Hewlett Packard Enterprise

High performance and reliability

HPE Synergy for Oracle 12c

Composable Infrastructure supports Oracle 12c DAS or SAN deployments.

HPE Synergy for Oracle 12c
- Move faster by accelerating Oracle Database delivery
- Work efficiently by reducing the steps required to deploy additional database instances
- Meet online analytical programming (OLAP) or online transaction programming (OLTP) performance needs easily with scalable resources
- Scale the solution by providing the right resources—compute, storage, and fabric
- Leverage Oracle functionality in either DAS or SAN environments

HPE Synergy reference configurations for Oracle 12c
HPE engineers developed and tested reference configurations for deploying Oracle 12c for both DAS and SAN environments. The HPE Synergy components used in both the DAS and SAN solutions are based on a balanced architecture that uses components that fit within a single HPE Synergy 12000 Frame.

DAS environment:
- HPE Synergy 480 Gen9 Compute Module with two CPUs is populated with 16-core processors for a total of 32 cores.
- HPE Synergy 660 Gen9 Compute Module with four CPUs is populated with 20-core processors for a total of 80 cores. This module is used as a target for the Synergy 480 Gen9 Compute Module environments when additional throughput is required.

Composable Infrastructure value

Hewlett Packard Enterprise has created the first fully Composable Infrastructure platform. Built from the ground up for composability, HPE Synergy uses fluid pools of resources, software-defined intelligence, and a unified application program interface (API) to enable IT to rapidly compose any configuration for any application.

Oracle deployment considerations

In the day-to-day management of the Oracle environment, administrators have a variety of tasks. They need to add new servers for scale-out performance or temporary test environments. They may also update servers with a new database version for testing, upgrade the processing capability for scale-up performance, or update storage capacity, as database needs change.

With traditional infrastructure, these activities are disruptive and time consuming. To ease this burden, administrators might initially overprovision database deployments to avoid—for as long as possible—new deployments down the road. This approach is both expensive and inefficient. That's not the case, though, with HPE Synergy Composable Infrastructure because adding or upgrading compute modules and increasing storage or network capacity is simple and quick.

HPE Synergy for Oracle

HPE Synergy is an ideal platform to run Oracle databases offering advantages that are not found elsewhere. With its fluid pools of resources, you select the right amount of resources, across compute, storage, and fabric, customized for specific database needs.

Oracle resources can be deployed rapidly through our software defined intelligence. Once a server profile is defined, HPE Synergy Composer can rapidly configure additional compute modules with the same settings. No further manual setup is required.

HPE Synergy also offers the advantage of effortlessly scaling to meet demand. If you need to expand a database from a two-socket to a four-socket system, HPE Synergy can easily make this adjustment. Moving applications to the right-sized compute modules on demand means, you can save on capital expenditures (CAPEX) and operating expenditures (OPEX) because overprovisioned resources do not have to be idly standing by.

Performance and reliability

For Oracle Database, performance and reliability across a variety of workloads are vital to supporting business-critical enterprise environments. The entirely new architecture of HPE Synergy combines the flexible storage capacity of internal direct-attached storage (DAS) or external SAN with a multi-Tbps midplane and multiple 40 Gbps external ports. This combination provides the ideal high-performance infrastructure for Oracle Database.

- HPE Synergy D3940 Storage Module consists of four solid-state drives (SSDs) and 34 15k rpm drives.

For a detailed discussion of this configuration, please refer to the **HPE Reference Configuration for Oracle 12c on HPE Synergy Composable Infrastructure**.

SAN environment:

- Synergy 480 Gen9 Compute Module with two CPUs is populated with 16-core processors for a total of 32 cores.

- HPE Synergy 660 Gen9 Compute Module with four CPUs is populated with 20-core processors for a total of 80 cores. This module is used as a target for the HPE Synergy 480 Gen9 Compute Module environments when additional throughput is required.

- HPE Synergy D3940 Storage Module: Two mirrored drives were used for the operating system to allow the HPE OneView server profile to be easily moved from one compute module to another.

- HPE 3PAR 7450c all-flash array:

  - 4 node

  - 192 GB of cache

  - 6X expansion shelves

  - 80X 480 GB Multi-Level Cell (MLC) SSD

  - 24X 8 Gb Fibre Channel ports

For a detailed discussion of this configuration, please refer to the **HPE Reference Configuration for Oracle 12c on HPE Synergy Composable Infrastructure using HPE 3PAR StoreServ Storage**.

Databases have high uptime requirements, and the robust design of HPE Synergy delivers the required reliability. The mechanical and electrical components of HPE Synergy reduce planned downtime and provide a highly available system even in the case of component failures.

Flexible and seamless

The deployment of the Oracle Database on HPE Synergy provides options that have not existed before.

In a DAS environment, you have the ability to use large quantities of DAS within the HPE Synergy 12000 Frame. Each storage module has 40 drives, and up to five storage modules or 200 drives can be connected to a compute module for up to 768 TB of storage capacity. With HPE Synergy, you can easily move a server profile from one compute resource to another and the storage follows the profile with absolutely no reconfiguration required. In a SAN environment, HPE Synergy and HPE 3PAR all-flash arrays enable you to deploy an Oracle environment quickly and flex it rapidly and seamlessly as needs change.

Business benefits

With HPE Synergy, you can scale DAS storage or external SAN storage to meet the IOPS needs of OLTP database servers. HPE Synergy supports in-memory database

environments with high end-to-end memory access speeds and memory density. In addition, it meets the bandwidth requirements for large OLAP configurations with midplane support for DAS and SAN environments delivering multiple Tbps with multiple 40 Gbps external ports.

With software-defined intelligence of HPE Synergy, you can fine-tune compute, storage, and network resources to meet the database workload. Using a database workload template, you can deploy additional compute modules with the same configuration and start using the new infrastructure in minutes.

With the ability to fine-tune resources, you can reduce capital expenses from the initial to ongoing hardware purchases. What's more, ease of management and an end-to-end view through the single management console reduce operational expenses.

Accelerate Oracle 12c

HPE Synergy enables IT to accelerate Oracle 12c database and application deployment in either a DAS or a SAN environment. Contact your authorized HPE sales representative today to find out more.

Learn more at
hpe.com/info/synergy

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