Meeting 10/11/17

Wednesday, October 11, 2017   11:00 AM

Attendees:
Kirby Sand, Andy Weiss
Alex Schultz, Dylan Davis, Trevor Hammock

Agenda:
1) Get Oracle set up on personal machines (Andy leads)
2) Phase 1: Experimentation (Kirby leads)

Environment:
- Virtual Box
- Oracle DB 12.2
- SQL Developer (GUI) || SQL+ (CLI)
- Oracle Linux 7.4 (REL not DLP)
- 2GB/4GB RAM | 60GB partition
- 8k block sizes, but will test on 8k/16k/32k

A good resource for how-to is oracle-base.com

Notes:
- We are compressing in an OLAP environment
- Oracle Database Instances
    - An instance is a set of memory structures that manage db files.
    - When an instance is started, Oracle db allocates the SGA (system global area)
        - SGA maintains internal data structures, accessed by many processes / threads concurrently
        - SGA caches data blocks read from the disk
        - Buffers redo data before writing it to the online redo log files
        - Stores SQL execution plans
    - The Program Global Area (PGA) is a private memory region that contains the data and control information for a server process. Only a server process can access the PGA.
    - The buffer cache stores data blocks read from the disk.
- Virtual hierarchy
    - Table space > segment > extent > block
    - Multiple tiles on disk make up the table space
    - Segment: takes up space of all extents together
    - Extent: determines how many blocks are needed. Multiple consecutive blocks

- Access Path: full table scan
- There are two ways to read off disk (I/O)
    - Single block read
    - Multi block read

Resources:
- **Oracle 12.2 Database concepts**
    - https://docs.oracle.com/database/122/CNCPT/toc.htm
- **Database Concepts**

- o https://docs.oracle.com/cloud/latest/db112/CNCPT/startup.htm#CNCPT89033
- **Database Glossary**
  - o https://docs.oracle.com/cloud/latest/db112/CNCPT/glossary.htm#CNCPT89131
- **PGA**
  - o http://docs.oracle.com/database/121/TGDBA/tune_pga.htm#TGDBA470

Action items / final thoughts:
- Finish setting up Oracle on Virtual Box
- When googling, use "oracle 12.2" to ensure results are within scope
- Read up on compression
- How to look through a block
- What information is contained on a block
- Become familiar with terminology