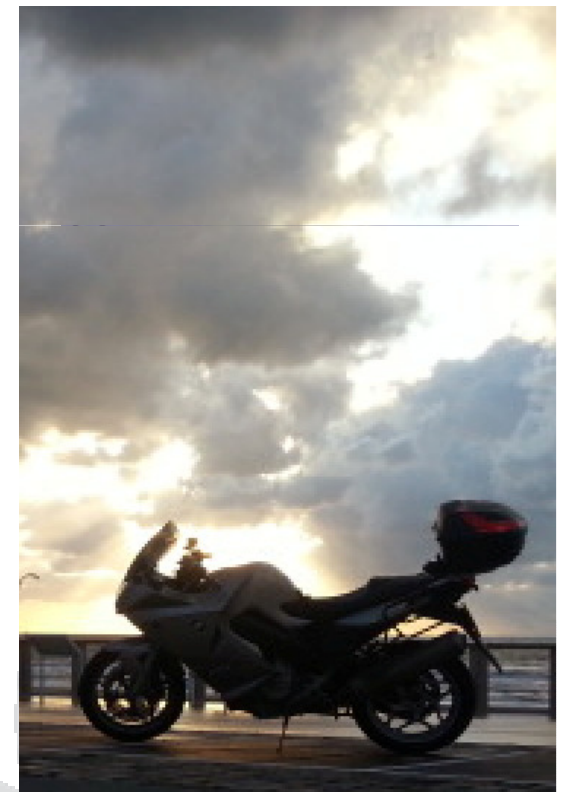


Troubleshooting with a blindfold. (DevOps in a PAAS Cloud)

Piet de Visser
The Simple Oracle DBA



History

(Cloud...)

XaaS

(Service, Finally)

Blind !
SQL >

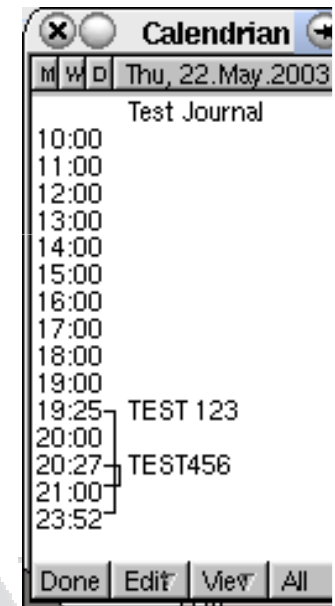
(\$... ? # .. ?)
(ok, but...)

What _do_ I see

(it depends)

10 min Discussion

(Do Challenge!)





4SYNERGY

How did we get so blind...

PdVBV

History of IT: “Outsourced...”

IT wasn’t core business

Minimal IT personnel wanted.

Only managers and architects.

“Running” of systems by “service provider”

Providers get paid per system and per hr

System will become slower...

Slower, so there is more “work”

Slower, so you need more and bigger “systems”





4SYNERGY

DBaaS: Databases as a Service...

PdVBV

Databases have become a “service”

We “buy a database”; pay per “unit”

4 CPUs, but how fast ?

1G or 12G or 24G memory (no hugepages??)

1TB of disk, but how fast, how much latency

A DRP of 4 hrs (not specified, RTO, RPO...?)

Vendor was “squeezed” on awarding contract...

Everything else is “extra”





4SYNERGY

Some of the “Consequences”

PdVBV

Databases are clicked from some DBCA template

Template goes back to v9.2 ?

starts with 1G of SGA,

ASMM (shared pool eats all memory)

“Failed to allocate..” no autoextend

Manual addition of files to TS

Datafiles end up in \$ORA_HOME/bin... ????



Fixing anything is “extra”

Need request, need “Ticket”, Queue, junior DBA.....



4SYNERGY

More interesting “Consequences”

PdVBV

Databases are located on “some server”

Ordering a server takes ... Months ??
Not stipulated how/what to prepare a DB

\$ 1s

No # and no \$... ?!! (only SQL>)

What is happening on the server ? (sar? ps?)

