

The logo for enKitec, featuring a stylized white wave or leaf-like shape above the text.

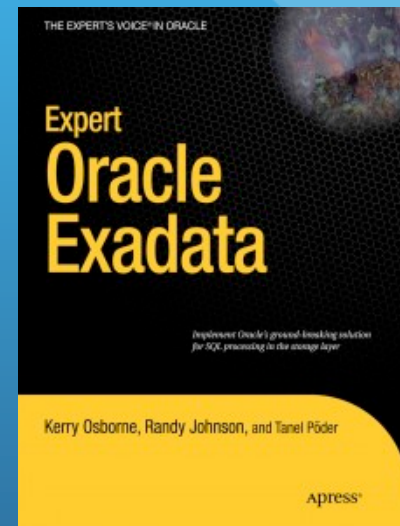
enKitec Exadata
Solution Overview

Presented by: Kerry Osborne

May 3, 2011

whoami -

Worked with Oracle Since 1982 (V2)
Work for Enkitec (www.enkitec.com)
Working with Exadata since early 2010
(Enkitec owns a Half Rack – V2/X2)
Many Exadata customers and POCs
Many Exadata Presentations (some to Oracle)
Working on Exadata Book



(kerryosborne.oracle-guy.com)

enkitec

Speaking After a Meal



Can be Challenging!

Who is Using Exadata?

- Market Research Companies
- Retail (Grocer)
- Logistics
- Government - State and Federal
- Mortgage Processing
- Oil and Gas
- Medical Clinics
- Document Processing Outsourcing



Who is Looking at Exadata?

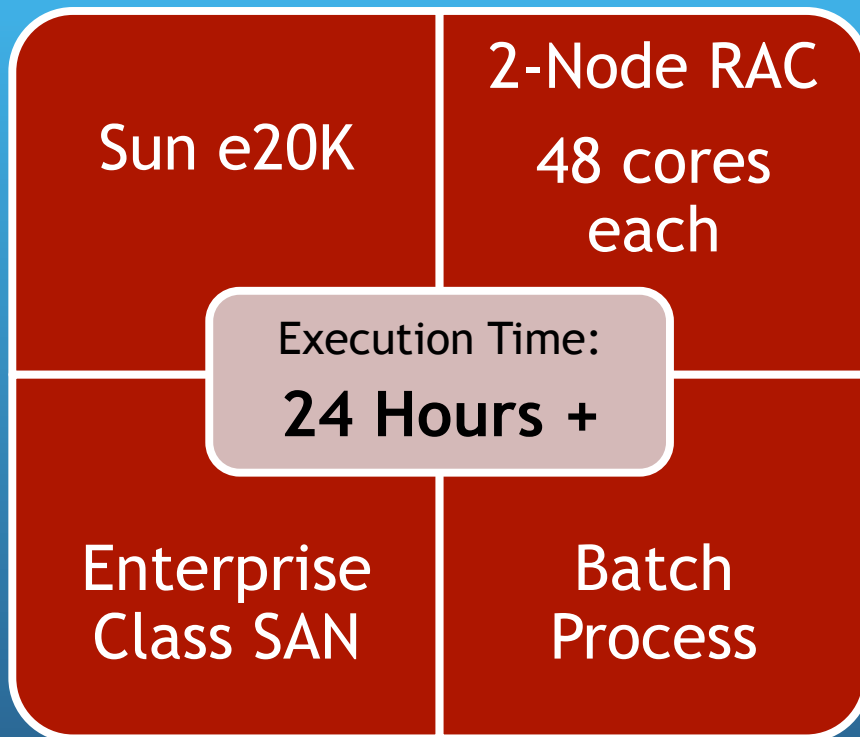
- Real Estate Services Firm
- Large Energy Company
- Telco Provider
- Retail
- Banking
- Secure Logistics (moving cash)
- Behavioral Health Organization

Who is Looking at Exadata?

