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The New Oracle Enterprise Manager Database Control 11g Release 2 – Now Managing Oracle Clusterware

Introduction

Oracle Enterprise Manager provides a single, integrated solution for testing, deploying, operating, monitoring, diagnosing, and resolving problems in today's complex IT environments. It delivers enhanced manageability and automation for your grid, reducing the cost of managing today's modern data centers.

Oracle Enterprise Manager comes in two versions. Oracle Enterprise Manager Grid Control is a centralized management solution, delivering enhanced manageability and automation for your grid across both Oracle and non-Oracle technologies to reduce the cost of managing today's modern data centers. Oracle Enterprise Manager Database Control is a decentralized management console, dedicated to manage Oracle Databases.

With the new version of Oracle Database 11g Release 2 Oracle Enterprise Manager Database Control provides a new cluster management tool, available with Oracle Real Application Clusters Databases, allowing the management of all resources deployed in an Oracle Clusterware 11g Release 2 based grid.

The New Oracle Enterprise Manager Database Control

Oracle Enterprise Manager (EM) Database Control extends the idea of a centralized cluster management and brings it to a new level. Starting with Oracle Clusterware 11g Release 2, Oracle EM Database Control can be used to manage the cluster and all its resources – applications and databases – as a whole. This functionality will be adapted in Oracle Enterprise Manager Grid Control as soon as the new release of Oracle Enterprise Manager Grid Control is available.

Using Oracle EM Database Control, however, requires at least one cluster-aware database to be installed in the cluster. This database does not need to be running to perform some resource-related operations in the cluster. Nevertheless, full access to all cluster operations will only be possible, if the database that is used by Oracle Enterprise Manager Database Control is online.

ORACLE Enterprise Manager 11g Database Control

Cluster Database

Cluster_cluster7 >

Manage Resources

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Oracle Grid Infrastructure provides High availability framework to protect any application that is registered with Grid Infrastructure. You can Create, Administer and Monitor these Resources using this interface.

Resources 23 (10 4)
(including Internal Oracle Resources)

Search Go Advanced Search

Show Oracle Resources

Select All | Select None | Show All Details | Hide All Details

Select	Details	Name ^	Cardinality	Current State	Target State	Running Hosts	Resource Type	Owner
<input type="checkbox"/>	▶ Show	ApacheVIP	1	↑	↑	stbpo57	app appvip type	root
<input type="checkbox"/>	▶ Show	MyApache	1	↑	↑	stbpo57	cluster_resource	root
<input type="checkbox"/>	▶ Show	myclock	1	↑	↑	stbpo57	cluster_resource	oracle
<input type="checkbox"/>	▶ Show	ora.DATA.dg	Runs on all servers	↑	↑	stbpo55, stbpo56, stbpo57, stbpo58	ora.diskgroup type	oracle
<input type="checkbox"/>	▶ Show	ora.LISTENER.lsnr	Runs on all servers	↑	↑	stbpo55, stbpo56, stbpo57, stbpo58	ora.listener type	oracle
<input type="checkbox"/>	▶ Show	ora.LISTENER_SCAN1.lsnr	1	↑	↑	stbpo56	ora.scan_listener type	oracle
<input type="checkbox"/>	▶ Show	ora.LISTENER_SCAN2.lsnr	1	↑	↑	stbpo58	ora.scan_listener type	oracle
<input type="checkbox"/>	▶ Show	ora.LISTENER_SCAN3.lsnr	1	↓	↓	n/a	ora.scan_listener type	oracle
<input type="checkbox"/>	▶ Show	ora.asm	Runs on all servers	↑	↑	stbpo55, stbpo56, stbpo57, stbpo58	ora.asm type	oracle
<input type="checkbox"/>	▶ Show	ora.eons	Runs on all servers	↑	↑	stbpo55, stbpo56, stbpo57, stbpo58	ora.eons type	oracle
<input type="checkbox"/>	▶ Show	ora.gsd	Runs on all servers	↓	↓	n/a	ora.gsd type	oracle
<input type="checkbox"/>	▶ Show	ora.net1.network	Runs on all servers	↑	↑	stbpo55, stbpo56, stbpo57, stbpo58	ora.network type	root
<input type="checkbox"/>	▶ Show	ora.oc4j	1	↑	↑	stbpo55	ora.oc4j type	oracle
<input type="checkbox"/>	▶ Show	ora.ons	Runs on all servers	↑	↑	stbpo55, stbpo56, stbpo57, stbpo58	ora.ons type	oracle
<input type="checkbox"/>	▶ Show	ora.racdb.db	Runs on server pool(s) ora.RAC-pool	↓	↓	n/a	ora.database type	oracle
<input type="checkbox"/>	▶ Show	ora.registry.acfs	Runs on all servers	↑	↑	stbpo55, stbpo56, stbpo57, stbpo58	ora.registry.acfs type	root
<input type="checkbox"/>	▶ Show	ora.scan1.vip	1	↑	↑	stbpo56	ora.scan_vip type	root
<input type="checkbox"/>	▶ Show	ora.scan2.vip	1	↑	↑	stbpo58	ora.scan_vip type	root
<input type="checkbox"/>	▶ Show	ora.scan3.vip	1	↓	↓	n/a	ora.scan_vip type	root
<input type="checkbox"/>	▶ Show	ora.stbpo55.vip	1	↑	↑	stbpo55	ora.cluster_vip_net1 type	root
<input type="checkbox"/>	▶ Show	ora.stbpo56.vip	1	↑	↑	stbpo56	ora.cluster_vip_net1 type	root
<input type="checkbox"/>	▶ Show	ora.stbpo57.vip	1	↑	↑	stbpo57	ora.cluster_vip_net1 type	root
<input type="checkbox"/>	▶ Show	ora.stbpo58.vip	1	↑	↑	stbpo58	ora.cluster_vip_net1 type	root