What is the “load” on the server ?

How many databases (instances) on a server ?

(Creating Views to access Alert- and tracefiles ☺)

Remember: Finding/Fixing “anything” is “extra”



4SYNERGY

Consequences: we are blind...

PdVBV

You wanted a Database...

SQL>

not: “DBA”

not: “select any” , V\$..

not: OEM

not: AWR....

Live n Learn

request for extra privs (extra)

extra priv => Signoff by manager



Remember: Finding/Fixing “anything” is “extra”



4SYNERGY

“First signs”: something not right...

PdVBV

Processing takes longer....

Nothing wrong with “our service”

You didnt ask for “performance”

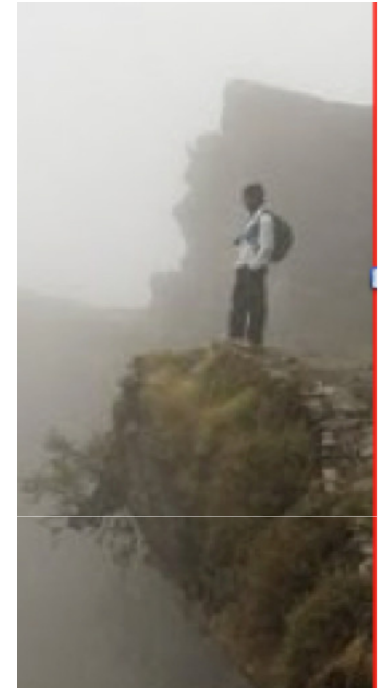
AWR-access :

first: no AWR/ASH access

then: slow-disks ? Need “storage ticket”

SAN-team: no problem, system working under capacity.

Remember: Finding/Fixing “anything” is “extra”





4SYNERGY

Collect Data.. Trends !

PdVBV

History and trend needed

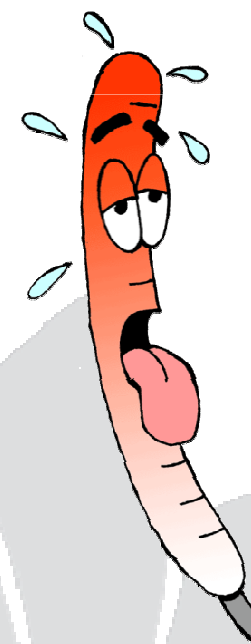
Not just AWR,

Also: batch-times

Also: known, measured UX times (screen waits)

**Proof that system is irregular and deteriorating..
burden of proof is on “user”**

Remember: Finding/Fixing “anything” is “extra”

