

**Oracle® Solaris Cluster Data Service for
Oracle GlassFish Server Message Queue
Guide**

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Using This Documentation

- **Overview** – Explains how to install and configure the Oracle Solaris Cluster HA for Oracle GlassFish Message Queue data service
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience troubleshooting and replacing hardware

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Installing and Configuring HA for Oracle GlassFish Message Queue

This chapter describes the procedures to install and configure Oracle Solaris Cluster HA for Oracle GlassFish Message Queue (HA for Oracle GlassFish Message Queue).

This chapter contains the following sections.

- [“HA for Oracle GlassFish Message Queue Overview” on page 15](#)
- [“Overview of the Installation and Configuration Process for HA for Oracle GlassFish Message Queue” on page 16](#)
- [“Planning the Oracle GlassFish Message Queue Installation and Configuration” on page 17](#)
- [“Configuring and Activating Network Resources” on page 17](#)
- [“Installing and Configuring Oracle GlassFish Message Queue” on page 19](#)
- [“Verifying the Oracle GlassFish Message Queue Installation and Configuration” on page 21](#)
- [“Planning the HA for Oracle GlassFish Message Queue Installation and Configuration” on page 21](#)
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- [“Configuring the SUNW.HASStoragePlus Resource Type” on page 29](#)
- [“Verifying the HA for Oracle GlassFish Message Queue Installation and Configuration” on page 30](#)
- [“Tuning the HA for Oracle GlassFish Message Queue Fault Monitor” on page 30](#)

HA for Oracle GlassFish Message Queue Overview

Use the information in this section to understand how HA for Oracle GlassFish Message Queue enables Oracle GlassFish Message Queue for high availability.

HA for Oracle GlassFish Message Queue is a data service with appropriate extension properties to configure a failover messaging service.

Configure HA for Oracle GlassFish Message Queue as a failover data service to enable the Oracle GlassFish Message Queue for high availability. See [Chapter 1, “Planning for Oracle Solaris Cluster Data Services,”](#) in *Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide* for general information about data services.

The Oracle GlassFish Message Queue is an integral part of the application server. Oracle GlassFish Message Queue is a robust Java Messaging Service (JMS) provider for JMS clients. Oracle GlassFish Message Queue is packaged with the Application Server installation. See the installation guide for your version of Oracle GlassFish Message Queue for information about Oracle GlassFish Message Queue. Implementation of HA for Oracle GlassFish Message Queue does not assume the existence of programs on which your architecture depends. Programs on which your architecture depends such as databases and web servers should be configured to be highly available, but might run on a different cluster.

Overview of the Installation and Configuration Process for HA for Oracle GlassFish Message Queue

The following table lists the sections that describe the installation and configuration tasks. Perform these tasks in the order that they are listed.

TABLE 1 Task Map: Installing and Configuring HA for Oracle GlassFish Message Queue

| Task | For Instructions |
|---|---|
| Plan Oracle GlassFish Message Queue installation and configuration | “Planning the Oracle GlassFish Message Queue Installation and Configuration” on page 17 |
| Configure and activate network resources | “How to Configure and Activate Network Resources” on page 18 |
| Install and configure Oracle GlassFish Message Queue | “How to Install the Oracle GlassFish Message Queue” on page 20 |
| Verify Oracle GlassFish Message Queue installation | “How to Verify the Oracle GlassFish Message Queue Installation and Configuration” on page 21 |
| Plan HA for Oracle GlassFish Message Queue installation and configuration | “Planning the HA for Oracle GlassFish Message Queue Installation and Configuration” on page 21 |
| Install the HA for Oracle GlassFish Message Queue package | “How to Install the HA for Oracle GlassFish Message Queue Package” on page 23 |
| Register and Configure HA for Oracle GlassFish Message Queue as a failover data service | “How to Register and Configure HA for Oracle GlassFish Message Queue as a Failover Data Service” on page 25 |

| Task | For Instructions |
|---|---|
| Configure the SUNW.HASStoragePlus resource type | “Configuring the SUNW.HASStoragePlus Resource Type” on page 29 |
| Verify the HA for Oracle GlassFish Message Queue installation and configuration | “Verifying the HA for Oracle GlassFish Message Queue Installation and Configuration” on page 30 |
| Tune the HA for Oracle GlassFish Message Queue fault monitor | “Tuning the HA for Oracle GlassFish Message Queue Fault Monitor” on page 30 |

