

Is that Data Streaming yet ?

(If you need to Replicate your data)

Piet de Visser

The Simple Oracle DBA



Suzanne Tyson

made in USA



Commit Your **ORACLE** Knowledge

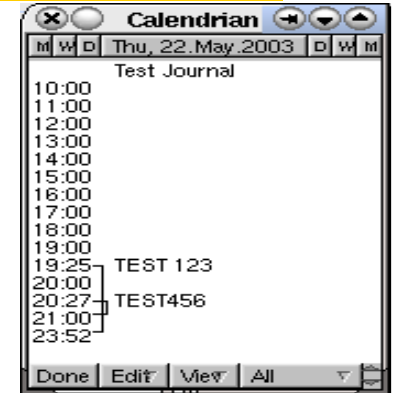
Agenda (<= 60 minutes)



SOLUTIONS THAT MATTER

We keep + replicate this data.. (...)

Classic Case? (I'm sure you have them too...)



Alternatives, pros + cons

What would You do ?

(Think & Simplify)

Discussion

(Do Challenge!)

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Classic case of need-to-replicate, (or is it)? and a bit of ILM
I want to pose a few stmnts, and then discuss with Peers. Possibly Improve life at the **coalface** ?

Manufacturing Execution System - MES



SOLUTIONS THAT MATTER

Before

- Plan Production (Recipes & Workflow)

During

- Execution: “Do This Now” (please)
- Track products (BOM, lots of prints, barcodes)
- Track Quality (most Important!)
- Evaluate (live SPC, SixSigma – Any data they can....)



After

- Investigate and Report on tons of details.
- Keep the data forever... (someone may need it)



Obsessions: Uptime, Quality! (and... Location)

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What does it look like..



SOLUTIONS THAT MATTER



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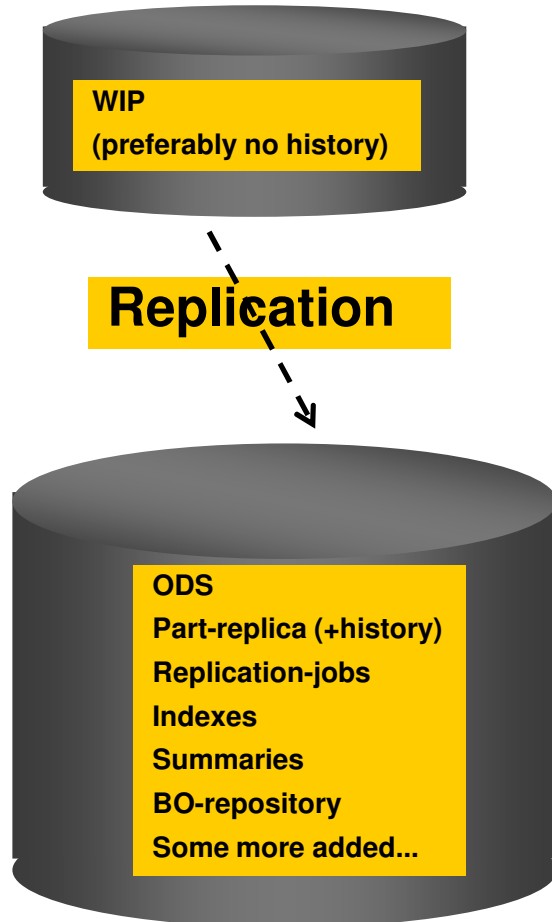


Couldn't resist... after this changing room, not allowed to take pictures anymore..
For travel pictures from Asia: later...

WIP and ODS – the Classic.



