

To RAC or Not To RAC An Overall View

by *Troy Ligon*
~~Steven Karam~~

**As with most things
in the Real-World,

Oracle RAC has it's
PROS and CONS**

PROS

- ⇒ Scalability
- ⇒ High Availability
- ⇒ Load Balancing
- ⇒ Resume Builder

CONS

- ⇒ Management Buy-in
- ⇒ Funding
- ⇒ Training
- ⇒ Man-hours for Implementation

FUNDING

⇒ RAC Licenses

\$20k per $\frac{3}{4}$ core

⇒ Training (times # DBAs)

RAC Admin – 5 days

RAC Lab – 4 days

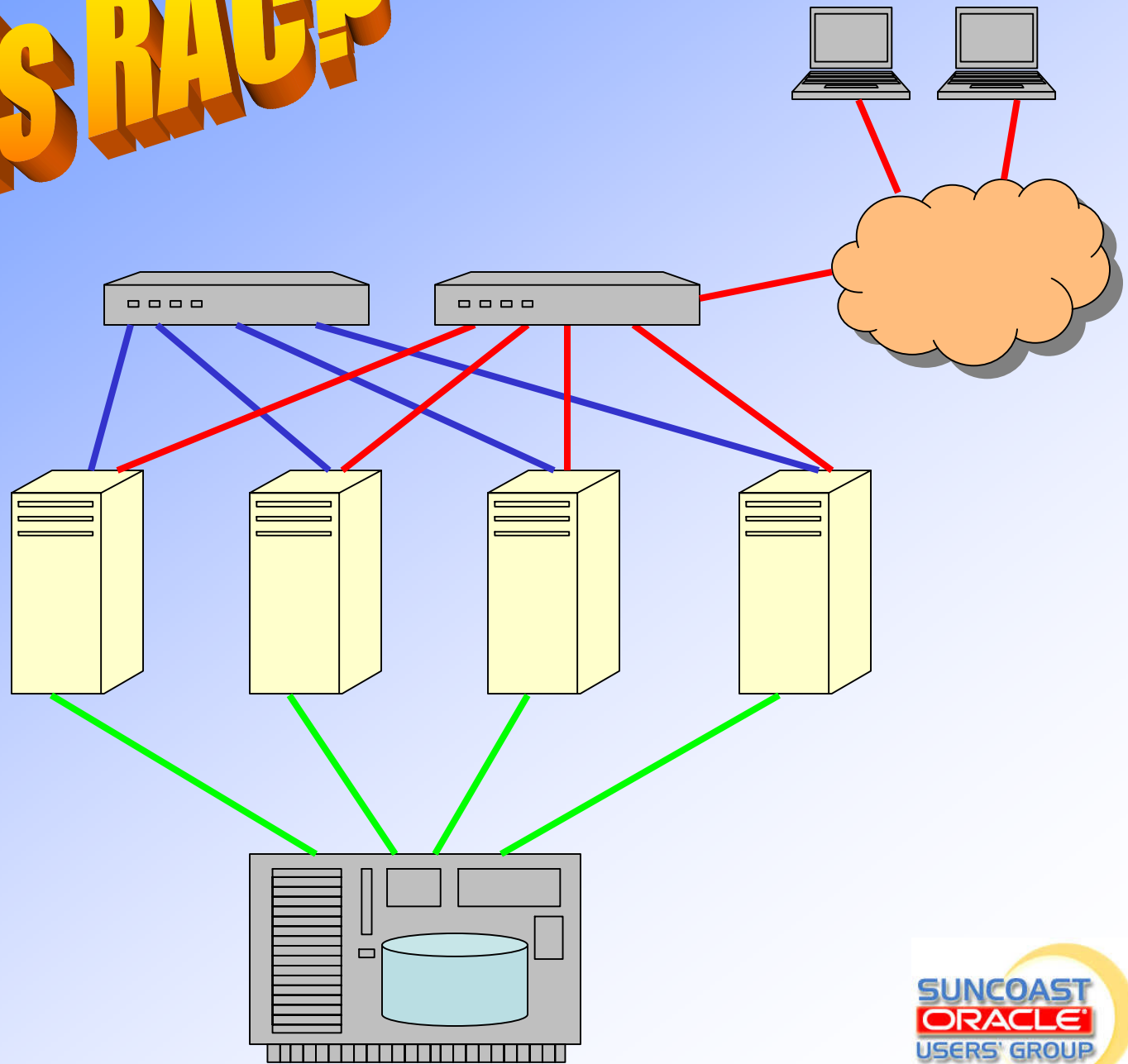
In-house study – ???