Note - If you run multiple data services in your Oracle Solaris Cluster configuration, you can set up the data services in any order, with the following exception. If the HA for Oracle GlassFish Message Queue configuration depends on Oracle Solaris Cluster HA for DNS, you must set up DNS first. For details, see [Oracle Solaris Cluster Data Service for DNS Guide](#) for details. DNS software is included in the Oracle Solaris operating environment. If the cluster is to obtain the DNS service from another server, configure the cluster to be a DNS client first.

Planning the Oracle GlassFish Message Queue Installation and Configuration

To install and configure Oracle GlassFish Message Queue, use this section as a checklist.

Consider the following before you start your installation. Store static files and data on the local file system of each cluster node. Dynamic data should reside on the cluster file system so that you can view or update the data from any cluster node. The Oracle GlassFish Message Queue binaries and configuration files must be highly available and accessible to application-server instances that are running on all nodes.

Configuring and Activating Network Resources

Before you install and configure Oracle GlassFish Message Queue, set up the network resources that the service uses after installation and configuration. To configure and activate the network resources, use the following command-line procedure.

▼ How to Configure and Activate Network Resources

To perform this procedure, you need the following information about your configuration.

- The names of the cluster nodes that can master the data service.
- The network resource that clients use to access Oracle GlassFish Message Queue. Normally, you set up this hostname when you install the cluster. See the [Oracle Solaris Cluster 4.3 Concepts Guide](#) for details on network resources.

1. **On a cluster member, assume the `root` role or become an administrator that provides `solaris.cluster.modify` and `solaris.cluster.modify` authorization.**
2. **Verify that all of the network addresses that you use have been added to your name service database.**

You should have performed this verification during the Oracle Solaris Cluster installation.

Note - To avoid name service look-up failures, ensure that all of the logical hostnames are present in the `/etc/inet/hosts` file on all the cluster nodes. Configure name service mapping in the `/etc/nsswitch.conf` file on the servers to check the local files before trying to access NIS, NIS+, or DNS.

3. **Create a failover resource group to contain the network and application resources.**

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

resource-group

Specifies the name of the resource group. This name can be your choice.

[-n node-list]

Specifies a comma-separated, ordered list of nodes that can master this resource group. The format of each entry in the list is *node*. In this format, *node* specifies the node name.

This list is optional. If you omit this list, the global zone of each cluster node can master the resource group.

4. **Add network resources to the resource group.**

Use the following command to add a logical hostname to a resource group.

```
# clreslogicalhostname create -g resource-group [-h hostname,...] [-N netiflist] lhresource
```

-g resource-group

Specifies the name of the resource group.

-h hostname, ...

Specifies a comma-separated list of network resources.

-N netiflist

Specifies an optional, comma-separated list that identifies the IPMP groups that are on each node. The format of each entry in the list is *netif@node*. The replaceable items in this format are as follows:

netif Specifies an IPMP group name, such as *sc_ipmp0*, or a public network interface card (NIC). If you specify a public NIC, Oracle Solaris Cluster attempts to create the required IPMP groups.

node Specifies the name or ID of a node. To specify the global zone, specify only *node*.

Note - If you require a fully qualified hostname, you must specify the fully qualified name with the *-h* option and you cannot use the fully qualified form in the resource name.

Note - Oracle Solaris Cluster does not currently support the use of the adapter name for *netif*.