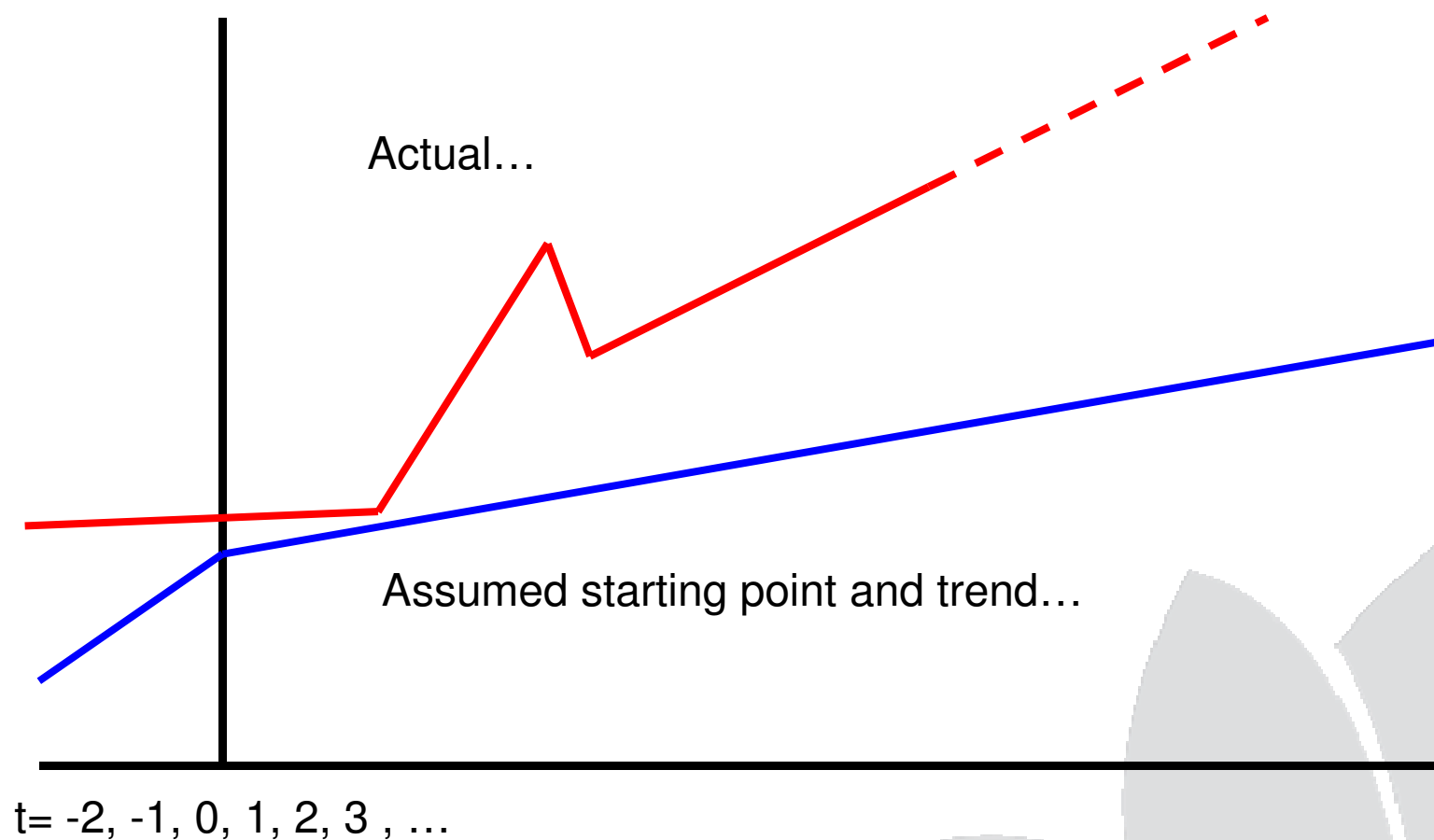




4SYNERGY

Look for Trends!

