

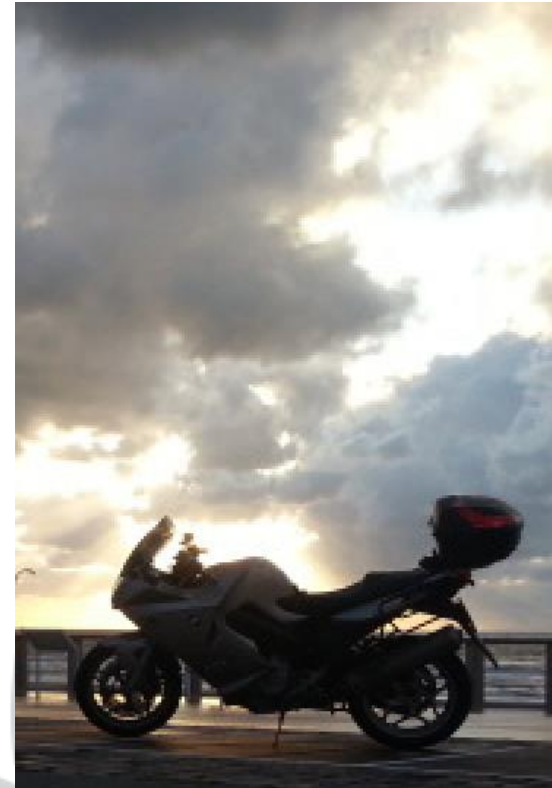


4SYNERGY

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**Cloud service is Great
But you still have to think...**

Piet de Visser
The Simple Oracle DBA



DOAG

Favorite Quotes: "The Limitation shows the master" (Goethe), "Simplicity is not a luxury, it is a necessity. Unfortunately, 'Complex' solutions sell better. (EW Dijkstra).



Agenda

(approx 45 minutes)

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History

(servers...)

Unlimited Resources !

(Finally)

Cloud Risks.

- All you can Eat ?

- Errors !

(best pract..)

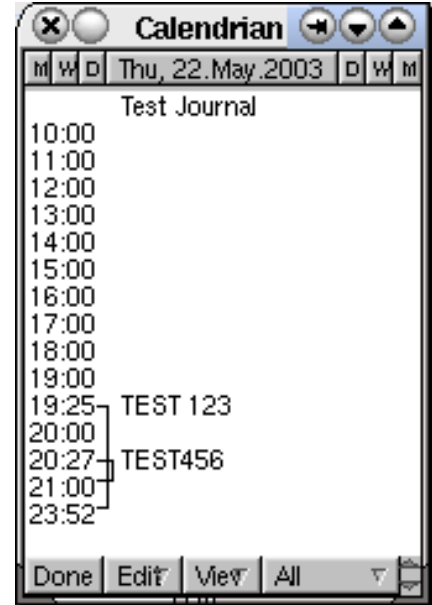
Positive note!

(it works)

Role of DevOps (the DBA) (it depends)

10 min Discussion

(Do Challenge!)





History of IT: “need More...”

Moore’s law, and “capacity will be used...”

Storage + Usage grow exponentially

System will become slower...



Never Enough, How to keep up ?

Buy more hardware ?

Future:

Big data? (unstructured data, cleverly indexed)

Only in “Cloud...”



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“Cloud” can give you...

(1/2)

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- **Very Quick start ... of any Idea / project / company**
 - **Just need Visa / MC / AMEX.**
- **Easy expansion (no fear of Success!)**
 - **And they want you to buy more....**
- **Resilience and Availability (bonus!)**
 - **Cloud datacentre vs your “server room”**
- **Reliable Network and Unlimited Bandwidth**
 - **At datacentre (not at your desk yet...)**





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“Cloud” can give you...

