

# ***Consolidation & Implementation in 11gR2***

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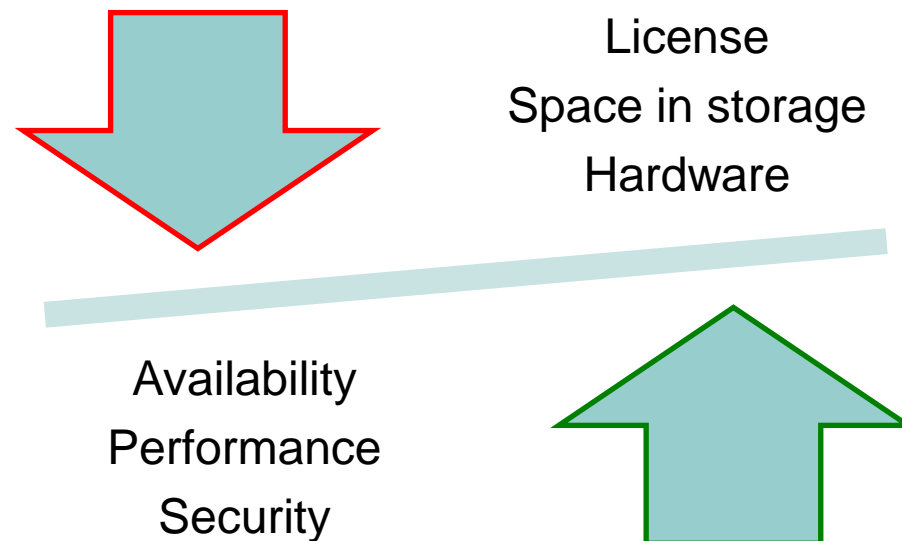
# Agenda

- Consolidation Overview
- Challenges
- Scenario
- Problems
- Goals
- Planning
- Knowledge in Oracle 11gR2
- Implementation
- Conclusion

# Consolidation overview

## Why consolidate my databases?

1. The principal objective is to reduce IT costs (TCO), such as:
  1. License, staff and consulting.
2. Reduce the total of hardware and space in storage;
3. Increase the availability, performance app, security and better SLA.



# Challenges

The principal challenges of consolidation are:

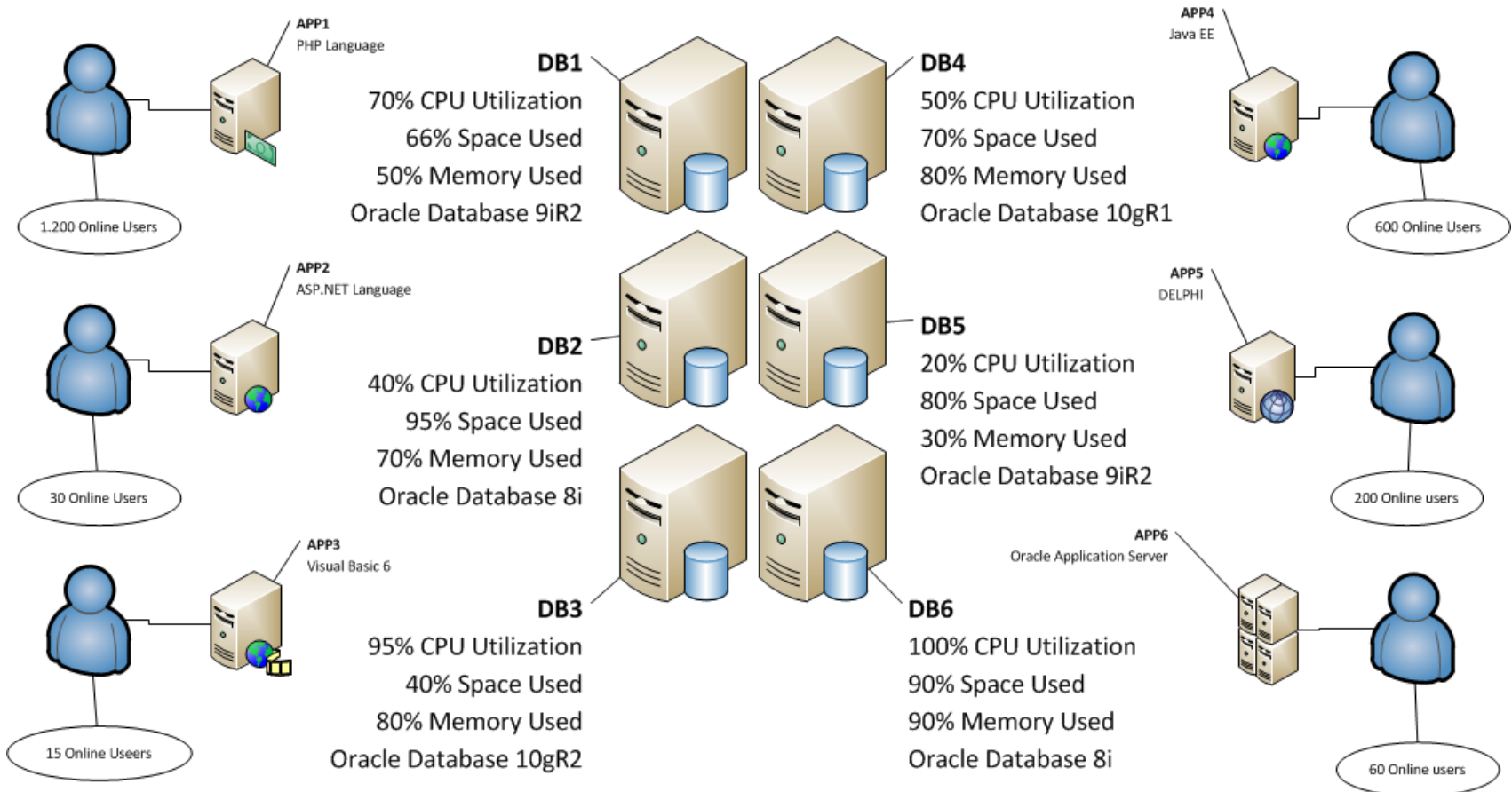
- Resource Control of Hardware;
- Architecture of Applications;
- Knowledge about Oracle database 11gR2;
- Fail points on design of current databases;
- Workload of each database and applications;
- Strategy of backup & recover;
- Mapping apps integrations...

