

**Oracle® Solaris Cluster Data Service for
Oracle External Proxy Guide**

ORACLE®

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Using This Documentation

- **Overview** – Describes Oracle Solaris Cluster HA for Oracle External Proxy, and includes detailed instructions to plan your HA for Oracle Solaris Cluster HA for Oracle External Proxy (HA for Oracle External Proxy) installation and configuration.
- **Audience** – Experienced system administrators with extensive knowledge of Oracle software and hardware.
- **Required knowledge** – Knowledge of the Oracle Solaris operating system, of Oracle Solaris Cluster software, and expertise with the volume manager software that is used with Oracle Solaris Cluster software.

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Installing and Configuring HA for Oracle External Proxy

This chapter describes the steps to install and configure HA for Oracle External Proxy on your Oracle Solaris Cluster servers.

Note - You can install and configure this data service to run in either the global zone or a zone cluster. For updated information about supported configurations of this data service, see the [Oracle Solaris Cluster 4 Compatibility Guide](#).

This chapter contains the following sections:

- [“Overview of HA for Oracle External Proxy” on page 9](#)
- [“Planning the Installation and Configuration” on page 11](#)
- [“Overview of the Installation and Configuration Process for HA for Oracle External Proxy” on page 16](#)
- [“Installing the HA for Oracle External Proxy Package” on page 16](#)
- [“Registering and Configuring HA for Oracle External Proxy” on page 17](#)
- [“Operations by HA for Oracle External Proxy” on page 24](#)
- [“Upgrading the ORCL.oracle_external_proxy Resource Type” on page 24](#)

You can configure HA for Oracle External Proxy as a failover or a scalable data service. See [Chapter 1, “Planning for Oracle Solaris Cluster Data Services” in *Planning and Administering Data Services for Oracle Solaris Cluster 4.4*](#) and the [Concepts for Oracle Solaris Cluster 4.4](#) document for an overview of failover and scalable data services.

Overview of HA for Oracle External Proxy

The ORCL.oracle_external_proxy resource type interrogates the Oracle Database or the Oracle Real Application Clusters (Oracle RAC) local or remote services and interprets the

availability of those services as an Oracle Solaris Cluster resource state or status in an Oracle Solaris Cluster configuration. Support for local services allows the agent to monitor pluggable databases (PDBs) in a RAC container database (CDB).

If the Oracle Database or the Oracle RAC services are unavailable, the Oracle Solaris Cluster resource state will be offline. Similarly, if the Oracle Database or the Oracle RAC services are available, the Oracle Solaris Cluster resource state will be online. Additionally, appropriate Oracle Solaris Cluster status messages will also be displayed.

For example:

```
# clresource status oep-rs
=== Cluster Resources ===

Resource Name      Node Name          State              Status Message
-----
oep-rs             oephost1           Online             Online - Service orcl is UP
                   oephost2           Online             Online - Service orcl is UP
```

Furthermore, if the Oracle Database and the Oracle RAC services are unavailable, the Oracle Solaris Cluster resource status message will also display the ORA error number and some part of the error message, if known.

For example:

```
# clresource status oep-rs
=== Cluster Resources ===

Resource Name      Node Name          State              Status Message
-----
oep-rs             oephost1           Offline            Offline - Service orcl is DOWN /
[ORA-12514, TNS:listener does not currently ...]
                   oephost2           Offline            Offline - Service orcl is DOWN /
[ORA-12514, TNS:listener does not currently ?]
```

Oracle External Proxy Status Messages

Status	Message	Description
Service VIS is UP	Instance is OPEN	A database that is OPEN in READ WRITE mode results in the Oracle External Proxy resource going to the ONLINE state.
Service VIS is DOWN	ORA-01033: ORACLE initialization or shutdown ...	A database that is MOUNTED results in the Oracle External Proxy resource going to the OFFLINE state.

Status	Message	Description
Service VIS is DOWN	Instance is MOUNTED	A database that is MOUNTED results in the Oracle External Proxy resource going to the OFFLINE state.
Service VIS is DOWN	Instance is READ ONLY	A database that is OPEN in READ ONLY mode results in the Oracle External Proxy resource going to the OFFLINE state.
Service VIS is DOWN	Instance is READ ONLY WITH APPLY	A database that is OPEN in READ ONLY WITH APPLY mode results in the Oracle External Proxy resource going to the OFFLINE state.