⇒ Hardware

Shared Disk Subsystem

Network Inter-connect

What is RAC?

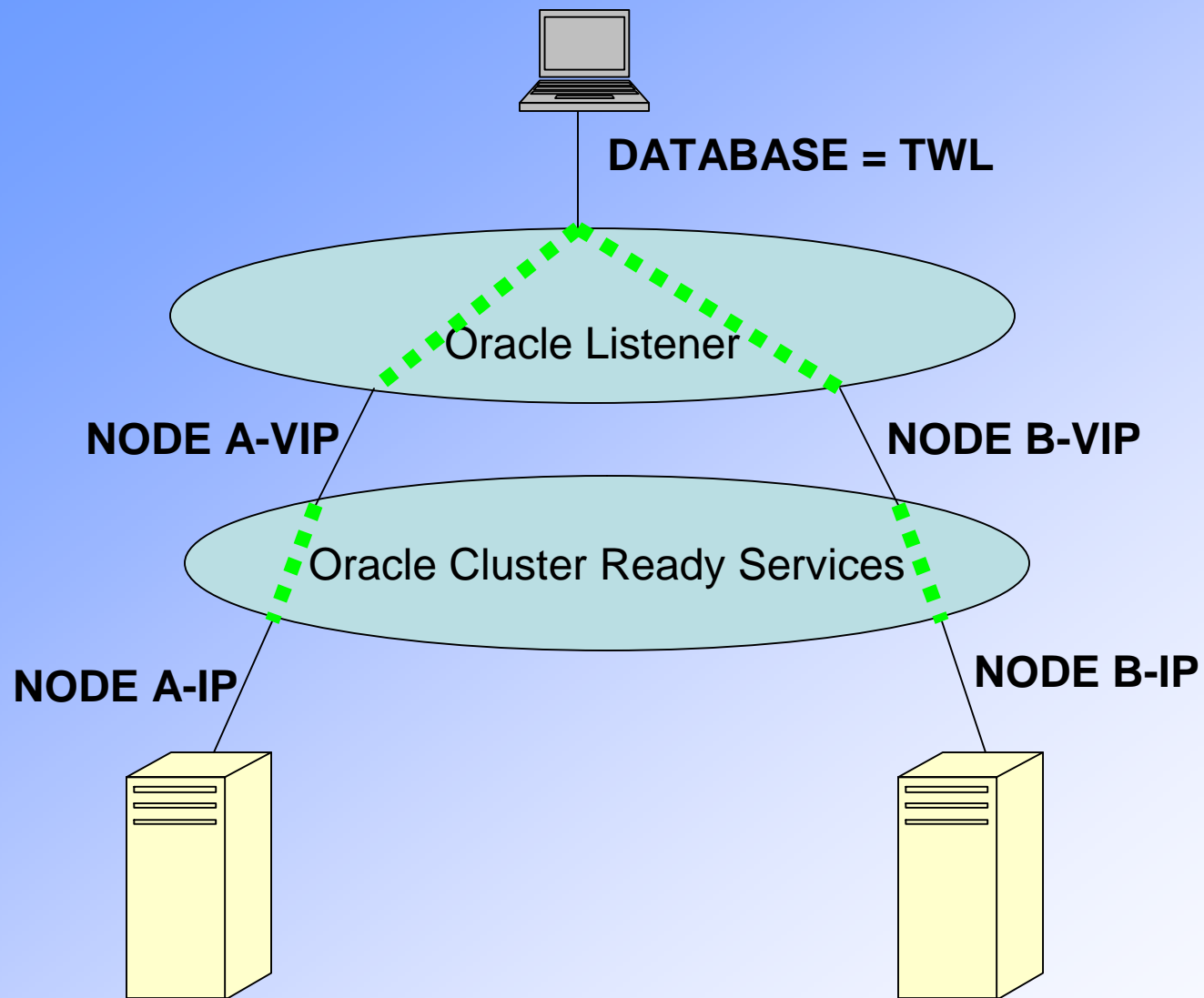


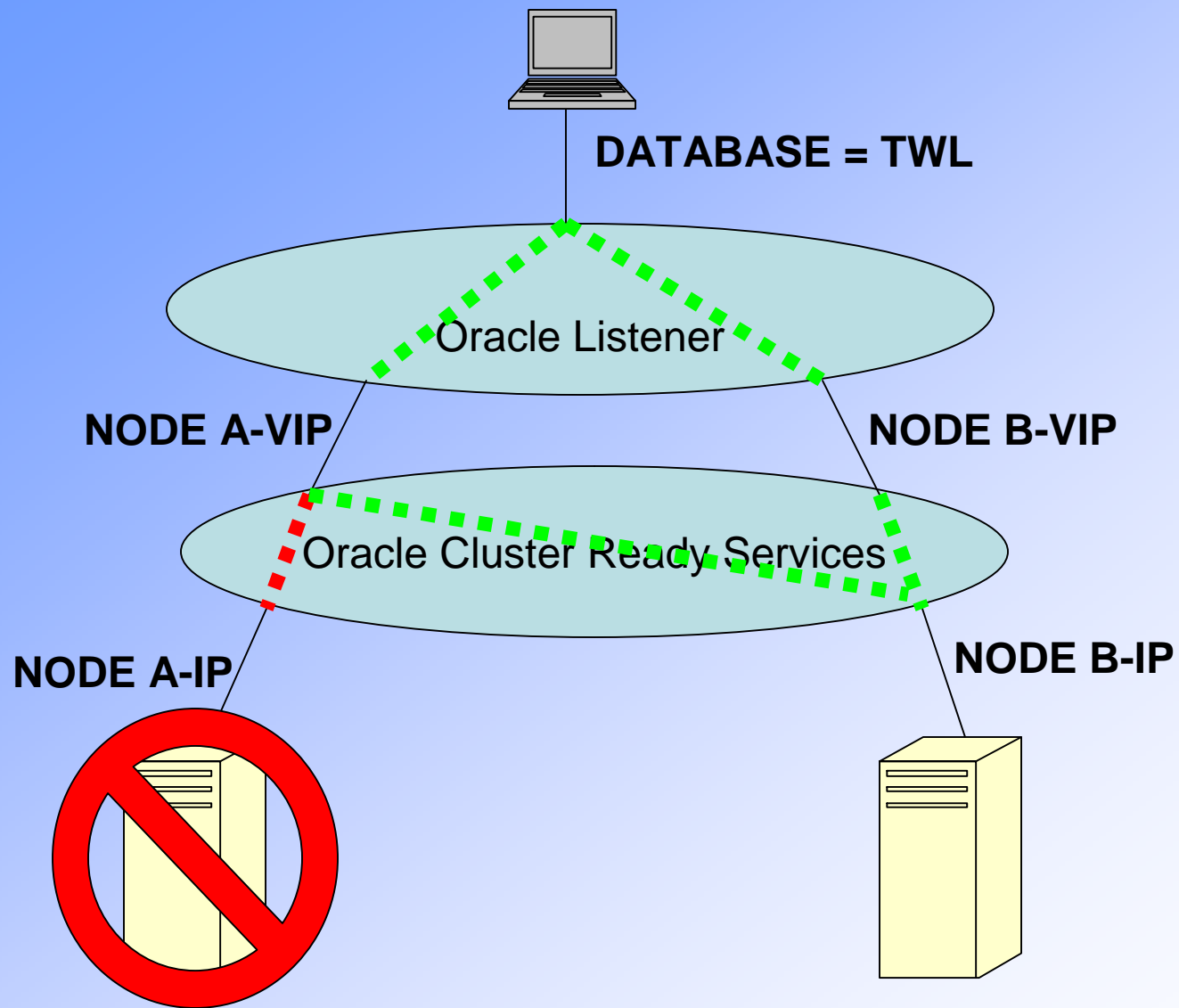
MYTH:

**When a RAC node
dies, it is transparent
to the users**

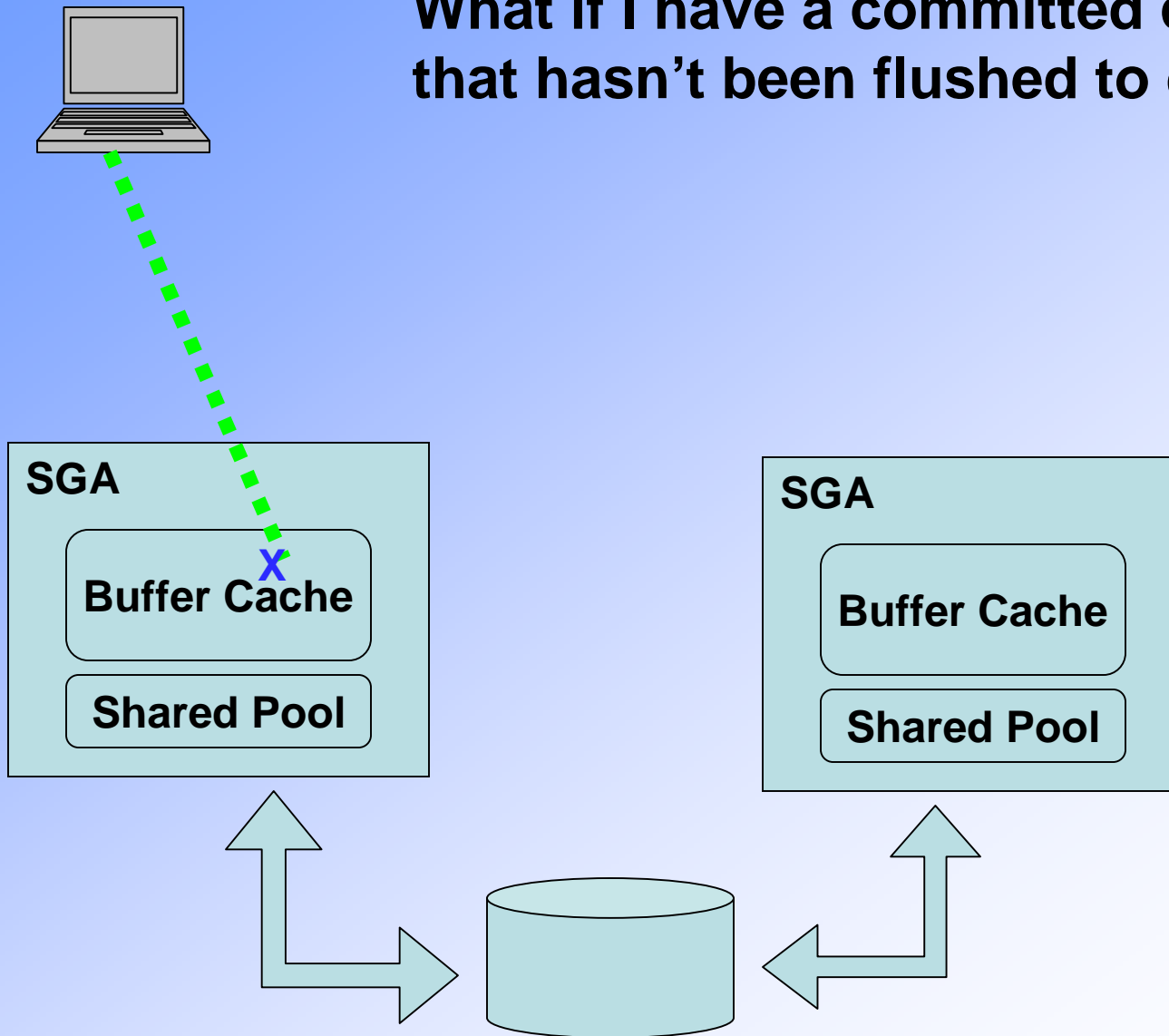
FACT:

**RAC clusters survive
node failures, sessions
don't**

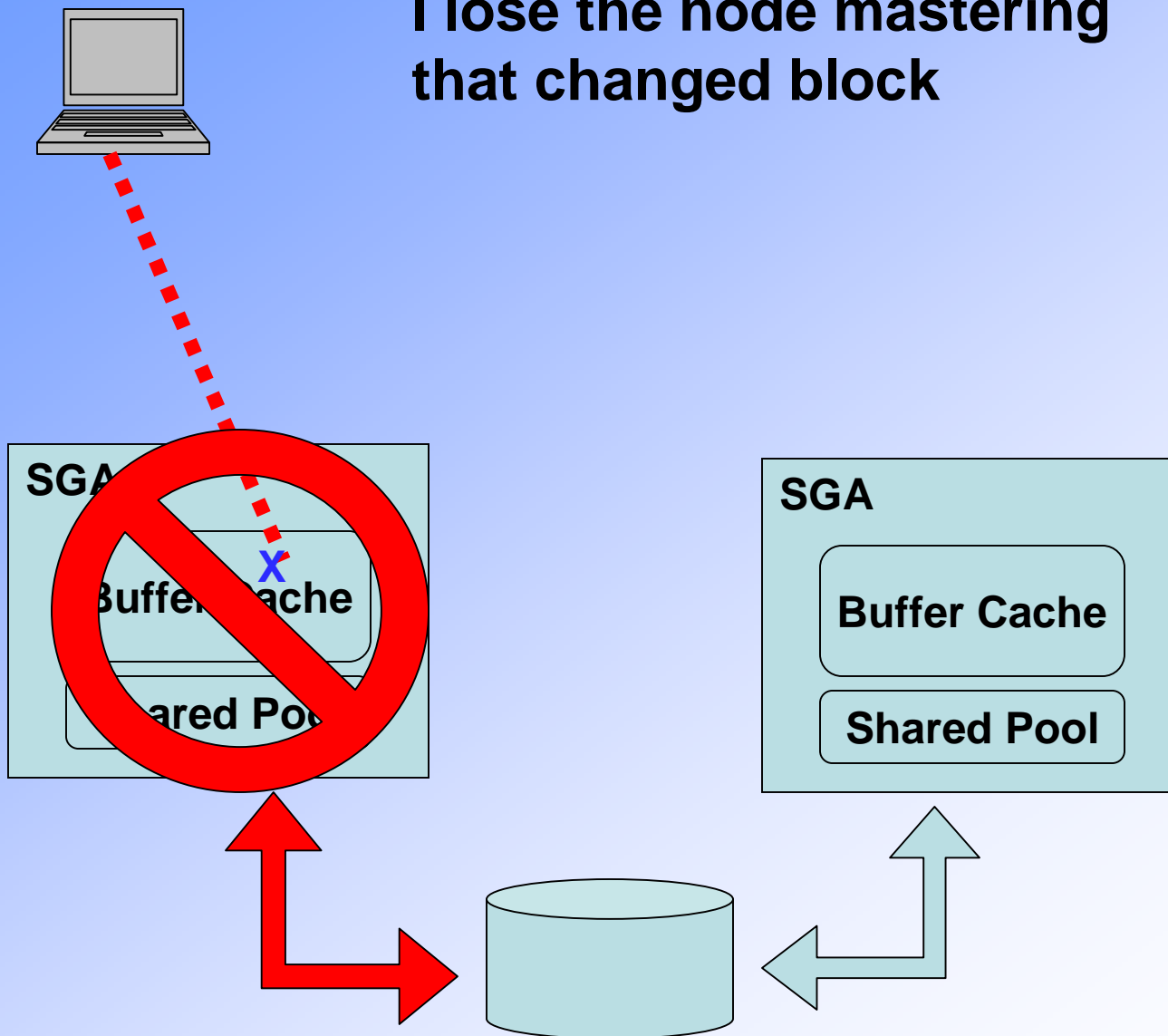




