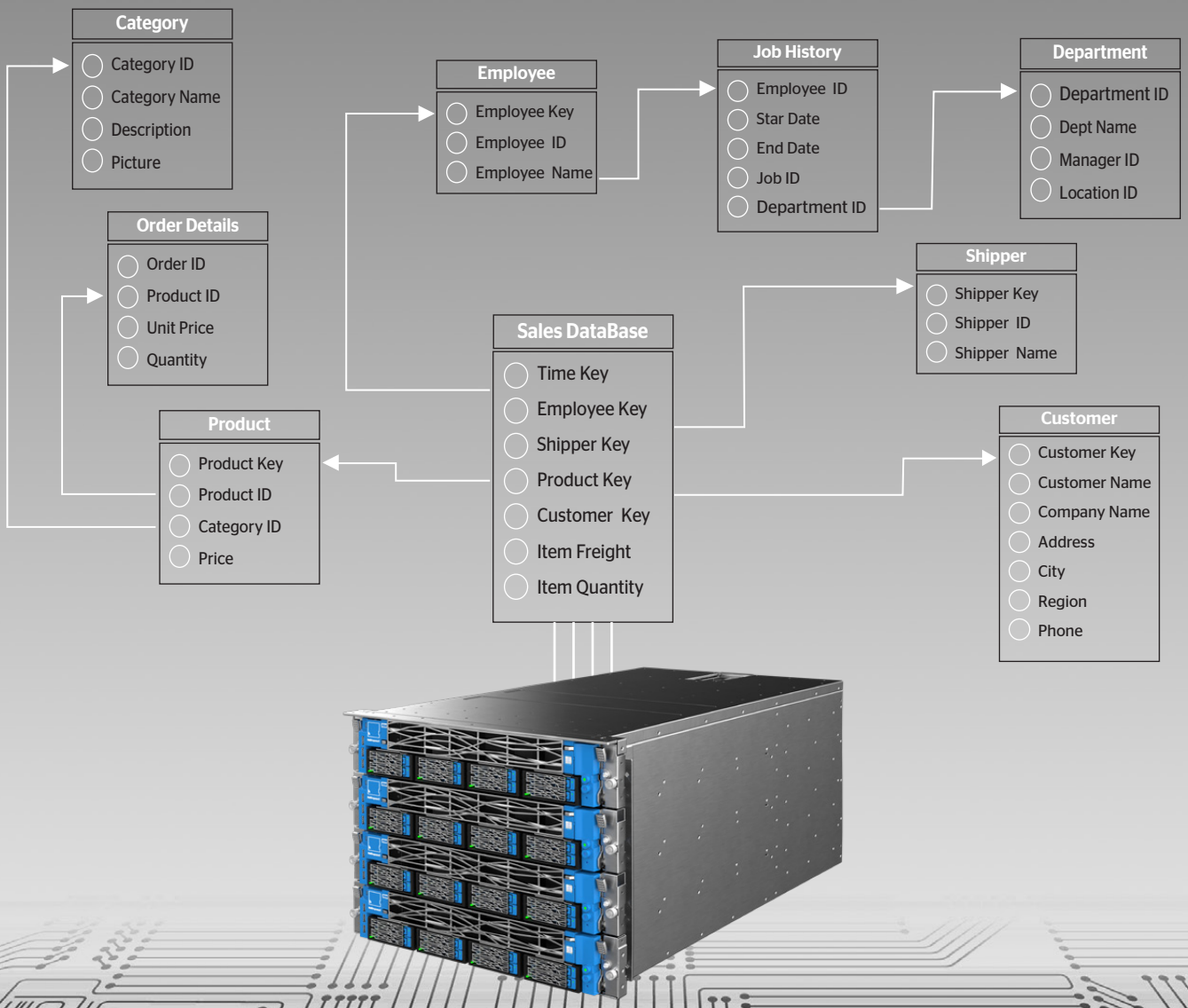
Database by BullSequana #Oracle

Leverage your data, reduce your cost.



