Configuring Oracle Management Agent to Manage Oracle Fail Safe

Oracle Maximum Availability Architecture White Paper
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Maximum Availability Architecture

Oracle Best Practices For High Availability

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Executive Overview

Oracle Maximum Availability Architecture (MAA) [1] is the Oracle best practices blueprint for implementing Oracle high availability technologies. For Oracle Database releases 10*g* release 2 (10.2.0.2) through 11*g* release 1 (11.1.0.*n*), the MAA recommended best practice for managing services running with Microsoft Clusters and Oracle Fail Safe is to use Oracle Enterprise Manager Grid Control (Grid Control).

This MAA white paper provides step-by-step instructions to configure Oracle Management Agents in Oracle Fail Safe environments. After performing the steps in this white paper, you will be able to use Grid Control to manage services running in Microsoft Clusters and Oracle Fail Safe environments.

Introduction to Oracle Fail Safe

Oracle Fail Safe manages Oracle Database and services running on Microsoft Cluster systems in cold failover cluster configurations. Oracle Fail Safe provides high-availability for e-business solutions deployed on Microsoft clusters. A cluster (which is a group of independent Microsoft Windows computing systems that operates as a single virtual system) eliminates individual host systems as points of failure. Oracle Fail Safe works with Microsoft Cluster Server to ensure that if a failure occurs on one cluster node, then the Oracle databases and applications running on that node will fail over automatically and quickly to a surviving node.

Oracle Fail Safe extends Microsoft Cluster Server by adding specific support for Oracle products and providing an enhanced graphical user interface (GUI), called Oracle Fail Safe Manager. The usually complex task of configuring and managing server components across a cluster is simplified with the step-by-step configuration wizards, drag-and-drop cluster management, comprehensive verification tools, and intuitive property sheets of Oracle Fail Safe Manager. The GUI also ensures availability of shared resources for the active node to actively host the virtual service groups.

You use Oracle Fail Safe Manager to create virtual nodes or groups, to manage services within each group, and to automate many management tasks, such as the following:

- Assign a network name
- Assign an IP address

- Specify a database service
- Assign a disk volume resource to failover with the group
- Add an Oracle Management Agent
- Start, stop or edit properties of each service

Oracle Fail Safe also monitors resource types for availability. For example, Figure 1 shows a screenshot from Oracle Fail Safe Manager that displays the configuration of a two-node cluster called NTCLU-70 with a group configured on each node, as follows:

- Physical nodes: NTCLU-71 and NTCLU-72
- Cluster groups: Group 0 and Group 1

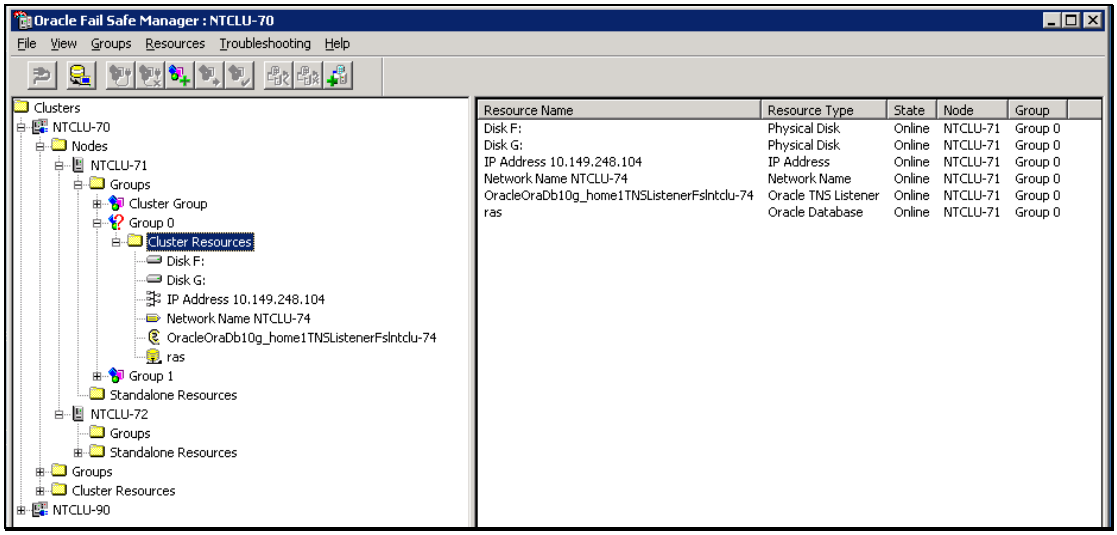


Figure 1. View of the NTCLU-70 Cluster in Oracle Fail Safe Manager

This white paper describes how to install Oracle Management Agent (Management Agent) and use Oracle Fail Safe Manager to deploy a Management Agent on each node in the Oracle Fail Safe cluster. Then, you use Oracle Enterprise Manager Grid Control (Grid Control release 10*g* or 11*g*) to discover the services and targets to be included in the cluster, and to monitor the Oracle Fail Safe environment. Grid Control is Oracle's single, integrated solution for managing all aspects of the Oracle Grid and the applications running on it. The Management Agent is deployed on each monitored host. It is responsible for monitoring all the targets running on those hosts, communicating that information to the middle-tier Oracle Management Service, and managing and maintaining the hosts and its targets.

Setting up Oracle Management Agent and Oracle Fail Safe

This section provides step-by-step instructions to install and deploy Oracle Grid Control Agents in an Oracle Fail Safe environment. In general, assume that the following releases are under discussion in this white paper:

- Oracle Management Agent release 10.2.0.2 or higher.
- Microsoft Cluster Server (MSCS) version 1 or higher.
- Oracle Fail Safe Manager release 3.3.1 or higher. However, Fail Safe is not required to deploy Oracle Management Agents on Windows clusters.