5. **Run the `clresourcegroup online -eM resource-group` command to enable the resource group and bring the resource group online.**

```
# clresourcegroup online -eM resource-group
```

resource-group

Specifies the name of the resource group.

Installing and Configuring Oracle GlassFish Message Queue

This section describes the steps to install and enable Oracle GlassFish Message Queue to run as HA for Oracle GlassFish Message Queue.

Note - If you run Oracle GlassFish Message Queue and another messaging service server and they use the same network resources, configure them to listen on different ports. Otherwise, a port conflict might occur between the two services.

Use the following procedure to install Oracle GlassFish Message Queue.

▼ How to Install the Oracle GlassFish Message Queue

Use the following procedure to install Oracle GlassFish Message Queue. Only the sections that are specific to Oracle GlassFish Message Queue are included here. See the installation guide for your version of Oracle GlassFish Message Queue for details.

Note - Do not set the AUTOSTART property to YES in the `/etc/imq/imqbrokerd.conf` file. The AUTOSTART property is set to NO by default because HA for Oracle GlassFish Message Queue starts and stops the application after you have configured the data service.

1. **Install the Oracle GlassFish Message Queue package on all the nodes of the cluster if they are not already installed.**
2. **Identify a location on a global file system where you intend to keep your message queue (for example, `/global/s1mq`).**
You can create a separate directory for this file system.
3. **On any node set `IMQ_VARHOME` and run the `imqbrokerd` command to create the configuration directory and files.**

```
# IMQ_VARHOME=/global/s1mq
# export IMQ_VARHOME
# imqbrokerd -name hamq1
```

4. **Set the `imq.portmapper.hostname` property to the logical hostname by editing `$IMQ_VARHOME/instances/hamq1/props/config.properties`.**

Verifying the Oracle GlassFish Message Queue Installation and Configuration

This section describes how to verify the Oracle GlassFish Message Queue installation and configuration.

▼ How to Verify the Oracle GlassFish Message Queue Installation and Configuration

Use this procedure to verify the Oracle GlassFish Message Queue installation and configuration. This procedure does not verify that your application is highly available.

1. **Ensure that the logical hostname is running.**
2. **Set `IMQ_VARHOME` and start the message broker manually.**

```
# IMQ_VARHOME=/global/s1mq
# export IMQ_VARHOME
# imqbrokerd -name hamq1
```

3. **Stop the broker.**

```
# /usr/bin/imqcmd shutdown bkr -b hostname:port
```

4. **Repeat [Step 2](#) on all the potential primaries of the Oracle GlassFish Message Queue resource group.**

Planning the HA for Oracle GlassFish Message Queue Installation and Configuration

This section contains the information that you need to plan your HA for Oracle GlassFish Message Queue installation and configuration.

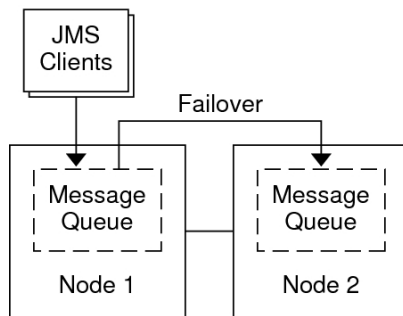
- [“Standard Data Service Configurations” on page 22](#)
- [“Configuration Considerations” on page 22](#)
- [“Configuration Planning Questions” on page 22](#)

Standard Data Service Configurations

Use the standard configurations in this section to plan the installation and configuration of HA for Oracle GlassFish Message Queue. HA for Oracle GlassFish Message Queue might support additional configurations. However, you must contact your Enterprise Services representative for information on additional configurations.

The following figure illustrates a standard failover configuration for Oracle GlassFish Message Queue.

FIGURE 1 Two-Node Cluster with Failover Data Service Configuration



Configuration Considerations

If you choose to use your message service with another highly available application, resource dependencies might exist. See the [r_properties\(5\)](#) man page for a description of the `Resource_dependencies` property.

