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THE INTRODUCTION TO PRIVATE CLOUD USING ORACLE EXADATA AND ORACLE DATABASE

Okcan Yasin Saygili



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Preface

The products described in this book are actually divided into two parts, one of which is Exadata and the other is Oracle's own database. These two products are handled separately; each one has been described independently in the book. For instance, all the database structures in the book were tested and written in Oracle Database (software only) and tested in virtual machine, not on the database in Exadata. In examples shown, because of this issue, performance loss in the database or a different expression is not related to Exadata and is directly related to the database in the virtual machine. As I said earlier, I have explained Exadata hardware and database separately. When writing the database section, I didn't describe directly Exadata's database, but rather I wrote about the database software only in a virtual system.



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Cloud Computing

1

The invention of the computer was actually the beginning of a new era. It was the precursor to a data repository that had not evolved in the earlier part of this era. When the repository for data was originally invented, no one knew how important its use would be in the future. Storing data, which has been one of the two most important functions since the advent of information technology (IT), is likely to keep us more occupied in the future. The storage and processing of data is a costly affair. The cost of processing and maintenance is significant when the companies store data in their data centers, and mostly companies would prefer to avoid such situations. Cloud computing is a new technology of this era that is growing and expanding day by day. Today, data of media, such as Dropbox and Instagram, and also all the enterprise data are stored in the cloud. Nowadays all companies are investigating how to store their data for future use, but some companies already have these data in place. In this trend, the IT industry seeks to move on-premise solutions to the cloud. The advantage of cloud is the saving in cost achieved by the use of solutions. Therefore, IT projects can be initialized at minimum cost. On the other hand, there is no cost saving with on-premise solutions as they are purchased. However, most of the time, these solutions aren't estimated correctly or used completely. A project may be started without expensive hardware and software and then updated to meet new requirements. Cloud solutions provide an opportunity to a team's members to work together, where each member of the team can, for example, easily connect to a cloud account for editing, copying, and deleting team documents on the cloud service. In general, cloud services are of two types, namely, public and private cloud. If everyone can access a cloud service, it is a public cloud. If the access to the cloud service is restricted to an organization, it is a private cloud. This book discusses about private cloud service.

Cloud is the most important technology in the world of informatics. The IT sector is growing day by day, and hence, the cloud data is also increasing. At this point, where to store the data and how to manage it under a single roof are the problems to be addressed; moreover, the processing of data is a separate and critical problem of the sector.

One of the most important topics of my work is cloud technologies and Gartner's estimated cloud technologies, which predicted that the market value of cloud technologies will increase from \$209 billion in 2016 to \$246.8 billion in 2020. It is not usually possible to see such a big market (Facebook, Instagram, etc.).

The management and maintenance of heterogeneous systems is very difficult. Therefore, the architecture and data of the system must be created and managed very well. So far, cloud systems primarily have been the backbone of a company, and they will continue to be so in the future as well [1,2].

PROBLEMS IN ON-PREMISE TECHNOLOGIES

Security Problems in On-Premise Technologies

Breach of security, especially information security, is one of the issues that we increasingly see in Turkey. As we are in the initial stages of providing better security, understanding some basic concepts is important. These basic concepts are the subject of this book. The lack of understanding of these basic concepts leads to solutions that provide security starts from the beginning. These solutions are mostly short term and cannot achieve success in the long term. In places where there is no cloud technology, it is more difficult to maintain security [1,2].

Cost Problems in On-Premise Technologies

The most expensive item in the IT sector is the employee, and this is the main reason for the transition to cloud technologies.

Effect of Natural Life in On-Premise Technologies

Cloud technologies in certain places, especially in distributed form of different types of software, work on servers that have been damaged to a certain extent during their operational life. These systems consume more electricity than required, and the cooling of unnecessary servers in operation involves additional costs.