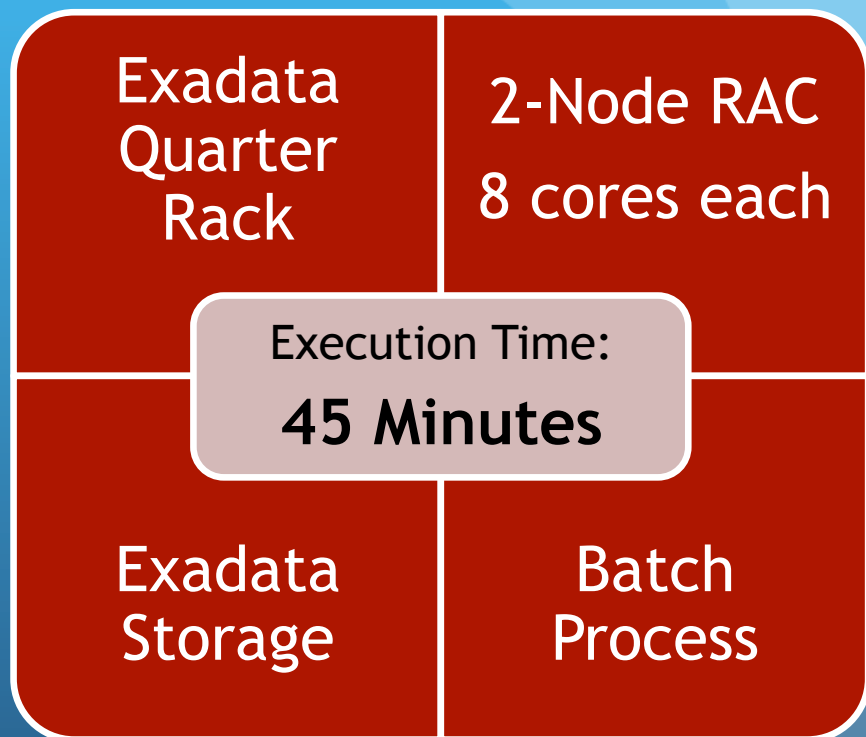
- Example: Market Research Entity With Millions of Members
- High Volume Survey Generation
- Very High OLTP Volume
- Extreme Loads on Data Warehouse for Analysis
- Data Manipulation for Presentation to Customers

Traditional Architecture vs Exadata

Traditional



Exadata



Execution Time Improved by 32x



What is Exadata?

- Revolutionary Approach to Oracle Database Processing
- Database Servers, Storage and Network in a Single Enclosure
- High Bandwidth Network Connects Database and Storage Servers
- Intelligent Storage Filters Data and Minimizes Network Traffic
- Optimized for Both Data Warehouse and OLTP Activity



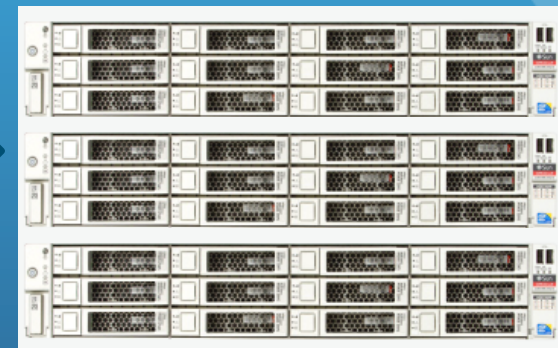
What is Exadata?

Exadata Database Servers



11gR2 / ASM

Exadata Storage Servers



cellsrv



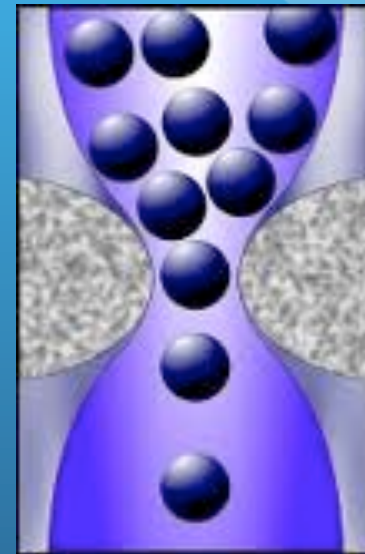
iDB / RDS

The Big Ah Ha!

The Bottleneck on Many (Most) Large Databases is between the Disk and the DB Server(s)!

How to Speed Up?

Make the Pipe Bigger/Faster
Reduce the Volume



* The fast way to do anything is not to do it!

