SAOUG
CONFERENCE 2026

MIRACLE

Interactive Discussion: Oracle MAA for Any Type of Environment (From On-prem to Apps)

Francisco Munoz Alvarez

Global CTO and Chief Evangelist

HELLO
AFRICA



UBUNTU
moving forward
TOGETHER.

MIRACLE

ORACLE MAA · RESILIENCE ENGINEERING

Break It Before It Breaks You

Proving Oracle MAA Resilience with CrashSimulator and DRRA

Francisco Munoz Alvarez Global CTO, Chief Evangelist - Miracle Group

SAOUG – Nov 2026



ABOUT THE SPEAKER

Francisco Alvarez

Global CTO, Miracle Group

- Former Oracle Distinguished Product Manager
- Oracle ACE Director and global Oracle community leader for many years
- Oracle Magazine recognition and an Oracle Excellence Award
- **Creator of CrashSimulator** , an open-source Oracle-focused project project
- **Main author of the best seller book**, "Oracle Backup and Recovery Survival Guide"

350+

events spoken at

45+

countries

Team Australia

Dragon Boat National Team, the Auroras

Every architecture diagram says “highly “highly available.” Very few teams can teams can prove it.

WHERE IT QUIETLY GOES WRONG

Configured is not the same as proven

01

Data Guard is configured

Failover has never been exercised.

02

Backups run nightly

A restore has not been rehearsed in years. years.

03

The standby drifted

Nobody noticed, until promotion day. day.

AGENDA

What we will cover

01 Configured vs proven

02 The MAA ladder, evidenced

03 Live: a governed switchover

04 Live: datafile loss on ASM

05 Live: the resilience review

06 Building a drill practice

01

Configured is not proven

The principle that separates evidence from a checklist.

THE PRINCIPLE

An installed component is a candidate capability. Only a a measured drill makes it evidenced.

CANDIDATE

Data Guard is installed. RMAN backups complete. FSFO is enabled. “The topology could do Gold.”

EVIDENCED

Switchover measured, with RTO and RPO. Restore rehearsed and rehearsed and timed. Observer loss drilled and survived. “We “We have proven Gold.”

TWO FREELY AVAILABLE TOOLS

One breaks things safely. One turns the evidence into a evidence into a score.

CrashSimulator

Open source

Injects real, governed failures into Oracle databases, then measures the actual recovery time and data loss.

DRRA

Data Resilience Review Assistant · Free

Turns that evidence, plus your topology and DBSAT security posture, into an evidence-based MAA scorecard.

CRASHSIMULATOR · FAILURE CATALOGUE

Real failures, governed, measured

01

Instance crashes

Abort an instance and watch watch RAC and clients recover.

02

Datafile and ASM storage loss

Lose storage, then restore and recover.

03

Data Guard role transitions

Switchover and failover, timed end to end.

04

FSFO observer loss

Remove the observer and test what survives.

Output: measured recovery time and data loss for every drill.

02

The MAA ladder, evidenced

Bronze through Diamond, and what each tier needs to prove.

ORACLE MAXIMUM AVAILABILITY ARCHITECTURE

Each tier is a claim. Each claim needs a drill. drill.

BRONZE

Backup and restore restore

Proof: a timed, rehearsed restore.

SILVER

Clustered availability availability

Proof: instance crash survived by clients.

GOLD

Disaster recovery

Proof: measured switchover switchover and failover.

PLATINUM

Near-zero downtime downtime

Proof: role change with no visible outage.

DIAMOND

Highest tier

Proof: every lower tier, evidenced, continuously.

“The topology could do Gold” and “we have proven Gold” are two very different statements to put in front of an auditor.

03

Live: break it, safely

On real 19c and 26ai RAC + Data Guard databases.

LIVE DEMO 1

Run a governed switchover and capture the measured RTO measured RTO and RPO as evidence

1. Pre-checks: lag, broker health, readiness
2. Approval and typed confirmation
3. Switchover executed and timed
4. Evidence recorded: RTO, RPO, timestamps

MEASURED RTO

[live]

MEASURED RPO

[live]

What the drill runs, and checks, for you

```
1  -- readiness, before anything moves
2  DGMGRL> SHOW CONFIGURATION;
3  DGMGRL> VALIDATE DATABASE 'stby';
4
5  -- the role change, timed
6  DGMGRL> SWITCHOVER TO 'stby';
7
8  -- confirm the new roles
9  DGMGRL> SHOW CONFIGURATION;
```

1 **VALIDATE** catches lag and gaps before the switch. switch.

2 The clock starts and stops around line 6.

3 The result becomes evidence, not a log line. line.

LIVE DEMO 2

Destroy and recover a datafile on ASM, safely, with automatic reversibility

STEP 1

Guard

Safety checks and a reversible starting point.

STEP 2

Destroy

The datafile is removed from ASM.

STEP 3

Recover

RMAN restore and recover, timed.

STEP 4

Revert

Back to the starting state, automatically.

The point is not that recovery works. It is **how long it took**, measured, on your storage.

A restore you have timed is a recovery plan

```
1  -- which file needs recovery?
2  SELECT file#, error FROM v$recover_file;
3
4  -- restore and recover it
5  RMAN> RESTORE DATAFILE 7;
6  RMAN> RECOVER DATAFILE 7;
7
8  ALTER DATABASE DATAFILE 7 ONLINE;
```

1. Find the damaged file first.
2. Lines 5–6 are the recovery time you are measuring.
3. Bring it online and the drill records the result. result.

LIVE DEMO 3 · DRRA

Generate a Resilience & Security Review on the spot, and download it as a PDF

- Executive summary
- Role-transition history
- **Stated-vs-evidenced contradictions**
- Primary/standby parity
- Backup-strategy analysis
- Evidence-based MAA scorecard

04

Make it a practice

From a one-off demo to a repeatable drill.

A REPEATABLE RESILIENCE-DRILL PRACTICE

Train on failure without gambling production production

01

Baseline

Run DRRA: the tier you can prove today.

02

Drill

One governed failure, in a lab or test estate.

03

Measure

RTO and data loss, recorded recorded as evidence.

04

Review

Compare stated and evidenced, fix the gaps.

05

Repeat

On a schedule, and after every major change.

Walk into your next DR audit with numbers instead of adjectives.

YOUR NEXT STEP

Run one drill in your own lab, this this afternoon

CrashSimulator · open source

DRRA · free

Francisco Alvarez · Francisco.munoz.alvarez@miracleltd.com
sales@miracleltd.com · miracleltd.com · Together we make miracles.

MIRACLE

Thank you

Together we make miracles.

Francisco Munoz Alvarez
miracleltd.com
Helsinki · Singapore · Houston

MIRACLE



Scan to visit my social media URLs