Trusted partner for your **Digital Journey**

Atos

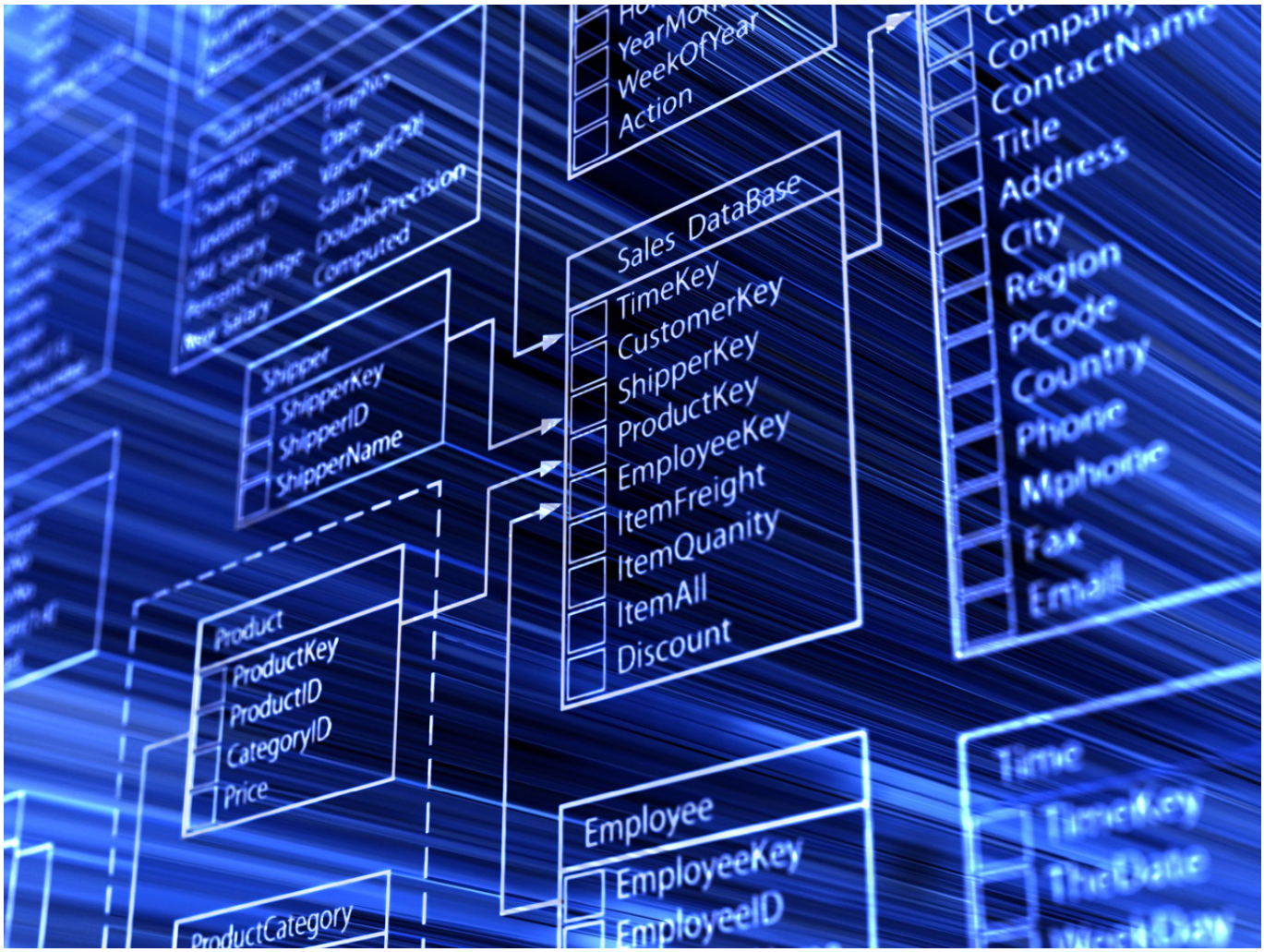
In an environment where digital technology plays a predominant role in the activities of enterprises and organizations, IT Departments are subject to unprecedented demands in terms of response times, availability, agility and security, all against a backdrop of tight budgets. They have to be flexible to incorporate the new IT developments that the business requires while meeting agreed service levels and maintaining operational efficiency.

In terms of architecture, IT often deployed, for flexibility reasons, a collection of distributed servers dedicated to various applications according to business needs, as they occurred, with multiple databases instances of various versions.

The level of performance and availability of the solutions implemented depended on the application critical level.

With a complex production tool, hard to manage and facing the need to control costs, IT Departments have to look for solutions to optimize and rationalize the IT landscape.

Databases being cornerstones to a large part of organization applications and a major asset due to their intrinsic value have to integrate the optimization and consolidation path.



Database consolidation: 3 key benefits

Consolidation is already a reality for a large part of the Data center, capitalizing on the maturity of virtualization technologies.

Consolidating the databases on x86 environments will bring to organizations 3 key benefits.

Reduce costs

Rationalizing the IT landscape creates savings opportunity at different levels.

First of all, wasted or unused resources can be reclaimed and dispatched according to needs. This will reduce the number of licenses and support units inducing big savings opportunity.