Offloading - The “Secret Sauce”

Offloading vs. Smart Scan
(what’s the difference)

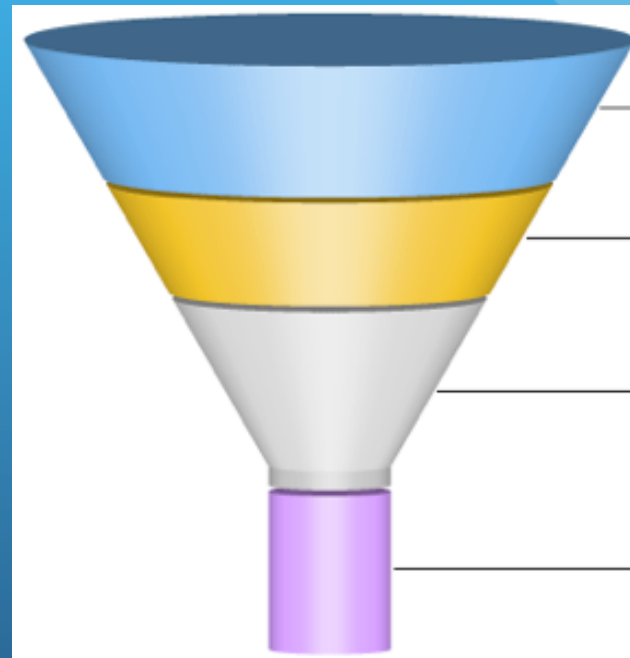
Offloading – generic term meaning doing work at the storage layer instead of at the database layer

Smart Scan – query optimizations covered by “cell smart table/index scan” wait events



Smart Scan Optimizations

Column Projection
Predicate Filtering
Storage Indexes
Simple Joins
Function Offloading
Virtual Column Evaluation
HCC Decompression
Decryption



Business Benefits of Exadata

- Extreme Performance*
- Pre-configured - Ready for Production in Weeks, not Months
- Single Source for Support - Hardware / Storage / Network
- No Need to Modify Oracle-based Applications
- Highly Scalable
- Optimized for Mixed Workload Environments
- HCC Compression

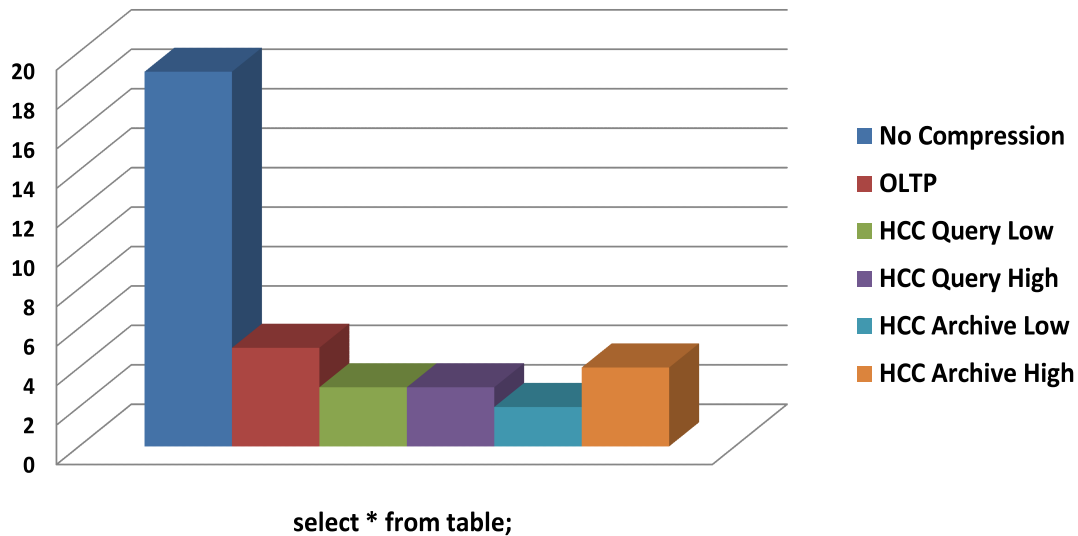


Rapid Deployment: Marketing Analytics Provider

- Quarter Rack Delivered in April - Full Production in Less than 30 Days
- Quarter Rack Delivered in May - Configured With DataGuard for DR in One Week
- No Changes Made to Current Applications or Tools
- Heavy Utilization of Hybrid Columnar Compression

