# **CME** Group Overview

CME Group is the world's leading and most diverse derivatives marketplace bringing together those who need to manage risk or those that want to profit by accepting it.



- Operating Multiple Exchanges CME, CBOT, Nymex and COMEX
- Trade hundreds of products across the globe on a single platform
- Average daily volume of 15.6 million contracts



- CME Clearing matches and settles all trades and guarantees the creditworthiness of every transaction
- Cleared more than 4.9 billion contracts with a value exceeding \$1 quadrillion
- Highest Volume Day 51.9 million contracts

# Who am I

- Christopher Guillaume, Senior Oracle DBA @ CME Group
- Oracle DBA since over 20 years
- Former Certified Oracle Instructor
- Working in Financial Industry since 2004, at CME Group since 2012
- Lead Exadata Response Team

## **Exadata**

#### What we currently have:

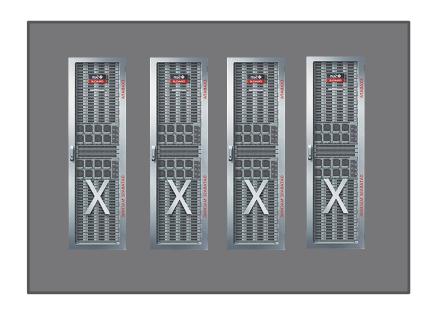
- Originally started on X2
- Currently on X6 and an X7
- Datawarehouse utilizes a 1 ½ rack
- OLTP utilizes 3 separate ½ racks
- DR Matches Prod (minus Local Standby)

## **CME HA/DR Requirements:**

- An Exadata Failure Cannot Cause a DR Event
- Allow Mid-Week End-to-End testing in DR
- Provide safe means to test applications in Production (Saturday Test)
- Continuous DB availability through planned maintenance for critical applications
- Allow for customers to retrieve critical data while Recovery is happening.

### **Disaster Recovery:**

- Critical DB's 10 second outage
- Recovery Point Objective (RPO) 30 seconds
- Recovery Time Objective (RTO) 2 hours for system
- RTO 5 minutes for Databases



# **CME HA Architecture**

- Multiple Databases running on
  - Single Servers
  - RAC
  - Exadata (Shown)
- Each Prod Database is replicated locally and remotely
  - BLUE Local (Fast Sync)
  - Gray Async
- Dedicated Local DG Recipient
- Active DG in DR
- Multiple Complete Exadata Failures need to occur in order for DR event to happen
- Running over 100 apps and more than 200 services