The following list describes the tasks at a high-level:

- Step 1: Install a Management Agent on each cluster node
- Step 2: Deploy a Management Agent for each cluster group using Oracle Fail Safe Manager
- Step 3: Discover Oracle services in Grid Control
- Step 4: Create a cluster in Grid Control

Step 1: Install a Management Agent on each cluster node

Install the Management Agent on a local disk (not a cluster disk resource) on each node in the cluster. The install path must be identical on each node. For example, install the Management Agent into the `D:\Oracle` directory on node1, node2, node 3, and so on.

By setting up identical install paths, then during installation a subdirectory will be created named `agent10g` (for release 10.2.0.2 environments) or `agent11g` (for release 11.1.0.*n*) under the `D:\Oracle` directory. Your `ORACLE_HOME` will become `D:\Oracle\agent10g`.

After completing the installation, the agent and local nodes will be visible in the Grid Control console along with any locally running services.

See Chapter 10 about Deploying Management Agents in the *Oracle Enterprise Manager Grid Control Installation and Configuration Guide* [3] for information about installing the Management Agent.

Note: The Oracle Enterprise Manager documentation strongly recommends using the Agent Deployment Wizard to install the Management Agent. However, you should not use the wizard **for Windows hosts in virtual host environments such as Oracle Fail Safe**. Instead, carefully follow the procedures described in the following steps.

Step 2: Deploy a Management Agent for each cluster group

The following steps and screenshots walk you through the steps to deploy a Management Agent:

1. In Fail Safe Manager, click the group to which you want to add a Management Agent and then click **Next**.
2. In the Add Resource to Group screen shown in Figure 2, choose **Generic Service** and click **Next** to add a Management Agent.

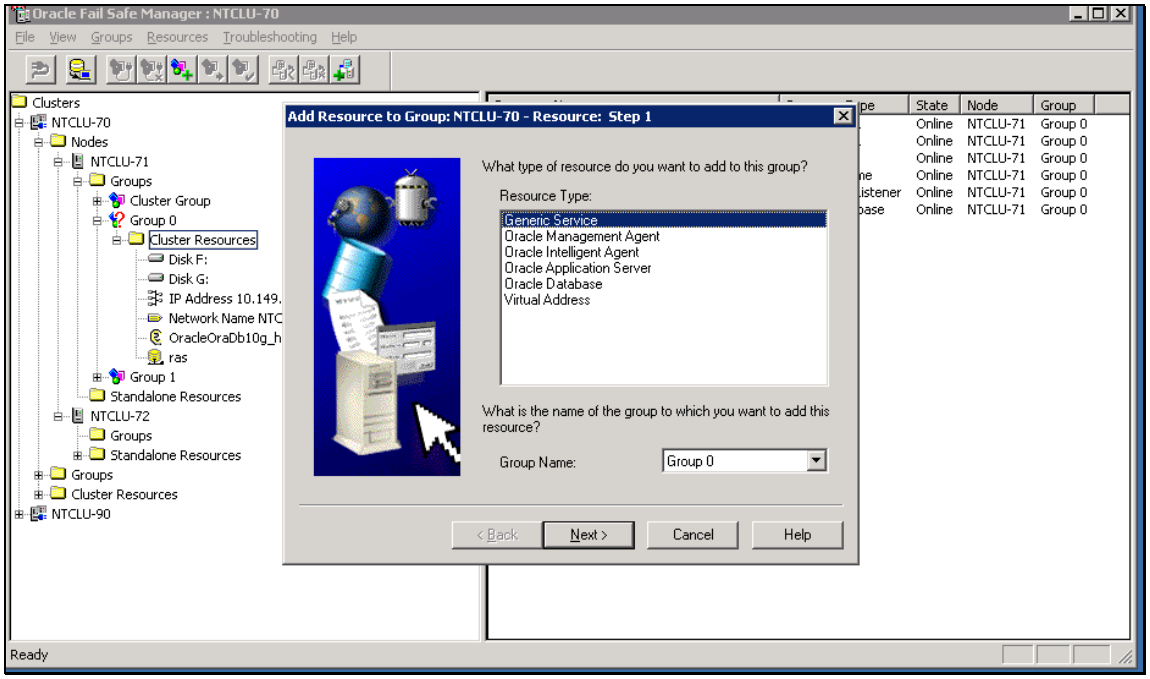


Figure 2. Add Resource Screen in Oracle Fail Safe Manager

3. Choose the Oracle home in which you want Oracle Fail Safe to create the Management Agent. For example, Figure 3 uses the agent10g Oracle home that was created in Step 1 of our MAA example.

