NetApp™

Go further, faster

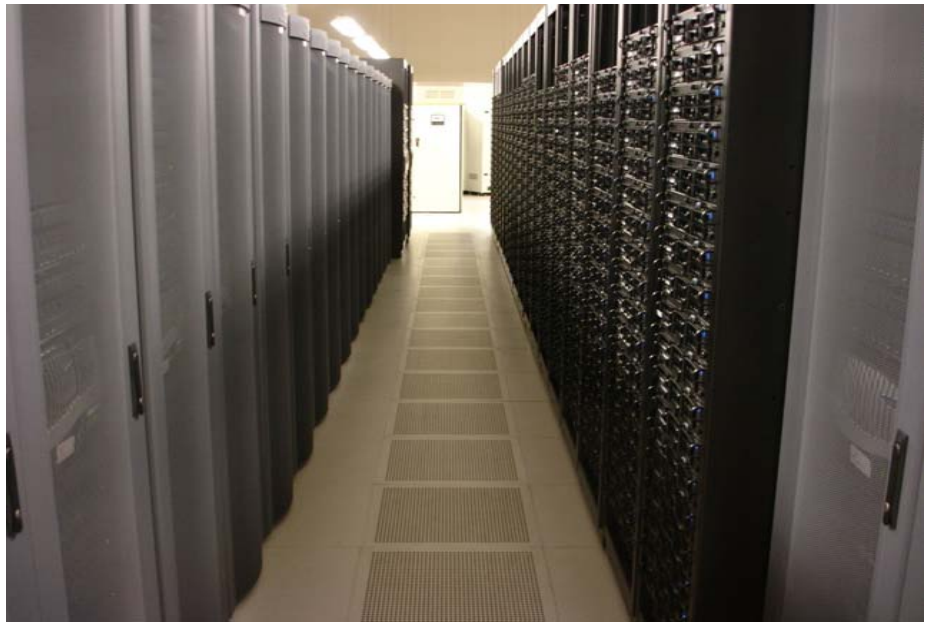
Backup & Restore Databases in Minutes

Timofey Gudilin

Helmut Putzenlechner

Presales Consultant

Did you know that Oracle runs on NetApp?
e.g. The Austin Datacenter

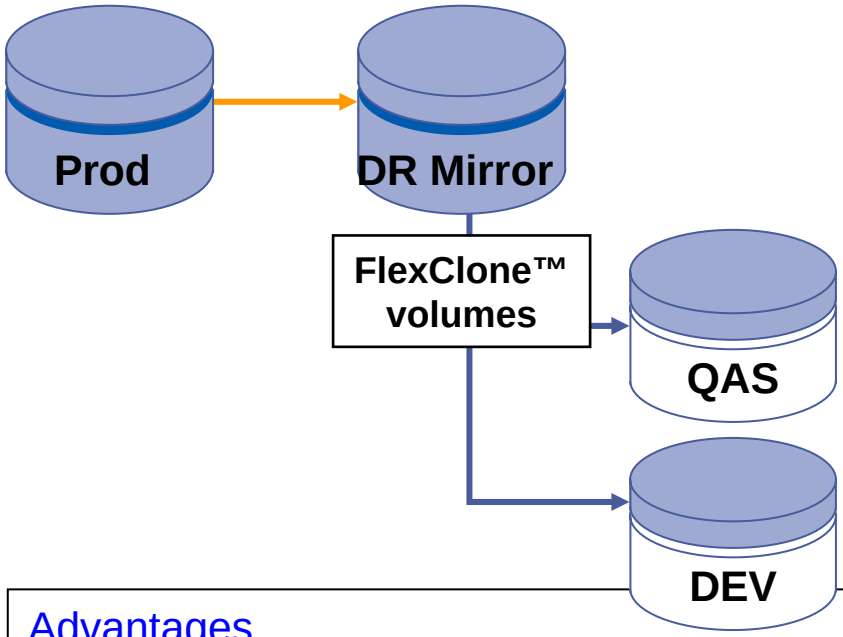


- 18,000 servers
- More than 4PB of NetApp storage
- Adding 100 servers and 15TB per week
- 400+ On Demand customers