Configuration Planning Questions

Use the questions in this section to plan the installation and configuration of HA for Oracle GlassFish Message Queue. See “[Considerations for Installing and Configuring a Data Service](#)” in *Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide* for information that might apply to these questions.

- What resource groups will you use for network addresses and application resources and the dependencies between them?
- What is the logical hostname (for failover services) for clients that will access the data service?
- Where will the system configuration files reside?

Installing the HA for Oracle GlassFish Message Queue Package

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

▼ How to Install the HA for Oracle GlassFish Message Queue Package

Perform this procedure on each cluster node where you want the HA for Oracle GlassFish Message Queue 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/glassfish-message-queue
# 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 [“Adding, Modifying, or Removing Package Publishers”](#) in *Adding and Updating Software in Oracle Solaris 11.3*.

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 *Adding and Updating Software in Oracle Solaris 11.3*.

3. Install the HA for Oracle GlassFish Message Queue software package.

```
# pkg install ha-cluster/data-service/glassfish-message-queue
```

4. Verify that the package installed successfully.

```
$ pkg info ha-cluster/data-service/glassfish-message-queue
```

Installation is successful if output shows that State is Installed.

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

For instructions on updating single or multiple packages, see [Chapter 11, “Updating Your Software,”](#) in *Oracle Solaris Cluster System Administration Guide*.

Registering and Configuring HA for Oracle GlassFish Message Queue

This procedure describes how to use the Oracle Solaris Cluster maintenance commands to register and configure HA for Oracle GlassFish Message Queue.

Note - See [“Tools for Data Service Resource Administration”](#) in *Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide* for details about additional options that enable you to register and configure the data service.

To perform this procedure, you need the following information about your configuration.

- The name of the resource type for HA for Oracle GlassFish Message Queue is `SUNW.s1mq`.
- The names of the cluster nodes that can master the data service.
- The network resource that clients use to access the HA for Oracle GlassFish Message Queue.
- The port where Oracle GlassFish Message Queue listens.

Setting HA for Oracle GlassFish Message Queue Extension Properties

The section that follows contains instructions for registering and configuring HA for Oracle GlassFish Message Queue resources. For information about the extension properties, see [Appendix A, “HA for Oracle GlassFish Message Queue Extension Properties”](#). The Tunable entry indicates when you can update a property.

See the [r_properties\(5\)](#) man page for details on all the Oracle Solaris Cluster resource properties.

To set an extension property of a resource, include the following option in the [clresource\(1CL\)](#) 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 Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide](#) to configure resources after the resources are created.

▼ How to Register and Configure HA for Oracle GlassFish Message Queue as a Failover Data Service

Perform the following steps to complete your configuration.

1. **On a cluster member, become superuser or assume a role that provides `solaris.cluster.modify` and `solaris.cluster.adminRBAC` authorization.**
2. **Add the resource group for Oracle GlassFish Message Queue if you have not performed the steps in “[Configuring and Activating Network Resources](#)” on page 17.**

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

3. **Add the logical hostname resource to the resource group if you have not performed the steps in “Configuring and Activating Network Resources” on page 17.**

```
# clreslogicalhostname create -g resource group -hlogical-hostname
```

Note - If you require a fully qualified hostname, you must specify the fully qualified name with the -h option and you cannot use the fully qualified form in the resource name.

4. **Register the SUNW.s1mq resource type for the data service.**

```
# clresourcetype register SUNW.s1mq
```

5. **If the Smooth_Shutdown extension property is set to TRUE, create a file named scs1mqconfig in the \$IMQ_VARHOME/instances/broker/ directory. Add the following line to the file you have created.**

```
Password password
```

See [Appendix A, “HA for Oracle GlassFish Message Queue Extension Properties”](#) for a description of the Smooth_Shutdown extension property.

