Configuration considerations for Oracle 11.2.0.2 use on AIX

Redundant Interconnect Usage (HAIP)

With Oracle Database 11g Release 2, Patch Set One (11.2.0.2), Oracle introduced an integrated Redundant Interconnect Usage feature, which provides a highly available IP (HAIP) network functionality for the Oracle interconnect. The Redundant Interconnect Usage feature does not operate on the network interfaces directly. Instead, it is based on a multiple-listening-endpoint architecture, in which a highly available virtual IP (HAIP) is assigned to each private network (up to a total number of four interfaces). Previous to this version, Oracle RAC and Oracle Clusterware depended on AIX and respective OS features to provide a highly available network interface for the Oracle interconnect. With Oracle Database 11g Release 2 Patch Set One, customers have the choice to either continue to use the AIX provided HA network interface, or to use Oracle’s integrated Redundant Interconnect Usage feature, which will provide full high availability for an Oracle RAC Database and Oracle ASM of version 11.2.0.2 or higher. Oracle’s Redundant Interconnect Usage feature will protect production RAC databases where instances of the same database are not co-located on the same physical frame.

For upgrade customers, it is recommended to maintain their current, typically Etherchannel based, configuration as with pre-11.2.0.2 releases during upgrades. This will allow the Redundant Interconnect Usage to allocate an HAIP on top of the Etherchannel device, but will not enable load balancing or network failover based on the Oracle Redundant Interconnect Usage feature. Load balancing as well as network failover will continue to be managed by Etherchannel in this case; no further configuration steps required.

In order to fully enable Redundant Interconnect Usage to manage load balancing and network failover for the Oracle cluster interconnect, the Etherchannel configuration used for the Oracle interconnect should be removed and Oracle Redundant Interconnect Usage should be enabled directly on the devices formerly managed by Etherchannel. For more information refer to the Oracle Documentation on how to enable Redundant Interconnect Usage.

Hosting more than one instance of a production Oracle RAC cluster in the same physical environment or frame with a single point of failure (sharing components required for network connectivity, storage access, common Hypervisor, or other critical components) at the same time is generally not recommended by Oracle for a complete High Availability solution, as a failure of any of those shared components inevitably affects more than one instance of the production Oracle RAC database. Under certain circumstances, virtualization solutions and other techniques provided by the hardware or OS vendor may mitigate these negative effects, however, for critical and production deployments, clustering within the same frame, if it has a single point of failure, is discouraged. Furthermore, at this point in time, when enabling Redundant Interconnect Usage, avoid co-location of Oracle RAC instances belonging to the same production database on the same frame as described above, when configured with virtual Ethernet, as certain failures (e.g. the loss of a physical network and one VIO server) in the frame could lead to losing the majority of the Oracle RAC database instances. Oracle and IBM are working to integrate the Redundant Interconnect Usage feature so that optimized high availability can be ensured. Alternatively, physical devices (as opposed to virtual or VIO based devices) can be used and managed by the Redundant Interconnect Usage feature directly to avoid such scenarios.
Oracle’s My Oracle Support website has additional information on this topic. In addition, the IBM Oracle ICC regularly updates the white paper “Tips and Considerations for 11gR2 and AIX”. This document was just updated with information on HAIP. Please refer to the “Reference” section below for the links to these sources.

Reference

1. My Oracle Support (MOS) website (userid and password are required)
   https://support.oracle.com/CSP/ui/flash.html
   Please check document id 1356461.1 (Using HAIP Oracle 11.2.0.2 and AIX 7.1)

2. IBM ITSO website
   http://www.redbooks.ibm.com/

3. Oracle DB & RAC 11gR2 on IBM AIX: Tips and Considerations
   http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP101176

4. Oracle Clusterware 11g Release 2 white paper (see pages 12 and 13)

Please e-mail the IBM Oracle International Competency Center at ibmoracl@us.ibm.com with any questions you may have on this topic.