INTRODUCTION

The amount of data stored in databases have been growing exponentially over the recent years in both transactional and data warehouse environments. In addition to the enormous data growth users require faster processing of the data to meet business requirements.

Parallel execution is key for large scale data processing. Using parallelism, hundreds of terabytes of data can be processed in minutes, not hours or days. Parallel execution uses multiple processes to accomplish a single task. The more effectively the database can leverage all hardware resources - multiple CPUs, multiple IO channels, multiple storage units, multiple nodes in a cluster - the more efficiently queries and other database operations will be processed. 5.12.4

Large data warehouses should always use parallel execution to achieve good performance. Specific operations in OLTP applications, such as batch operations, can also significantly benefit from parallel execution. This paper covers three main topics:

- **Fundamental concepts of parallel execution** – why should you use parallel execution and what are the fundamental principles behind it.
- **Oracle's parallel execution implementation and enhancements –** here you will become familiar with Oracle's parallel architecture, learn Oracle-specific terminology around parallel execution, and understand the basics of how to control and identify parallel SQL processing.
- **Controlling parallel execution in the Oracle Database** – this last section shows how to enable and control parallelism within the Oracle environment, giving you an overview of what a DBA needs to think about.