6. **Add the Oracle GlassFish Message Queue resource instance to the failover resource group.**

If Smooth_Shutdown will be set to FALSE (the default):

```
# clresource create -g resource-group -t SUNW.s1mq \  
-p Confdir_list=$IMQ_VARHOME/instances/broker \  
-p Bin_dir=bin-directory \  
-p Broker_Name=broker \  
-p Network_Resources_Used=logical hostname \  
-p Port_list=port/tcp[,port/tcp] resource
```

If Smooth_Shutdown is set to TRUE:

```
# clresource create -g resource-group -t SUNW.s1mq \  
-p Confdir_list=$IMQ_VARHOME/instances/broker \  
-p Bin_dir=bin-directory \  
-p Broker_Name=broker \  
-p Broker_User=user \  
-p Network_resources_used=logical hostname \  
-p Port_list=port/tcp[,port/tcp] \  
-p Smooth_Shutdown=TRUE resource
```

The resource is created in the enabled state.

The resource group that contains the application resources is the same resource group that you created for your network resources in [“How to Configure and Activate Network Resources” on page 18](#).

-t *SUNW.smq*

Specifies the type of resource to add.

-p *Confdir_list=\$IMQ_VARHOME/instances/broker*

Specifies a path for your Oracle GlassFish Message Queue configuration directory. The *Confdir_list* extension property is required. The *Confdir_list* property must have exactly one entry.

-p *Bin_dir=bin-directory*

Specifies the location where the Oracle GlassFish Message Queue binaries, particularly *imqbrokerd* and *imqcmd*, are installed.

-p *Broker_Name=broker*

Specifies the name of the broker to monitor.

-p *Broker_User=user*

Specifies the user name of the managed broker.

-p *Network_resources_used=network-resource*

Specifies a comma-separated list of network resources (logical hostnames) in *resource-group*, which the Oracle GlassFish Message Queue application resource must use.

-p *Port_list=port-number/protocol*

Specifies a port number and the protocol to be used, for example, *80/tcp*. The *Port_list* property must have one or two entries.

-p *Smooth_Shutdown=TRUE*

Used to shutdown the broker. Use of the *impcmd* command exposes the broker password in the *imqcmd* command string.

resource

Specifies the Oracle GlassFish Message Queue application resource name.

7. Bring the resource group online.

```
# clresourcegroup online -M resource-group
```

resource-group

Specifies the name of the application resource group that is being enabled.

8. Verify that the resource group and application-server resource are online.

```
# clresourcegroup status
# ps -ef
```

Example 1 Registering and Configuring HA for Oracle GlassFish Message Queue

This example shows how to register HA for Oracle GlassFish Message Queue.

Cluster Information

Node names: phys-schost-1, phys-schost-2

Logical hostname: schost-1

Resource group: resource-group-1 (for all resources)

Resources: schost-1 (logical hostname),

SUNW.s1mq (Oracle GlassFish Message Queue application resource)

Create a failover resource group

```
# clresourcegroup create -n phys-schost-1,phys-schost-2 s1mq-rg
```

Add a logical hostname resource to the resource group

```
# clreslogicalhostname -g s1mq-rg -h schost-1 schost-1
```

Register the SUNW.s1mq resource type

```
# clresourcetype register SUNW.s1mq
```

Create an Oracle GlassFish Message Queue resource and add it to the resource group

```
# clresource create -g s1mq-rg \
-t SUNW.s1mq \
-p Confdir_list=$IMQ_VARHOME/instances/hamq1 \
-p Bin_dir=/opt/mq/bin \
-p Broker_Name=hamq1 \
-p Network_resources_used=schost-1 \
-p Port_list=7676/tcp s1mq-rs
```

Enable the application resource group

```
# clresourcegroup online -M s1mq-rg
```

Example 2 Registering and Configuring HA for Oracle GlassFish Message Queue With Smooth_Shutdown Enabled

This example shows how to register HA for Oracle GlassFish Message Queue with Smooth_Shutdown enabled.