Agenda: Why Oracle on NetApp

- Shorter Test and Development Cycles
- Reduce unplanned Downtimes
  from hours to < 30 mins
- Simplify Management – e.g. Oracle on NFS
- DR-Solutions with Transparent Site Failover
- Boost Performance with WAFL
- SnapManager for Oracle Live Demo

Shorter Test and Development Cycles
Clones instead of Copies



Shorter TestCycles

- → Create clone in 30 Sec
- → perform tests
- → step back in 30 Sec
- → Change code, redo tests
- → All without data moving

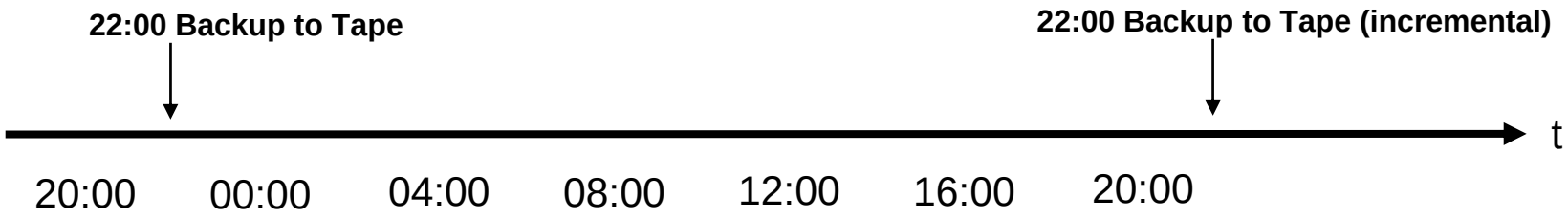
Advantages

- *Instantaneous*, space-efficient environments
- Clones for Migrations, Development, Test, Reporting, Partial Data Restore….
- Pay to *manage* only changed data

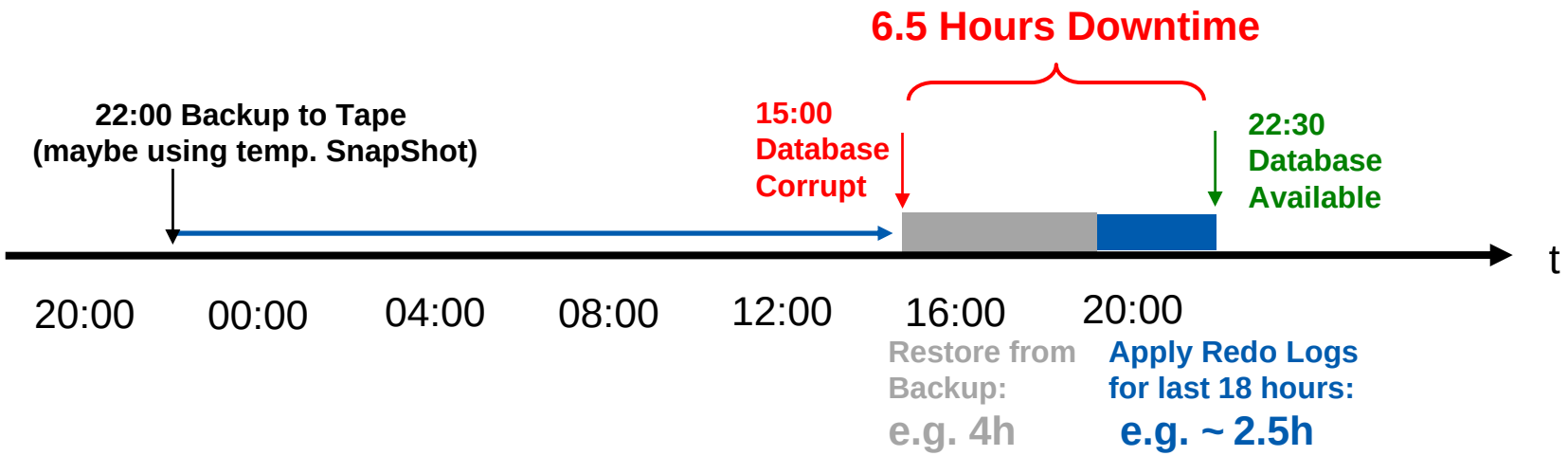
SnapManager to clone complete instance in one step