Planning the Installation and Configuration

To register and configure HA for Oracle External Proxy, you must consider or provide information on the following points.

- Decide whether to run HA for Oracle External Proxy as a failover or scalable data service.
- Decide which extension properties to set. See the [Planning and Administering Data Services for Oracle Solaris Cluster 4.4](#) for information about the standard properties and [Appendix A, “HA for Oracle External Proxy Extension Properties”](#) for information about the extension properties.
- Provide the name of the resource type for HA for Oracle External Proxy. This name is `ORCL.oracle_external_proxy`.
- Provide the names of the cluster nodes that will master the data service.

Configuration Requirements

The following sections describe the configuration requirements for Oracle External Proxy.

- [“Database User” on page 11](#)
- [“Secure Database Password” on page 13](#)
- [“tnsnames.ora File” on page 14](#)
- [“Remote Oracle Notification Service” on page 15](#)

Database User

On the Oracle Database or the Oracle RAC database, create a user that will be used by the Oracle External Proxy resource.

EXAMPLE 1 Creating a User hauser Using the Helper Script

This example shows how to create a user hauser with a password hauser by using the helper script. You can choose a different username and password. The username and password that you choose will be used later by the Oracle Solaris Cluster resource.

As the Oracle database user, copy `/opt/ORCLscoep/util/grant_privileges` from an Oracle Solaris Cluster node to a working directory, for example, `/var/tmp`, on the Oracle Database node.

```
-bash-4.1$ export ORACLE_HOME=/u01/app/oracle/VIS/12.1.0
-bash-4.1$ export ORACLE_SID=VIS1
-bash-4.1$ cd /var/tmp
-bash-4.1$ (echo hauser; echo hauser) | ./grant_privileges
```

EXAMPLE 2 Creating a User hauser Using the SQL Commands

This example shows how to create a user hauser with a password hauser by using the SQL commands. You can choose a different username and password. The username and password that you choose will be used later by the Oracle Solaris Cluster resource.

```
-bash-3.00$ sqlplus "/as sysdba"

SQL*Plus: Release 11.2.0.2.0 Production on Fri Nov 4 05:23:31 2011

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Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options

SQL> create user hauser identified by hauser;

User created.

SQL> grant create session to hauser;

Grant succeeded.

SQL> grant execute on dbms_lock to hauser;

Grant succeeded.

SQL> grant select on v_$instance to hauser;

Grant succeeded.
```

```

SQL> grant select on v_$database to hauser;

Grant succeeded.

SQL> create profile hauser limit PASSWORD_LIFE_TIME UNLIMITED;

Profile created.

SQL> alter user hauser identified by hauser profile hauser;

User altered.

SQL>

```

If the Oracle database or the Oracle RAC database is being used as a standby database, then include the following command to [Example 2, “Creating a User hauser Using the SQL Commands,” on page 12](#).

```
SQL> grant sysdba to hauser;
```

Secure Database Password

The ORCL.oracle_external_proxy resource type verifies a connection to the Oracle database. There is no requirement for any Oracle Client software on the nodes where the ORCL.oracle_external_proxy resource type will execute. You will need to create a secure password to connect to a database. [Example 3, “Encrypting the Database User Password,” on page 13](#) shows how to encrypt the database user password. The example uses hauser as the password. However, this password must correspond to the password you used when creating the database user in [“Database User” on page 11](#).

EXAMPLE 3 Encrypting the Database User Password

Assuming a root role on all Oracle Solaris Cluster nodes, do the following:

```

# clpstring create -b "resource" "resource"-pw
Enter string value: *****
Enter string value again: *****
#

```

Replace "resource" with the Oracle Solaris Cluster resource name you will use for the ORCL.oracle_external_proxy resource. For example, if the resource name is oep-rs issue the following command.

```
# clpstring create -b oep-rs oep-rs-pw
```

```
Enter string value: *****
Enter string value again: *****
#
```

tnsnames.ora File

A valid tnsnames entry for the Oracle Database or Oracle RAC service is required within a tnsnames.ora file. By default, the Oracle External Proxy resource uses the /var/opt/oracle/tnsnames.ora file to determine the tnsnames entry. However, if the default value is not acceptable, then specify the Tns_admin extension property as follows:

```
-p TNS_ADMIN=${ORACLE_HOME}/network/admin -p TNS_ADMIN=your path to tnsnames.ora
```

