

Report Title: IQ Template Details
Run Date and Time: 27-Oct-2023 04:35:42 PM India Standard Time
Run by: G,Ramsanthosh
Table name: u_iq_template

IQ Template

Number:	AIQ0006087	Status:	Published
Product Name:	Rac Node removal from Clueter	Version Number:	1
IQ Date:	08-Jul-2020 05:11:45 PM	Category:	Cat 1
IQ Version:	1	GXP Regulated (A):	false
Type:	Software	SOX (B):	false
		Non Regulated (C):	Yes
		Privacy (P):	Yes

Form Changed:

false

Author:

Dilli,Dinesh (801379)

Technical Approver:

G,RamSanthosh (808326)

Development Manager:**IT Manager:**

Ball,Linda (633987)

Qualification Coordinator:**Overview:**[\\usadc-sboxi01\q\Dummy_Work_Instruction.htm#overview](#)**System Introduction:**

Successful execution of this Installation Qualification (IQ) verifies removing a node and updating databases on an existing cluster has been installed per IQVIA standard operating procedures and is approved for release into the test or production environment.

The controlled documents that were followed during the qualification process are:

CS.OP.CV001 Computer System Validation Activities and Deliverables

CS.WI.CV007 Creating and Executing an Installation Qualification

This installation qualification is for the removal of node and updating Databases on existing RAC cluster. This covers version 12.1.0.2 of the RAC RDBMS software. This system can have many different applications and various and numerous uses; most typically it provides a suitable environment for the installation and execution of additional software which require a database back-end.

Installation Location and Environment Verification:

Responses to the following questions provide information about the location and environment into which the system is being installed:

· What business group/department is responsible for the installation of this system?

Infosario Safety DBA support

· What site preparation is needed for this installation?

This IQ assumes that the server is already installed and configured as an Oracle database server

· What software preparation is needed for this installation?

OS and Oracle software are already installed.

· What interface preparation is needed for this installation?

No additional interface preparation is required for this installation.

· What data preparation is needed for this installation (e.g., patient data, metadata setup, project-specific data, pre-loaded data necessary to install test user accounts, configuration settings)?

This IQ assumes that the server is already installed and configured as an Oracle database server

· Is this to be a multi-component installation (i.e., a single IQ or a series of related IQs)? If yes, describe.

This Removal operation will be performed on a RAC Cluster.

· What access rights are necessary to perform this installation (e.g., OS or database admin privileges)?

DBA account in the Database

Instructions for the Installer:

\\usadc-sboxi01\q\Dummy_Work_Instruction.htm#instructions

Acceptance Criteria:

Node has been successfully removed from cluster

Instructions for Resolving Errors:

\\usadc-sboxi01\q\Dummy_Work_Instruction.htm#error

Uninstall Procedures:

Add instance back & Node back. Follow AIQ0004382

Name And Version:

Rac Node removal from Clueter 1

Installation Procedures

Test Case Number:

Title:

Test Objective:

App Dependencies:

Dependencies:

Starting Point:

Overview Validate:

\\usadc-sboxi01\q\Dummy_Work_Instruction.htm#overview

ILEV Validate:

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- No additional interface preparation is required for this installation.
- What data preparation is needed for this installation (e.g., patient data, metadata setup, project-specific data, pre-loaded data necessary to install test user accounts, configuration settings)?
- This IQ assumes that the server is already installed and configured as an Oracle database server
- Is this to be a multi-component installation (i.e., a single IQ or a series of related IQs)? If yes, describe.
- This Removal operation will be performed on a RAC Cluster.
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- DBA account in the Database

Instrinstall Validate:

\\usadc-sboxi01\q\Dummy_Work_Instruction.htm#instructions

Acceptcrit Validate:

Node has been successfully removed from cluster

System Introduction Validate:

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Errors Validate:

\\usadc-sboxi01\q\Dummy_Work_Instruction.htm#error

Uninstall Procedures Validate:

Lifecycle Dates

IQ Date:

08-Jul-2020 05:11:45 PM

Published:

02-Aug-2022 02:31:39 PM

Superseded:

Retired:

Retired by:

Updated: 02-Aug-2022 02:31:39 PM

Activity

IQ Variables

Related List Title: Document Revision History List
Table name: u_iq_revision_history
Query Condition: IQ Template = Rac Node removal from Clueter 1
Sort Order: Revision Date in ascending order

2 Document Revision History

Version	Changes	Author	▲ Revision Date	IQ Template
1	Initial Version	Q801379	09-Jul-2020 03:37:25 PM	Rac Node removal from Clueter 1
1	Node name highlighted. screen shot attached	Q801379	07-Jul-2022 05:44:30 PM	Rac Node removal from Clueter 1

Related List Title: IQ Template Step List
Table name: u_iq_template_step
Query Condition: IQ Template = Rac Node removal from Clueter 1
Sort Order: Step Number in ascending order