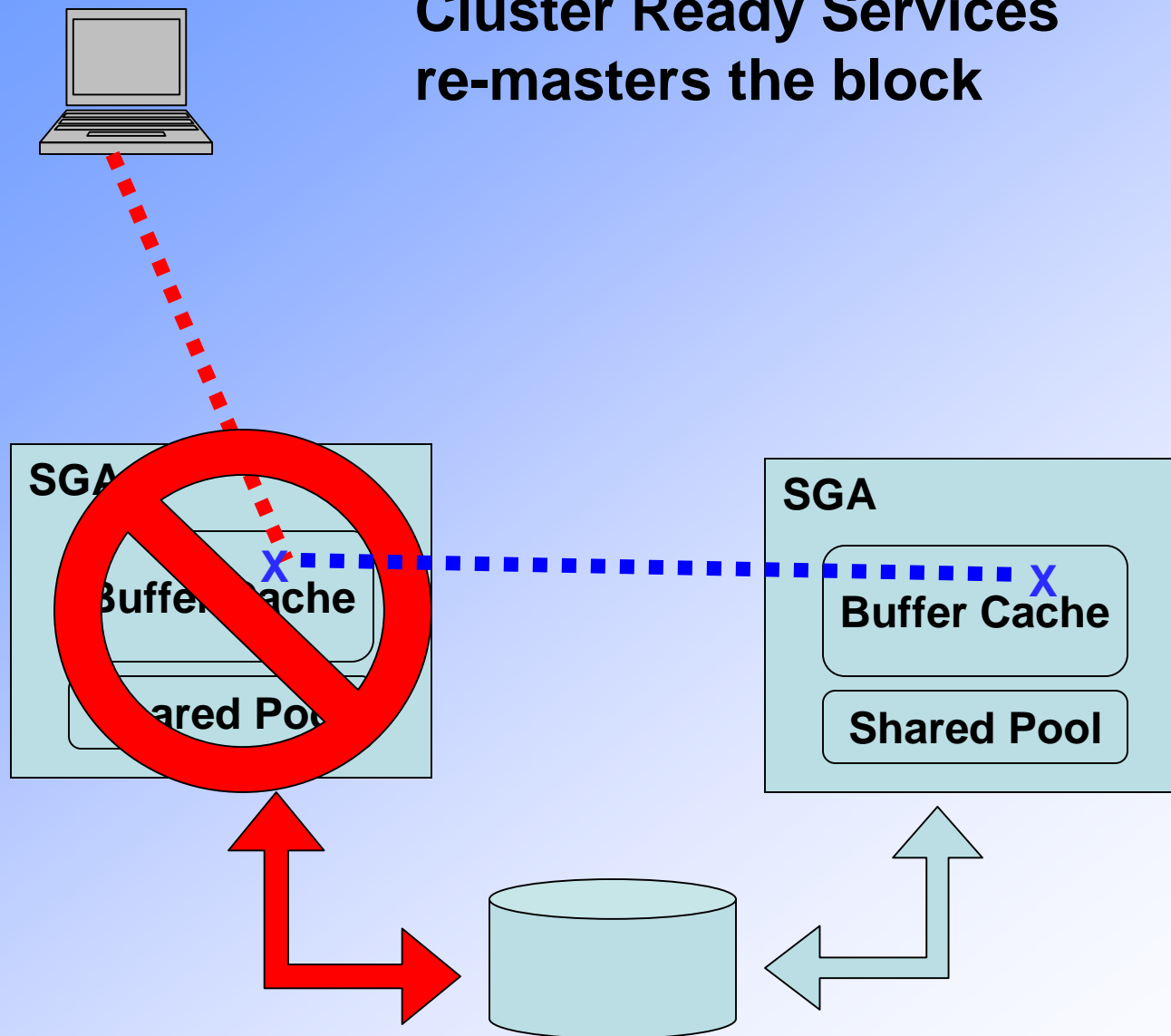
**What if I have a committed change
that hasn't been flushed to disk?**



