



## Solution Brief

# Dell Integrated System for Oracle Databases 2.0

### Powering a future ready Oracle infrastructure

Keeping pace with your organizations' data processing demands can be a challenge. Critical business processing applications often are deployed on proprietary, closed, and outmoded infrastructures that hamper needed expansion and modernization. Replacing main database and application servers can become major projects that don't address the real bottleneck in database performance. In most cases, adding newer, faster processor cores only gives marginal performance improvement, while forcing huge leaps in software licensing costs.

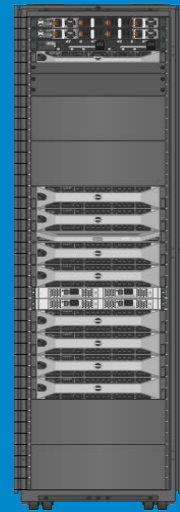
In most cases, performance is hampered by the ability of traditional shared storage to provide the throughput required by database servers in large systems. In fact, sub-optimal storage can monopolize server processor time "waiting" for disk response. Opening the "pipeline" from disk to processor should allow the database servers to do more work in less time, requiring fewer total processor cores to accomplish the same amount of work. Designing a system with ultra-high performance storage, tuned to database servers with high speed, low core count processors can provide an optimum platform to address the need to support more users, higher transaction rates, and sophisticated analysis.

This is the design philosophy of the Dell Integrated System for Oracle Databases 2.0, or DISOD 2.0. DISOD 2.0 is a pre-integrated system, complete with Dell PowerEdge database servers, the ultra-high performance Dell Acceleration Appliance for Databases 2.0 (DAAD 2.0) flash storage sub-system, wide bandwidth server and storage fabrics, full system management, and all delivered fully installed in a Dell PowerEdge rack. Database servers are pre-installed with Oracle Linux running Unbreakable Enterprise Kernel, but can be reconfigured with Red Hat Enterprise Linux and RHEL compatible distributions, to meet the standards of your datacenter. DISOD 2.0 is delivered complete, and ready for installation of any compatible Oracle database, from 12c to 11gR2.

### Performance and flexibility without the high TCO of proprietary technology

Although DISOD 2.0 is a pre-integrated system, it is by no means a closed architecture. DISOD 2.0 uses industry standard servers, storage, and networking fabrics to create the system, which means an integrated system can be easily field upgraded to add more servers or storage, depending on the needs of your data processing environment. DISOD 2.0 doesn't rely on proprietary storage server algorithms for database acceleration like other integrated system vendors. This means that your database will run faster without any modifications or rewrites of queries and stored procedures.

The secret to DISOD 2.0 performance is the Dell Acceleration Appliance for Databases 2.0, or DAAD 2.0, an ultra-high performance, highly available flash storage device that delivers database performance that rivals any comparably provisioned system on the market. And, because DAAD 2.0 requires no additional database query modification, software licensing, DBA training or annual software support renewals, you'll find the DISOD total cost of ownership is significantly lower than other Oracle database acceleration platforms.



### The DISOD 2.0 Difference

Pre-integration with industry standard components offers fast time to value with flexible configurations.

Higher performance, lower core count processors deliver the performance you need while demanding **44% fewer licenses**.

DISOD, with Dell's ultra-high performance DAAD flash storage, delivers >1.1M Transactions per Minute with <10ms average response time<sup>1</sup>, comparable to any system engineered for Oracle – **without incurring additional licensing costs**.

No modification of existing database queries is needed to enhance performance.

Open standards rack and networking provides easy expansion of servers and storage.

Standard flash storage can be expanded with additional DAAD capacity, or with other traditional storage platforms.

Global services capability with consulting design and deployment services for your Oracle datacenter.

## More than just the sum of its parts

DISOD 2.0 uses award winning Dell servers, storage, networking, and management to create an optimum platform for your highest performance Oracle database needs. With configurations suited for data analytics and data warehousing (OLAP), transactional application systems (OLTP), or a hybrid of both, DISOD 2.0 can be built to meet your needs, with ample room for growth as your needs change. The components that make up DISOD 2.0 include:

- Database servers – 2x or 4x PowerEdge R730 dual socket servers, available standard with the 10 core Intel® Xeon® Processor E5-2687W v3 (other Intel core options are available), and 128 GB DDR4 RAM (expandable to 1.5TB RAM per server with 64GB LRDIMMS)
  - Or -
  - 2x PowerEdge R930 quad socket servers, available with the 10 core Intel® Xeon® Processor E7-8891 v3 2.80 Ghz (other Intel core options are available), and 1TB DDR4 RAM (expandable up to 6TB RAM per server w/64GB LRDIMMs)
- Storage servers – 1x or 2x DAAD 2.0 HA flash storage array pairs, available with 12.8TB or 25.6TB of mirrored storage per pair, up to 51.2TB of mirrored storage without incurring storage licensing costs.
- Network fabrics – 16 Gbps Fibre Channel storage for SAN; 40 GbE for Oracle database public and private interconnect communication between servers and Top of Rack switch
- System management – a dedicated PowerEdge R320 server equipped to run OpenManage Essentials software, and for hosting the OpenManage Plug-In for Oracle Enterprise Manager and DAAD Plug-In for Oracle Enterprise Manager, allowing monitoring, inventory, and

alerts for all Dell hardware directly through Oracle Enterprise Manager. In-band and out-of-band management is available through the Dell iDRAC interface on each server and DAAD, and is fully enabled and pre-cabled for operation.

- 3 year ProSupport service standard – 24/7 on-site business critical service is included with every DISOD 2.0, with options to extend that service to years 4 and 5, removing the need for annual subscription and service renewals.
- Complete integration – all components are pre-installed, cabled and tested within the Dell NetShelter SX 42U rack enclosure. Servers are pre-installed with Oracle Linux, and optimized for Oracle Database 12c. Systems arrive pre-assembled and ready for deployment in your datacenter.
- Consulting and deployment services – Dell services are always on call to assist you in sizing your DISOD 2.0 system, analyzing your data center needs, deploying your system and/or installing your database applications.

Additional versions of DISOD 2.0 incorporating Infiniband fabrics will also be available later this year.

## A future ready platform for your Oracle database infrastructure

With DISOD 2.0, you can start at whatever size fits your needs, and easily expand within the same rack without paying a premium. If you need to incorporate your application servers in the same rack, there's space to do so. If additional storage is needed, add another DAAD 2.0 HA pair. If you don't need the high performance of DAAD 2.0 for archival and second tier data, Dell consultants can work with you to configure the appropriate SAN storage into the same rack, tiering data storage with Oracle ASM. Or, even use existing storage and/or application servers to connect with DISOD 2.0 – open standards makes it possible!

So which DISOD 2.0 is right for your Oracle needs? With so many options to fit so many use cases, it is certain that you can get exactly what you need, rather than what someone else wants to sell you. Dell is committed to making the process of optimizing, acquiring and deploying *your* future ready architecture easy, moving you to productivity the fastest way possible.

Contact your Dell representative to set up a consultation session to configure your DISOD 2.0 today!

## To learn more about the innovative Dell Integrated System for Oracle Databases, visit our learning site at <http://www.dell.com/oracle>.

1. In tests using HammerDB on DISOD 2.0 4x4 R730 configuration with 38.4TB HA storage.  
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