The Oracle External Proxy resource can query a remote Oracle data base or a local Oracle database and has the following requirements:

- **Querying a remote Oracle database service** - If the Oracle database is a remote Oracle database, then the ADDRESS and the HOST entry in the tnsnames.ora file must specify the SCAN name for either Oracle Database 11g Release 2 or Oracle Database 12c. For Oracle Database 10g Release 2 and Oracle Database 11g Release 1, specify the appropriate listener address entries for each node that runs an instance of the database.
- **Querying a local Oracle database service** - If the Oracle database is a local Oracle database, then the HOST entry can be omitted. Instead, the PROTOCOL and KEY entries are required within the ADDRESS statement.
- The tnsnames entry and SERVICE_NAME entry must be the same.

The following examples show how to use Oracle External Proxy to query a remote Oracle database and a local Oracle database.

When querying a local Oracle Database service, you must first create a non-default service name for that database.

EXAMPLE 4 Querying a Remote Oracle Database Service

In this example, the /var/opt/oracle/tnsnames.ora file is used.

In this example, the non-default service sales_svc is created for the sales database.

preferred_list is a list of preferred instances on which the service runs when the database is administrator managed.

```
bash-4.3$ srvctl add service -d sales -s sales_svc -r "preferred_list"
bash-4.3$ srvctl start service -d sales -s sales_svc
```

```

bash-4.3$
bash-4.3$ cat /var/opt/oracle/tnsnames.ora
SALES_SVC =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = IPC)(KEY = LISTENER))
      (CONNECT_DATA =
        (SERVER = DEDICATED)
          (SERVICE_NAME = SALES_SVC)
      )
    )
  )
bash-4.3$
    
```

The hostname `dbhost-scan-lh` must be resolvable and within the `/etc/hosts` file on each node.

```

bash-4.3$ grep dbhost-scan-lh /etc/hosts
10.134.84.58 dbhost-scan-lh.us.oracle.com dbhost-scan-lh
bash-3.00#
    
```

EXAMPLE 5 Querying a Local Oracle Database Service

In this example, the `/var/opt/oracle/tnsnames.ora` file is used.

```

bash-3.00# cat /var/opt/oracle/tnsnames.ora
SALES =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = IPC)(KEY = LISTENER))
      (CONNECT_DATA =
        (SERVER = DEDICATED)
          (SERVICE_NAME = SALES)
      )
    )
  )
bash-3.00#
    
```

Remote Oracle Notification Service

Running Oracle Notification Service on every database node reduces the time it takes for the `ORCL.oracle_external_proxy` resource type to connect to the database and to determine the state of the database. To verify that Oracle Notification Service is running on the database nodes, run the following command.

```

bash-3.00# su - oragrid
Oracle Corporation 5.11 11.0 November 2011
-bash-3.00$ crsctl stat res ora.ons -t
-----
NAME TARGET STATE SERVER STATE_DETAILS Local Resources
    
```

```

-----
ora.ons
ONLINE ONLINE dbhost1
ONLINE ONLINE dbhost2
bash-3.00$
    
```

If Oracle Notification Service fails or stops running on a database node, the ORCL . oracle_external_proxy resource will still continue to monitor the remote database. However, it will take longer to connect to the database and determine the state of the database.

Overview of the Installation and Configuration Process for HA for Oracle External Proxy

The following table lists the sections that describe the installation and configuration tasks.

TABLE 1 Task Map: Installing and Configuring HA for Oracle External Proxy

Task	Instructions
Install the HA for Oracle External Proxy package	“How to Install the HA for Oracle External Proxy Package” on page 16
Configure and start HA for Oracle External Proxy	“How to Register and Configure HA for Oracle External Proxy” on page 19

Installing the HA for Oracle External Proxy Package

If you did not install the HA for Oracle External Proxy package during your initial Oracle Solaris Cluster installation, perform this procedure to install the package.