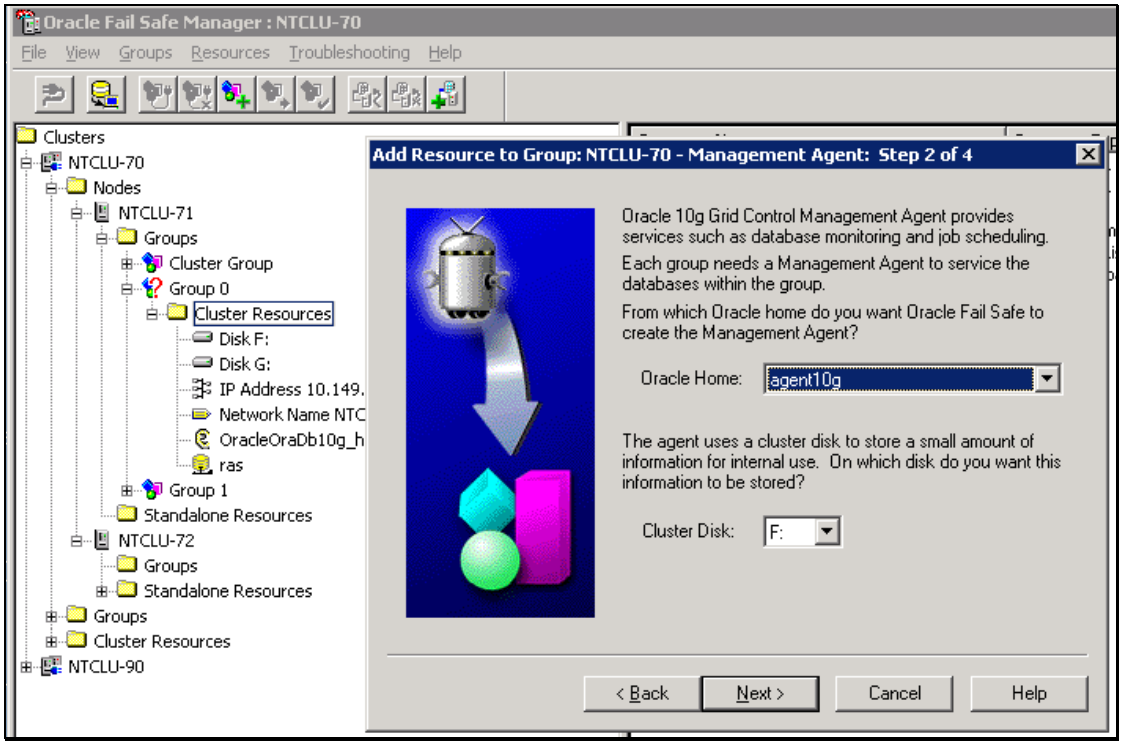


Figure 3. Select the source (physical) agent's Oracle Home

4. Provide the Agent Registration password, as shown in Figure 4.

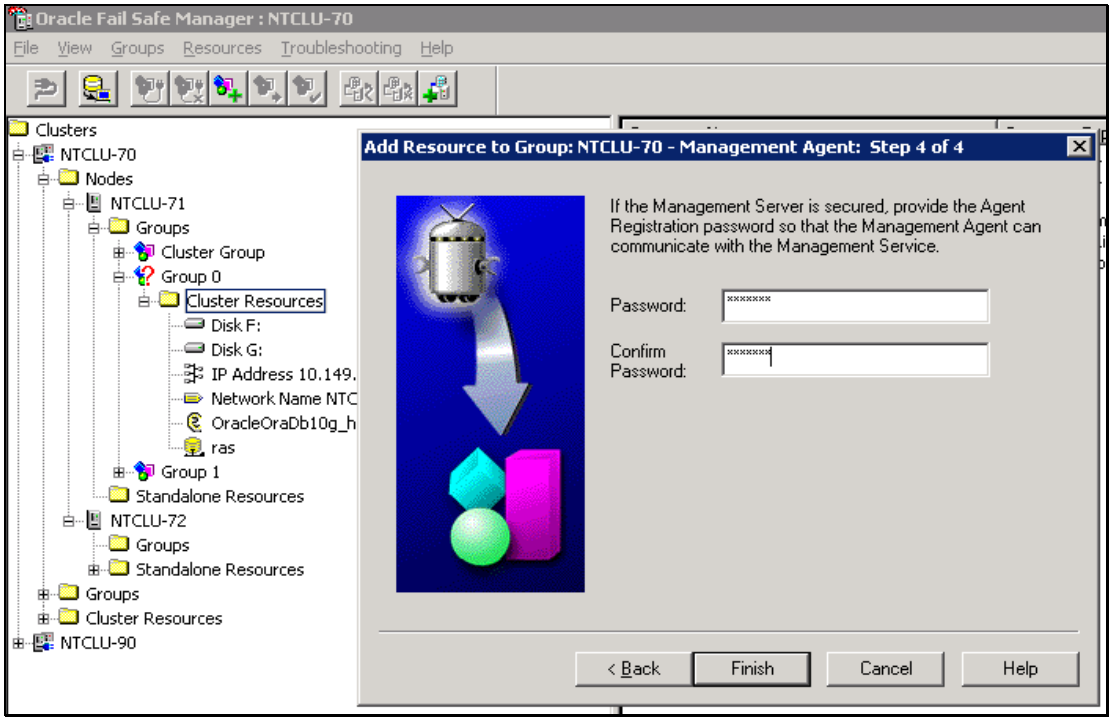


Figure 4. Supply the Management Agent Password

5. Verify the information in the "Finish Adding the management agent to the Group" page, as shown in Figure 5 and click OK to create the Management Agent.

