Order and Configuration Guide for HP Parallel Database Cluster for Oracle10g RAC on Red Hat Linux x86 32bit or 64 bit emulation (ProLiant)

HP Parallel Database Clusters (PDC) on Linux are built from select HP ProLiant servers (including Blades) and HP StorageWorks shared storage environments. HP tests these specific configurations for compatibility and stability. HP then provides the PDC Cluster Kit to assist customers in the deployment of these specific configurations and supports these tools with third level PDC support specialists. Additionally, HP or HP partners can deliver pre-configured PDC solutions to further accelerate time-to-deployment.

Before reading further, review the related "Support Matrix" for the PDC for Oracle 10g RAC on Linux for details on the HP products supported. This document defines the minimum requirements and limitations that must be met in configuring those products to receive PDC Cluster Kit support.

Important: Please note that the special PDC for Linux installation tools and processes delivered in the PDC Kit and associated collateral only apply to the specific configurations defined here and in the Parallel Database Cluster Support Matrix. Variations will be supported through standard HP Global Support and Oracle Support.

PDC for Linux Cluster Kit

The PDC for Linux Cluster Kit contains:

- Installation Documentation specific to the PDC configurations
- Installation scripts and utilities specific to the PDC configurations
- Test tools and processes for validating your installation

In addition, compliance with the PDC for Linux cluster definition and Kit procedures ensures that the PDC Support Specialists will be able to assist you with any initial deployment issues you may encounter.

Configuration Guidelines

To purchase the necessary components for a Parallel Database Cluster for Red Hat Linux, follow these steps:
1. Select the servers and options
2. Select the storage components
3. Define a dedicated Ethernet or Gigabit Ethernet interconnect configuration for the cluster
4. Select the optional hardware support upgrades
5. Include the PDC for Linux Cluster Kit
6. Select the HP Red Hat Linux subscription and CarePaq support level
7. Acquire necessary Oracle and RAC software and support
8. Include the optional Professional Services as desired

Step 1: Select the Servers and Options

Servers

Refer to the PDC for Red Hat Linux Support Matrix and the server Quick Specs fro Operating Systems support. All processor speeds of the servers listed in the Support Matrix are supported.

PDC Requirements:

- Select from the specific ProLiant servers models (including DL380 Packaged Clusters and Blades) listed in the PDC for Linux "Support Matrix"

- Maximum of eight node clusters (larger systems supported as "Custom Solutions" - contact HP Services)
- Processors: 2 minimum (any speed)
- Memory per server: 2 GB minimum
- (For post installation upgrades/expansion - servers in the cluster may be different Models, however, it is highly recommended that matched servers be used wherever possible, as additional tuning and load balancing complexities will result from unbalanced configurations.)
- Each server must have a minimum of two internal 36 Gb Disk Drives that will be mirrored using the standard integrated Smart Array Controller.
- For Fiber Channel configurations (MSA1000 or EVA) each server must have at least one HP Host Bus Adapter – see Storage Components.

Options:

- Refer to the server QuickSpecs. Unless specifically noted, all options specified in the server QuickSpecs that are also supported under the Linux support page (http://h18000.www1.hp.com/products/servers/linux/index.html) are supported for the PDC for Linux.
- NIC Teaming is supported - following options are possible:
    1. No redundancy for cluster Interconnect or public LAN connections: requires two PCI-X ports be available. One for cluster Interconnect and one for public LAN connections.
    2. Redundant Cluster Interconnect only: requires three PCI-X ports be available. Two for cluster Interconnect and one for public LAN connections.
    3. Redundant Cluster Interconnect and Public LAN connections: requries Four PCIX ports be available. Two for cluster Interconnect and Two for public LAN connections.

Step 2: Select the Storage Components

Refer to the PDC for Red Hat Linux Support Matrix and storage QuickSpecs for generic configuration details.

PDC Limitations and Requirements:

For Fiber Channel SAN configurations:

- 2 GB SAN interconnect components only
- Switches: 2 GB Fibre Channel Infrastructure family of switches (external)
- Single path or dual path configurations (i.e. controller, switch, HBA)
- HBA – FCA2214 only
- HP StorageWorks SAN Management Appliance is required

For MSA500 (DL380 G4 Packaged Cluster) configurations:

- Standard configuration rules apply

Step 3: Define a dedicated Ethernet interconnect for the cluster

Refer to the PDC for Red Hat Linux Support Matrix and network product QuickSpecs for generic configuration details.

PDC Limitations and Requirements:

Gigabit Ethernet interconnects only
Oracle RAC requires a dedicated cluster interconnect isolated from any other network traffic.
- An Ethernet Switch is recommended in all configurations (Ethernet cross over cable is supported for use with the DL380 G4 Packaged Cluster for Linux to provide a low cost development system only).
- Redundant Ethernet configurations are recommended (NIC teaming). The following options are available:

- o Redundant Cluster Interconnect only: Must have three PCI-X ports available. Two for cluster Interconnect and one for public LAN connections.
- o Redundant Cluster Interconnect and Public LAN connections: Must have Four PCI-X ports available. Two for cluster Interconnect and Two for public LAN connections.

Step 4: Select the recommended hardware support upgrades

It is highly recommended that all hardware components (servers, storage array, switches) have at minimum 9x5, 4 hour response level support; refer to the individual product Quick Specs for associated Service Options.

Step 5: Request the PDC for Linux Cluster Kit
The PDC for Linux Cluster Kit includes:
- User Installation and Administrators Guide for Cluster Specific components
- Installation scripts and utilities
- Test tools and processes for validating your installation

Request your complimentary PDC Cluster Kit via e-mail to RAC_Contact@HP.com.

For any issues encountered using the PDC Kit for initial deployment, contact the PDC Team via e-mail to RAC_Contact@HP.com. For any subsequent issues, contact your local HP support office for assistance, when providing system details note that you are using a PDC compliant configuration.

Step 6: Select the HP Red Hat Linux subscription support level

Red Hat Enterprise Linux AS 3.0 is available in 1 year or 3 year subscriptions with support response levels to meet your business needs through HP's award winning Global Support network. For more details see http://www.hp.com/products/servers/linux/redhat/

Step 7: Acquire Oracle and RAC software and Licenses (Oracle upgraded support contracts are highly recommended)

Oracle and the Real Application Cluster option are purchased separately. It is highly recommend that the customer purchase upgraded support for their Oracle software.

Step 8: Include optional Professional Services on site installation and training where available

The standard components of the PDC for Linux solution are backed by a portfolio of HP's industry leading service and support offerings. In addition, HP offers specific services targeting the optimal integration and deployment of Oracle grid computing environments:

- The HP Start-up Service for PDC RAC (HA533AE) (http://h18022.www1.hp.com/solutions/enterprise/highavailability/oracle/linux-rac/documentation.html)
- The HP and Oracle Grid Accelerator Service (http://www.oracle.com/technology/consulting/10gservices/hp.html)

Validation of plan configurations is available by e-mailing RAC_Contact@HP.com .