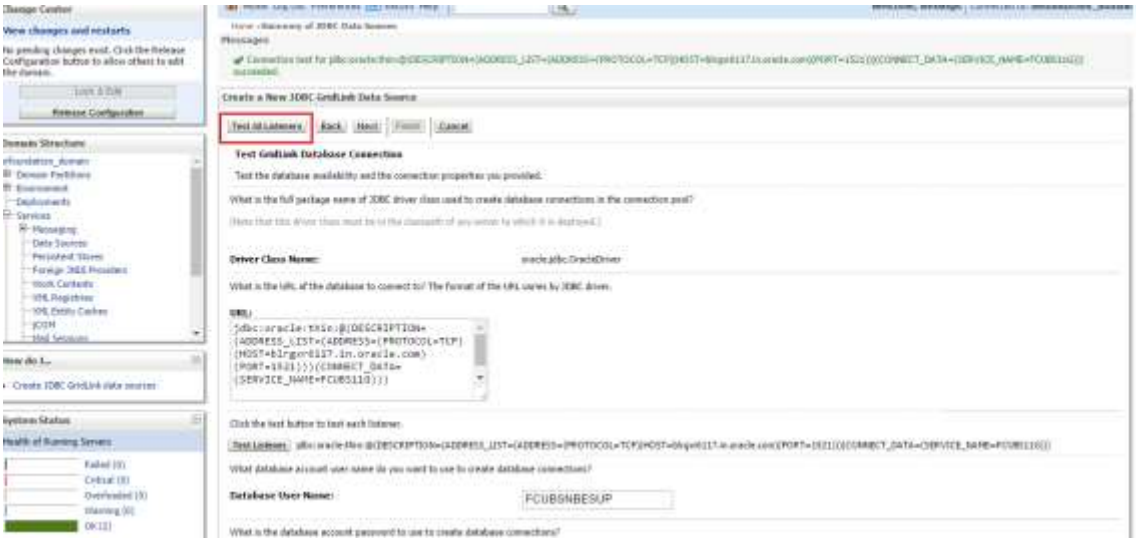
3) Click **Next**

4) Choose first option "Enter individual listener information" and Click **Next**

5) Enter the Database Name, Host Name, Port, User Name, Password, Confirm Password and Click on **Next**

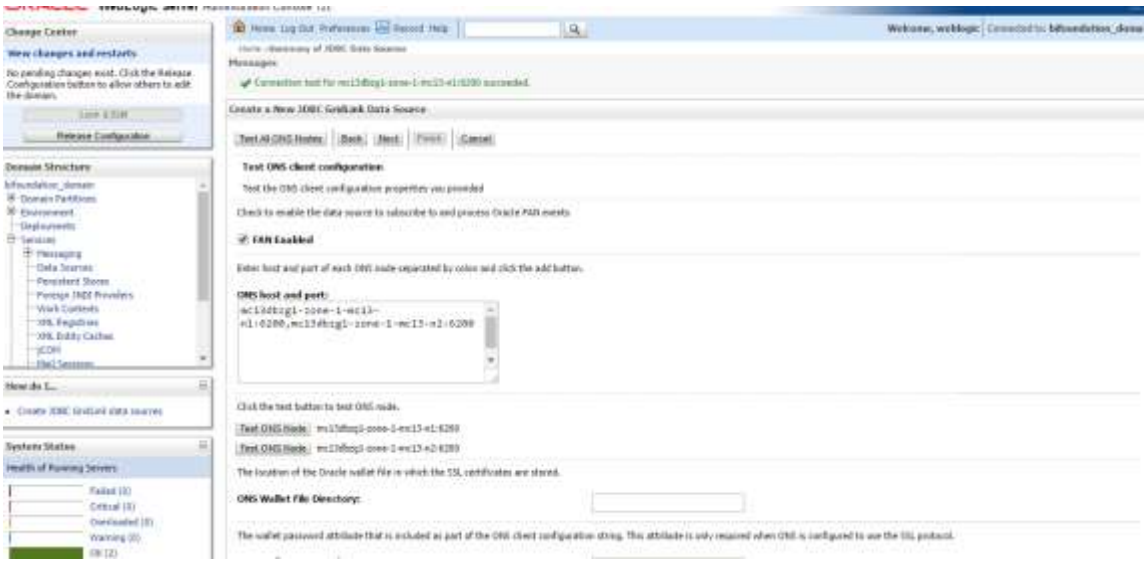


6) Click “Test All Listners” and check the connection is established properly with the database and Click **Next**



7) Enter the ONS host:port details which has already been configured in database

8) Click “Test ONS Nodes” to check the connection with ONS.



9) Select Target and click on **Finish**

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