Common Restore Problem today:

Conventional Backup: 1x/day to Tape Library or Backup-to-Disk



Conventional Restore:

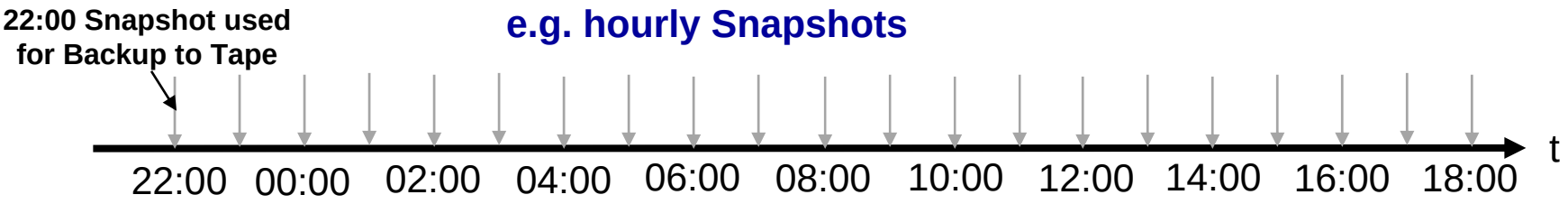


Need Backups which are faster restorable!

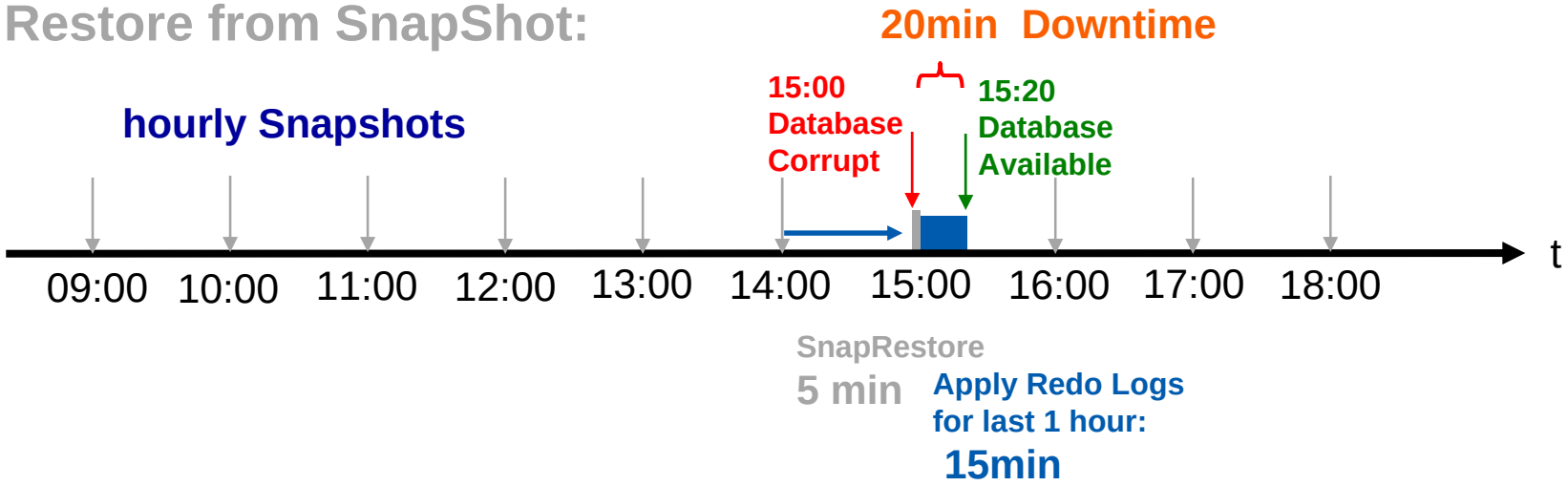
Reduce Downtime:

Extended Backup Concept with Snapshot™

Snapshots as additional, frequent „online“ Backups:



Restore from SnapShot:



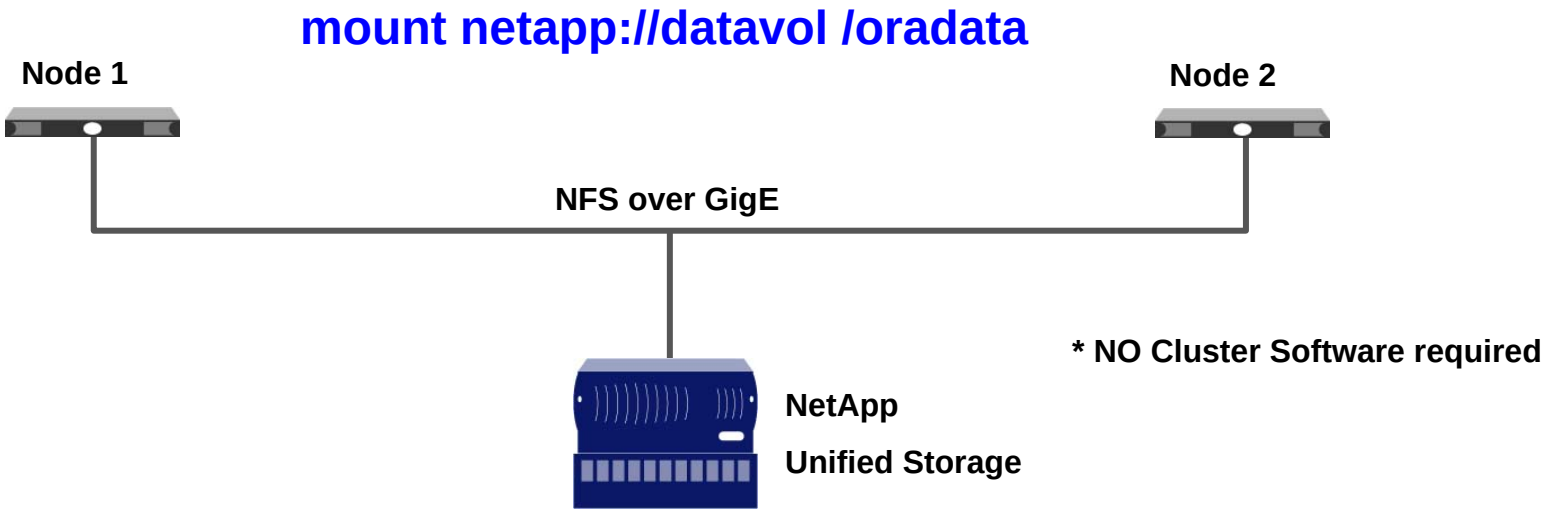
20min vs 6.5 hours Downtime!