SOLUTIONS THAT MATTER



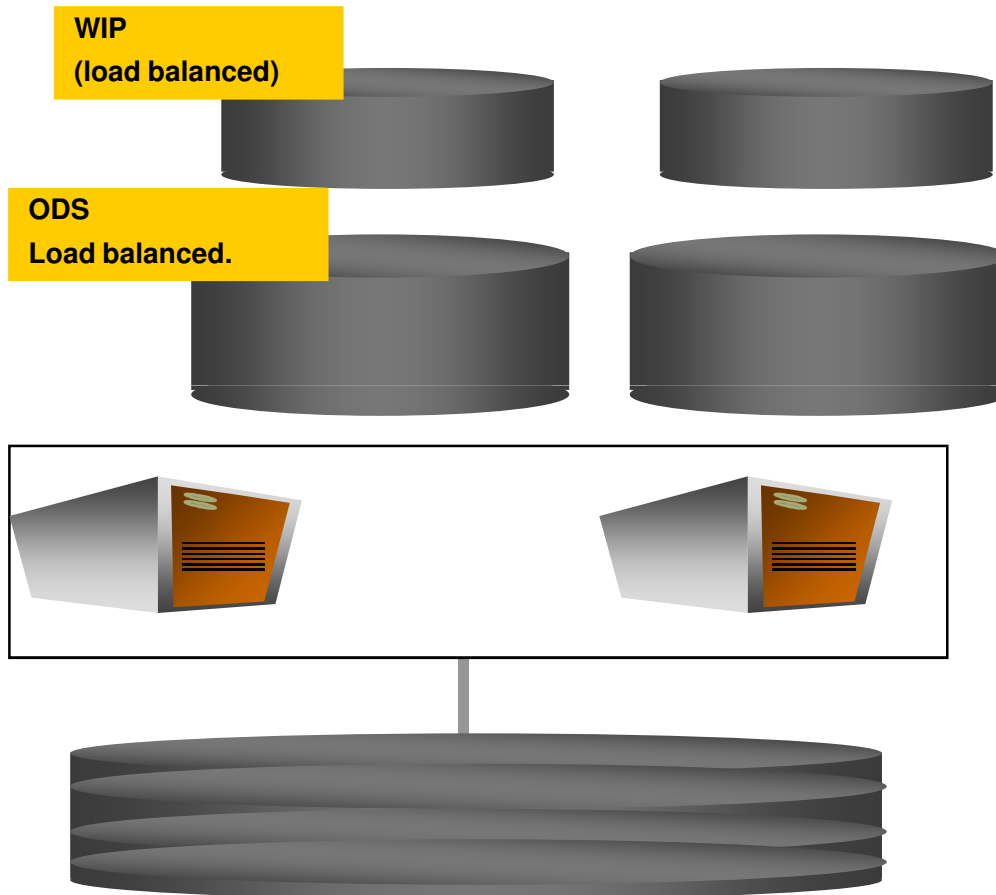
- **Work In Progress**
 - Recent data,
 - Needed for running “the plant”.
- **Operational Data Store**
 - More like an “archive”
 - No deletions.
 - Used to report anything else...
 - But has to be “Timely”

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The Database Infrastructure: RAC



SOLUTIONS THAT MATTER



- Two node RAC
- RHEL-64, 16cpu/24G
- EVA – 5TB, OCFS-2
- 300-500 session.
- Databases $\leq 1T$ / yr
- Largest Table: $<50G$ / yr

- Sufficient!
- Sar: 10% usage

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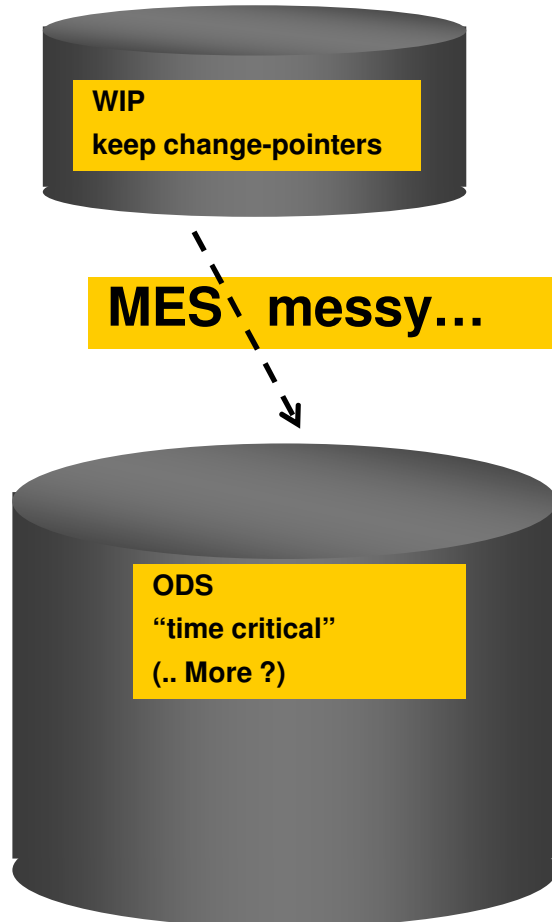


Vanilla infrastructure. RAC (designed in 2008 ? built in 2009)
But some twists.. (complex hosting situation : we are not root, and not DBA)

(MES) What can possibly be wrong ?



