

## Unlock new insights in real-time!



## Real-time with in-memory DB

Big Data offers a high-speed way to transform data into real value. But with the massive expansion in data volumes, and demands for even greater agility and flexibility to meet new business needs, Database Management Systems (DBMSs) are being pushed to their limits.

The solution? In-memory DB: an innovative technology that integrates seamlessly into the Data Center to boost performance and unlock new insights.

Featuring Intel® Xeon® processors, the bullion for SAP HANA platform delivers unique flexibility, unmatched scalability and best-in-class quality of service in the x86 world, essential criteria for in-memory DB and real-time computing. Combined with expertise and value-added services from Atos, this forms an end-to-end solution for successful SAP HANA deployments in even the most critical environments.

### Boost your database performance

Enterprise Data Warehouse and Enterprise Resource Planning (ERP) solutions hold the most critical data in increasingly complex repositories and relational databases (RDBMSs). Ensuring rapid, efficient and secure access to that data is vital. In the current, challenging environment businesses have never been under greater pressure to take the best decisions – fast and with maximum flexibility – based on real-time analysis and metrics. Ultimately there are three big challenges:

- ▶ **Performance:** Do you have the processing power to manage all types of reports, while speeding up data insertion?
- ▶ **Agility:** Can you create new reports at minimum cost, using disparate data?
- ▶ **Efficiency:** Can you limit data replication across different repositories, to speed up performance and simplify data storage?

### Upgrade to in-memory: SAP HANA

To boost access, disk-based storage is being replaced by solutions that hold all data in RAM. SAP HANA technology offers best-in-class implementation of in-memory databases: increasing the performance of both transaction and analytics-oriented systems (OLTP/OLAP). So much so, SAP announced that all the SAP ERP future releases will be using only SAP HANA. This suite (named **SAP S/4 HANA**) leverages the tremendous capacities of in-memory DBMS. It is vital to get this transition right. This is why many enterprises are looking for end-to-end solutions including hardware, software and services, to migrate their data containers and

business applications (SAP BW, ERP...). Drawing on Bull's R&D expertise, Atos has designed and engineered a new SAP HANA appliance based on the acclaimed bullion server. This delivers a SAP certified, secure, high-performance solution, suitable for even the most mission-critical environments.

### bullion: the platform of choice

**Scalability:** The same bullion technology can be used for any SAP HANA deployment – from 512GB to 6TB of RAM – for both Business Warehouse and S/4 HANA implementations. This protects investments, by providing a migration path for any SAP HANA architecture, at any scale.

**Flexibility:** bullion is certified for SAP HANA, whether in appliance and Tailored Datacenter Integration (TDI) mode. Appliance mode provides pre-integrated hardware, storage and software for fast deployment, backed by central support and agreed performance levels. TDI mode offers total flexibility to use any storage technology certified by SAP in its TDI program, or to reuse an existing SAN.

**Quality of service:** bullion provides unique memory protection features, essential for mission-critical systems. Thanks to a patented blade system, RAM and PCIe components can be hot-plugged or hot-swapped to facilitate maintenance activities while providing best-in-class high availability.

### Atos: experience on your side

These innovative solutions build on Atos' widespread experience in delivering SAP projects. Atos uses its expertise to design, optimize and deploy complex SAP projects, and provides end-to-end solutions from infrastructure design and architecture optimization to tailored deliverables.



# bullion for SAP HANA: the scalable solution

The Atos solutions for SAP HANA take advantage of bullion servers' high levels of performance, scalability and flexibility.

**bullion S2**



**2 CPU**

**bullion S4**



**4 CPU**

**bullion S8**



**Up to 8 CPU**

**bullion S16**



**16 CPU**

<ul style="list-style-type: none"> <li>Up to 3TB of RAM</li> <li>85,000 SAPS*</li> <li>HANA BW 512GB,768GB** SoH 512GB, 768GB, 1TB, 1.5TB**</li> </ul>	<ul style="list-style-type: none"> <li>Up to 6TB of RAM</li> <li>170,000 SAPS*</li> <li>HANA BW 1TB, 1.5TB**, 2 TB SoH 2TB, 3TB**</li> </ul>	<ul style="list-style-type: none"> <li>Up to 12TB of RAM</li> <li>330,000 SAPS*</li> <li>HANA BW 2TB, 3TB**, 4TB SoH 4TB, 6TB **</li> </ul>	<ul style="list-style-type: none"> <li>Up to 24TB of RAM</li> <li>660,000 SAPS*</li> </ul> <p><i>figures available soon</i></p>
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\*SAP benchmark estimations based on EHP5 version of ECC6

\*\*max RAM size in single-node ; can raise up to 16x in scale-out on Intel® Xeon® E7v2 processors with adjusted memory limits

SoH (Suite on HANA) is the name for SAP business suite using HANA as a database

S/4 HANA is the new SAP Business Suite with highly optimized data structures taking full advantage of the SAP HANA platform.

## Summary of architecture and characteristics

<b>Processors</b>	Intel® Xeon® E7-8880v3, E7-8880Lv3 or E7-8890v3 (2.0, 2.3, 2.5GHz/45MB/9.6GT/s) - 18 cores
<b>Number of bullion modules</b>	1 bullion server with 1, 2, 4 or 8 modules (for S2, S4, S8 and S16, refer above)
<b>Memory</b>	32GB DIMM units; 512GB to 6TB in total depending on the model
<b>Disks / internal storage</b>	2 x600 GB SAS disks at 10 Krpm in RAID 1 on LSI card (for TDI : boot on SAN or local)
<b>External storage</b>	In appliance mode: 1 EMC VNX® 5400, 2SP, 16GB cache per SP 42 x 10Krpm SAS disks (36 for SAP), 600 or 900GB depending on model In TDI mode: any storage in SAP TDI certified list – provided apart
<b>Network interfaces</b>	Ethernet 1 and 10 Gb/s, FC 8Gb/s (for direct attached storage)
<b>OS / Virtualization</b>	Suse® SLES 12 & Red Hat® 6.6 for SAP HANA <sup>(1)</sup> / VMware® up to S4, limited to a single VM for production
<b>Rack space required</b>	3U (S2), 6U (S4), 12U (S8) or 24U (S16) + SAN (5U for EMC VNX 5400 in appliance mode)

(1) or other certified version

The bullion for SAP HANA appliance is delivered with pre-integrated server and storage, with Red Hat or Suse for SAP HANA and SAP HANA software pre-installed in their current versions. For more information on bullion, SAP HANA, EMC VNX 5400 and SAP certified hardware, please refer to the relevant documents.

## The benefits of bullion for SAP HANA

- ▶ **Flexibility:** solution available in appliance mode with unrivalled scalability, or in Tailored Datacenter Integration (TDI) mode
- ▶ **Scalability:** easy to upgrade, same hardware and spare parts, no need for 'rip and replace'
- ▶ **Robust:** carefully chosen components and Highly Available architecture, ready for mission-critical environments
- ▶ **Reliability:** memory hot-add, unique memory protection features