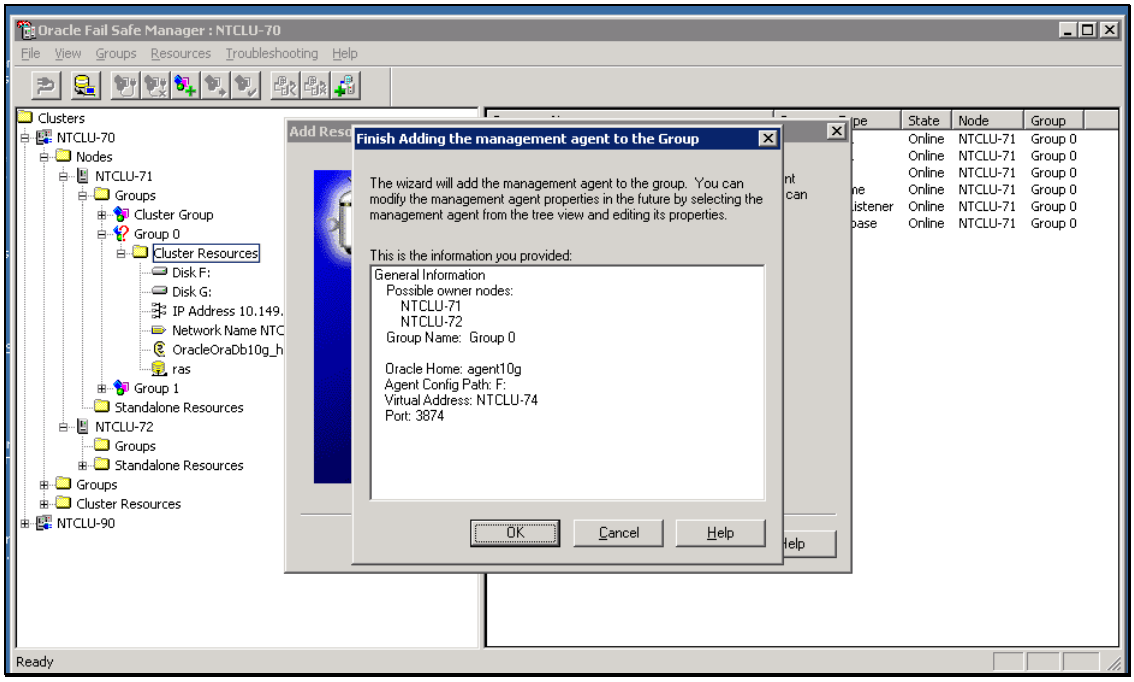


Figure 5. Verify Your Input to Oracle Fail Safe Manager

6. Observe the information that is displayed in Oracle Fail Safe Manager as the Management Agent is created. The information shown in Figure 6, Figure 7, and Figure 8 shows the creation of the MAA example Management Agent.

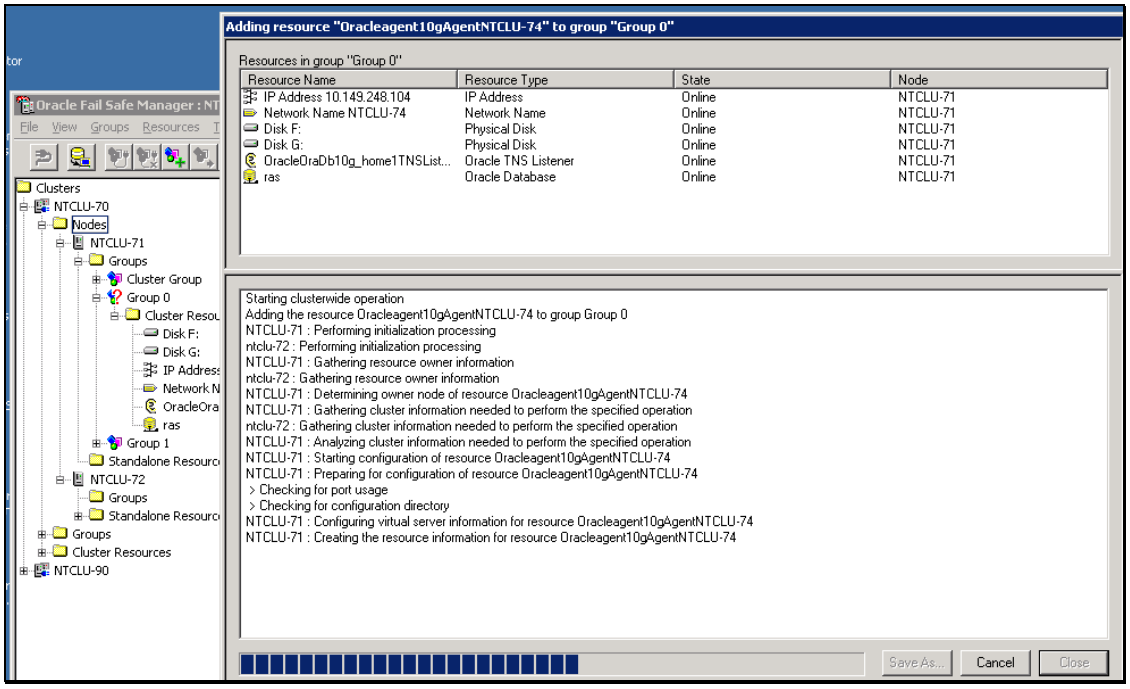


Figure 6. Oracle Fail Safe Manager Log During Management Agent Creation (Part 1)