(2/2)

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- **Unlimited CPU + memory**
 - PAYG, Per hr..
 - Just need more Visa / MC / AMEX.
- **Unlimited Bandwidth**
 - Including “elastic”-IP and Load-Balancers
 - But you will get billed
- **Unlimited Storage**
 - Per GB per month...
- **“All you can eat” ... but not at fixed price.**



Router



Bucket



Cloud services are very convenient. All you can eat...
Cloud vendor is like Telco-contract: you get billed per usage. (roaming cost)



“Cloud” will happen (IaaS, DBaaS,)

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- **“Distance” ? ... Is not an issue**
- **Network ? ... Fixable, to a point**
- **Confidentiality:**
 - Vpn and encrypted storage will “pass the audit”
 - (The risk is elsewhere)
- **Co\$t and Flexibility are ... Compelling.**
 - Resistance is futile.



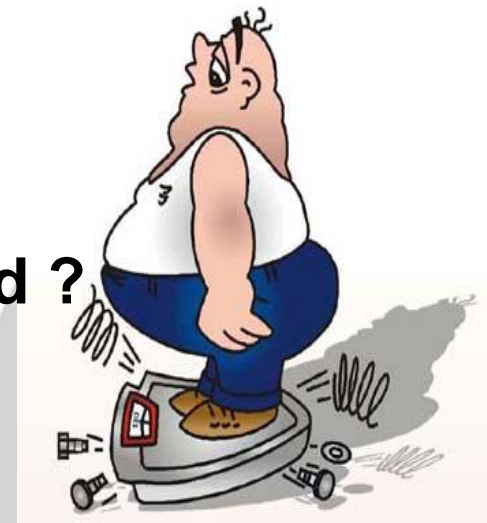


Beware: Application “Runaways”

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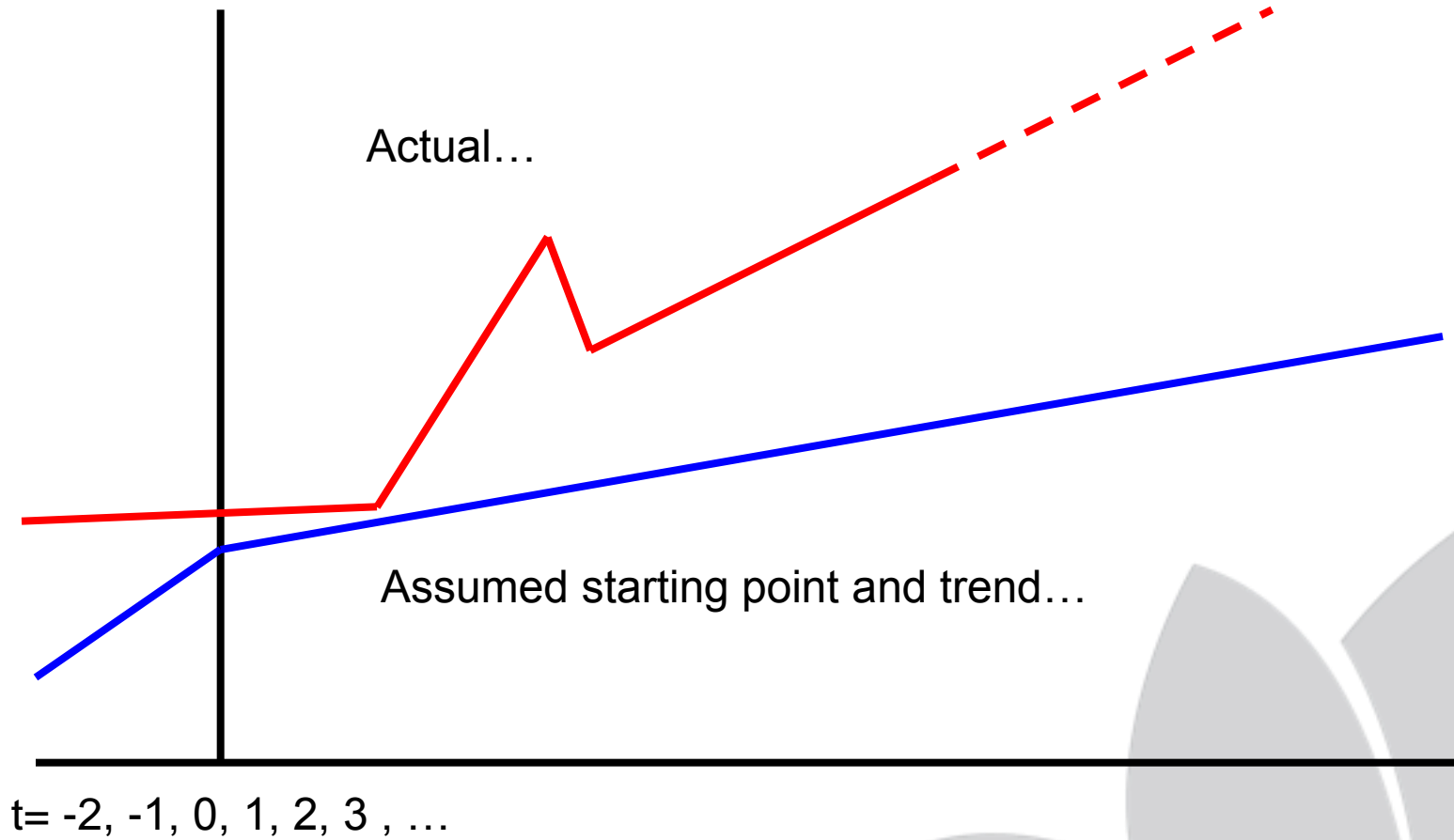
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- **Some Applications “leak”**
 - CPU-runaways
 - Memory leaks
 - (log)files grow, are kept forever .. ?
- **“Fix/Kill it With Iron” (KIWI) is too easy**
 - Automatic provisioning... ? .
- **Who checks this ?**
 - If not: How many EC2 and S3 do you need ?
- **Testing (load-, Duration-testing) Important**