SOLUTIONS THAT MATTER



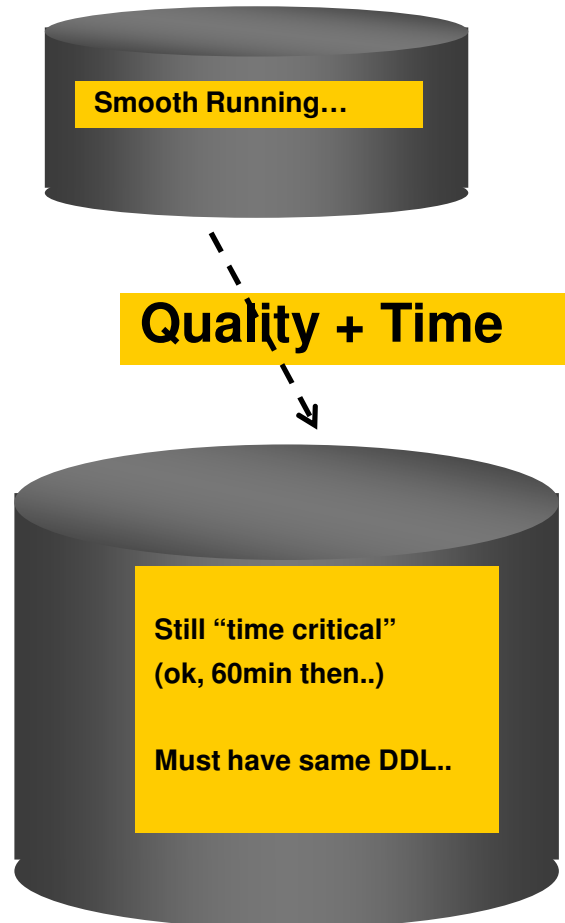
- **Vendor:**
 - Replication Code in application
 - De-supports this version...
 - (VERY) Afraid of large WIP.
 - Modifies tables 1/month++.
- **Userbase:**
 - ODS now on shop-floor!
 - Outages of replication
 - Spotted holes.
- **No trust in ODS.**
- **No Purge in WIP.**

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Step back: Requirements, Constraints



SOLUTIONS THAT MATTER



- **Timely Replication to ODS (minutes)**
- **Quality Replication (no holes!)**
- **Get load off WIP (what load??)**
 - No heavy Qries (or: no impact!)
 - Allow purge WIP
- **But.. Keep all data (in ODS)**
- **Absorb DDL (eehhh.... ?)**
 - 1100 tables, 1099 of which..

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Optional Intermezzo: Poll for audience



SOLUTIONS THAT MATTER

Thank You !



Oracle **ORACLE** Knowledge

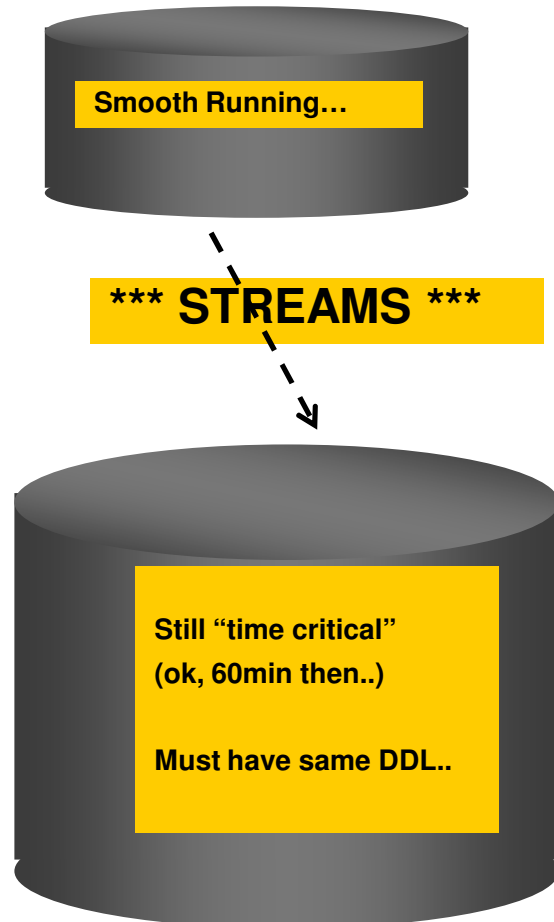


Find out from the audience.
What kind of replication in the room...