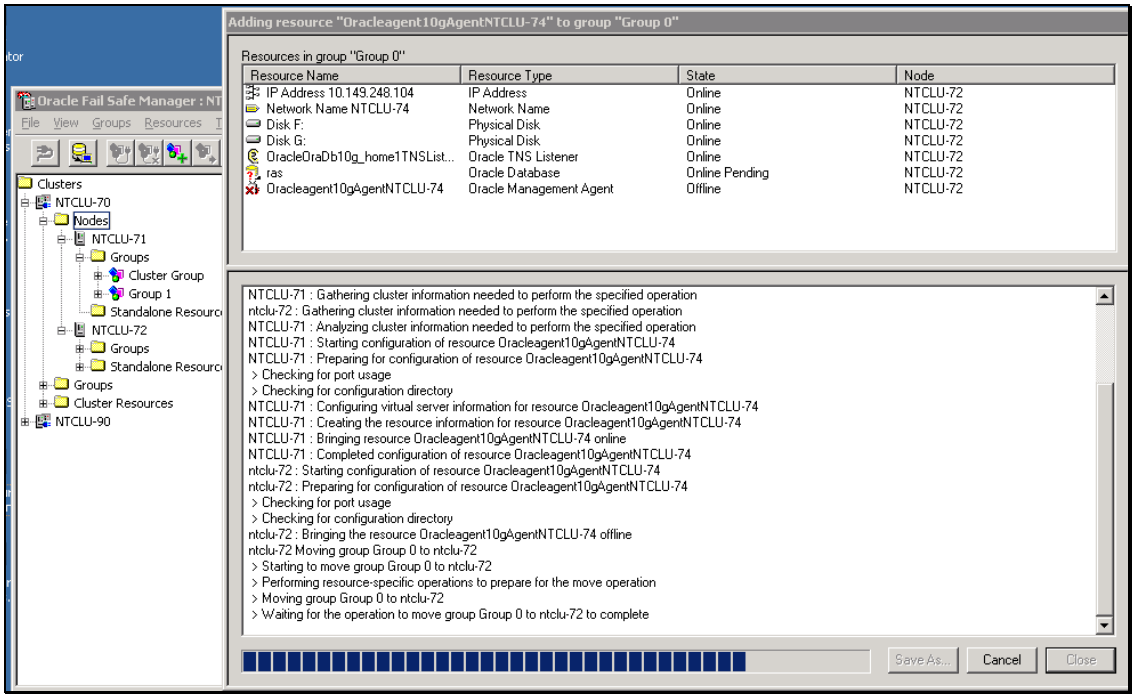


Figure 7. Oracle Fail Safe Manager Log During Management Agent Creation (Part 2)

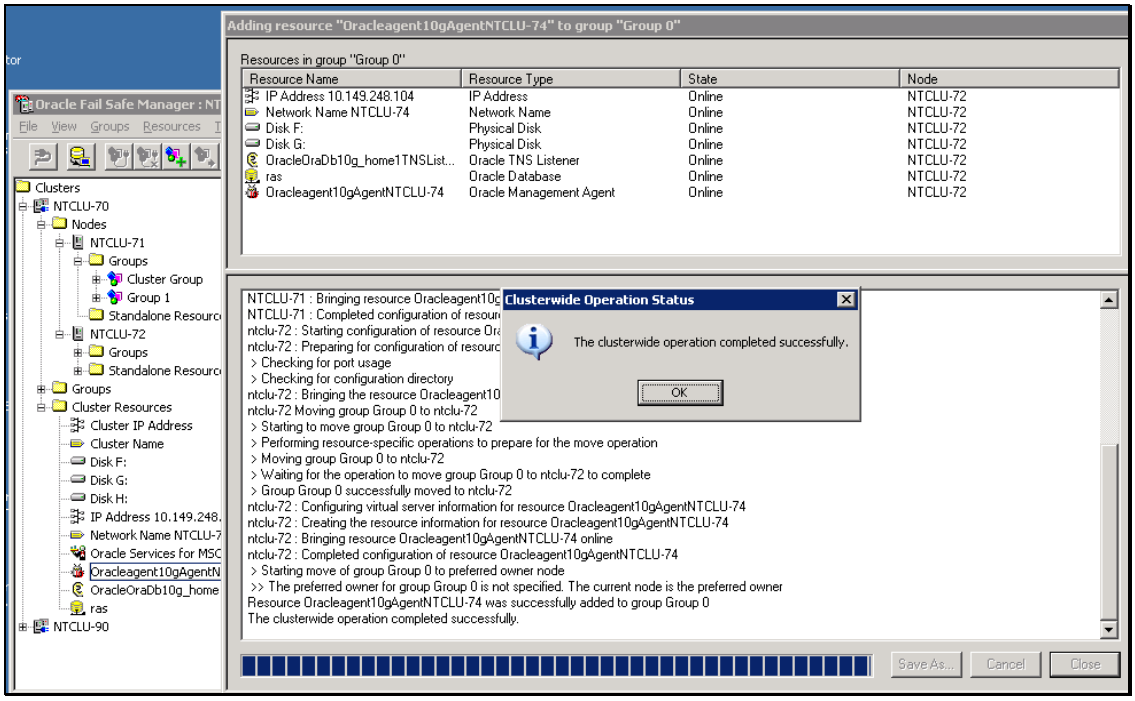


Figure 8. Oracle Fail Safe Manager Log During Management Agent Creation (Part 3)

7. Login to the Grid Control console and check the Management Agent status, as shown in Figure 9.

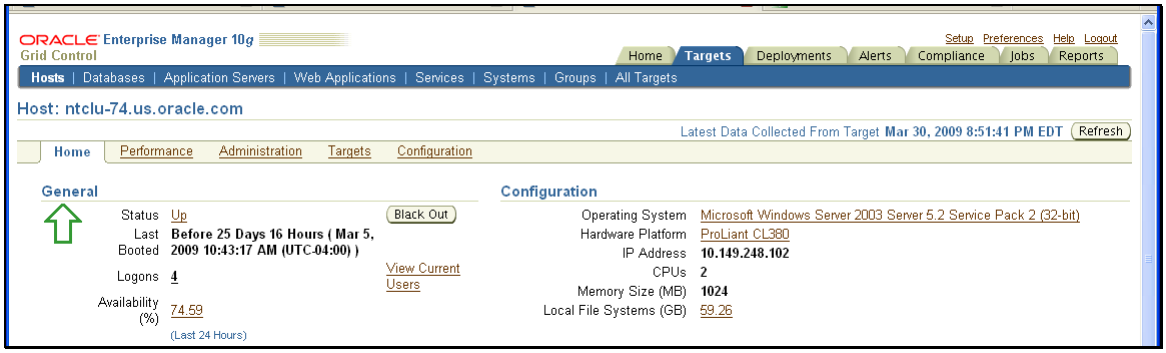


Figure 9. Viewing the Newly Deployed Management Agent Status in Oracle Grid Control

Step 3: Discover Oracle services in Grid Control

After you have successfully deployed the Management Agent, as described in Step 2, then login to the Grid Control console and discover the services (database and listener) that are associated with this virtual group. In our MAA example, the new cluster group's virtual hostname is NTCLU-74.

1. Log in to Grid Control and then perform the following steps:
   a) Click the **Targets** tab.
   b) Select **All Targets.**
   c) Select **Add Database Instance.**
   d) Click **Go**.