PdVVBV

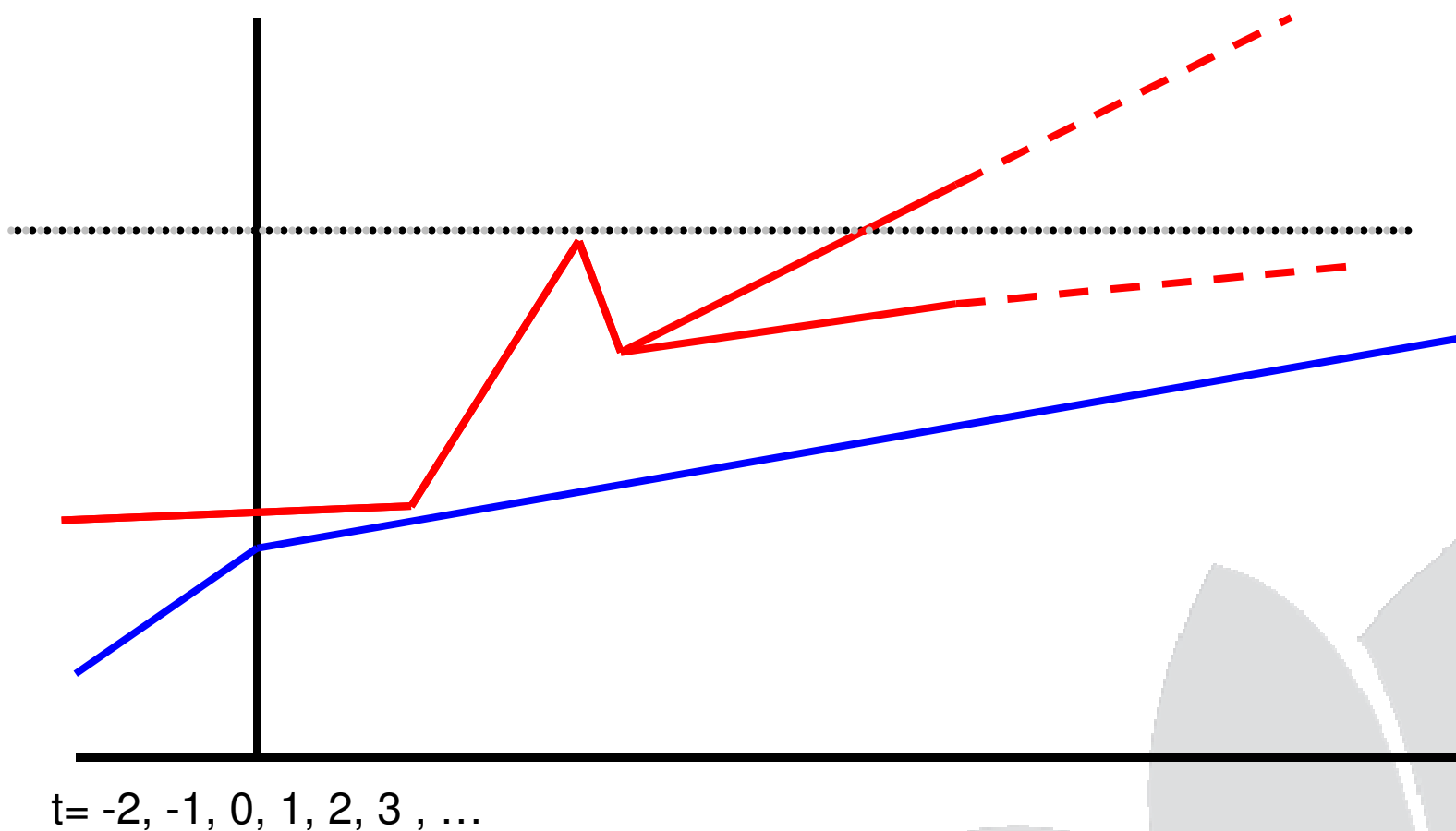




4SYNERGY

PdVBV

The Ceiling – Iron or Brains ?





4SYNERGY

AWR has most of the data you need....

PdVBV

	Per Second	
Redo size:	629,039.51	663.37
Logical reads:	120,995	1,474.09
Block changes:		43.47
Top 5 Timed Events		
Event	Waits	Wait Class
CPU time		58.9
db file sequential read	3	18.7 User I/O
log file sync	6	18.7 Commit
log file parallel	3	17.3 System I/O
db file	12	5.8 System I/O
Trace	82.08	

And ... it tells you CPU_COUNT, system-memory and usage...



4SYNERGY

Beware: Capacity Monitoring....

PdVBV

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.



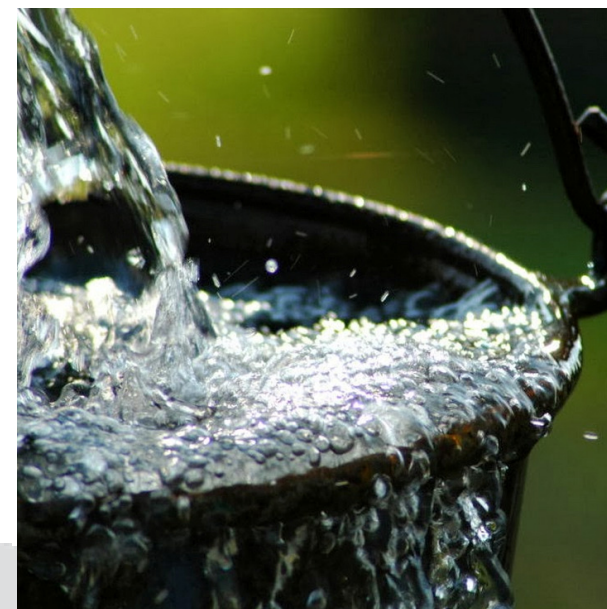
Beware: Application “Runaways”