Vendor: OK, here are some “streams” scripts...



SOLUTIONS THAT MATTER



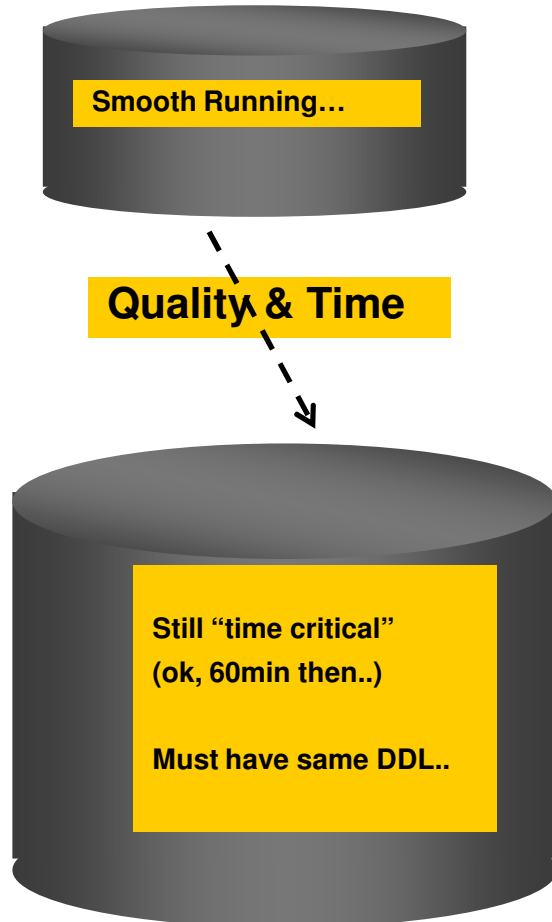
- Vendor was “sold” on Streams
 - Oracle “partner” (11.1...)
 - Sort-of grasped the concept
 - Had Streams solution “developed”
 - And Tested (on laptops)
- “Here are some scripts...”
- Never Worked @ Customer site....
 - Windows ...
 - Not DBA-built
 - Not DBA deployed.

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Alternatives.



SOLUTIONS THAT MATTER



- **DIY**
 - Make PL/SQL Code..
 - Mviews / Triggers
- **No ODS...**
 - All Reports on WIP..
 - Never purge
- **DB-replication...**

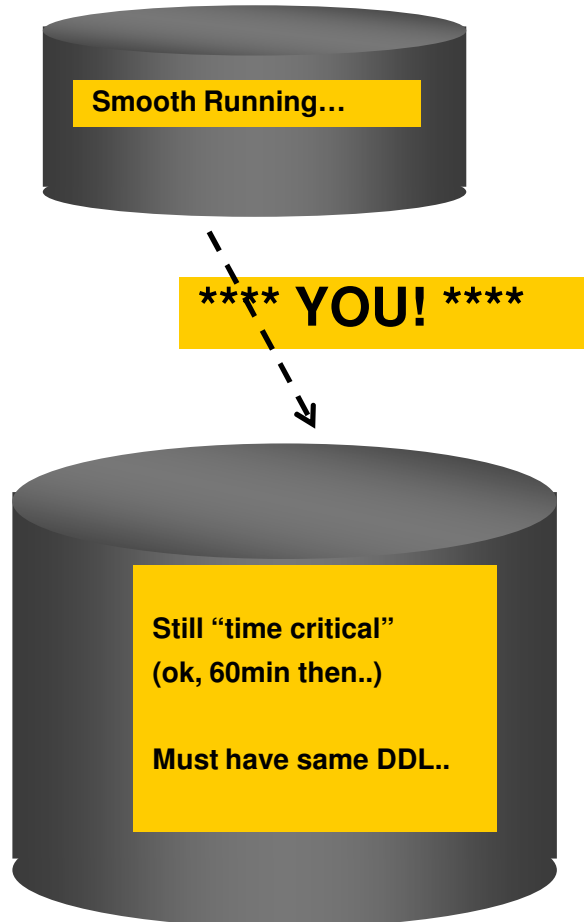


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DIY. (Do It Yourself)



SOLUTIONS THAT MATTER



- **DIY Replication**

- 1999
- PL/SQL or..
- Mviews (still got DDL)
- Trigger (+ code) Noooo !!