Rapid Deployment: Marketing Analytics Provider

HCC Effect on Query Performance



HCC Compression

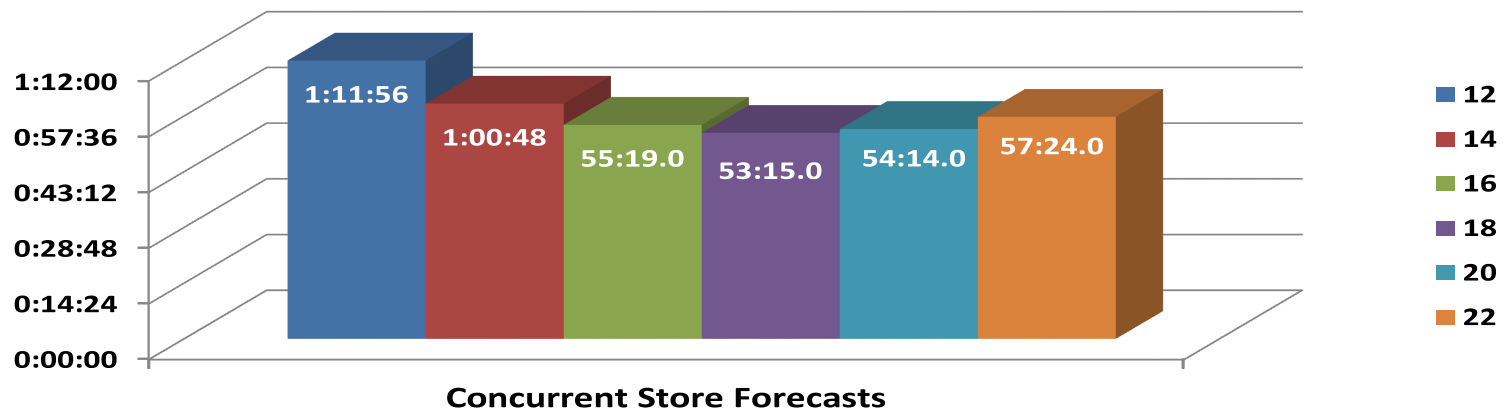
| Type | Size | Ratio |
|------------|---------|-------|
| None | 33.6 G | 0% |
| Advanced | 10.51 G | 219% |
| Query Low | 5.05 G | 563% |
| Query High | 3.04 G | 1002% |
| Arch Low | 2.67 G | 1153% |
| Arch High | 2.29 G | 1360% |

High Performance: Large Scale Retail Comparison

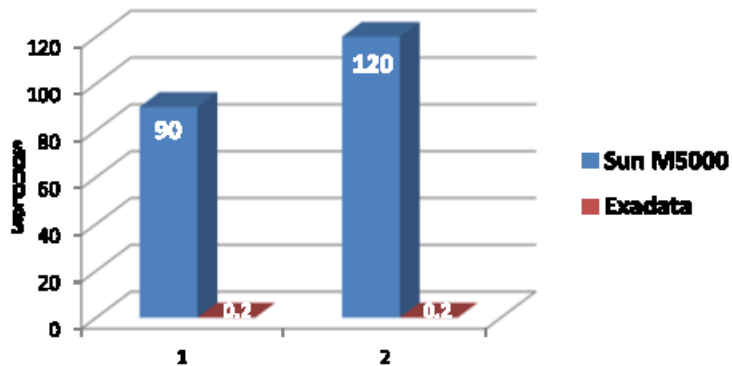
| Customer Environment 32 Core (RISC) Max RAM Solid State SAN | Enkitech Exadata Environment Quarter Rack - 16 Core Intel |
|--|--|
| Test 1 - Nightly Forecast 4 Concurrent Stores Execution Time: 2.75 hours | Test 1 - Nightly Forecast 18 Concurrent Stores Execution Time: 53 Minutes |
| Test 2 - PO Build Plan Execution Time: 120 seconds each | Test 2 - PO Build Plan Execution Time: 0.2 seconds |
| Test 3 - Ad Hoc Queries 56 minutes 27 minutes 4 minutes | Test 3 - Ad Hoc Queries 4.5 minutes 8 minutes 3 seconds |