4 IQ Template Steps

▲ Step Number	Step Type	Instructions
1	Install	<p>Make sure Voting disk is online and OCR backup is valid</p> <p>Verify voting disk and OCR backup is fine using below command</p> <pre>crsctl query css votedisk</pre> <pre>ocrconfig -showbackup</pre> <p>Instance removal:</p> <p>i) Find the database status with service</p> <pre>srvctl status database -d dbname -v</pre> <p>- Relocate/Recreate the RAC service on existing nodes.</p> <p>- Disable the thread, that is going to remove from cluster</p> <p>ii) Stop the particular instance</p> <pre>srvctl stop instance -i instancename -d dbname</pre> <p>iii)Connect to database and disable the thread now</p> <pre>alter database disable thread threadnumber;</pre> <p>iv) Remove instance from cluster</p> <pre>srvctl remove instance -i instancename -d dbname</pre> <p>And check the DB status now and make sure instance is removed</p> <pre>srvctl status database -d dbname -v</pre> <p>Note: Follow instance removal step for each node, that is going to remove from cluster.</p>

▲ Step Number	Step Type	Instructions
2	Install	<p>As oracle user, verify instances are removed from database.</p> <pre>select INST_ID,INSTANCE_NUMBER,INSTANCE_NAM E,HOST_NAME from gv\$instance;</pre> <p>Verify Thread's are closed</p> <pre>select THREAD# , STATUS, INSTANCE from v\$thread;</pre> <p>Go to node which is GOING TO BE DELETED and check listener on nodes to be deleted and disable, stop them</p> <pre>export ORACLE_HOME=/u02/app/12.1.0.2/grid export PATH=\$PATH:/u02/app/12.1.0.2/grid/bin:/u02/app/12.1.0.2/grid/OPatch</pre> <p>\$ srvctl status listener</p> <pre>srvctl disable LISTENER -listener listernername -n nodename srvctl stop LISTENER -listener listernername -n nodename</pre> <p>Ex:</p> <pre>srvctl disable LISTENER -listener LISTENER_NDE -n usadc-sdbxt75d srvctl stop LISTENER -listener LISTENER_NDE -n usadc-sdbxt75d</pre>

▲ Step Number	Step Type	Instructions
3	Install	<p>RDBMS removal</p> <p>Go to Inventory and make sure all four nodes are listed for oracle home</p> <p>cd /u01/app/oralInventory/ContentsXML</p> <p>cat inventory.xml</p> <p>export ORACLE_HOME=/u01/app/oracle/product/12.1.0.2.180116/dbhome_1 export PATH=\$PATH:/u01/app/oracle/product/12.1.0.2.180116/dbhome_1/bin:/u01/app/oracle/product/12.1.0.2.180116/dbhome_1/OPatch</p> <p>Run the following command from the \$ORACLE_HOME/oui/bin directory on the NODE THAT YOU ARE DELETING to update the inventory on that node PARTICULAR NODE:</p> <p>Ex: cd /u01/app/oracle/product/12.1.0.2.180116/dbhome_1/oui/bin/</p> <p>./runInstaller -updateNodeList ORACLE_HOME=\$ORACLE_HOME CLUSTER_NODES=usadc-sdbxt75d -local</p> <p>Now go to Inventory and make sure only one node are listed, that we are going to delete on NODE THAT YOU ARE DELETING.</p> <p>cd /u01/app/oralInventory/ContentsXML</p> <p>cat inventory.xml</p> <p>Remove the Oracle RAC software by runing the following command on the NODE TO BE DELETED from the \$ORACLE_HOME/deinstall directory:</p> <p>cd \$ORACLE_HOME/deinstall/</p> <p>\$ deinstall -local</p> <p>-- Copy all DB names and paste again on last step for deinstall</p> <p>Remove any directory if still exists. use rm-rf</p> <p>Update the nodes list on the remaining nodes with</p>

▲ Step Number	Step Type	Instructions
		<p>available nodes from other available nodes</p> <p>xport ORACLE_HOME=/u01/app/oracle/product/12.1.0.2 .180116/dbhome_1 export PATH=\$PATH:/u01/app/oracle/product/12.1.0.2.18 0116/dbhome_1/bin:/u01/app/oracle/product/12.1.0 .2.180116/dbhome_1/OPatch</p> <p>Run the following command from the \$ORACLE_HOME/oui/bin directory on the node WHICH ARE AVAILABLE to update the inventory on all available node's:</p> <p>Cd /u01/app/oracle/product/12.1.0.2.180116/dbhome_ 1/oui/bin/</p> <p>./runInstaller -updateNodeList ORACLE_HOME=\$ORACLE_HOME CLUSTER_NODES=usadc-sdbxt75a,usadc- sdbxt75b,usadc-sdbxt75c</p> <p>To verify, Now go to Inventory on OTHER NODE and make sure NODE we are planning to remove is not there.</p> <p>cd /u01/app/oraInventory/ContentsXML</p> <p>cat inventory.xml</p>

