Safaricom
Leading Communications Provider in Kenya

• Safaricom provides converged communication solutions addressing evolving voice, video and data requirements:
  – Enterprise mobility, fixed data connectivity, Telepresence
  – Wholesale bandwidth capacity solutions for national, regional and international market segments

• The Safaricom managed services division provides tailor-made solutions for SMB and the enterprise such as:
  – Cloud computing, domain / hosted services, conferencing and more

• Known for customer service and community involvement, Safaricom is the leading provider of consumer mobile, high-speed internet in the region
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Uses Exadata for Critical Databases

• Safaricom leverages Exadata for its critical databases requiring high availability and optimal performance such as:
  – Business Intelligence (BI) data warehouse system for reporting and analytics – 15TB database
  – Fraud management database along with other OLTP high-priority systems

• Exadata delivers great performance with built-in storage intelligence which is ideal for Safaricom systems
  – Exadata uses the best available storage (Flash to SATA) based on how frequently the data is accessed

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Exadata Data Protection
Safaricom Chose an Oracle Solution

• Exadata data protection strategy includes a complete Oracle solution:
  – Oracle Secure Backup
  – Sun ZFS Storage Appliance
  – StorageTek SL3000 with 6 LTO-5 tape drives

• Safaricom leverages a D2D2T backup strategy:
  – Exadata backup to disk on the ZFSSA
  – Backup the RMAN disk backup to tape using OSB
    • RMAN command BACKUP BACKUPSET;
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Exadata Backup Solution: OSB, ZFSSA, StorageTek
Oracle Secure Backup

Configuration

• Oracle Secure Backup 10.3.0.3
  – Administrative and Media Server – Sun Fire x4170
    • Zoned to manage robot and 2 of the 6 tape drives
    • One six-core processor and 16GB of RAM, two 4Gb/s FC ports and two IB ports
  – Media Server – Sun Fire X4270
    • Zoned for access to 4 of 6 tape drives
    • Two six-core processor and 24GB of RAM, four 4Gb/s FC ports and two IB ports
• Network interfaces to OSB media servers are bonded for high availability
• Backup of the OSB catalog to tape daily
Backup Performance to Tape

OSB Delivers…

- Tape backup performance using OSB is very good
  - Backup to tape of the 15TB BI database takes about 6 hours
    - Tremendous improvement over the previous solution which took about 5 days

- Backup architecture designed for optimal performance
  - Infiniband (IB) connectivity from Exadata to the OSB media servers and ZFSSA
  - OSB media servers are FC connected to the StorageTek SL3000

- One RMAN channel allocated per tape drive
  - The six RMAN channels are spread across four RAC nodes on the Exadata
“Safaricom chose a complete Oracle backup solution (OSB, ZFSSA and StorageTek) for an integrated disk and tape data protection strategy for Exadata.”

Donald Twesiga
Head of Information Technology, Safaricom