**PRINCIPAL: REDESIGN APPLICATIONS!!!**

Workforce between DBA and DEVELOPER.

# Scenario

## Current database environment



# Problems

In the previous scenario, the problems we may encounter are:

1. Public database Links and Synonyms;
2. Query performance for each CBO version;
3. Schema with same name for distributed databases;
4. Workload of key applications (IOPS/Memory/CPU);
5. Invalid and LOB's objects;
6. Security Policies and Sensitive data;
7. Grant with ANY, ADMIN OPTIONS and Roles;
8. Limitations of App and/or App Server;
9. Load routines;
10. Different SLA's (Critical and non-Critical);
11. High consumption of storage (disks);
12. Use of specific parameters in Oracle instance;
13. Version of database and Patch sets;
14. 3<sup>rd</sup> Party App;
15. Availability.

# Goals

The objectives to consolidation databases are:

1. Hardware downtime;
2. Low business risk;
3. Standardization;
4. Better database management;
5. Better security policies;
6. Scalable and High availability;

**TIP:** All applications must be tested before of consolidation.

# Planning

## What I know about my applications?

Take into consideration all the data collected in the environment.

APP	IOPS	NETWORK	LANGUAGE	DB	NOTE
APP1	> 150.000	40% BW	PHP	9iR2	E-commerce
APP2	> 4.000	5% BW	ASP.NET	8i	Fiscal
APP3	> 60.000	17% BW	Visual Basic	10gR2	Media Center
APP4	> 2.000	9% BW	Java EE	10gR1	Payment
APP5	> 3.000	10% BW	Delphi	9iR2	WMS

1. Collect data into AWR report and SQL scripts in v\$sysstat;
2. Network can use special application on infrastructure.

BW = Bandwidth

# Planning

## What I know about my Hardware?

Take into consideration all the data collected in the environment.

Server	Proc	Memory	Disk	Platform	SO	DB
DELL 2900	2x QUAD	6GB	4x 136GB	64-Bits	Linux	DB1
DELL 2950	2x QUAD	16GB	6x 136GB	64-Bits	Unix	DB2
HP DL360 G5	2x QUAD	8GB	4x 136GB	64-Bits	Linux	DB3
HP DL360 G4	2x DUAL	16GB	6x 300GB	64-Bits	Unix	DB4
IBM NetFinity	2x DUAL	4GB	2x 80GB	32-Bits	Windows	DB5

1. Collect data into AWR report and SQL scripts in v\$sysstat;
2. Network can use special application on infrastructure.

BW = Bandwidth

# Knowledge in Oracle 11gR2

What resources and products should I know in Oracle 11gR2?

## Availability

- RAC – Real Application Cluster – *Additional License*
- Active Data Guard (Optional) – *Additional License*
- Active Database with RMAN

## Security

- Database Vault – *Additional License*
- Data Masking – *Additional License*
- Simple audit based in Triggers
- Profile and TDE

# Knowledge in Oracle 11gR2

What resources and products should I know in Oracle 11gR2?