Simplify Management

Example: Oracle RAC on Linux with NFS

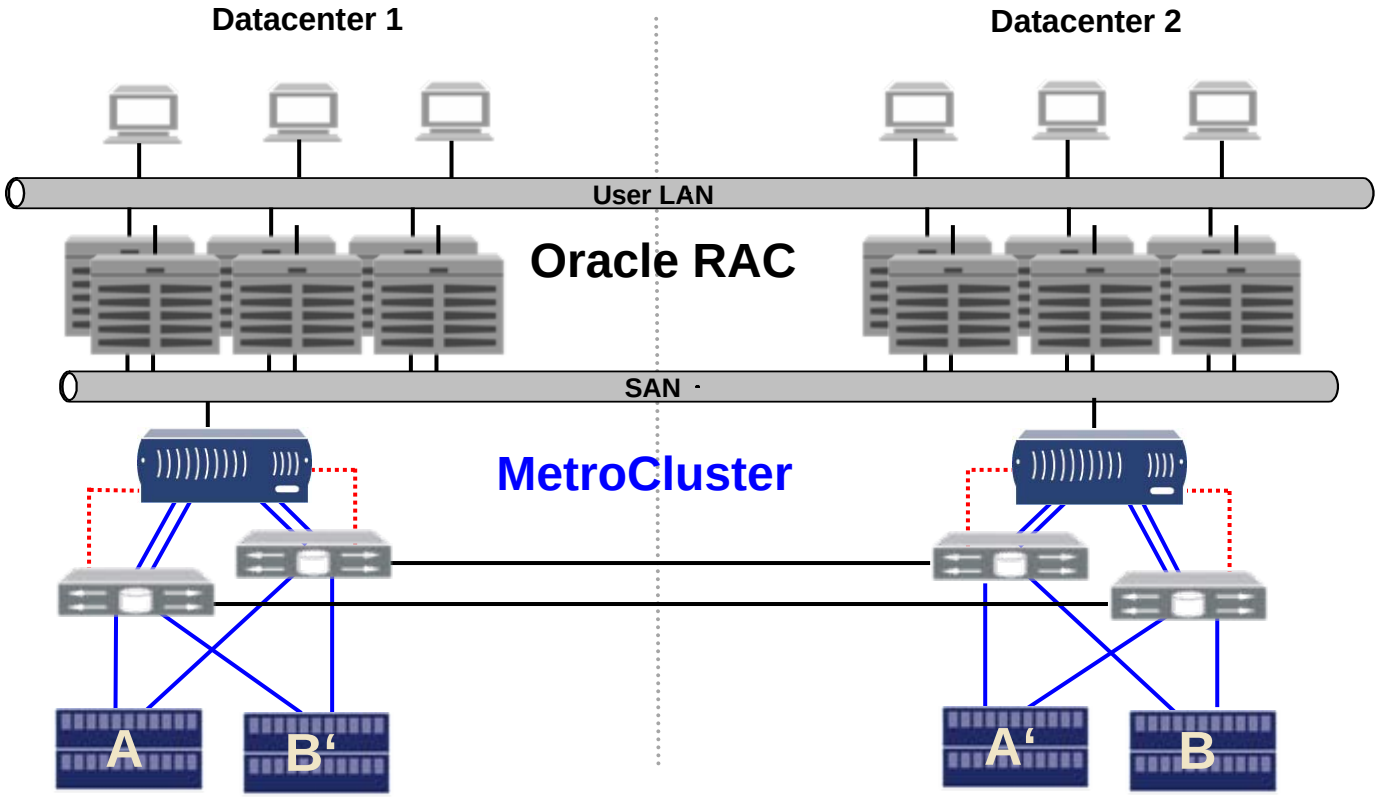
Oracle RAC using NFS as shared Filesystem

(1000s of installations, supported by Oracle only on Netapp)



SnapManager supports SAN & NFS connectivity

DR with transparent Failover
MetroCluster & RAC



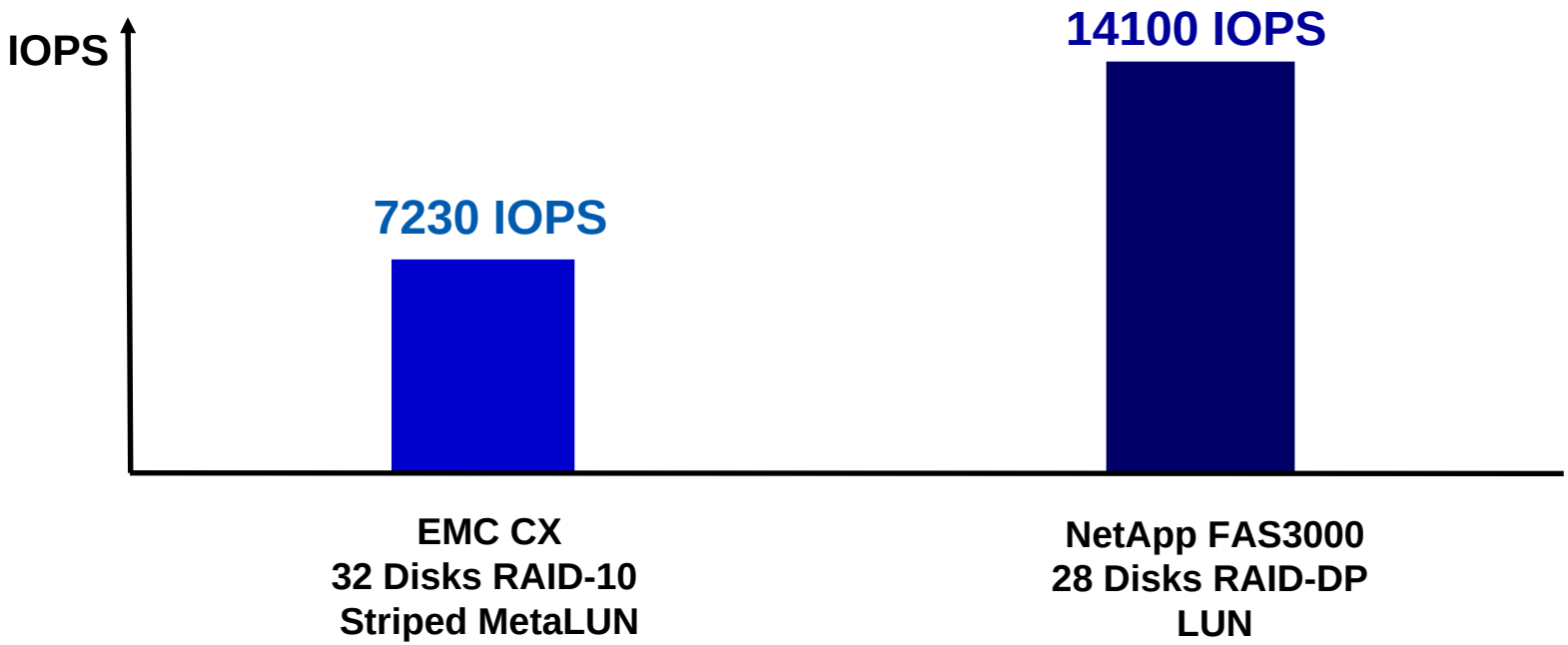
- Write access at both sides simultaneously
- Up to 100km distance