In terms of global administration stand point, reducing the number of objects (server, storage, network ports...) simplifieshe IT landscape and as consolidation tends to reduce heterogeneity improves operational efficiency.

Ensure scalable performance

On top, consolidation is also an efficient way to improve the corporate social responsibility (CSR).

The sprawl of database servers creates a poor computing and I/O resource distribution. Over time, some low performing infrastructure may cap the resources available for the DBMS, impacting the performance level. Once consolidated, it is possible to very simply reallocate or provision extra capacity enabling enhanced performance.

In addition, according to analysts, structured data volume grows from 5 to 10% per year on average. On the long run it means 50% extra data volume five years later. Consolidation is a simple and efficient way to reallocate resource where they are needed, and reuse also in the very same database environment freed resource from decommissioned environments.

Improve resiliency

Consolidation relies on highly redundant hardware and network resources, enabling to improve overall availability compared to a single server (if no database clustering is active). Moreover running virtual machines is also more secure as a service/environment may be transferred, in a planned manner or in case of failures, from a resource to another one, without downtime. Furthermore, with data center consolidation, the planning, implementation, and execution of disaster recovery solutions are less daunting because all the vital components are in one place, easing replication and failover initiation.

Consolidation has also a positive effect on flexibility and serviceability since upgrades can be run on a node of a cluster without downtime.

Databases environments are usually one or a mix of those two deployment models:

- Sprawl of dedicated or clustered x86 servers
- Consolidated/partitioned legacy systems (often Unix)
- Being on sprawled dedicated servers creates on the one hand, a waste in computing and I/O resource distribution and, on the other hand, a concern in terms of resiliency, availability and performance
- If consolidation has started on legacy machines, this creates 2 concerns: renewal and maintenance costs remain high and expertise is less and less available

Why consolidate with database by BullSequana #Oracle?

With its unique features, database by BullSequana addresses extreme demands that are often believed to be completely irreconcilable: decrease your TCO while ensuring performance and Quality Of Service levels. The freed resources can then be invested into improving organization digitalization and operational excellence.
Database by BullSequana #Oracle is a new integrated system, to optimize database environment, leverage data and reduce costs. It combines a BullSequana S high-end server equipped with Intel® Xeon® Scalable Platform Processor Family, a virtualization solution Oracle VM® and state-of-the-art flash storage.
The hardware is certified on Oracle VM®, the latter supports the Oracle Database. As for the OS, customer has the choice: Oracle linux® or an other distribution for more flexibility. Database by BullSequana #Oracle leverages all those components to optimize database environment, leverage data and reduce costs.

Reduce your TCO up to 35%

Servers consolidation is already widely implemented accross the data centers, while consolidation of Databases can generate additional high level benefits. Database by BullSequana allows enterprises to drastically reduce their costs in three domains, resulting in up to 35% of TCO decrease, leading to a quick Return On Investment (ROI) of about 2 years.

Lower Oracle support fees thanks to server consolidation

In Oracle enterprise environments, the software support fees are a percentage of the license cost (around 22% of Oracle EE license price). And the perpetual licensing costs are based on 2 elements: the total number of cores and a core factor depending on the server (0.5 for x86 environments; 1 for AIX® & HP-UX®).

In a distributed commodity server environment, an important share of the total resources is unused since extra cores are often licensed as "buffer" to absorb temporary heavy workloads; this has a direct impact on licensing costs. By consolidating, the "buffer cores" are mutualized and licensed cores are saved.

The more important the server sprawl, the bigger the savings which can range from 5 to 25%.

Lower Oracle support fees thanks to optimized processors

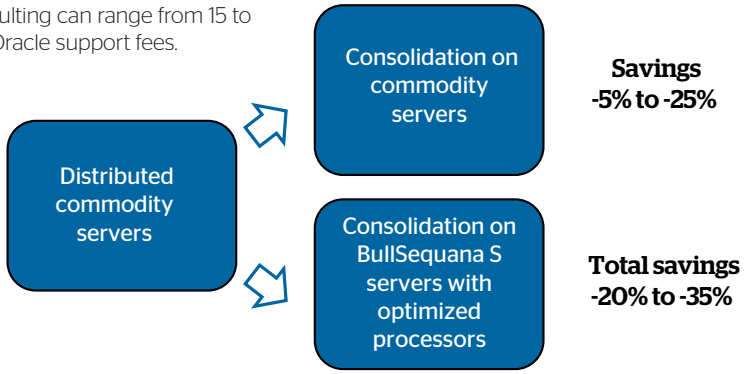
The second and main area of cost reduction with database by BullSequana is based on the processor type.