- **Risk of batch-hiccups**

- Errors
- Peak-loads (22:00)



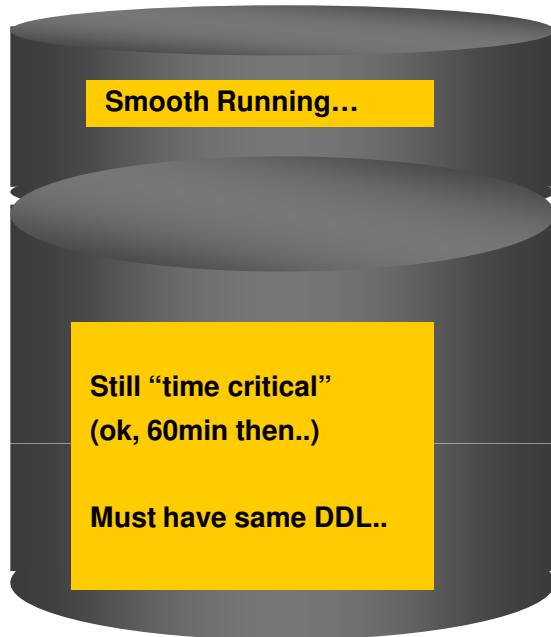
- **Maintenance!**

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No ODS, No Replica. - SIMPLE !



SOLUTIONS THAT MATTER



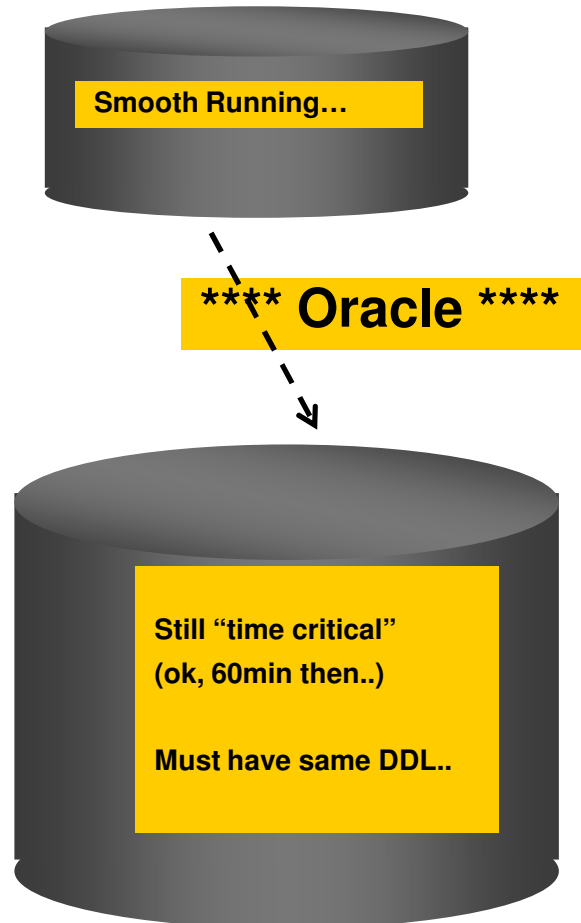
- **Easy – no mechanism needed.**
- **Quality - No holes, no discussion.**
- **Hold this idea...**
- **Scary:**
 - **WIP is my “archive”**
 - **Too big WIP (?)**
 - **Too many indexes (?)**
 - **“Vendor don’t like”**
 - **Bad OLTP code... will run badly...**

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GoldenGate or ... Streams.



SOLUTIONS THAT MATTER



- **Replica at Redo-level**
- **Always most efficient**
- **Single Point of Truth = Redo.**
- **Catches DDL – zero Maintenance.**

- **Streams:**
 - Tweaking (lots, patches, params)...