High Performance: Large Scale Retail Overview

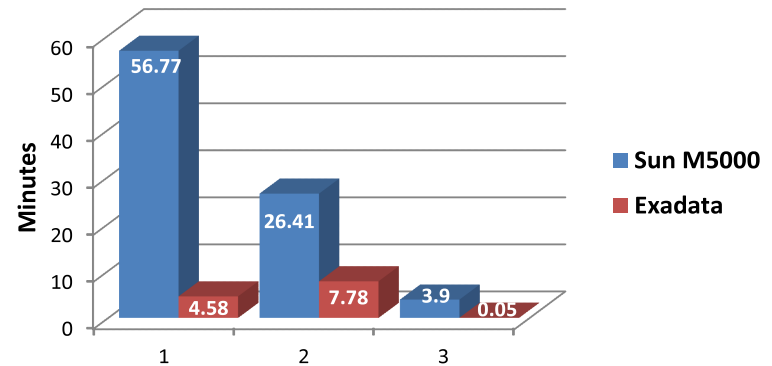
Daily Forecast - Time to Completion



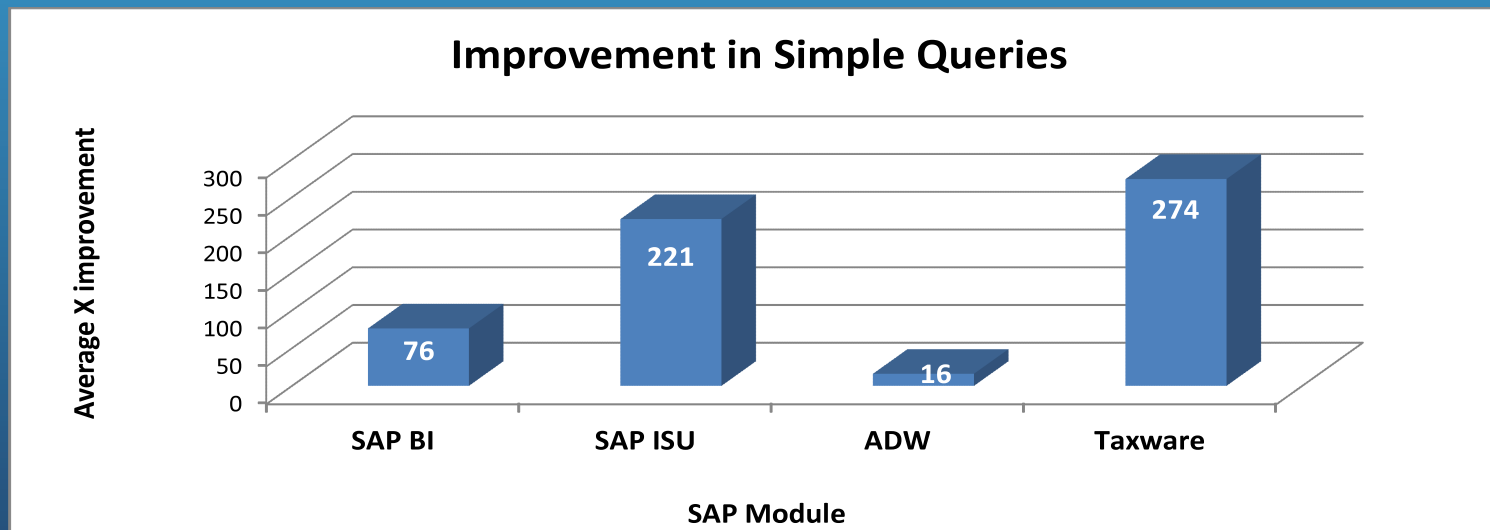
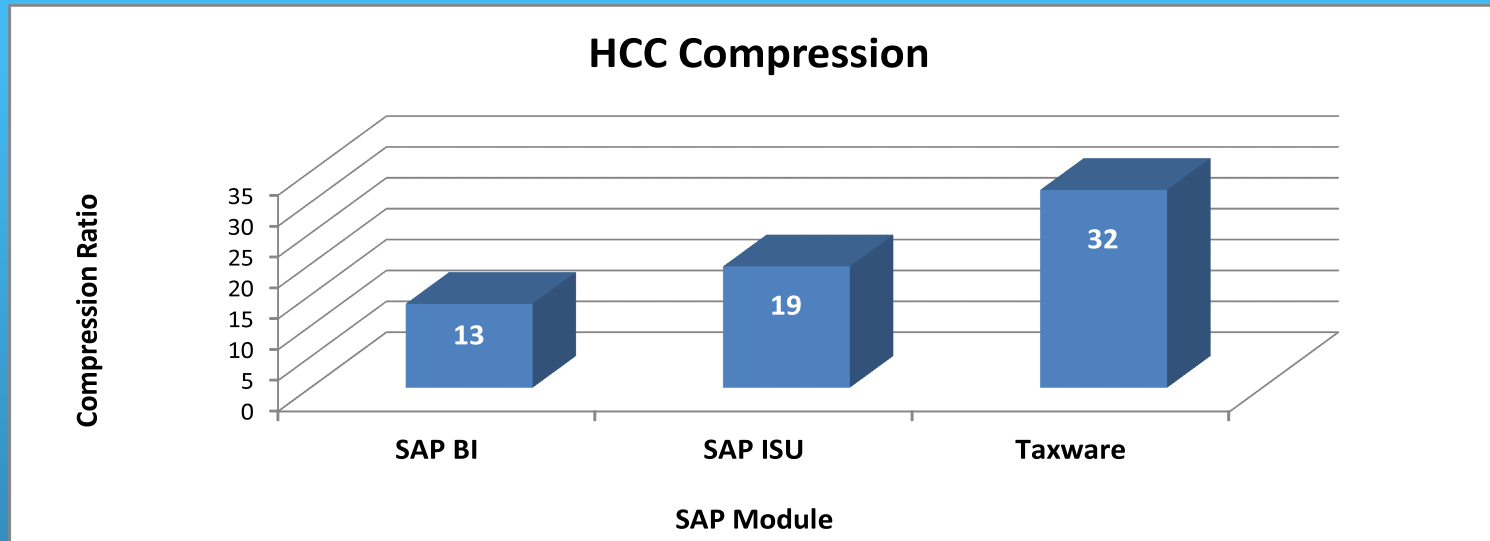
Purchase Order Build Time