Full synchronous „active/active“ Remote Mirroring

Performance: Random I/O Comparision

Performance Test on a 400GB LUN done by Veritest

OLTP Workload: 60% Random Read, 40% Random Write

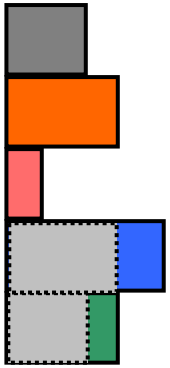


Why is there such a big difference with the same number of disk?

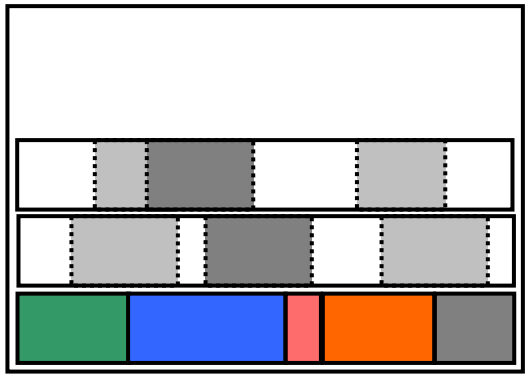
WAFL – “The write performance boost”

Tetris Cache Optimization

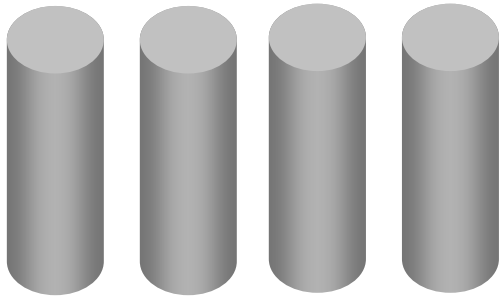
Host IO Queue



Write Cache



WAFL Filesystem on Disks



- Write one 256k block is approx. 20 times faster then 32 x 8k

WAFL tranforms

„small random writes“ to „large sequential writes“!

SnapManager for Oracle Overview

ORACLE DATABASE

Oracle 9*i*, 10*g*, 11*g*

- Leverage GUI or CLI to automate complex and manual processes
  - **Backup/Restores**
  - **Cloning**
- Integrates with the host application
- Tight integration
  - **RMAN**
  - **Automated Storage Manager (ASM)**
  - **Direct NFS Client**

SnapManager for Oracle:

Integration Points:

- Oracle Database 9i, 10g and 11g
- RAC
- RMAN
- ASM
- Direct NFS Client

Benefits:

- Leverage backup, restore, and cloning benefits for ASM-based databases
- Realize SnapManager benefits for RAC configurations

Live – Demo: SnapManager for Oracle

NetApp™

Go further, faster

Simplifying Data(Base) Management

Learn more:

http://www.netapp.com/software