

## **Advanced RAC Training – Part 2**

### **RAC Performance - Network**

- Engineering network to suite application workload
- Performance, scalability issues with various network configuration
- Performance analysis of Network Hardware
- Jumbo packets versus Non-jumbo packet
- Detecting lost packets.

### **Memory management in RAC**

- SGA configuration – Why SGA size matters in RAC?
- Buffer cache management
- Troubleshooting shared pool issues, RAC specific allocations
- Shared pool durations and heapdump analysis

### **RAC – PQ and PX**

- Parallel query in RAC
- Controlling parallelism: Intra-instance and Inter-instance parallelism
- 10g, 11g new features in parallel processing
- Partitioning, PQ and RAC
- Troubleshooting parallelism issues
- How to improve PX performance using few basic techniques?

### **RAC performance: Locks and Latches GES layer**

- Locks - global locks
- Troubleshooting locking contention in RAC
- Deadlocks, initialization parameter and troubleshooting deadlocks in RAC
- Latch contention specific to RAC
- Troubleshooting RAC specific latches.

### **RAC: Undo**

- Undo block shipping
- Light works rule
- Commit cleanout issues
- LGWR performance
- Excessive CR copy creation
- Long running processes in active databases

### **Optimizer setup in RAC**

- Execution plan management in RAC
- How to troubleshoot execution plan differences between instances?
- Optimizer parameter setup to match workload patterns
- Effective use of SQL profiles, and sql baselines to improve plan stability
- System statistics and how to setup in RAC?

### **Cluster freeze, instance freeze, and GRD freeze**

- Review of systemstate dumps in RAC
- Hanganalyze and hanganalyze\_global
- Effective use of gv\$wait\_chains
- Troubleshooting and tuning instance reconfiguration

**RAC Stress testing: Is your environment ready?**

- Stress testing using scripts
  - Inducing High CPU usage
  - Inducing high Global cache Traffic
  - Inducing high redo generation
- Swingbench to the rescue

**Administration practices**

- Initialization parameter management
- Undo tablespace management
- Optimal temp tablespace setup
- Troubleshoot software issues.

**RAC – Workload management**

- Configuring connect time failover
- Run time failover
- Services and Service Failover
- Connection Load Balancing and LBA
- Resource Manager, Services and RAC