Ad Hoc Query Execution Time

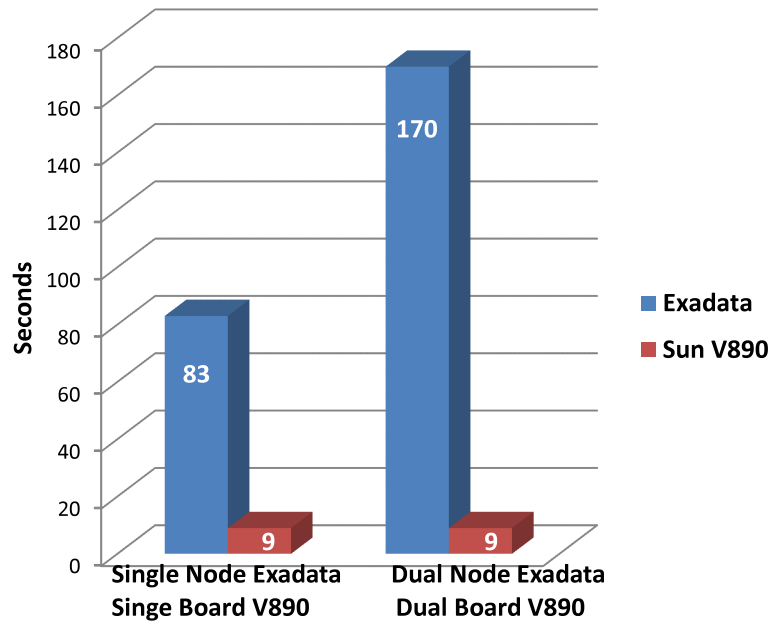


SAP Performance : Public Utility

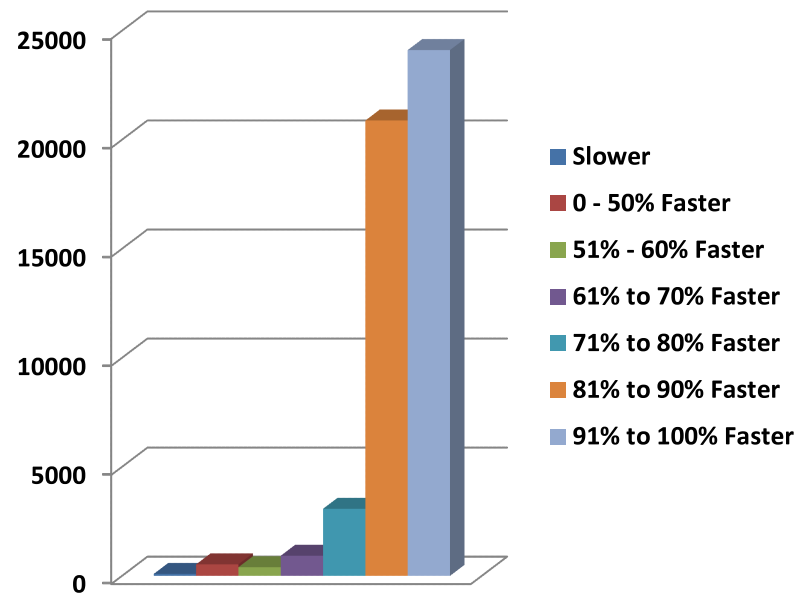


High Performance: Loyalty Program Manager

Average Throughput per Second



Number of Lookups which Performed Faster on Exadata

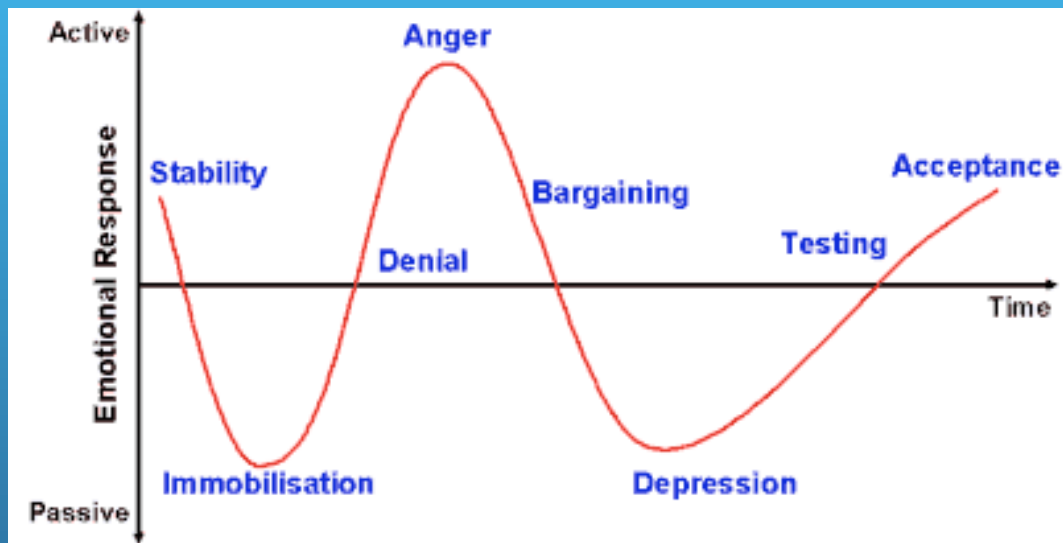


High Transaction Volume: Telco Provider

- Customer Runs Dell, 16 Core Machines in Multiple RAC Instances
- Very High Volume of OLTP and Data Warehouse Type Queries on Same Database
- Performance Differences Were Too Excessive to Graph

| SQL | Current | Exadata | Times Faster |
|-----------------------------------|----------|----------|--------------|
| Process 1: 6-Month Data Volume | 52 min | 19.5 sec | 160 x |
| Process 2: 3-Month Data Volume | 51 min | 11.5 sec | 269 x |
| Process 3: 1-Year Data Volume | 50 min | 37.5 sec | 81 x |
| Process 4: 2-Month Data Volume | 48 min | 9.4 sec | 308 x |
| Update SCN_CALL_PARTY_LOG | 13 min | 1.05 sec | 744 x |
| Update SCN_CALL_PARTY_IDENT_LOG | 7 min | .23 sec | 1871 x |
| Select SCN_CALL_PARTY_EXTDATA_LOG | 6.75 min | .47 sec | 868 x |

The Kübler-Ross grief cycle



Exposure to Exadata

Exadata Capabilities - Wrap-up

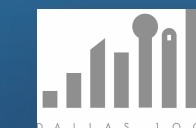
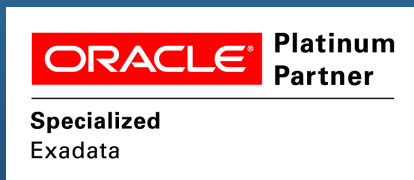
- Speed to Market
- Easy Transition from Legacy Systems to Exadata
- Simple and Accurate Application Migration
- Consolidation Platform
- Radical Compression
- Extreme Performance





Questions?

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Fastest Growing Companies
in Dallas