Figure 1: Resource Overview in Oracle Enterprise Manager Database Control

Managing All Kinds of Applications in the Cluster

All kinds of applications and processes can be monitored and managed by Oracle Clusterware as resources in the cluster. Resources can either run as so called local resources on every node in the cluster, providing infrastructure components. Alternatively, they can be defined as cluster resources, in which case they manage an application in a failover manner.

Non-Oracle applications must be managed using the CRSCCTL tool. Oracle Enterprise Manager (EM) database control, however, can be used to manage all types of resources in the cluster.

Oracle Clusterware 11g Release 2 makes it easier than ever to register an application so it can be managed using Oracle Clusterware. All that is required are four steps, including a failover test:

1. Create an Application Specific Action Script or Individual Agent
2. Create an Application VIP to access the Application
3. Configure and Register the Application with Oracle Clusterware
4. Check Start / Stop of the Application & Finalize

Oracle Enterprise Manager supports each of these steps for an easy, centralized deployment. Figure 3 for example shows the dialog that supports adding a resource to the cluster. This includes the action script creation and the registration of the resource.



Figure 2: Application specific VIP Creation using Oracle EM

Other dialogs support the Application-VIP creation or the relocation of a resource between servers in the cluster. Most of the cluster related management operations can be performed even, when the database assigned to the Oracle Enterprise Manager Database Control is down.

ORACLE Enterprise Manager 11g Database Control Cluster Database Help

Add Resource Cancel Submit

General Parameters Advanced Settings Dependencies

* Name

* Resource Type

Resource Type is a template for the Resource. Resource derives default parameter values and dependencies from the specified Resource Type. User can override these default parameters and dependencies during Resource creation.

Description

Start the resource after creation

Placement

The following parameters define where the resource would be placed.

Placement Anywhere in the Cluster where this resource instance can be started
 Restrict or Favor the placement of resource to the Server Pools
 Restrict or Favor the placement of resource to the Hosts

Placement Policy Restricted
 Favored

Cardinality Specify number
 Set to size of Server Pool(s) on which the resource is running

Degree

Active Placement Re-evaluate resource's placement during addition or restart of a cluster node

Action Program

Action Program defines the way to start, stop and check the status of a resource. Action Program could be an executable (Agent File) and / or a script (Action Script) that the Oracle Clusterware can invoke. Action Program should accept 'start', 'stop' or 'check' as argument to perform respective operations. User can implement all these operations using Agent File alone or Action Script alone or using a combination of both (some operations in Agent File and some in Action Script). If both implement the same operation, Agent File operation would override the Action Script operation.

Action Program

Action Script Name

Overwrite if already exists (on any node of the cluster)

General Parameters Advanced Settings Dependencies

Figure 3: Adding a resource to the cluster using Oracle Enterprise Manager

Conclusion

Managing large grids, independent of the number of deployed applications can appear to be a challenge. Oracle Clusterware overcomes these challenges. Using Oracle Enterprise Manager Database Control as a standardized and integrated management tool, Oracle Clusterware now manages all applications in a grid as if they were running on a single system, providing improved availability, scalability, and flexibility.



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