Output similar to the screenshot in Figure 10 will be displayed.

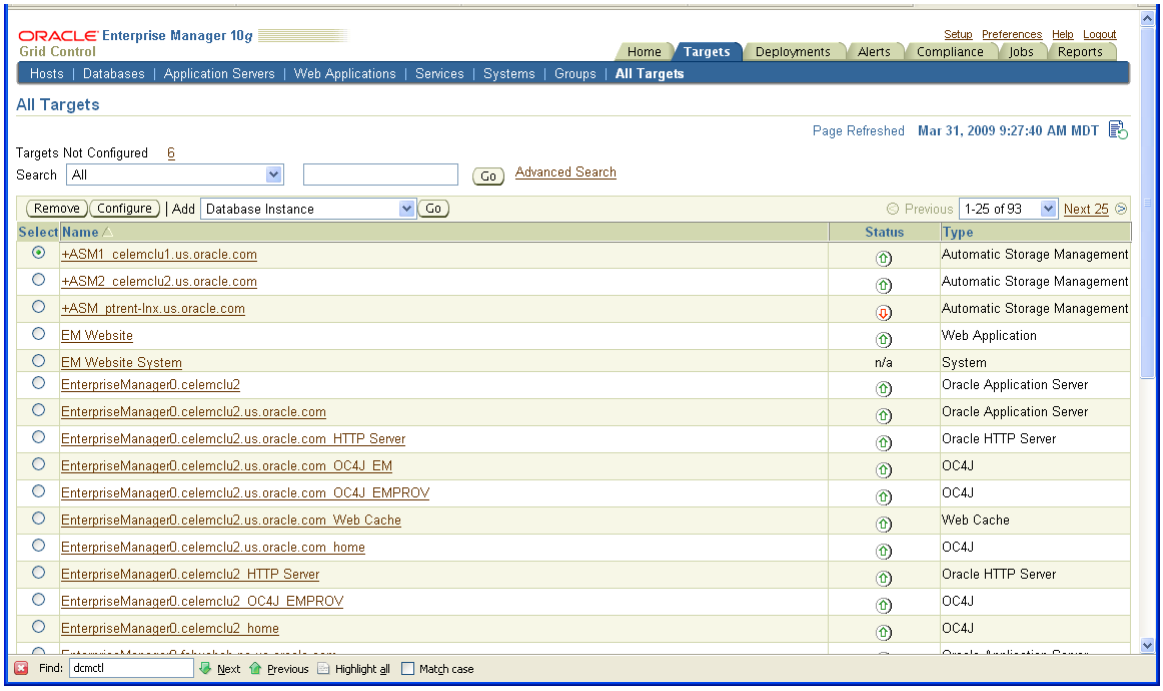


Figure 10. All Targets Page view - Discovering Oracle Services in Oracle Grid Control

2. Select the hostname on which you have just deployed a Management Agent, as shown in Figure 11.



Figure 11. Selecting the Hostname of the Cluster Group in Grid Control

3. The Grid Control console displays the targets on the host, as shown in Figure 12.
4. Click the **Configure** icon and ensure your user password for the DBSNMP database user account is correct.
5. If you made any changes, apply them and then click **OK** to accept the newly discovered database and listener targets.

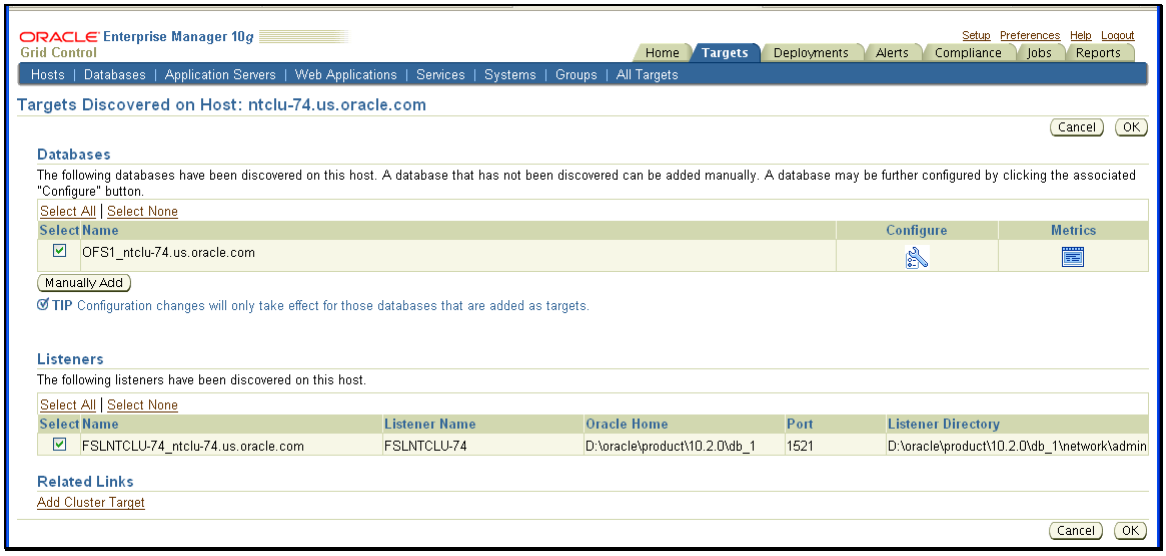


Figure 12. Targets Discovery Results in Oracle Grid Control

Figure 13 shows the new database and listener targets displayed in Oracle Grid Contol.