4SYNERGY

PdVBV



- Some Applications “leak”
 - CPU-runaways
 - Memory leaks
 - Shared_pool growing...
 - (log)files grow, are kept forever .., ?
- “Fix/Kill it With Iron” (KIWI) is tempting
 - More “service”, more revenue.
- Who checks this ?
 - “Service” has no incentive...
 - If unknown: How much do you need ?

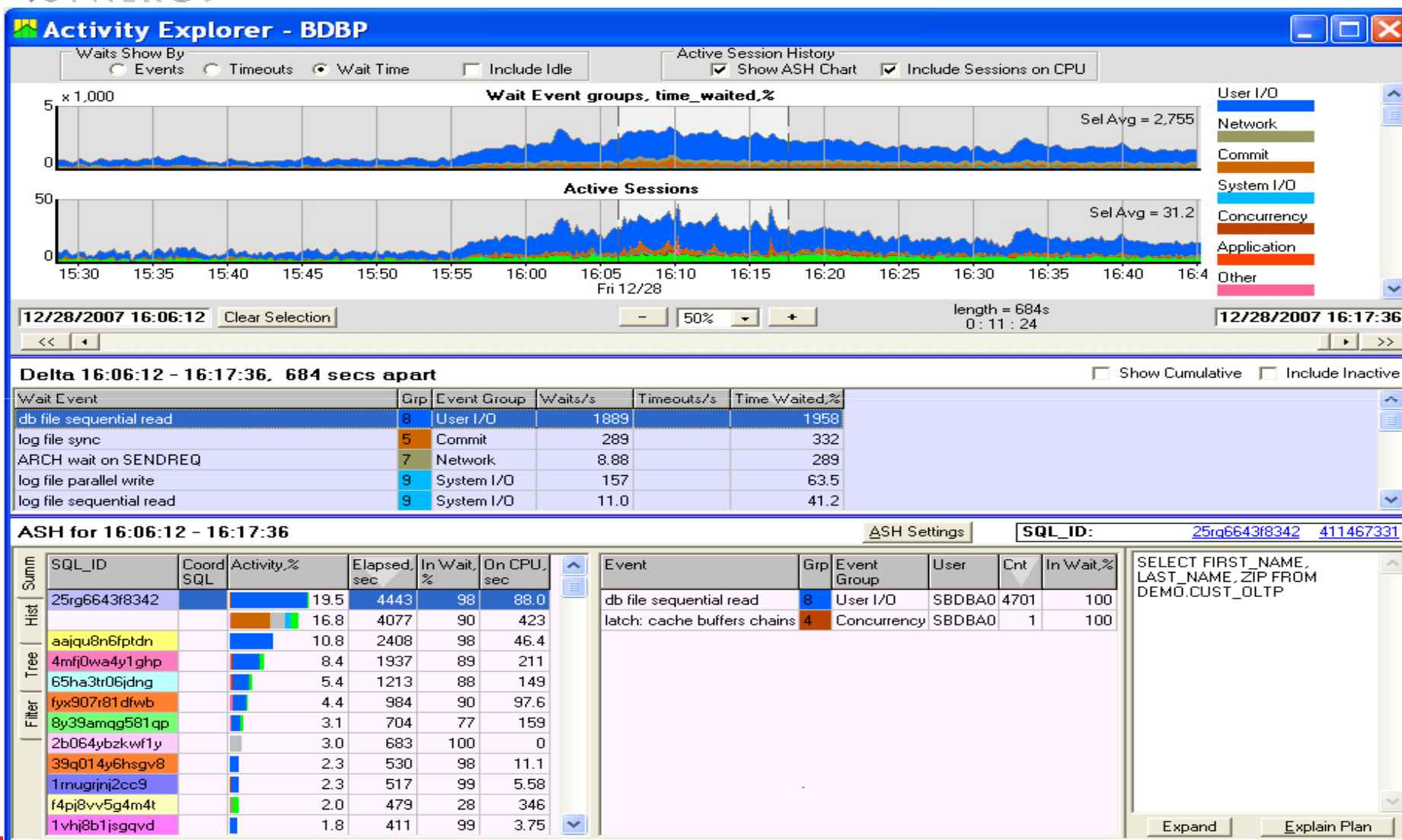




Plug for Lab128...