## Management

- Resource Manager
- Grid Control – *Additional License*
- ADR
- SCM – Contract Support

## Storage

- ASM
- Advanced Compression – *Additional License*

## Development

- Database Resident Connection Pooling (DRCP) for PHP
- LOB Prefetch

# Knowledge in Oracle 11gR2

What resources and products should I know in Oracle 11gR2?

## Network

- Client side query cache

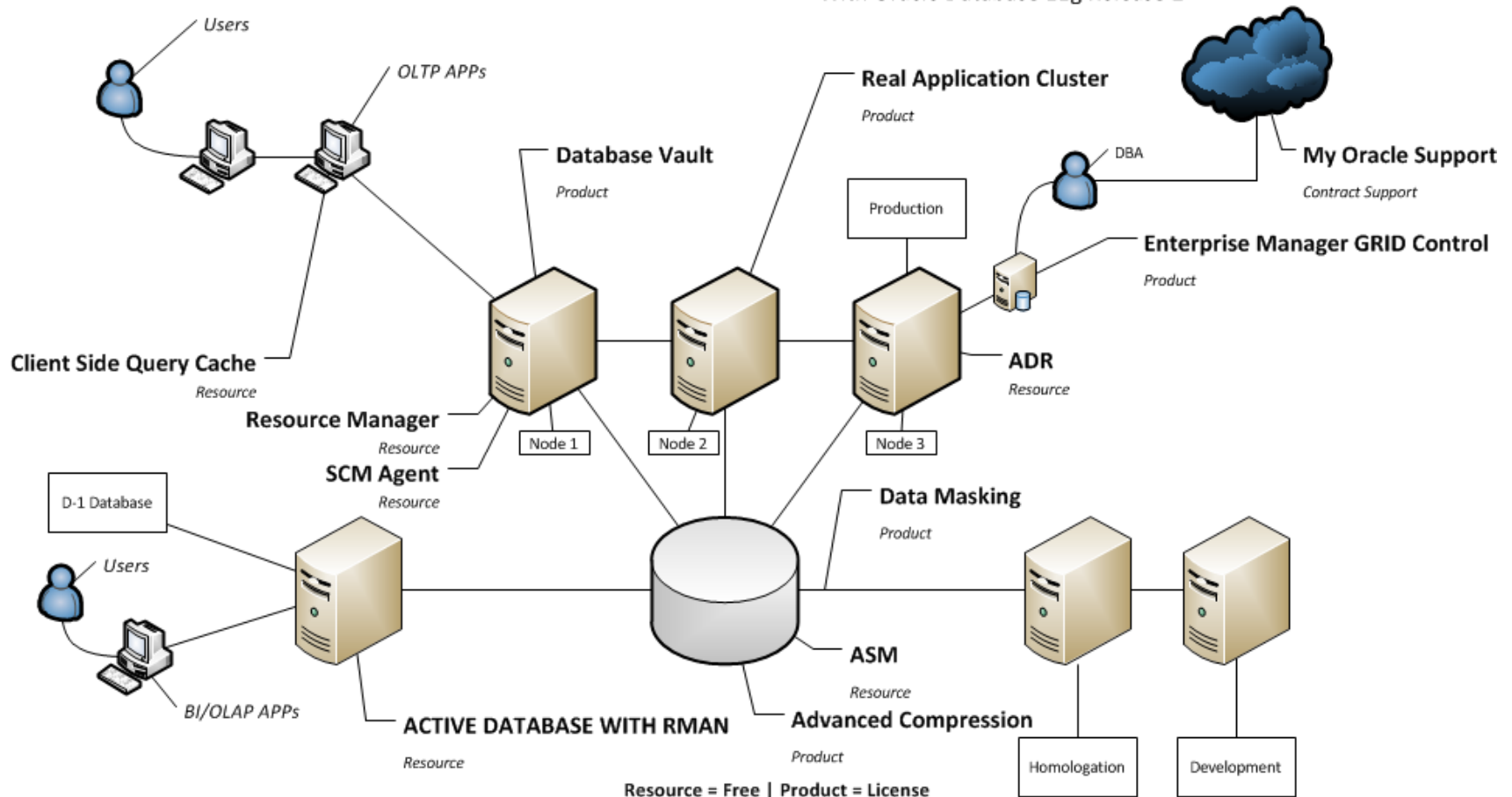
## Performance

- AWR reports – *only EE*
- ADDM and ASH advisors
- Real application test
- Result cache for PL/SQL

# Implementation

## Consolidation Environment

With Oracle Database 11g Release 2



## Conclusion

We will always remember the basic rules:

- Planning!
- Know about your workload!
- Consolidate an application at time!
- Build a good test plan for each application!
- Ensure security and performance for your database!

# Thanks

# Contacts



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