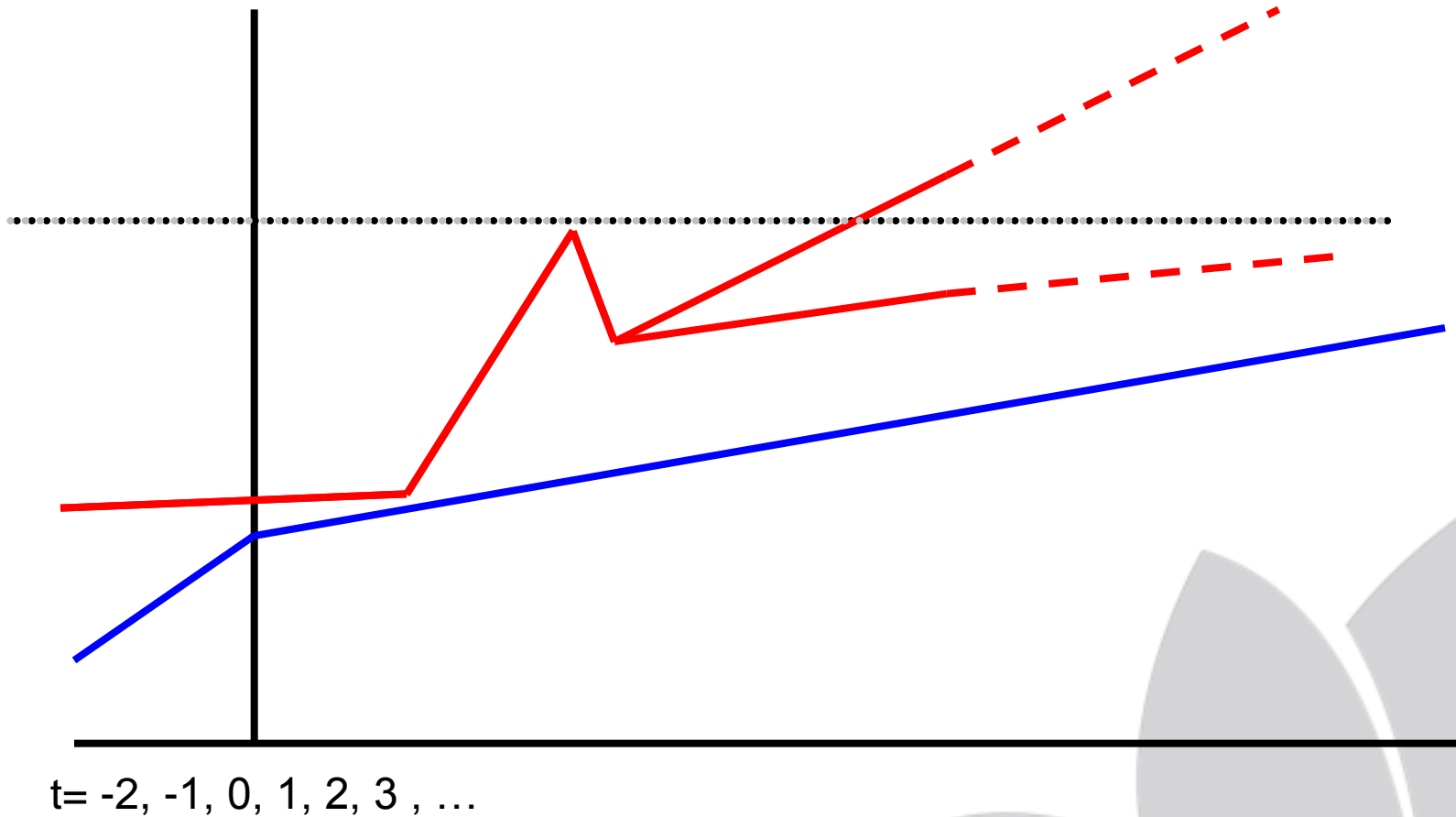


Look for Trends!





The Ceiling – Iron or Brains ?





I keep check using AWR...

| DB Name | DB Id | Instance | Inst num |
|----------|------------|----------|----------|
| DATAHUBD | 4096108834 | DATAHUBD | 1 |

| Host Name | Platform | CPUs | Cores |
|-----------------|------------------|------|-------|
| ip-172-16-0-234 | Linux x86 64-bit | | |

| | Snap Id | Snap Time |
|-------------|---------|--------------------|
| Begin Snap: | 72 | 07-Oct-13 10:00:01 |
| End Snap: | 73 | 07-Oct-13 10:17:09 |
| Elapsed: | | 17.15 (mins) |
| DB Time: | | 0.00 (mins) |

SQL ordered by Elapsed Time

No data exists for this section of the report.

Tablespace IO Stats

No data exists for this section of the report.

Jus tmy first dissapointment.. No AWR, no Statspack yet (we are working on this..) V\$SQL all visible, and LAB128 does work..



Plug for Statspack and Lab128...

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Activity Explorer - BDBP

Waits Show By: Events Timeouts Wait Time Include Idle

Active Session History: Show ASH Chart Include Sessions on CPU

Wait Event groups, time_waited, % Sel Avg = 2,755

Active Sessions Sel Avg = 31.2

12/28/2007 16:06:12 Clear Selection 50% length = 684s 0:11:24 12/28/2007 16:17:36

Delta 16:06:12 - 16:17:36, 684 secs apart Show Cumulative Include Inactive

| Wait Event | Grp | Event Group | Waits/s | Timeouts/s | Time Waited, % |
|--------------------------|-----|-------------|---------|------------|----------------|
| db file sequential read | 8 | User I/O | 1889 | | 1958 |
| log file sync | 5 | Commit | 289 | | 332 |
| ARCH wait on SENDREQ | 7 | Network | 8.88 | | 289 |
| log file parallel write | 9 | System I/O | 157 | | 63.5 |
| log file sequential read | 9 | System I/O | 11.0 | | 41.2 |

ASH for 16:06:12 - 16:17:36 ASH Settings **SQL_ID:** [25rq6643f8342](#) [411467331](#)

