

Foreword

As a database management system, the management of Oracle file structures is critically important to the successful operation of any system. The Oracle administrator must understand all levels of Oracle file management, including data file management principles, tablespace management principles, and the storage of individual objects within the tablespaces. As Oracle has evolved into one of the world's most complex database management systems, it is imperative that all Oracle professionals understand how their information is stored both at the logical and physical level. The purpose of this book is to bring together some of the world's best experts to talk about storage management internals and to provide you with insights into the successful operation of large complex Oracle databases.

This book is designed to provide you with specific insights and techniques that you can use to immediately be successful within your Oracle enterprise. Given the amazing wealth of choices that Oracle offers with regard to data storage mechanisms, it is important for the Oracle professional to understand which mechanisms are appropriate, and not appropriate, for their specific database needs. The focus of this book is going to be about how you can leverage Oracle's wealth of choices in order to choose the optimal configuration for your I/O subsystem.

This book will review Space Management in six functional areas: Data Files, Tablespaces, Tables, Indexes, Partitioning, and Replication.

In the section on space management as it applies to data files, this text covers relevant topics such as I/O contention,

determining which files need resizing and the optimum size to make them, tuning to reduce disk I/O, using *v\$segstat* and *v\$segment_statistics* to isolate segment level problems, index compression and Index Organized Tables (IOT), simplifying the process of verifying that your backup ran successfully, Interested Transaction List (ITL) waits, and what to consider before re-writing SQL statements to try to save CPU costs.

Space management for tablespaces offers a PL/SQL package to automate database cleanup, a thorough discussion of TEMP tablespaces, a section on the ability of Oracle's datasever to manage itself, strategies for using locally-managed tablespaces, and a discussion of Oracle's ability to support multiple block sizes

In the discussion on space management for tables you will read about automating periodic table and index reorganization, and the practical application, management, and performance issues of external tables.

This text also covers how to rebuild indexes without worrying about fragmentation, and how to size indexes for new and existing tables. There is a discussion on how to partition tables and then some of the perils and pitfalls to watch for. The text wraps up with a discussion on automating replication.

We hope you will be able to apply some of the techniques offered in this text to your production environment to enhance the success of your Oracle enterprise.