*Cluster Information**Node names: phys-schost-1, phys-schost-2**Logical hostname: schost-1**Resource group: resource-group-1 (for all resources)**Resources: schost-1 (logical hostname),**s1mq-1 (Oracle GlassFish Message Queue application resource)**Create a failover resource group*

```
# clresourcegroup create -n phys-schost-1,phys-schost-2 s1mq-rg
```

Add a logical hostname resource to the resource group

```
# clreslogicalhostname create -g s1mq-rg -h schost-1 schost-1
```

Register the SUNW.s1mq resource type

```
# clresourcetype register SUNW.s1mq
```

Create a Oracle GlassFish Message Queue resource and add it to the resource group

```
# clresource create -g s1mq-rg \  
-t SUNW.s1mq \  
-p Confdir_list=$IMQ_VARHOME/instances/hamq1 \  
-p Broker_Name=hamq1 \  
-p Broker_User=admin \  
-p Network_resources_used=schost-1 \  
-p Port_list=7676/tcp \  
-p Smooth_Shutdown=TRUE s1mq-rs
```

Enable the application resource group

```
# clresourcegroup online -M s1mq-rg
```

Configuring the SUNW.HAStoragePlus Resource Type

The SUNW.HAStoragePlus resource type synchronizes actions between HA storage and the data service. SUNW.HAStoragePlus also has an additional feature to make a local file system highly available. HA for Oracle GlassFish Message Queue is not disk intensive and not scalable, and therefore setting up the SUNW.HAStoragePlus resource type is optional.

See the [SUNW.HAStoragePlus\(5\)](#) man page and “[Relationship Between Resource Groups and Device Groups](#)” in *Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide* for background information. See “[Synchronizing the Startups Between Resource Groups and Device Groups Using HAStoragePlus](#)” in *Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide* for the procedure.

Verifying the HA for Oracle GlassFish Message Queue Installation and Configuration

This section contains the procedure to verify that you installed and configured your data service correctly.

▼ How to Verify the HA for Oracle GlassFish Message Queue Installation and Configuration

Use this procedure to verify that you installed and configured HA for Oracle GlassFish Message Queue correctly.

1. **Ensure that the Message Queue is started under the control of Oracle Solaris Cluster software.**

```
# clresourcegroup online resource group
```

2. **Connect to Oracle GlassFish Message Queue from a web browser to verify that the Oracle GlassFish Message Queue software functions correctly.**

3. **Run the `clresourcegroup` command to switch the resource group to another cluster node, such as `node2`.**

```
# clresourcegroup online -n node2 resource-group
```

4. **Verify that the resource group and message queue resource is online.**

```
# clresourcegroup status  
# ps -ef
```

5. **Repeat [Step 2](#) through [Step 4](#) on all the potential primaries of the Oracle GlassFish Message Queue resource groups.**

Tuning the HA for Oracle GlassFish Message Queue Fault Monitor

The HA for Oracle GlassFish Message Queue fault monitor is contained in the resource that represents Oracle GlassFish Message Queue. You create this resource when you register and

configure HA for Oracle GlassFish Message Queue. For more information, see [“Registering and Configuring HA for Oracle GlassFish Message Queue” on page 24](#).

System properties and extension properties of this resource control the behavior of the fault monitor. The default values of these properties determine the preset behavior of the fault monitor. The preset behavior should be suitable for most Oracle Solaris Cluster installations. Therefore, you should tune the HA for Oracle GlassFish Message Queue fault monitor *only* if you need to modify this preset behavior.

For more information, see the following sections.

- [“Tuning Fault Monitors for Oracle Solaris Cluster Data Services” in Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide](#)
- [“Changing Resource Type, Resource Group, and Resource Properties” in Oracle Solaris Cluster 4.3 Data Services Planning and Administration Guide](#)
- The `r_properties(5)` man page

Operations by the Fault Monitor During a Probe

The HA for Oracle GlassFish Message Queue fault monitor uses the `Smooth_shutdown` extension property. For instructions on setting this property, see [“Setting HA for Oracle GlassFish Message Queue Extension Properties” on page 25](#).