BullSequana S server is equipped with with selected Intel Xeon gold or platinium processors. Facing the commodity environments equipped with Intel Xeon Bronze or Silver, database by BullSequana #Oracle requires fewer cores to achieve the same processing power. This database by BullSequana feature allows to reduce Oracle licenses and maintenance costs.

The savings resulting can range from 15 to 33% on yearly Oracle support fees.

Additional savings due to operations rationalization

Consolidation also results into a reduction in the number of objects (server, storage, network ports...). It is estimated that for a production environment, around 70% of the total server administration fees are reduced and around 45% server power costs saved. Indeed, thanks to expertise inherited from Bull in designing efficient platforms, BullSequana S offers outstanding energy efficiency which improves the corporate social responsibility (CSR).



Benefit from scalable performance to meet SLA over time

State-of-the-art storage

Concerning the storage - often a bottleneck in the database architectures – the low latency I/O per second (IOPS) metric is a key element of a successful infrastructure.

In database by BullSequana #Oracle, there are 3 flash disks offerings HitachiVantara® F370 and F900, EMC XtremIO® X2-R, PureStorage® //X. Their state-of-the-art technologies provide very high IOPS performance with very low latency (hundreds K IOPS with < 1 ms) and their modular design ensures steady growth in terms of performance while always delivering the required I/O level.

Scalable architecture

Databases are often very resource hungry. According to analysts, structured data volume grows from 5 to 10% per year on average. Being able to guarantee their level of performance and availability, no matter what, is essential.

With database by BullSequana #Oracle, the same technology is used for any Oracle deployment, without any rupture – from 8 to 224 cores per server, scaling from 1 TB up to 6 TB RAM. The very flexible upgrade path (addition per 2 CPUs) protects investments. This also applies to memory footprint which can be extended very simply by adding memory blades (for example if the in-memory option of Oracle 12c becomes necessary).

Powerful processors

For Oracle database, BullSequana S server is equipped with Intel Xeon gold or platinium processors. These processors are major leap forward in the x86 world, as the increased cache contributes to improve the computing power especially in an OLTP environment. That is why BullSequana S is positioned among the very best enterprise servers in the SPECint benchmark, often n°1 position in its range.

Database by BullSequana #Oracle benefits from very fast processors, that enables to limit the number of cores for a given performance level.

Improve resiliency to keep databases from risks

Oracle solution robustness

The first resiliency element is to capitalize on DBMS features (Oracle RAC and/or dataguard) which enable business continuity (High Availability or disaster recovery ready).

Oracle VM enables partitioning. Consolidating all the Oracle instances in a very highly resilient infrastructure improves overall uptime and availability. Moreover the virtualization technology simplifies maintenance or upgrade by redeploying the virtual machines (Oracle Live Migration) while preserving the service availability.

BullSequana S unique RAS features

BullSequana S offers unique levels of reliability and availability for critical environments, including early warning features that anticipate potential breakdowns. A specific feature prevents a server crash in case of a fatal memory error, limiting the impact to the virtual machine.

In addition to the RAS features such as Enhanced Run Sure® technology (a raft of methods to protect the RAM and the platform), the new Intel Xeon Scalable processors provide extended RAS features such as Adaptive Double DRAM Device Correction and PCIe Live Error Recovery.

Moreover, best-inclass high availability is provided thanks to a patented blade system: PCIe components can be hot-plugged or hotswapped to facilitate maintenance activities and boost productivity.

Robust storage and network

The storage is built on fully redundant components with no single point of failure (SPOF). In addition, to achieve multi-site protection, the flash storage arrays use replication features to duplicate data and ensure an optimal recovery point objective.

An advanced resiliency option enables to provide Point in time in a journalized way by coupling 2 EMC storage solutions (Recoverpoint® and Xtremio Xbrick). It triggers the possibility to get back in time and revert simply from a data corruption.

Concerning the network, multipathing enables no single point of failure (SPOF).

Replace UNIX consolidated servers by Database by BullSequana #Oracle to reduce costs

Some organizations already consolidated databases on Unix legacies and many use partitioning features which provide flexibility and a high Quality Of Service. However the Unix-based infrastructures costs (acquisition and maintenance) are very high and Unix environments are suffering skills shortage.

Moving to Database by BullSequana S leads to two major savings opportunities:

- Oracle licensing: overall Unix cores are roughly 1.5 to 2 times more powerful than x86 ones but Oracle licenses cost 2 times more (core factor x86 is 0.5 as it is 1 for AIX & HP-UX), meaning that for the same overall performance, x86 processing power is cheaper
- Legacy systems acquisition and maintenance: multiple times more expensive than x86 servers.