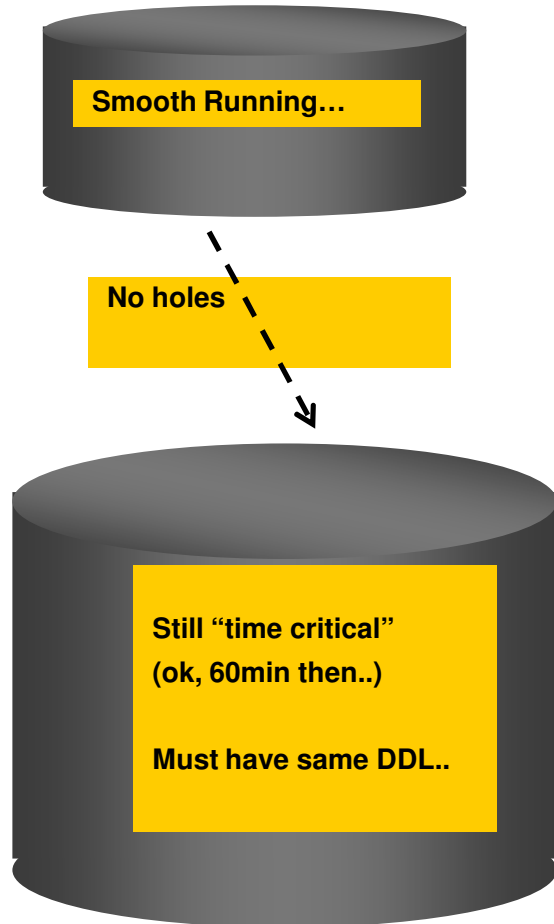
- **GG**
 - Some tweaking still.
 - Cost – (we can work a year for...)

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Poll: Your Choice.... ?



SOLUTIONS THAT MATTER

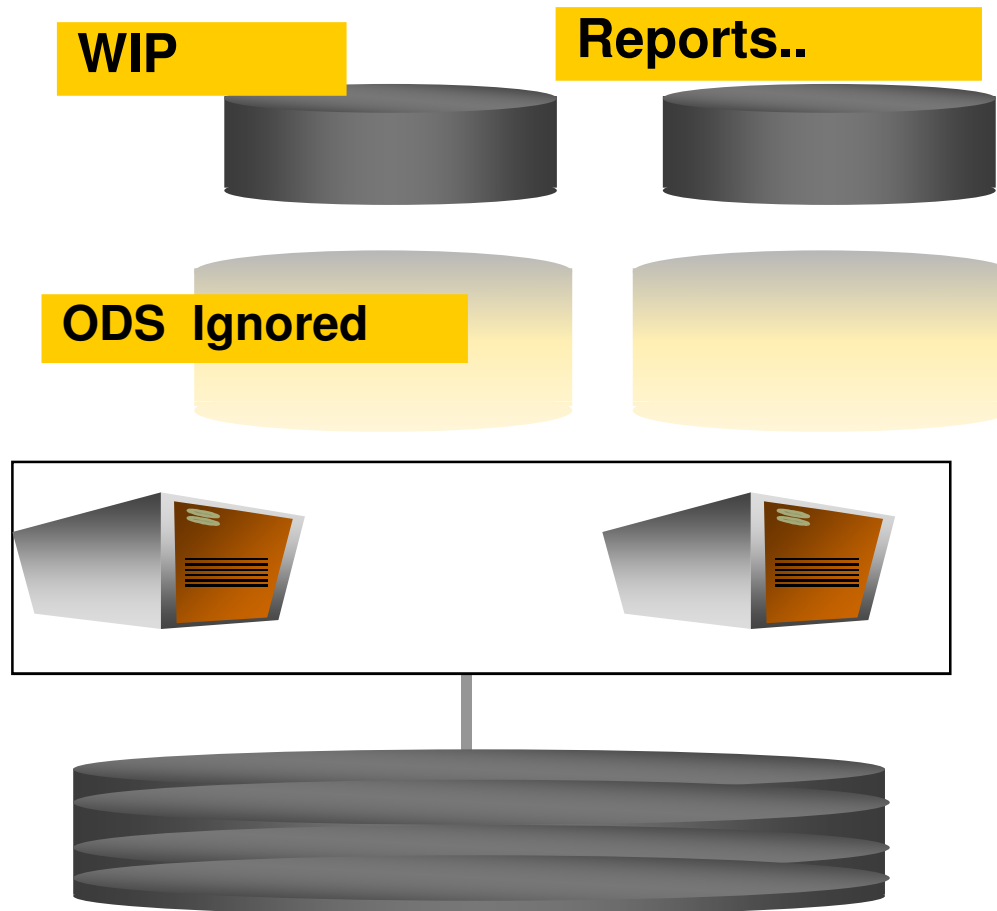


- **DIY**
- **WIP forever...**
- **Streams**
- **GG**
- **Other ...**



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Wait long enough....