The HA for Oracle GlassFish Message Queue probe sends a request to the server to query the health of the Oracle GlassFish Message Queue server instance.

The probe connects to the IP address and port combinations defined by the network resource configuration and the `Port_list` setting for the resource group. If the connection succeeds, the probe reads the port mapper information. Finally the probe disconnects. If any part of the connection fails, a failure is recorded.

Heavy network traffic, heavy system load, and misconfiguration can cause the query to fail. Misconfiguration can occur if you did not configure the Oracle GlassFish Message Queue server to listen on all the IP address and port combinations that are probed. The Oracle GlassFish Message Queue server should service every port for every IP address that is specified for this resource.

When the probe fails to connect to the server, a complete probe failure occurs. The following error message is sent, where the `%s` indicates the hostname and `%d` indicates the port number.

```
Failed to connect to the host <%s> and port <%d>.
```

The probe accumulates partial failures that happen within the resource property interval `Retry_interval` until they equal a complete failure that requires action.

The following are partial probe failures.

- Failure to disconnect. The following error message is sent, where %d indicates the port number and %s indicates the resource name.

```
Failed to disconnect from port %d of resource %s.
```

- Failure to complete all probe steps within Probe_timeout time.
- Failure to read data from the server for other reasons. The following error message is sent, where the first %s indicates the hostname, %d indicates the port number, and the second %s indicates further details about the error.

```
Failed to communicate with server %s port %d: %s
```

Based on the history of failures, a failure can cause either a local restart or a failover of the data service.

HA for Oracle GlassFish Message Queue Extension Properties

This section describes the extension properties for the resource type `SUNW.s1mq`. This resource type represents the Oracle GlassFish Message Queue application in an Oracle Solaris Cluster configuration.

For details about system-defined properties, see the [r_properties\(5\)](#) man page and the [rg_properties\(5\)](#) man page.

The extension properties of the `SUNW.s1mq` resource type are as follows:

Bin_dir

Indicates the location of Oracle GlassFish Message Queue server binaries. You must specify this property at resource creation time.

| | |
|------------------|-----------------------|
| Data type | String |
| Default | <code>/usr/bin</code> |
| Range | Not applicable |
| Tunable | At creation |

Broker_Name

The name of the broker to be monitored.

| | |
|------------------|--------------------|
| Data type | String |
| Default | No default defined |
| Range | Not applicable |
| Tunable | At creation |

Broker_User

User name of the managed broker. This property is needed only if Smooth_Shutdown=TRUE.

| | |
|------------------|--------------------|
| Data type | String |
| Default | No default defined |
| Range | Not applicable |
| Tunable | At any time |

Confdir_list

A path name that points to the configuration directory for the broker. HA for Oracle GlassFish Message Queue requires this extension property, and the property must have one entry.

| | |
|------------------|--------------------|
| Data type | String array |
| Default | No default defined |
| Range | Not applicable |
| Tunable | At creation |

Smooth_Shutdown

Indication of whether to enable smooth shutdown using the imqcmd command.

When this extension property is set to FALSE, the data service attempts to shut down the Oracle GlassFish Message Queue process first with SIGTERM, then with SIGKILL (9).

When this extension property is set to TRUE, the data service attempts a smooth shutdown of the process using the imqcmd command. If this extension property is TRUE, the extension property Broker_User must be set, and the password must be set in \$IMQ_VARHOME/instances/broker/scs1mqconfig.

Note - If this property is set to TRUE, the password can be seen in output from the ps command when the data service runs the imqcmd command with the password.

| | |
|------------------|----------------|
| Data type | Boolean |
| Default | FALSE |
| Range | Not applicable |

Tunable

At any time

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