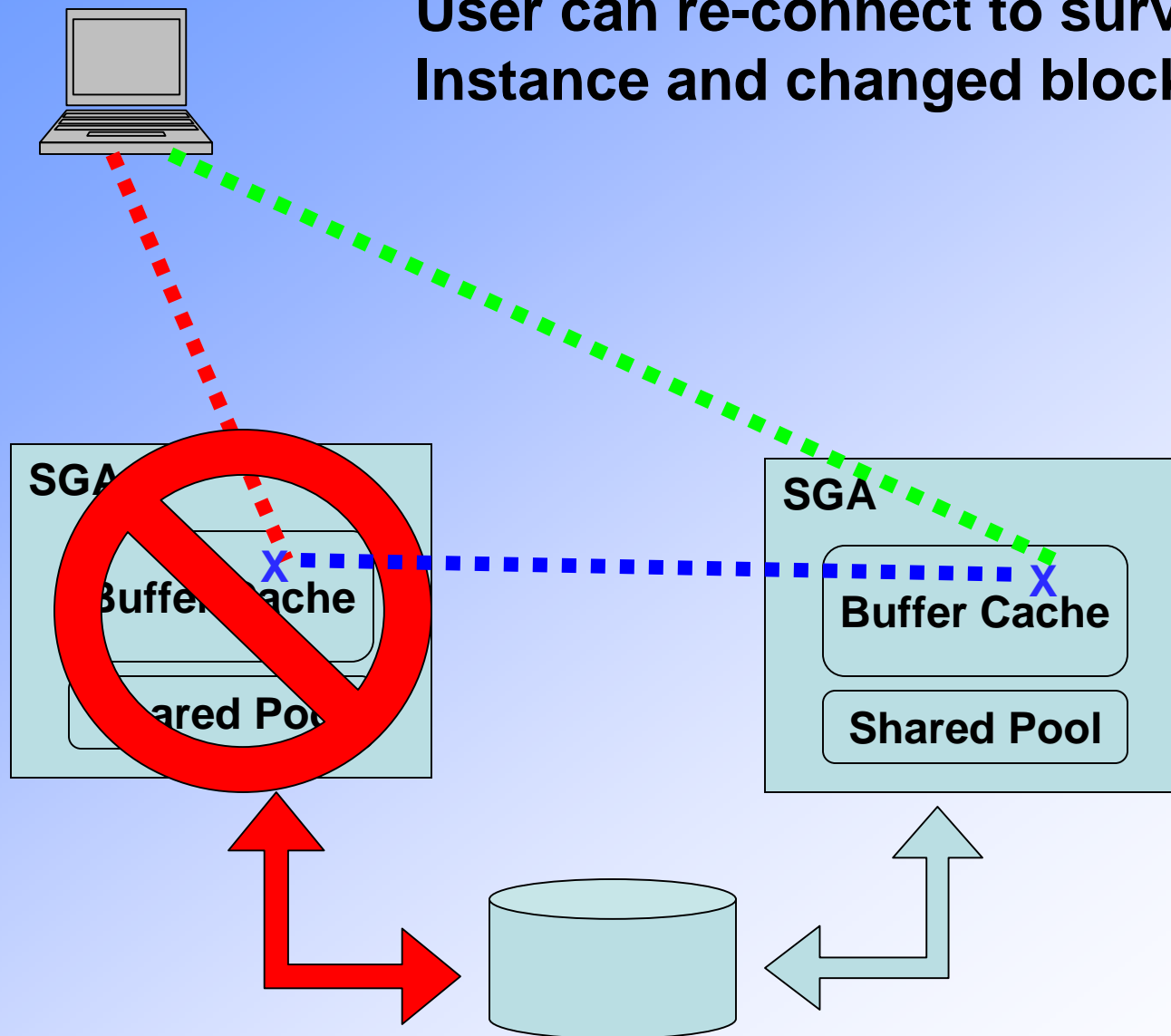
**I lose the node mastering
that changed block**



Cluster Ready Services re-masters the block



User can re-connect to surviving Instance and changed block is intact



MYTH:

Applications run faster on a RAC database than on a stand-alone data base

FACT:

**Speedup &/or Scaleup
Depends on Workload**

SPEEDUP:

Occurs when a given workload is completed in less time.

Typically seen in long running transactions that benefit from parallelization

SCALEUP:

Occurs when a greater workload is completed in a given period of time.

Typically seen in large numbers of discrete transactions

MYTH:

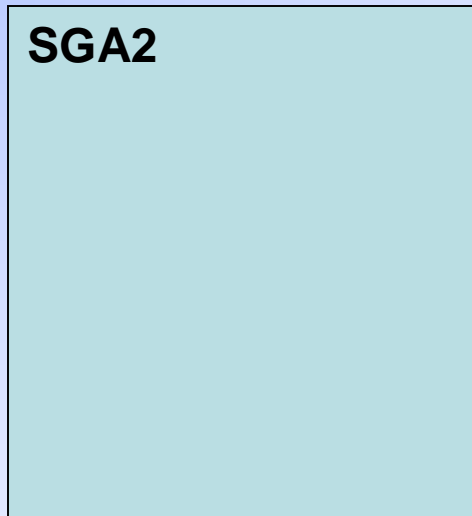
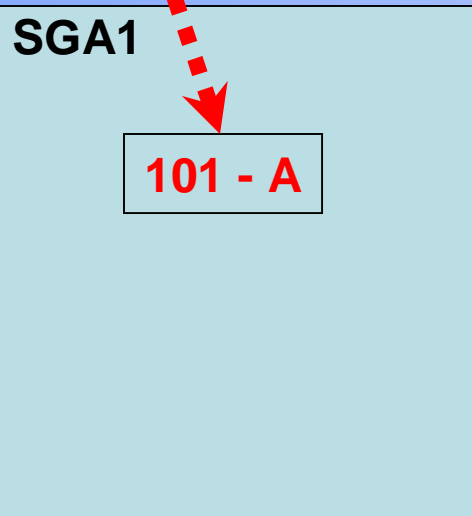
Applications run faster on a RAC database than on a stand-alone data base

FACT:

PingPonging of blocks can have performance impact if sessions on different nodes repeatedly update the same block



