

# Hyperconvergence for Oracle

## Oracle Database and Real Application Clusters



Independent scaling



Always-on storage efficiency



Predictable performance



Application and database  
availability

## Designed for databases

Oracle Databases and Real Application Clusters (RAC) are the core of many enterprise applications, including online transaction processing (OLTP), data warehousing, business intelligence, report generation, and online analytical processing (OLAP). As the amount and types of data increase, you need flexible and scalable systems with predictable performance to address database sprawl. By deploying Cisco HyperFlex™ systems with All Flash or All NVMe nodes, you can run your Oracle Database and RAC deployments on an agile platform that delivers insight in less time and at less cost.

### Enterprise application-ready solution

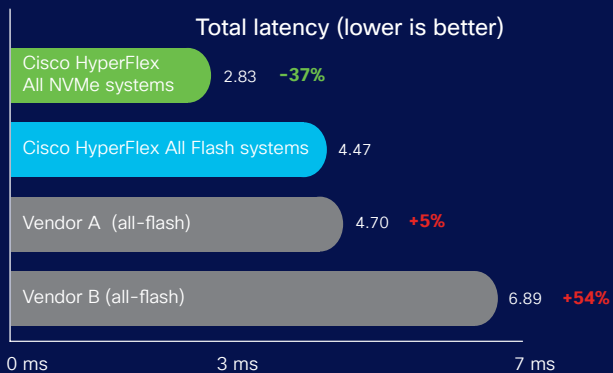
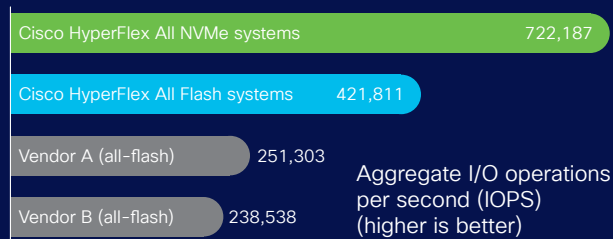
We have the right solution for your Oracle databases and the applications that use them. The platform consists of Cisco HyperFlex systems with All Flash or all NVMe nodes, Oracle Database 19c (or earlier) or Oracle RAC, an integrated network fabric, powerful data optimization, and unified management. Faster to deploy, simpler to manage, and easier to scale, Cisco HyperFlex systems enable you to bring the full power of hyperconvergence to power enterprise databases and applications.

## Cisco HyperFlex systems with Oracle Database and RAC

- Closely match the needs of databases and applications
- Reduce storage footprint
- Optimize storage costs
- Deliver predictable database performance
- Keep enterprise applications and databases available

## Performance matters

Oracle workload performance comparisons executed by ESG. Cisco HyperFlex All Flash nodes are faster than other HCI solutions. Cisco HyperFlex All NVMe nodes are even faster and especially good for databases with ultra-low latency requirements.



Source: [Enterprise Strategy Group](#)

## Easy to deploy and manage

Cisco HyperFlex nodes are shipped with software installed so your cluster can be up and running quickly. Cisco Intersight™ software as a service can help you deploy, manage, and monitor your cluster regardless of where it is installed. Full-stack upgrades help you keep your cluster up to date with firmware, hypervisor, and data platform software updated synchronously. Integrated Cisco® Technical Assistance Center (TAC) connectivity allows us to detect any failures and automatically initiate repair tickets.

## Scalable

Independent resource scaling helps you closely match the resource needs of your Oracle environments. You can start small and scale to support hundreds or thousands of users and petabytes of data. The entire cluster's disk drives are combined into a single distributed, object-based data store. As you add nodes to the cluster to expand capacity, data is automatically rebalanced across shared resources, providing performance consistency and lower I/O operations per second (IOPS) than other hyperconverged solutions (see sidebar). Using thin provisioning, you can size your data store larger than the cluster and expand the solution as databases grow.

## Efficient data storage infrastructure

You can reduce your data footprint and optimize storage infrastructure costs. Deduplication and compression are built in to make efficient use of storage capacity. The optional Cisco HyperFlex Acceleration Engine improves performance and increases compression ratios with faster and lower-latency data compression operations. More compression makes more efficient use of storage resources for databases. And unlike solutions from other vendors, you don't have to disable these features to deliver the high performance that databases and enterprise applications demand.

## Proven and predictable performance

Driving performance at the end user level requires a holistic approach in designing your solutions. Simply adding low-latency storage is not enough. This is why we designed HyperFlex systems to have balanced high-performance. Configurations using All Flash and All NVMe nodes, together with our standard high-throughput network and fast computing, supports consistently high performance even to large databases. The distributed architecture provides every virtual

## Performance and efficiency

Cisco HyperFlex Acceleration Engine improves performance and efficiency in the data center with faster and lower-latency data compression operations. More compression makes more efficient use of storage resources for databases.

## Cisco HyperFlex All NVMe Nodes

- Intel® Optane™ SSD DC cache and Intel 3D NAND SSD capacity
- Fastest solution for ultra-latency sensitive databases
- With HyperFlex innovations and Intel® Volume Management Device (VMD) enhance reliability, availability, and serviceability for PCIe storage
- Intel Optane technology reduces write cache cost per terabyte

machine access to high IOPS regardless of the physical location of the virtual machine. This capability is important for virtual machines running Oracle Database or RAC because they frequently need higher performance to handle bursts of application or user activity. All NVMe storage performs even faster (as shown by ESG testing) and is great for databases that require ultra-low latency.

## High data availability

Your enterprise applications and databases need to run all the time. The innovative configuration of Cisco HyperFlex systems supports database mirroring and is resilient to failure. For example, systems configured with five nodes or more can keep running even if all drives fail on two nodes. In addition, built-in snapshots are available and are integrated with backup solutions to support disaster-recovery operations.

## Next steps

- Read the [Cisco HyperFlex All NVMe At a glance](#)
- [Contact your Cisco or partner representative](#) to discuss Cisco HyperFlex systems for Oracle Database.

## For more Information

Read

- [Cisco HyperFlex All-NVMe Systems for Oracle Database: Reference Architecture](#)
- [Cisco HyperFlex All-NVMe Systems for Oracle Real Application Clusters: Reference Architecture](#)
- [Hyperconvergence for Enterprise Apps](#) at-a-glance
- Read the Enterprise Strategy Group report [Mission-critical Workload Performance Testing of Different Hyperconverged Approaches on the Cisco Unified Computing System Platform \(UCS\)](#)
- Read the Enterprise Strategy Group report [Mission-critical Hyperconverged Workload Performance Testing on Cisco HyperFlex All NVMe with Intel Optane DC SSD](#)