- ODS is “broken”
 - Reports go to..
- Wip!
- WIP Instance 2
 - E.g. use RAC

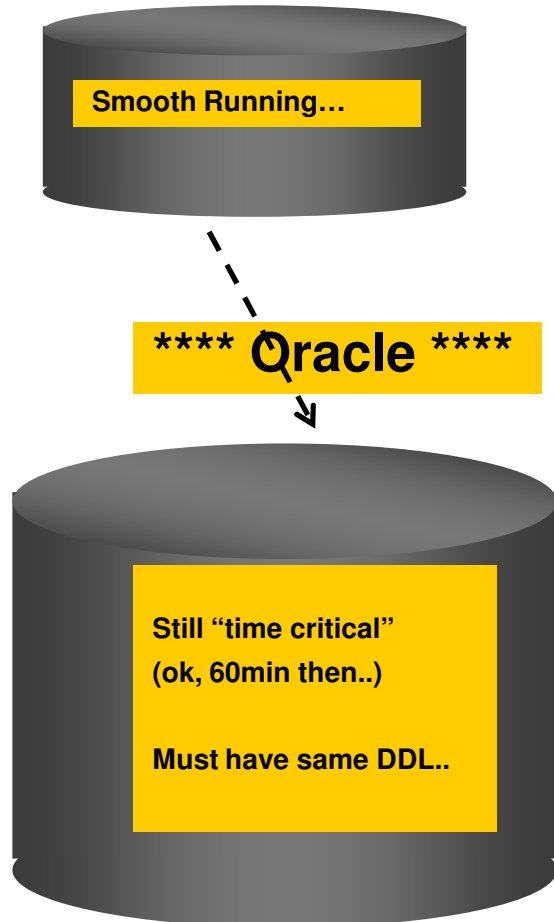
- Partly Coincidence..
- But working fine
- (and we’re not alone)

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Take back control.. Make a choice.



SOLUTIONS THAT MATTER



- After much deliberation...
- Back to Streams
 - We know it can work (have done..)
 - Vendor “happy”
 - Simplify streams to CCA
- Now go prove to Business...
- Test
- And tweak
- And patch
- And test ...

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Some Streams “tips”



SOLUTIONS THAT MATTER

- **Get a DBA, and get Full Control**
 - Outsourced “dba” – needs tickets for Everything.
- **Simplify to CCA : Combined Capture + Apply.**
 - No need for “propagate” – one less component.
 - One point to monitor (the target)
 - Comes close to DataGuard (logical standby) – a known trick.
- **Practice Instantiate (build)**
 - You will need this often.
- **Ignore errors (unfortunately)**
 - `DISABLE_ON_ERROR => 'N'`



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- **Replica Not in mid-tier, and not by “application vendor”**
 - Data-replication is a **DATABASE** problem.
 - They don’t test.
 - They don’t know your situation.
 - They don’t think Conceptually, they just code...
- **Look at simple Options first:**
 - **Mviews ? (They do come with some maintenance)**
 - **DIY code (if limited set of data, and no DDL: most r**
- **Get a DBA, and get Full Control (again)**
 - **Cannot wait for “ticket”**



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- **If you have to repliate more.. : use GG or Streams**
 - best possible concept,
 - Single-point-of-truth (redo).
 - Robust (up to a point / patch)
- **IMHO: Streams can do the job**
 - IF you can simplify it (CCA)
 - IF you have time to tweak + patch
- **But.. No Revenue for Oracle (hence GG – almost as complex)**
- **(and GG looks better on your resume)**



Don't Take my word for it...