▼ How to Install the HA for Oracle External Proxy Package

Perform this procedure on each cluster node where you want the HA for Oracle External Proxy software to run.

- 1. On the cluster node where you are installing the data service package, assume the root role.**

2. **Ensure that the data service package is available from the configured publisher and that the `solaris` and `ha-cluster` publishers are valid.**

```
# pkg list -a ha-cluster/data-service/oracle-external-proxy
# pkg publisher
PUBLISHER                TYPE      STATUS  P  LOCATION
solaris                   origin   online  F  solaris-repository
ha-cluster                 origin   online  F  ha-cluster-repository
```

For information about setting the `solaris` publisher, see [Updating Systems and Adding Software in Oracle Solaris 11.4](#).

Tip - Use the `-nv` options whenever you install or update to see what changes will be made, such as which versions of which packages will be installed or updated and whether a new BE will be created.

If you do not get any error messages when you use the `-nv` options, run the command again without the `-n` option to actually perform the installation or update. If you do get error messages, run the command again with more `-v` options (for example, `-nvv`) or more of the package FMRI pattern to get more information to help you diagnose and fix the problem. For troubleshooting information, see [Appendix A, “Troubleshooting Package Installation and Update,”](#) in [Updating Systems and Adding Software in Oracle Solaris 11.4](#).

3. **Install the HA for Oracle External Proxy software package.**

```
# pkg install ha-cluster/data-service/oracle-external-proxy
```

4. **Verify that the package installed successfully.**

```
$ pkg info ha-cluster/data-service/oracle-external-proxy
```

Installation is successful if output shows that State is Installed.

5. **Perform any necessary updates to the Oracle Solaris Cluster software.**

For instructions about updating your software, see [Chapter 10, “Updating Software Packages”](#) in [Updating Your Oracle Solaris Cluster 4.4 Environment](#).

Registering and Configuring HA for Oracle External Proxy

The following sections describe how to register and configure HA for Oracle External Proxy.

- [“Setting HA for Oracle External Proxy Extension Properties”](#) on page 18
- [“Tools for Registering and Configuring HA for Oracle External Proxy”](#) on page 18

- [“How to Register and Configure HA for Oracle External Proxy” on page 19](#)
- [“Setting up Dependencies on Oracle External Proxy Resources” on page 23](#)
- [“How to Verify Data Service Installation and Configuration” on page 23](#)

You can configure HA for Oracle External Proxy as a failover service or as a scalable service.

Setting HA for Oracle External Proxy Extension Properties

The sections that follow contain instructions for registering and configuring HA for Oracle External Proxy resources. For information about the extension properties, see [Appendix A, “HA for Oracle External Proxy Extension Properties”](#). The Tunable entry indicates when you can update a property.

See the [rt_properties\(7\)](#), [r_properties\(7\)](#), and [rg_properties\(7\)](#) man pages for details on all of the Oracle Solaris Cluster extension properties.

To set an extension property of a resource, include the following option in the `clresource` command that creates or modifies the resource:

`-p property=value`

`-p property`

Identifies the extension property that you are setting.

`value`

Specifies the value to which you are setting the extension property.

You can also use the procedures in [Chapter 2, “Administering Data Service Resources” in *Planning and Administering Data Services for Oracle Solaris Cluster 4.4*](#) to configure resources after the resources are created.

Tools for Registering and Configuring HA for Oracle External Proxy

Oracle Solaris Cluster provides the following tool for registering and configuring HA for Oracle External Proxy:

- **Oracle Solaris Cluster maintenance commands.** For more information, see [“How to Register and Configure HA for Oracle External Proxy” on page 19](#).

▼ How to Register and Configure HA for Oracle External Proxy

Complete the registration and configuration on any cluster member.

Before You Begin Ensure that you have completed the requirements as described in [“Configuration Requirements” on page 11](#).

1. **On a cluster member, become an administrator that provides `solaris.cluster.admin` authorization.**

2. **Register the `ORCL.oracle_external_proxy` resource type for the data service.**

```
# clresourcetype register ORCL.oracle_external_proxy
```

3. **Create either a scalable or a failover resource group for the Oracle External Proxy resource.**

For example, to create a scalable resource group, do the following:

```
# clresourcegroup create -S [-n node-zone-list] resource-group
```

resource-group

Specifies the name of the scalable service resource group to add.