PdVBV

4 SYNERGY



hroug

14 - 17, 10, 2014, @ Crveni otok, Rovinj

This tool is a good OEM-performance-screen clone, with lots of goodies. Recommended. Needs Windows and SQL*net access. (and frequent renewal of your free trial key)



4SYNERGY

Gartner : IaaS

(or any HaaS)

PdVBV

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

**XaaS... It does work.
Has to work.**

Get Prepared...



As of August 2013



4SYNERGY

What You can Do...

- **Buy from a mature, respected vendor.**
 - Make IT work ‘for’ you not “against” you.
- **Make sure conditions are reasonable.**
 - Verify: demand some SLA-reporting, details.
 - Verify or Negotiate “access” (sar, sp, awr)
 - Verify or Negotiate “problem solving” capacity
- **Build “probes”**
 - Measure what you need (times, volumes)
 - Double-check vendor-numbers.
- **Control: Monitor usage, Monitor Co\$**

PdVBV



What can you do... ?

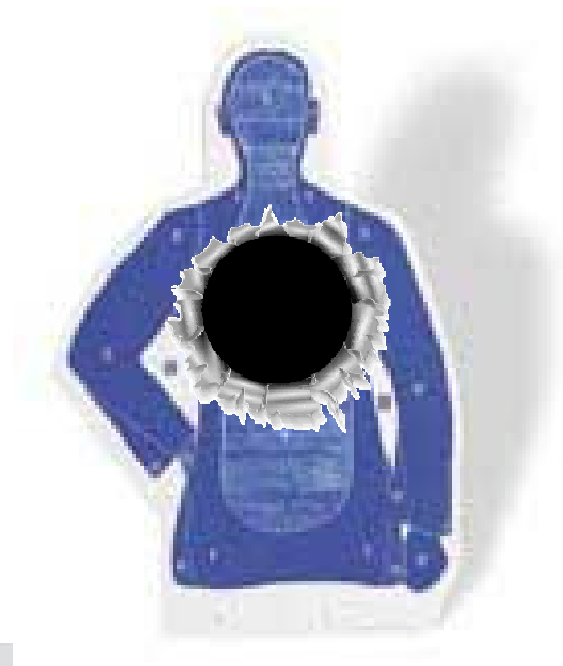
PdVBV

Do what you can,
with what you have,
where you are.

Theodore Roosevelt



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





4SYNERGY

Coffee...

PdVBV

hroug
godišnja konferencija

14. - 17. 10. 2014. @ Crveni otok, Rovinj

Question and Answer time. Discussion welcome
Teach me something: Tell me where you do NOT AGREE.

(what about that Razor?)

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4SYNERGY

Beware: Database Bottleneck

PdVBV

(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



4SYNERGY

“Cloud” can give you...

(1/2)

PdVBV

- **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 Bandwith**
 - **At datacentre (not at your desk yet...)**





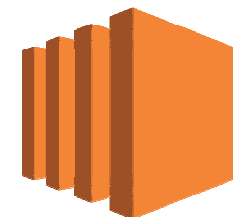
4SYNERGY

“Cloud” can give you...

(2/2)

PdVBV

- **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





4SYNERGY

Beware: DevOps (sysadmin) : Busy !

PdVBV

- 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”





4SYNERGY

PdVBV

Image:
juggling

hroug
godišnja konferencija

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Potentially, more machines mean much more work.
One business has 18 scrum teams and 100+ copies of data + application... how to keep control ??? .

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