SOLUTIONS THAT MATTER

Tahiti.oracle.com: start with concept-guides

Technet (but be critical)

Oracle-L : real world stuff

[www . Bloggingaboutoracle . org](http://www.Bloggingaboutoracle.org) (company ramblings)

[SimpleOracleDb . Blogspot . com](http://SimpleOracleDb.blogspot.com) (my ramblings)

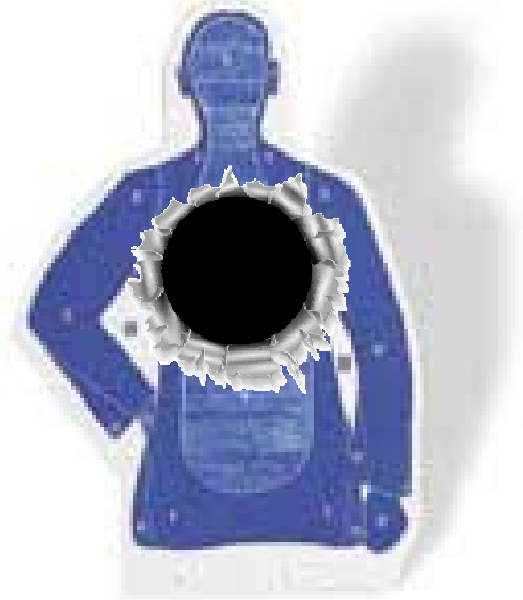
Do some testing yourself ...

Goethe (simplicity, limitations...)



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- Questions ?
- Reactions ?
- Experiences from the audience ?



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Fin...



SOLUTIONS THAT MATTER

- Placeholder slide to indicate last slide.....

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You are Here...

My Opinion: Good Outsourcing



SOLUTIONS THAT MATTER

- **Correct Incentives**
- **Good Coordination**
- **Focused Teams.**

- **Not many Outsourcers have this...**
 - **Do customers realize this ? Ask for it ?**

- **(apologies for the bog-standard bullet-list-ppt)**

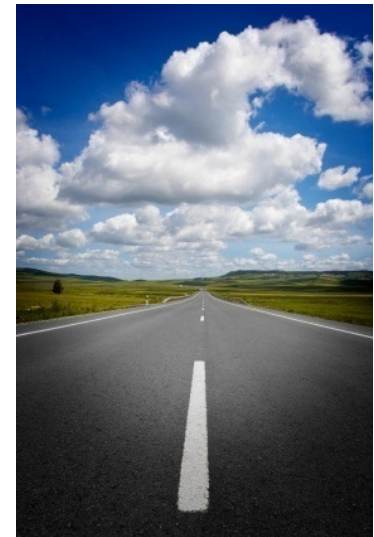


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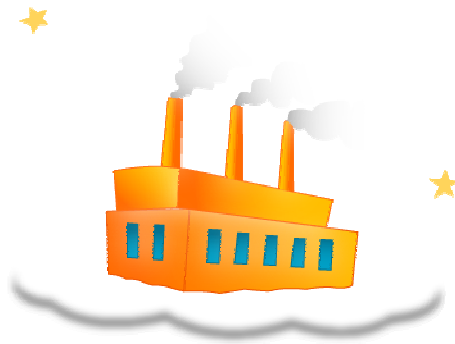


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Very light ppt..

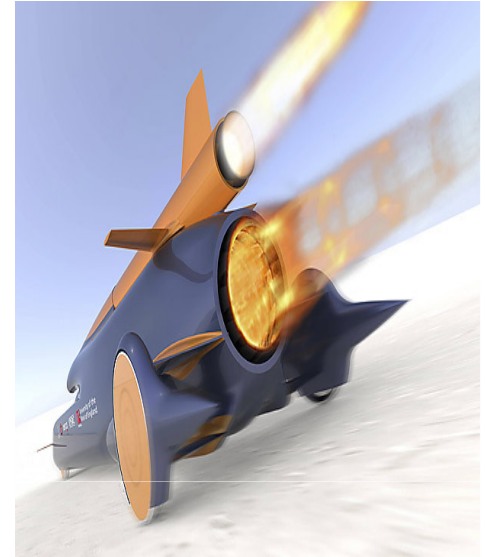


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- ODA brings control back to DBA
A lot of Arcane Details...



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Anecdotes... (later)



SOLUTIONS THAT MATTER

- **O/S = layered expertise (NMP...)**
- **O/S = Many more “architects”**
- **O/S = Tickets (even between layers)**
- **O/S = Work done Everywhere (nowhere)**
- **O/S = Herd experts into groups – then Squeeze!**

- **O/S = Resistance to Change**
- **O/S = Avoidance of relevant groups (DIY, testing))**
- **O/S = milking “Exceptions”**
- **O/s = Cross-sellers Dream...**



Commit Your **ORA**