In conclusion, with regard to consolidation on large UNIX servers, consolidation on database by BullSequana S offers major savings while providing a highly reliable and robust production environment.

Database by BullSequana #Oracle cost savings versus Oracle Exadata® Database Machine

When compared to Exadata from Oracle, database by BullSequana #Oracle can bring significant costs reduction, as 3 major expenses can be reduced.

Reduced software support fees

Exadata is based on common processors. Database by BullSequana #Oracle using more performant processors (more processing power per core), the total core number is drastically reduced implying major support costs savings.

Licensing costs: pay for what you really use

In an Exadata scenario, the Oracle RAC features (and of course licenses) are mandatory, should they be required by the customer or not which is not the case for Database by BullSequana #Oracle.

Limited transition costs

Today Exadata supports only Oracle 12c database, 18c (and a dedidated 11qR2 for exadata only). This implies that, prior to re-platforming, all databases will have to migrate to one of those versions. This has a huge impact both on cost and on the whole applicative ecosystem. Migrating the first database likely requires 25 working days and likely 5 more per additionnal Database, depending on size and complexity. Moreover migrating the applications on top of the database will likely also be costly (additionnal licenses & migration costs).

In comparison, database by BullSequana, supports the Oracle VM virtualization technology, allowing to host different Oracle versions – from version 9 to 12c - 18c on a single server. This means no mandatory DB upgrade and a simple DB replatforming. Consequently, database by BullSequana allows to keep the whole existing Oracle ecosystem. Transitioning can be done smoothly, making IT operations easier and more reliable with a lower impact on users.

Staying at the forefront of technology

By working closely with Oracle, Atos has always been able to ensure a fast time-to-market in the delivery of the latest innovations to businesses.

It's this approach that saw us become an early adopter of Oracle Engineered Systems, shaping the technology within our Extreme Performance Computing environment. To keep at the forefront we continually invest in training our teams in the skills to support the changing face of technology and business. As the all-inclusive service provider for Oracle, Atos has expertise and accreditation across the complete spectrum of applications, technologies and associated services. Our deployment choices include the flexibility to choose between on premise and cloud-based software as a service models.

Building the future of business and technology

Looking back over the past years of partnership, Atos and Oracle have come a long way together. Geographically, we've gone further to implement joint projects for clients in all corners of the world. Technologically, we've moved forward in great strides to innovate a business orientated approach to delivering systems and applications. Collaboratively, we've worked closely to develop and implement solutions that improve speed and agility for our clients. As we look forward to the changes that the next decade will bring, the Atos Oracle Partnership will continue to support the evolution of technology with the goal of driving performance and sustained growth for businesses across the globe.

Assurance of over 15 years of partnership experience

Since the mid 1990s, Atos and Oracle have successfully implemented hundreds of projects together. This experience means that today we have a robust tried and tested methodology for implementation that comprises comprehensive assessment and strategy. Our teams bring together the expertise of Atos' dedicated Oracle project management resource with business-focused consultants to ensure seamless implementation that minimizes risks and increases turnaround time. In-depth Oracle product expertise, a global sourcing model and quality assurance ensures a track record in deliverability of innovation, flexibility and reliability.

An audit to secure the transition to database by BullSequana #Oracle

Prior to engage a migration or re-platforming, it is essential to realize an audit to make an assessment of the whole ecosystem, the implicated infrastructures and software with the associated versions and all the whereabouts.

The audit's key steps are the followings:

- Understand customer's Oracle ecosystem
- Analyze server, storage and network architectures
- Deploy OS/DB tools to collect metrics
- Analyze metrics to define migration scenarios.

The audit will involve Atos architects, BullSequana and database experts.

The main results of the audit are:

- Identification of the databases to be migrated
- Definition of the targeted architecture
- Definition of the best migration scenario amongst possible scenarios.

The audit can be followed by a POC in order to validate the targeted architecture and migration scenario.

About Atos

Atos is a global leader in digital transformation with 120,000 employees in 73 countries and annual revenue of € 13 billion.

European number one in Cloud, Cybersecurity and High-Performance Computing, the Group provides end-to-end Orchestrated Hybrid Cloud, Big Data, Business Applications and Digital Workplace solutions through its Digital Transformation Factory, as well as transactional services through Worldline, the European leader in the payment industry. With its cutting-edge technologies and industry knowledge, Atos supports the digital transformation of its clients across all business sectors.
The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and operates under the brands Atos, Atos Syntel, Unify and Worldline. Atos is listed on the CAC40 Paris stock index.

Find out more about us
atos.net/database

Let's start a discussion together

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