

### Overview

#### HP ProLiant Parallel Database Cluster solutions

HP Parallel Database Cluster solutions provide high availability, scalability, and manageability for Oracle applications and data in business-critical environments. The Parallel Database Cluster (PDC) for Oracle9i is a hardware and software configuration specifically designed and tested for use with Oracle9i Real Application Cluster (RAC) software. The PDC is specifically designed to leverage Oracle RAC cluster functionality by integrating HP server, storage and management technologies for maximum availability on an industry standard platform. The PDC for EVA product is offered as an on-site implementation via HP Services.

#### Product Description

The PDC for EVA supports a two to six node cluster of HP ProLiant servers running Oracle9i Real Application Clusters. PDC for EVA clusters are comprised of:

- Select ProLiant Servers (Please refer to the PDC for EVA Support Matrix for supported ProLiant Server models in the PDC for EVA cluster configurations at the following URL: <http://h18022.www1.hp.com/solutions/enterprise/highavailability/oracle/index.html>)
- StorageWorks Enterprise Virtual Array (EVA) 3000 or 5000 Storage subsystem as shared storage
- Ethernet or Gigabit Ethernet dedicated cluster Interconnects
- HP Consulting and Integration on-site implementation service. Please call 1-800-289-9052 to request details on available PDC services. HP offers the initial Oracle Parallel Database Cluster Installation & Configuration Service, ask for HP part # QR-SMPDC-BZ.

# QuickSpecs

## HP PDC Model for EVA for Oracle9i Real Application Clusters on Windows 2000

### Product Highlights

#### Maximum Availability, Minimum Cost

The PDC for EVA exploits fully redundant and optimized Windows Server-based ProLiant servers and other highly reliable, industry-standard hardware. It provides significantly improved uptime and lower operating costs than multiple single-server or proprietary database implementations.

The PDC for EVA configurations have been tested with optimized ProLiant Server models and the StorageWorks Enterprise Virtual Array (EVA) 3000 and 5000. The StorageWorks Enterprise Virtual Array (EVA) is the newest generation of the StorageWorks Disk Array that is enabled by VersaStor technology. EVA is a high performance, high capacity and high availability "virtual" RAID storage solution for the high-end enterprise class marketplace that removes the time, space and cost boundaries of traditionally architected storage. EVA is designed for the data center where there is a critical need for improved storage utilization and scalability while meeting application specific demands for consistently high transaction I/O and MB data rate performance, seamless capacity expansion, instantaneous replication, and simplified storage administration.

The PDC for EVA configuration supports multiple redundant Fibre Channel SANs with Short Wave GBICs and multi-mode Fibre optic cabling. The SAN configuration is fully redundant with dual I/O paths from each server to the shared EVA storage. Management and availability of the SAN is delivered through HP SecurePath multi-path software. One Secure Path license must be purchased per server.

#### Increased Throughput and Simplified Management with Oracle Software

All nodes within the PDC for EVA Cluster share a single Oracle database. Oracle9i Real application Cluster software increases throughput to the Oracle database by coordinating each server's access to the data and allows the entire cluster to be managed from a single workstation-providing increased performance and simplified management of the database.

#### Automatic Online Recovery

In the event of a node failure, the remaining nodes continue to access the database. Users of the failed node can automatically be redirected to another node in the cluster and continue processing. The surviving nodes automatically recover all of the transactions performed by the applications before the failure occurred, ensuring data integrity.

### Hardware Configuration Elements

- HP ProLiant Servers (two to six nodes of the same model. Please refer to the PDC for EVA Support Matrix for supported ProLiant Server models in the PDC for EVA cluster configurations at the following URL:  
<http://h18022.www1.hp.com/solutions/enterprise/highavailability/oracle/index.html>)
- StorageWorks Enterprise Virtual Array (EVA) 3000 or 5000 Storage subsystem as shared storage
- 100BaseTX Ethernet Interconnect or Gigabit Ethernet Interconnect

### Components

#### Servers

The PDC for EVA cluster supports 2 to 6 nodes of ProLiant server. Please refer to the PDC for EVA Support Matrix for supported ProLiant Server models in the PDC for EVA configurations. The PDC for EVA Cluster must be identically configured, including:

- All the servers within a PDC for EVA cluster must belong to the same server model
- Each server should have a minimum of 2 processors to ensure stable performance
- Each ProLiant server in the PDC for EVA Cluster is recommended to have a minimum of 2GB of memory.

The servers within a PDC for EVA cluster must be balanced. That is, each server must have the same type and number of processors, the same amount of primary and secondary cache, and the same type and amount of memory

#### Storage

The PDC for EVA configurations have been qualified with the HP StorageWorks Enterprise Virtual Array 3000 or 5000. The StorageWorks Enterprise Virtual Array (EVA) is the newest generation of the StorageWorks Disk Array that is enabled by VersaStor technology. EVA is a high performance, high capacity and high availability "virtual" RAID storage solution for the high-end enterprise class marketplace that removes the time, space and cost boundaries of traditionally architected storage. EVA is designed for the data center where there is a critical need for improved storage utilization and scalability while meeting application specific demands for consistently high transaction I/O and MB data rate performance, seamless capacity expansion, instantaneous replication, and simplified storage administration. Additional information on StorageWorks Enterprise Virtual Array is available at

<http://h18006.www1.hp.com/storage/array systems.html>

The PDC for EVA cluster configuration supports redundant Fibre Channel SANs.

#### Cluster Interconnect

The PDC for EVA cluster supports standard Ethernet or Gigabit Ethernet interconnects. A redundant interconnect is optional but recommended. The interconnect must be dedicated to inter-cluster communication only.

**NOTE:** Ethernet 'cross over' cabling is not supported for RAC and may result in erroneous cluster error conditions.

#### Secure Path

The PDC for EVA cluster requires one secure path license per server. Detailed information on StorageWorks software and ordering information can be found at: <http://h18006.www1.hp.com/products/sanworks/secure-path/index.html>. See the PDC for EVA Support Matrix for the Secure Path version required.

#### Supported Operating Systems

The PDC for EVA supports Windows 2000 Advanced Server with Service Pack 3 or higher.

#### Service and Support

HP Customer Services organization has participated in the definition and delivery of supporting services for the PDC for EVA product. Please call 1-800- 289-9052 to request the details on available services for the hardware, the software and the clusters. Ask for HP Part # QR-SMPDC-BZ. Additional information about the initial Oracle Parallel Database Cluster Installation & Configuration Service is available at: [http://www.hp.com/hps/partners/pa\\_oracle.html](http://www.hp.com/hps/partners/pa_oracle.html) HP servers and storage systems are protected by HP Services including a three-year limited warranty<sup>1</sup>, 7 x 24 hardware technical phone support and on-line support through CompuServe, Prodigy, America Online and the Internet.

For more information on support offerings for your HP hardware, contact your HP Authorized Service Provider.

**NOTE:** Certain restrictions and exclusions apply. Consult the HP Customer Support Center at 1-800-345-1518 for details.

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