▲ Step Number	Step Type	Instructions
4	Install	<p>GRID Cluster Removal</p> <p>Set grid home</p> <pre>export ORACLE_HOME=/u02/app/12.1.0.2/grid export PATH=\$PATH:/u02/app/12.1.0.2/grid/bin:/u02/app/12.1.0.2/grid/OPatch</pre> <p>Verify whether the node to be deleted is active or not by using following command from the \$CRS_HOME/bin directory:</p> <pre>\$ olsnodes -s -t --> Should be in unpinned status</pre> <pre>olsnodes -s -t</pre> <pre>usadc-sdbxt75a Active Unpinned usadc-sdbxt75b Active Unpinned usadc-sdbxt75c Active Unpinned usadc-sdbxt75d Active Unpinned</pre> <p>As a root user,</p> <p>1) Disable the Oracle Clusterware applications and daemons running on the NODE TO BE DELETED:</p> <pre>export ORACLE_HOME=/u02/app/12.1.0.2/grid export PATH=\$PATH:/u02/app/12.1.0.2/grid/bin:/u02/app/12.1.0.2/grid/OPatch</pre> <pre>cd /u02/app/12.1.0.2/grid/crs/install ./rootcrs.sh -deconfig -force</pre> <p>Output will be "CLSRSC-336: Successfully deconfigured Oracle Clusterware stack on this node"</p> <p>As a oracle user,</p> <p>2) From any NODE YOU ARE NOT DELETING (Ex: usadc-sdbxt75a), run the following command from the \$CRS_HOME/bin directory as root to delete the node from the cluster:</p> <pre>export ORACLE_HOME=/u02/app/12.1.0.2/grid export PATH=\$PATH:/u02/app/12.1.0.2/grid/bin:/u02/app/12.1.0.2/grid/OPatch</pre> <pre>cd ORACLE_HOME=/u02/app/12.1.0.2/grid/bin sudo crsctl delete node -n usadc-sdbxt75d</pre>

▲ Step Number	Step Type	Instructions
		<p>Output will be "CRS-4661: Node usadc-sdbxt75d successfully deleted"</p> <p>As a oracle user,</p> <p>1) verify the OLS nodes,</p> <pre>olsnodes -s -t</pre> <p>usadc-sdbxt75a Active Unpinned usadc-sdbxt75b Active Unpinned usadc-sdbxt75c Active Unpinned</p> <p>2) Update the node list on the NODE TO BE DELETED (Ex:usadc-sdbxt75d) , run the following command from the CRS_HOME/oui/bin directory:</p> <pre>export ORACLE_HOME=/u02/app/12.1.0.2/grid export PATH=\$PATH:/u02/app/12.1.0.2/grid/bin:/u02/app/12.1.0.2/grid/OPatch cd /u02/app/12.1.0.2/grid/oui/bin/ ./runInstaller -updateNodeList ORACLE_HOME=\$ORACLE_HOME CLUSTER_NODES=usadc-sdbxt75d -local</pre> <p>To verify, Go to below folder and check the file and make sure only one node (usadc-sdbxt75d) is available for Grid home.</p> <pre>cd /u01/app/oralInventory/ContentsXML cat inventory.xml</pre> <p>3) Deinstall the Oracle Clusterware home from the NODE THAT YOU WANT TO DELETE:</p> <pre>cd /u02/app/12.1.0.2/grid/deinstall/ ./deinstall -local</pre> <p>do rm -rf on /u02/app/12.1.0.2/grid using Unix team</p> <p>4) Update grid Inventory about available nodes on all remaining nodes.Go to any AVAILABLE NODE and run below command. This will update inventory on all available nodes.</p> <pre>cd /u02/app/12.1.0.2/grid/oui/bin ./runInstaller -updateNodeList ORACLE_HOME=\$GRID_HOME</pre>

▲ Step Number	Step Type	Instructions
		<div>CLUSTER_NODES=usadc-sdbxt75a,usadc-sdbxt75b,usadc-sdbxt75c</div> <div>To verify, Go to below folder and check the file on all available nodes to make sure only available nodes are listed on grid home in inventory</div> <div>cd /u01/app/oraInventory/ContentsXML cat inventory.xml</div> <div>Verify cluster and resources status of cluster</div> <div>\$ olsnodes -s -t</div>

Related List Title:

Approval List

Table name:

sysapproval_approver

Query Condition:

Review for = Rac Node removal from Clueter 1

Sort Order:

State in ascending order

3 Approvals

▲ State	Approver	Approval Meaning	Group	Workflow activity	Created
Approved	G,RamSanthosh (808326)	This signature indicates technical review of this document and confirms that this deliverable includes sufficient detail to install the system, and that the document is in compliance with the applicable SOPs			01-Aug-2022 06:52:10 PM
Approved	Dilli,Dinesh (801379)	This signature confirms that installation and verification steps described in this document are complete and sufficient to demonstrate qualified installation of the system.			07-Jul-2022 05:44:32 PM

▲ State	Approver	Approval Meaning	Group	Workflow activity	Created
Approved	Ball,Linda (633987)	For Cat 1: This signature indicates technical review of this document has been completed, and authorizes execution of the IQ For Cat 2-5: This signature indicates review of this document and confirms that this deliverable includes sufficient detail to install the system or project			02-Aug-2022 10:21:49 AM