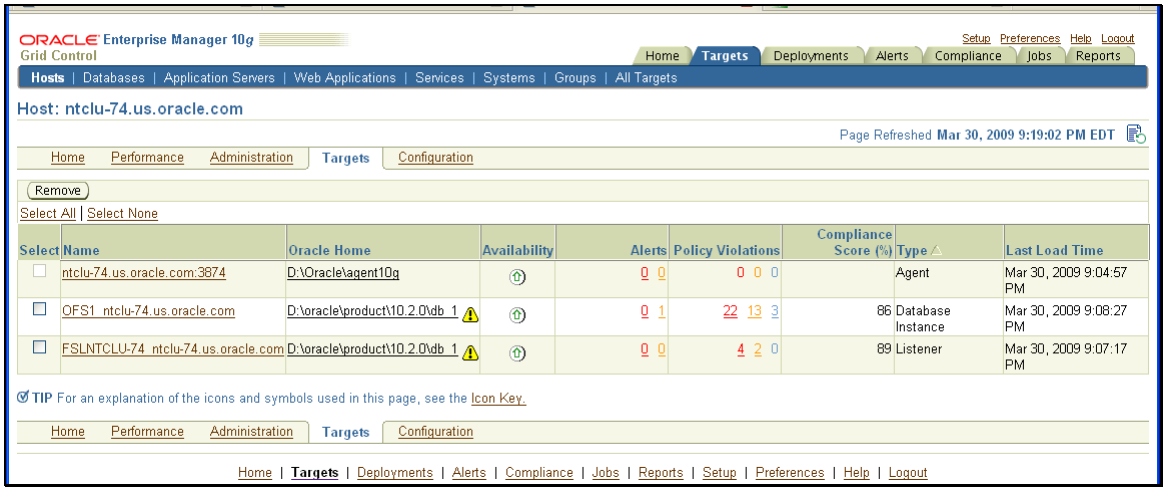


Figure 13. Monitored Targets on NTCLU-74 in Oracle Grid Control

Step 4: Create a Cluster in Grid Control

After you have discovered all cluster member nodes and virtual hosts (groups) in Grid Control, then create a Cluster target that identifies all members (virtual and physical nodes).

1. Log in to Grid Control and then:
   a) Click the **Targets** tab.
   b) Select All **Targets.**
   c) Select **Add Cluster.**
   d) Click **Go**.

The Grid Control console displays cluster information similar to Figure 14.

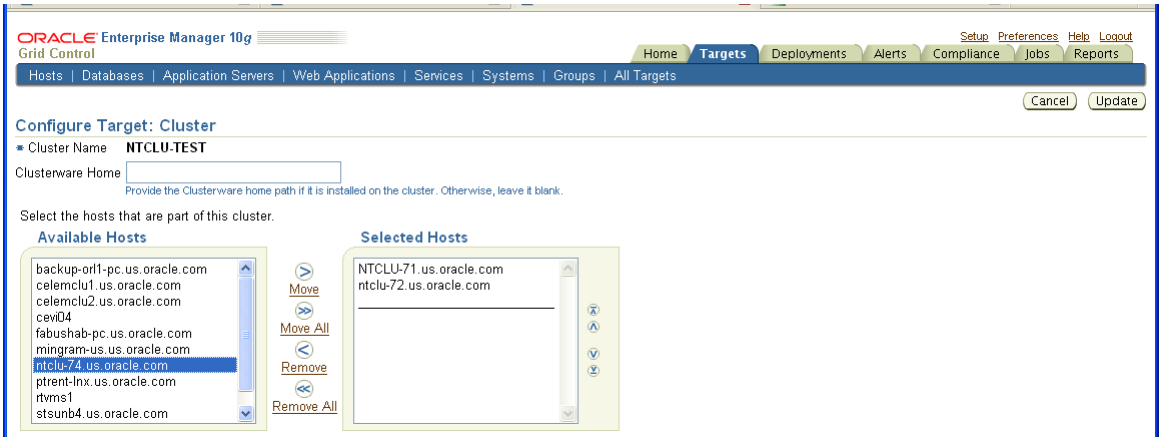


Figure 14. Adding Cluster Nodes to NTCLU-TEST Cluster in Oracle Grid Control

2. The only supported Cluster targets in Grid Control are Oracle Clusterware targets. Because this cluster is not Oracle Clusterware, you can ignore the warning shown in Figure 15 and click **Yes**.

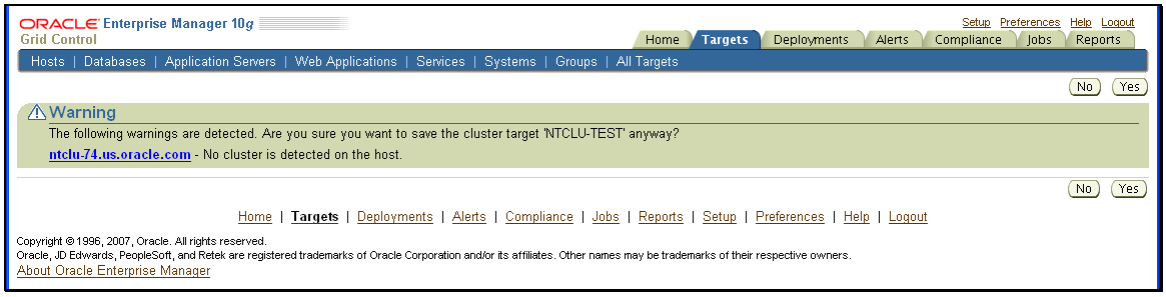


Figure 15. Warning Displayed in Oracle Grid Control

3. The Cluster target is added and saved, as shown in Figure 16. Now, you have successfully completed the configuration of your Fail Safe targets in Grid Control. Click **OK** to finish.