-n node-zone-list

Specifies a comma-separated, ordered list of nodes that can master this resource group. This list is optional. If you omit this list, then all the nodes of the global cluster or zone cluster are used to master the resource group.

4. **Create an Oracle External Proxy resource in the resource group that you created.**

```
# clresource create -g resource-group \  
-t ORCL.oracle_external_proxy \  
-p service_name=service-name \  
-p ons_nodes=ons-nodes \  
-p dbuser=dbuser \  
[-p plugin_name=plugin-name] \  
[-p tns_admin=tns-admin] \  
-d \  
resource
```

`-g resource-group`

Specifies the name of the resource group .

`-t resource-type`

Specifies the resource type to add.

`-p service_name=service-name`

Specifies the Oracle Database or Real Application Clusters (RAC) service name that the Oracle External Proxy uses to connect to the database.

`-p ons_nodes=ons-nodes`

Specifies the Remote Oracle Notification Service (ONS) nodes that the Oracle External Proxy uses to connect to the database. For a remote Oracle database, specify `ONS_NODES=scan:port` or `ONS_NODES=node:port[node:port]`. For a local Oracle database, specify `ONS_NODES=localhost:port`.

Note - For a remote Oracle Database 11gR2 or later with Grid Infrastructure installed, it is recommended to use `scan_name:port`.

`-p dbuser=dbuser`

Specifies the server side Oracle database user that the Oracle External Proxy uses to connect to the database. If the database is being used as a standby database, you must grant the `sysdba` privilege to the user, and specify `dbuser="hauser as sysdba"` where `hauser` represents your entry for `dbuser`. For information on how to grant the `sysdba` privilege to the user, see [“Database User” on page 11](#).

`-p plugin_name=plugin-name`

Specifies the plugin module that the Oracle External Proxy uses to connect to the database. You can omit this entry as it will default to `OracleExternalProxy`.

`-p tns_admin=tns-admin`

Specifies the client-side location for the Oracle `tns_admin` path that the Oracle External Proxy uses to connect to the database. Omit this entry so that it defaults to the `/var/opt/oracle` directory.

`-d`

Creates the resource in the disabled state.

resource

Specifies your choice for the name of the resource to add.

Note - Optionally, you can set additional extension properties that belong to the Oracle External Proxy data service to override their default values. See [Appendix A, “HA for Oracle External Proxy Extension Properties”](#) for a list of extension properties.

5. Bring the resource group online.

```
# clresourcegroup online -emM resource-group
```

resource-group

Specifies the name of the resource group.

The Oracle Solaris Cluster resource is now configured and online, thereby interrogating the state of the remote database.

Example 6 Creating a Multi-master ORCL.oracle_external_proxy Resource for a Remote Oracle Database Service

This example shows the commands for performing the following operations which create a multi-master ORCL.oracle_external_proxy resource.

- Creating the oep-rg resource group
- Registering the ORCL.oracle_external_proxy resource type
- Adding the oep-rs resource to the oep-rg resource group

This example assumes that default values are being used for the `dbuser`, `tns_admin`, and `plugin_name` extension properties. It also assumes that the `dbuser` password has been encrypted on each cluster node.

```
phys-schost-1# clresourcetype register ORCL.oracle_external_proxy
phys-schost-1# clresourcegroup create -S oep-rg
phys-schost-1# clresource create -g oep-rg \
-t ORCL.oracle_external_proxy \
-p service_name=orcl \
-p ons_nodes=binks-scan-1h:6200 \
-d \
oep-rs
phys-schost-1# clresourcegroup online -M oep-rg
phys-schost-1# clresource enable oep-rs
```

Example 7 Creating a Multi-master ORCL.oracle_external_proxy for a Remote Oracle Database Service

```

phys-schost-1# clresourcetype register ORCL.oracle_external_proxy
phys-schost-1# clresourcegroup create oep-rg
phys-schost-1# clresource create -g oep-rg \
-t ORCL.oracle_external_proxy \
-p service_name=orcl \
-p ons_nodes=binks-scan-lh:6200 \
-d \
oep-rs
phys-schost-1# clresourcegroup online -M oep-rg
phys-schost-1# clresource enable oep-rs

