

# Lenovo Validated Designs for Oracle Database

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## Reduce time to value with pretested hardware configurations

### Support for Transactional and Data Warehouse Applications

The volume and complexity of data is increasing everywhere, and the ability to capture and use it is becoming more important for organizations across almost every industry. Digital transactions and experiences are expected to be available across geographies and time zones. And the ability to analyze this data for operational results and market trends is also of paramount importance to businesses large and small.

To address both of these needs, Lenovo has developed reference architecture-based solutions with the breadth of scope that allows them to easily accommodate both transactional database and data warehouse database workloads. With their unified architecture approach, these cost-effective solutions include all the infrastructure components and hardware resources optimized to address both types of workloads in order to address the needs of enterprises and smaller businesses.

The principle components of these architectures include Lenovo ThinkSystem and ThinkAgile servers, ThinkSystem all flash storage arrays as well as Oracle Database 18c and 19c software. Oracle Database 18c and 19c are both of the same database software family, with 19c the long-term support release for that family. Solutions for Oracle Database 18c are also certified [Oracle Validated Configurations](#).

### Faster Time to Deploy

These Oracle database designs are faster and easier to deploy using pre-tested/certified hardware configurations and Oracle RAC configurations. The resulting pre-tested solutions employ the infrastructure configuration details required for a Oracle 18c and 19c Real Application Cluster (RAC). These solutions enable businesses to accelerate their Oracle database deployment and quickly provision infrastructure resources in a repeatable and consistent manner.

### Reduce Equipment and Operating Costs

Designing and sizing an Oracle 18c or 19c RAC solution is not a trivial task. It is common for data warehouse architects to over provision hardware and software systems anticipating future growth and peak demands not accounting for the latest features, performance and capabilities. This typically results in higher hardware costs, software costs and maintenance costs. These Lenovo solutions solve this business problem. They are validated configurations that include compute, storage and networking elements that can be easily deployed, managed, configured and reconfigured as business and application needs change.

## Highlights

- Deploy an on-line transaction processing (OLTP) or unified (supporting OLTP and data warehouse workloads) architecture for Oracle Database 18c and 19c
- Minimize deployment time and cost with pre-tested and optimized infrastructure configurations
- Scale the design easily based on workload requirements.

As database or workload demands increase additional Oracle RAC nodes may be added without redesign of the cluster environment. This nodal growth capability yields an optimized building block design that scales uniformly as workload demands increase. This reduces operating costs and avoids over spending on infrastructure costs.

**Powered by Lenovo**

The Lenovo Database Validated Configurations have been certified for Oracle Database with the following Lenovo ThinkSystem and ThinkAgile servers:

- ThinkSystem SR650 - A 2U, 2-socket server that provides extensive flexibility to fit almost any customer environment
- ThinkSystem SR850 - A 2U, up to 4-socket server that delivers the performance and reliability you require today, with the scalability and versatility you'll need in the future.
- ThinkSystem SR950 - A 4U, up to 8-socket server that is resilient and scalable with large memory and storage capacity for the most crucial workloads and demanding applications.
- ThinkAgile HX7520 - A 2U, 2-socket Nutanix-based hyper-converged server with compute, storage and virtualization co-located on a single node. Simplify deployments and pool resources into a single virtualized infrastructure for more flexible and efficient utilization and management.

All Lenovo ThinkSystem servers are high performance systems, consistently holding numerous world performance benchmarks. Engineered for always-on productivity, ThinkSystem servers are [consistently ranked #1 in x86 server reliability](#).



ThinkSystem SR650 Server



ThinkSystem SR950 Server



ThinkSystem DM5000F Storage Array

Oracle Database	ThinkSystem Server	ThinkSystem Storage	Workloads (OLAP, OLTP, Unified)	Oracle Validated Configuration
18c	SR650	DM5000F	Unified	<a href="#">Config #710</a>
18c	SR650	DE6000F	OLTP	Equivalent to <a href="#">Config #710</a>
18c	SR950	DE6000F	Unified	<a href="#">Config #712</a>
19c	ThinkAgile HX7520	Internal	OLTP	Not available
19c	SR650 with PMEM	Internal	OLAP	Not available

All configurations support on-board storage or attached storage with the Lenovo ThinkSystem DM5000F or DE6000F Storage Arrays. These all-flash arrays offer a range of connectivity options, minimizing latency and maximizing performance. The DM Series provides strong data management with block and file support. The DE Series provides maximum performance for block storage at an affordable price.

Connecting the servers to the data and storage networks can be easily accomplished with network switches. Options include 10, 25 and 100 GbE switches as well 16 and 32 Gb Fibre Channel switches.

### Complementary Software

Lenovo offers a wide range of complementary software offerings for your Oracle Database environments.

Whether you desire to run Oracle Database on Linux or Windows, Lenovo can provide you with the OS software. Lenovo offers Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES) Linux distributions, and the current and previous versions of Windows Server.

System management is achieved through Lenovo XClarity Administrator, a centralized resource management solution that is aimed at reducing complexity, speeding response, and enhancing the availability of Lenovo server systems and solutions. Lenovo XClarity Administrator provides agent-free hardware management for Lenovo servers, storage, and network switches.

Oracle Database environments can be backed up with Veeam Availability Suite. Veeam provides reliable, agentless, image-level backup for Oracle databases that run any supported operating system and hypervisor, with transaction log backup and replay capability so that you can restore your Oracle database to a precise point in time — even to a specific transaction.

### Tying It All Together

The solutions can be installed and configured with the help of Lenovo Services. Lenovo Services can help you:

- Drive Digital Transformation. Select the best architectures suited to your unique needs.
- Foster Innovation. Free up your internal resources to focus on initiatives that grow your business.
- Simplify Your Support Experience. Gain a trusted partner who understands your systems and solutions to fully support and optimize your data center.



A university decided to move their Oracle databases from IBM Power to Intel-based servers due to the loss of skilled workers to support them. The university selected Lenovo ThinkSystem SR850 servers and experienced a smooth transition.

Included with your ThinkAgile HX Series appliance are ThinkAgile Advantage Services, which deliver proactive, solution-oriented support for your Lenovo ThinkAgile HX Series appliances.. This includes end-to-end case management and problem resolution, with a dedicated Lenovo phone number for expedited response. Lenovo ThinkAgile Advantage services extend these benefits with 24x7 support, allowing your IT team to focus on developing proficiencies that give your business a competitive edge. It's an efficient way to keep your investment working for you, with minimal disruption to your staff resources.

### Why Lenovo

Lenovo is a leading provider of data center infrastructure solutions. We partner with you to identify, design, install and support the solution that best ensures your organization's needs are met throughout the IT lifecycle. Lenovo complements a portfolio of leading x86 infrastructure with a full range of storage, software, and comprehensive services that provides excellent performance, reliability, and security for your IT environment from the edge to the cloud.

### For More Information

To learn more about Lenovo Database Validated Designs for Oracle Database, contact your Lenovo Sales Representative or Business Partner or visit our [Database Solutions webpage](#).

### Additional Resources

- Solution Guides:
  - [Oracle Database 19c OLAP with ThinkSystem SR650](#)
  - [Oracle Database 19c OLTP with ThinkAgile HX](#)
  - [Oracle Database 18c OLTP with ThinkSystem SR650](#)

Lenovo ThinkSystem servers with Oracle Database software provide high performance, cost effective transactional or data warehouse solutions



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