| Summ | SQL_ID | Coord SQL | Activity, % | Elapsed, sec | In Wait, % | On CPU, sec |
|------|---------------|-----------|-------------|--------------|------------|-------------|
| | 25rq6643f8342 | | 19.5 | 4443 | 98 | 88.0 |
| | aaaju8n6fptdn | | 16.8 | 4077 | 90 | 423 |
| | 4mfj0wa4y1ghp | | 8.4 | 1937 | 89 | 211 |
| | 65ha3tr06jdnq | | 5.4 | 1213 | 88 | 149 |
| | fyx907r81dfwb | | 4.4 | 984 | 90 | 97.6 |
| | 8y39amqg581qp | | 3.1 | 704 | 77 | 159 |
| | 2b064ybzkwf1y | | 3.0 | 683 | 100 | 0 |
| | 39q014y6hsgv8 | | 2.3 | 530 | 98 | 11.1 |
| | 1rnugrjn2cc9 | | 2.3 | 517 | 99 | 5.58 |
| | f4pj8vv5g4m4t | | 2.0 | 479 | 28 | 346 |
| | 1vhj8b1jsgqvd | | 1.8 | 411 | 99 | 3.75 |

| Event | Grp | Event Group | User | Cnt | In Wait, % |
|-----------------------------|-----|-------------|--------|------|------------|
| db file sequential read | 8 | User I/O | SBDBA0 | 4701 | 100 |
| latch: cache buffers chains | 4 | Concurrency | SBDBA0 | 1 | 100 |

```
SELECT FIRST_NAME,
LAST_NAME, ZIP FROM
DEMO.CUST_OLTP
```

Expand Explain Plan



(stateless) Application; can scale

- **Just add capacity (KIWI)**

Database is your SPOT (ACID) ...

- **Only 1 record with Balance!**
- **All “transactions” come there.**

• **Most IaaS include resilience (...)**

- **But nobody tests for Scalability.**
- **Inefficient code/SQL still hurts!**



data: SPOT



Beware: DevOps (sysadmin) : Busy !

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- From “hardware”, to VMs, to ... Dashboard.
- Having unlimited “Machines” means...
 - More work for Sysadmin.
- Deployment !
 - Keep relevant components up to date !
- Monitoring, Verifying, Testing.
 - Make sure all works as intended. All the Time.
- Be ready for “Permanent Deployment”
 - Orchestration... (Chef, Puppet, Xebia)





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Gartner : IaaS

(or any HaaS)

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- Amazon...
- IBM, HP,
- Oracle ??
- Note: much more.
2 large customers ..
@ “unknown” provider.

Cloud... It does work.
Get Prepared...



This aaS is almost in-evitable, and Amazon is the main pioneer. But others try to follow. Anecdote about two customer using same vendor, very expensive



What You can Do... (let them eat it)

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- **Prepare for “Cloud”**
 - Re-Define role for DevOPs (Sysadmin, DBA)
 - Get used to “external systems” (Network!)
- **Let it happen... (hand out a few cloud-machines)**
- **Focus on “deployment” and “testing”**
 - Define + Verify: How you want your systems to run.
- **Control: Growth of “Machines” in the cloud.**
- **Control: Monitor usage, Monitor Co\$**





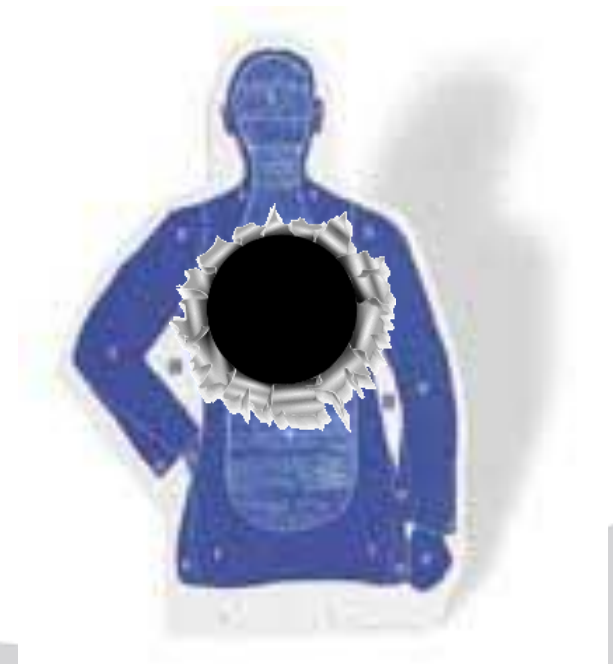
Quick Q & A (3 min ;-)

3 .. 2 .. 1 .. Zero

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





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notes

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- I GOT QUESTIONS,,,