```

Example 8 Creating a Multi-master ORCL.oracle_external_proxy Resource for a Local Oracle Database Service

```

phys-schost-1# clresourcetype register ORCL.oracle_external_proxy
phys-schost-1# clresourcegroup create -S oep-rg
phys-schost-1# clresource create -g oep-rg \
-t ORCL.oracle_external_proxy \
-p service_name=sales \
-p ons_nodes=localhost:6100 \
-p resource_dependencies_offline_restart=<OSC RAC resource>\
-d \
oep-rs
phys-schost-1# clresourcegroup online -M oep-rg
phys-schost-1# clresource enable oep-rs

```

Example 9 Configuring ORCL.oracle_external_proxy for Pluggable Database (PDB) in a RAC Container Database (CDB)

In this example CDB name is orcl and has instances orcl1 and orcl2, PDB name is pdb1. The CDB is administrator-managed.

This example assumes that SUNW.scalable_rac_server_proxy resource named rac-server-proxy-rs exists for the CDB and the CDB instances run on all cluster nodes.

1. Add local service for PDB with same name as PDB and start the service.

```

$ srvctl add service -d orcl -s pdb1 -r orcl1,orcl2
$ srvctl start service -d orcl -s pdb1

```

2. In all nodes ensure that \$ORACLE_HOME/network/admin/tnsnames.ora contains entry for the pdb1 service created in step 1 above.
3. Ensure that database user (for example, hauser) required to connect to the database has been created in the CDB.
4. Ensure that the database password has been provided using clpstring.

5. Create resource group and ORCL.oracle_external_proxy resource for the PDB and enable it.

```
# clrg -S create pdb1-rg
# clrs create -t ORCL.oracle_external_proxy -g pdb1-rg \
-p resource_dependencies_offline_restart=rac-server-proxy-rs \
-p ons_nodes=localhost:6100 \
-p service_name=pdb1 \
-p tns_admin=$ORACLE-HOME/network/admin pdb1
# clrg online -eM pdb1-rg
```

Setting up Dependencies on Oracle External Proxy Resources

To use the Oracle Solaris Cluster resource as a dependency for an application resource, set up appropriate dependencies as shown in the following example.

EXAMPLE 10 Setting Up Application Resource Group Dependencies

As an example, when the Oracle External Proxy resource is within a scalable resource group and the application resource is within a failover resource group, you can do the following:

```
# clrg set -p RG_Affinities=++oep-rg app-rg
# clrs set -p resource_dependencies_offline_restart=oep-rs{any_node} app-rs
```

As an example, when the Oracle External Proxy resource and the application resource are within the same failover resource group, you can do the following:

```
# clrs set -p resource_dependencies_offline_restart=oep-rs app-rs
```

As an example, when the Oracle External Proxy resource and the application resource are in separate failover resource groups, you can do the following:

```
# clrg set -p RG_Affinities=++oep-rg app-rg
# clrs set -p resource_dependencies_offline_restart=oep-rs app-rs
```

How to Verify Data Service Installation and Configuration

After the Oracle External Proxy resource has been installed, configured, and registered, verify it by enabling the Oracle External Proxy resource. Once the Oracle External Proxy resource

has been enabled, the resource status will reflect the state and status of the server-side Oracle database. The presence of a resource status message is verification that the Oracle External Proxy has been installed and configured.

Operations by HA for Oracle External Proxy

The Oracle External Proxy software interrogates an Oracle Database or Oracle RAC service and interprets the availability of that service as an Oracle Solaris Cluster resource state or status. As part of that interrogation, the Oracle External Proxy software uses the Oracle JDBC thin driver to connect to the Oracle Database or Oracle RAC service. The connection is then interpreted by Oracle Solaris Cluster with the Oracle External Proxy resource state and status message.

The Oracle External Proxy writes to a trace file within the `/var/cluster/logs/DS/ORCLscoep/message_log.resource` file on each node where three generations are kept. The Oracle External Proxy resource type is responsible for maintaining the generations and automatically removes old generations.