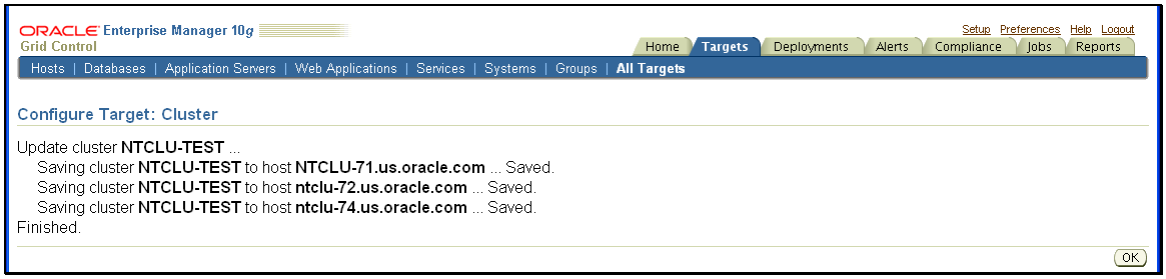


Figure 16. Saving the Cluster Targets in Oracle Grid Control

Removing a Management Agent from a Group

In some cases, you may need to delete a previously deployed Management Agent from a cluster group. To remove the Management Agent, perform the following steps:

1. Stop the Management Agent resource (service).
2. Delete the Management Agent deploy directory `EM_STATE` that was selected for this agent resource (for example, `F:\GCAgent`).
3. Remove the Management Agent service from the Windows server using the `sc.exe` operating system command. See My Oracle Support Note 165268.1 for more details.

You can use the Windows Registry Editor to remove the registry entries for this agent. To do so, select `HKLM` ➡ `Software` ➡ `Oracle` ➡ `Sysman` ➡ *`your_agent's_service_name`* and delete the entry.

For example, Figure 17 shows the Oracle section of the Registry Editor and the entry for our MAA example, `Oracleagent10gAgentNTCLU-74`, which has been selected for deletion.

Note: Do not remove the master (local) agent key.

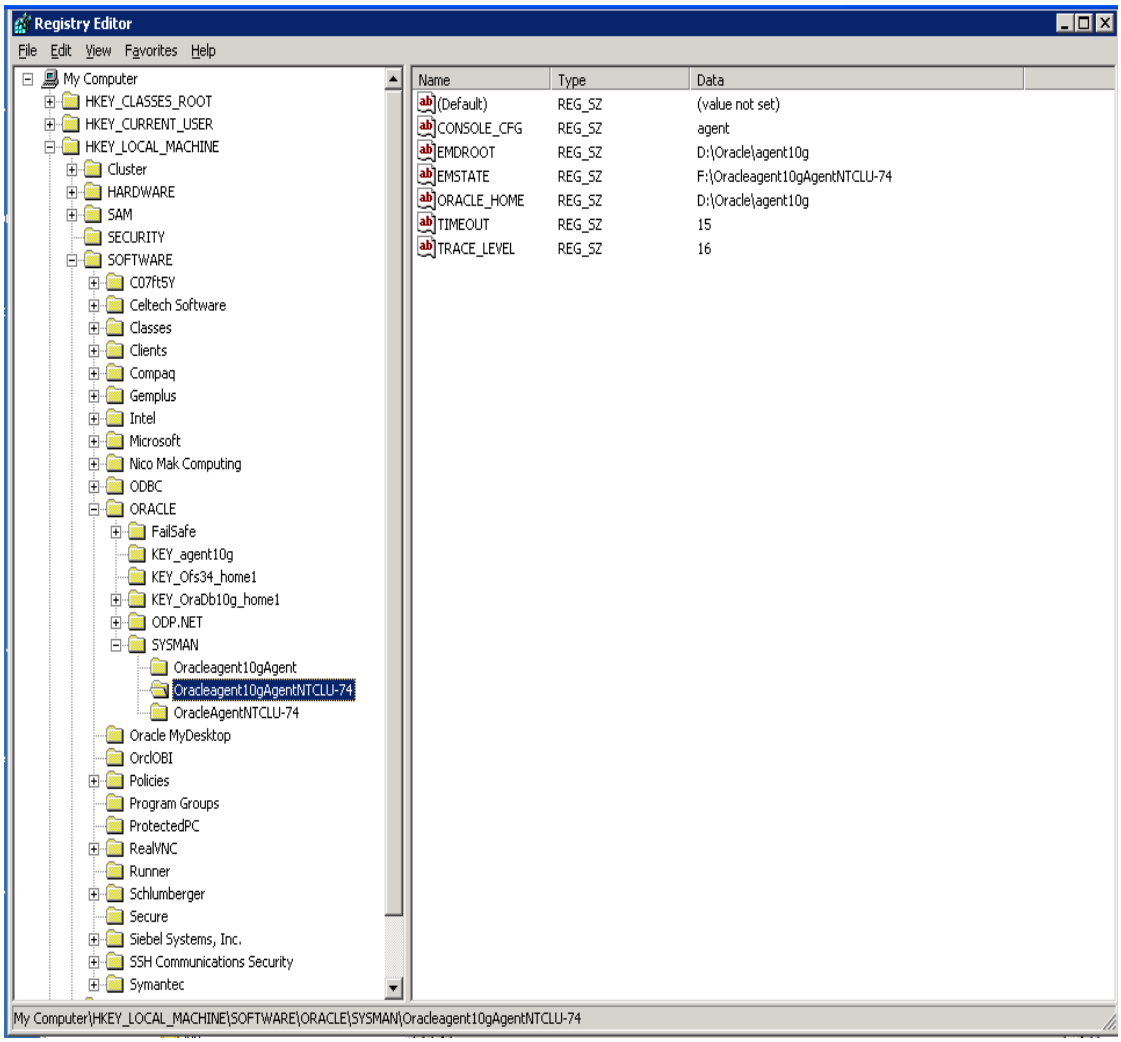


Figure 17. Selecting the Virtual Agent for Deletion in Windows Registry Editor

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   http://www.oracle.com/pls/db111/db111.to_toc?partno=b28282



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