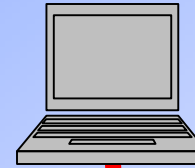
Update x set text=A





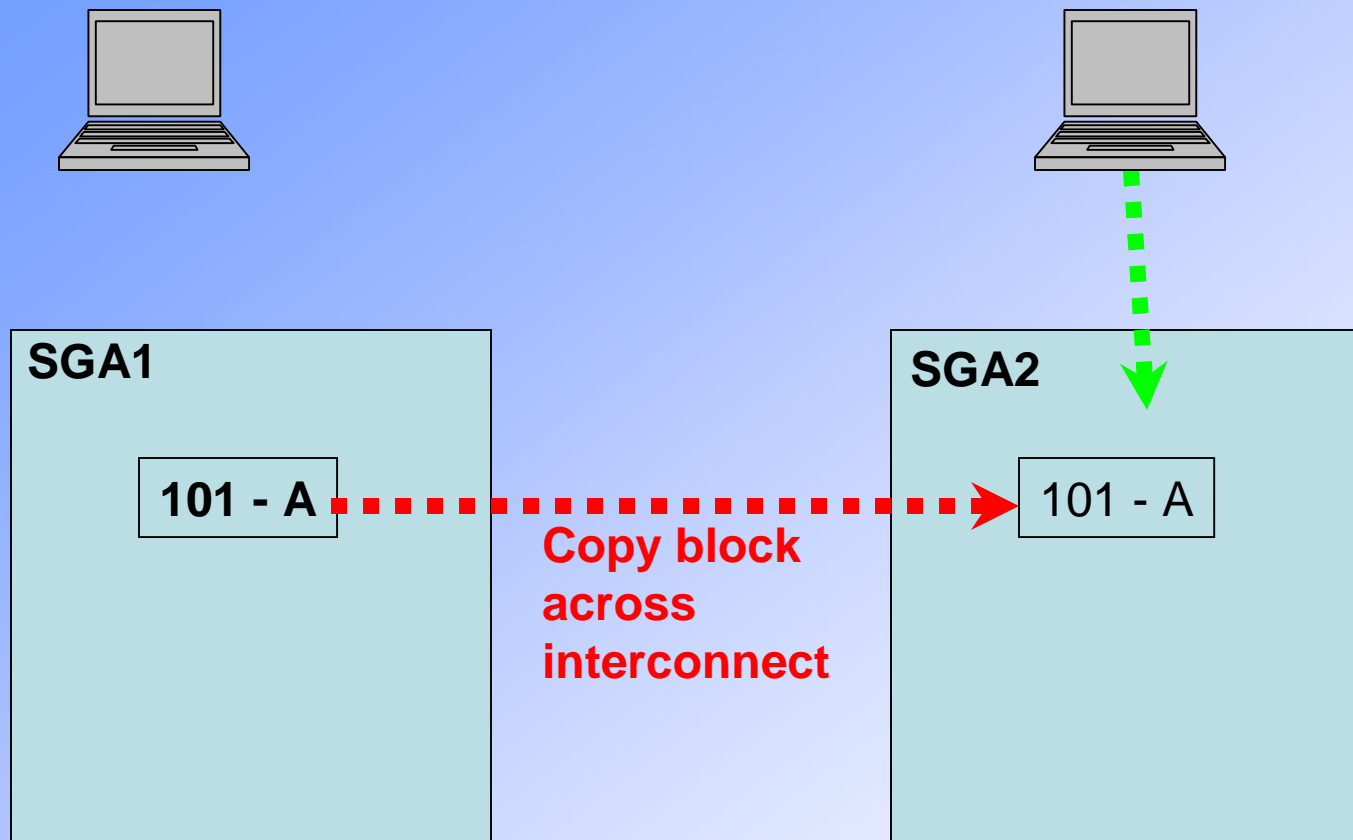
SGA1

101 - A



Update x set text=B

SGA2





SGA1

101 - A



SGA2

101 - **B**



Additional SGA:

15% more SHARED POOL

this is RAC overhead mostly
allocated at startup

10% more BUFFER CACHE

this is related to the same block
being cached in multiple instances

Actual Memory:

```
select resource_name,  
       current_utilization,  
       max_utilization  
from v$resource_limit  
where resource_name in (  
    'global cache services',  
    'global enqueue services');
```

SOUG TechDay 2008
Tuesday - May 13
<http://soug.org>

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