Actions in Response to Faults

If the Oracle External Proxy cannot connect to the Oracle Database or Oracle RAC service, the Oracle Solaris Cluster resource will go offline. An appropriate resource status message will indicate the reason why the connection was not possible. As soon as the Oracle External Proxy can connect to the Oracle Database or Oracle RAC service, the Oracle Solaris Cluster resource will come online.

Upgrading the `ORCL.oracle_external_proxy` Resource Type

Upgrade the `ORCL.oracle_external_proxy` resource type if the following conditions apply:

- You are upgrading from an earlier version of the HA for Oracle External Proxy data service.
- You need to use the new features of this data service.

For general instructions that explain how to upgrade a resource type, see [“Upgrading a Resource Type” in *Planning and Administering Data Services for Oracle Solaris Cluster 4.4*](#). The information that you require to complete the upgrade of the `ORCL.oracle_external_proxy` resource type is provided in the following subsections.

- [“Information for Registering the New Resource Type Version” on page 25](#)
- [“Information for Migrating Existing Instances of the Resource Type” on page 25](#)

Information for Registering the New Resource Type Version

The relationship between a resource type version and the release of Oracle Solaris Cluster data services is shown in the following table. The release of Oracle Solaris Cluster data services indicates the release in which the version of the resource type was introduced.

Resource Type Version	Oracle Solaris Cluster Data Services Release
1	1.0

To determine the version of the resource type that is registered, use the `clresourcetype show` command.

The resource type registration (RTR) file for this resource type is `/opt/ORCLscoep/etc/ORCL.oracle_external_proxy`.

Information for Migrating Existing Instances of the Resource Type

The information that you require to edit each instance of the `ORCL.oracle_external_proxy` resource type is as follows:

- You can perform the migration at any time.

The following example shows the command for modifying an instance of the `ORCL.oracle_external_proxy` resource type.

EXAMPLE 11 Migrating Instances of the ORCL.oracle_external_proxy Resource Type

The following command sets the `Type_version` property of the `ORCL.oracle_external_proxy` resource named `oep-rs` to 2.

```
# clresource set -p Type_version=2 oep-rs
```


HA for Oracle External Proxy Extension Properties

This section describes the extension properties for the resource type `ORCL.oracle_external_proxy`. This resource type represents the Oracle External Proxy application in an Oracle Solaris Cluster configuration.

For details about system-defined properties, see the [r_properties\(7\)](#) and [rg_properties\(7\)](#) man pages.

The extension properties of the `ORCL.oracle_external_proxy` resource type are as follows:

Debug_level

This property indicates the level to which debug messages for the `ORCL.oracle_external_proxy` resources are logged. When the debug level is increased, more debug messages are written to the terminal, the console, and the system log `/var/adm/` messages as follows:

0	No debug messages
1	Function Begin and End messages
2	All debug messages and function Begin and End messages

For messages to appear in the system log, perform the following:

1. Edit the `/etc/syslog.conf` file and make sure that the debug is set.

```
*.err;kern.debug;daemon.debug;mail.crit /var/adm/messages
```

2. Disable the system log.

```
bash-3.00# svcadm disable system-log
```

3. Enable the system log.

```
bash-3.00# svcadm enable system-log
```

Data Type	Integer
Range	0 - 2
Default	0
Tunable	Any time

Dbuser

This property specifies the server-side Oracle Database user that the proxy monitor uses to connect to the database.

Data Type	String
Default	hauser
Tunable	When disabled

Ons_nodes

This property specifies the Remote Oracle Notification Server (ONS) nodes such as *node:port[,node:port]* that the proxy monitor uses to connect to the database.

Data Type	String
Default	None
Tunable	When disabled

Plugin_name

This property specifies the plugin module name that the proxy monitor uses to connect to the database.

Data Type	String
Default	OracleExternalProxy
Tunable	When disabled

Service_name

This property specifies the Oracle Database or Oracle RAC service name that the proxy monitor uses to connect to the database.

Data Type	String
------------------	--------

Default	None
----------------	------

Tunable	When disabled
----------------	---------------

Tns_admin

This property specifies the client-side location for the Oracle Tns_admin path that the proxy monitor uses to connect to the database.

Data Type	String
------------------	--------

Default	/var/opt/oracle
----------------	-----------------

Tunable	When disabled
----------------	---------------

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