

# SAP HANA on Dell Technologies and Red Hat

Configuration guidance for Dell Technologies and Red Hat solutions for SAP HANA

Today's competitive, data-intensive world requires near-instant access to information and insights. Traditional data warehousing technologies can be inefficient and struggle with large, complex datasets, causing delays, reducing agility, and increasing costs.

An in-memory data platform with transactional and analytical capabilities, SAP HANA® provides a foundation to conduct real-time data analytics, optimize performance, and simplify business operations — in a single system. Transactions and analytics are processed on a single data copy to deliver insight from live data many times faster than disk-based relational databases. SAP HANA also incorporates databases, advanced analytic processing, applications, and integration services into a single platform that can run all of your SAP enterprise applications.

Dell Technologies and Red Hat® solutions for SAP HANA deliver modern, high-performance database environments for a digital world. These solutions are optimally configured, SAP-certified, and include hardware, software, and services. Available as scale-up configurations designed for business continuity, Dell Technologies and Red Hat solutions for SAP HANA help customers succeed in fast-changing industries.

Dell Technologies, Red Hat, and SAP are trusted by some of the most successful companies in the world. In fact, Dell Technologies is the #1 vendor in servers,<sup>1</sup> converged systems,<sup>2</sup> and cloud IT infrastructure.<sup>3</sup> Red Hat is trusted by 100% of commercial banks, airlines, healthcare, and telecommunications companies in the Fortune Global 500.<sup>4</sup> A key part of the solutions in this guide, [Red Hat Enterprise Linux® for SAP Solutions](#) combines the reliability, scalability, and performance of [Red Hat Enterprise Linux](#) with additional content specific to SAP landscapes. Red Hat Enterprise Linux for SAP Solutions delivers:

- World-record SAP performance.<sup>5</sup>
- Up to 4 years of integrated, world-class support and updates for select minor releases.
- Live kernel patching for critical and important CVEs.
- Predictive analytics and remediation with [Red Hat Insights](#) and [Red Hat Smart Management](#).
- Automated SAP environment deployment, configuration, and management via [Red Hat Ansible® Automation Platform](#).
- High reliability and fast recovery via the included [Red Hat Enterprise Linux High Availability Add-On](#).
- Consistent operation across SAP and IT environments.

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<sup>1</sup> IDC Worldwide Quarterly Server Tracker, Q1 2020, June 9, 2020, Server Shipments and Revenue.

<sup>2</sup> IDC WW Quarterly Converged Systems Tracker, HCI SW Vendor Revenue (US\$M) Q1 2020, June 18, 2020.

<sup>3</sup> IDC WW Quarterly Cloud IT Infrastructure Tracker, 2018Q2, September 27, 2018, Vendor Revenue.

<sup>4</sup> Red Hat client data and Fortune Global 500 list for 2020.

<sup>5</sup> Red Hat blog. "[Red Hat Enterprise Linux with Intel's newest Xeon processors posts record performance results across a wide range of industry benchmarks](#)," April 16, 2019.

This guide provides configuration details for Dell Technologies and Red Hat solutions for SAP HANA. These configurations are certified to support SAP HANA, SAP S/4HANA, and SAP BW/4HANA, as well as all previous versions of ECC, SoH, and BW variants. See the complete list of certified and supported hardware for SAP HANA [here](#).

**Table 1. Single-node, SSD storage-based certified appliance configurations**

<p><b>192GB</b> Single node for SAP Analytics, SAP Business Warehouse, SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA</p>	<ul style="list-style-type: none"> <li>• <b>Server:</b> Dell EMC PowerEdge R840 or R940</li> <li>• <b>CPU:</b> 2 or 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors</li> <li>• <b>Memory:</b> <ul style="list-style-type: none"> <li>• 2 or 4 sockets: 24 x 8GB RDIMM</li> <li>• 2 sockets: 12 x 16GB RDIMM</li> </ul> </li> <li>• <b>OS:</b> Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)</li> <li>• <b>OS+SAP+LOG:</b> 10 x 800GB, 6 x 1.6TB or 1.92TB, or 4 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5</li> <li>• <b>DATA volume:</b> <ul style="list-style-type: none"> <li>• 4 x 800GB</li> <li>• 3 x 1.6TB, 1.92TB, or 3.84TB SAS SSD</li> <li>• Plus 1 hot spare configured as RAID 5</li> </ul> </li> <li>• <b>File system:</b> XFS for DATA and LOG volumes</li> </ul>
<p><b>384GB</b> Single node for SAP Analytics, SAP Business Warehouse, SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA</p>	<ul style="list-style-type: none"> <li>• <b>Server:</b> Dell EMC PowerEdge R840 or R940</li> <li>• <b>CPU:</b> 2 or 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors</li> <li>• <b>Memory:</b> <ul style="list-style-type: none"> <li>• 2 sockets: 12 x 32GB RDIMM</li> <li>• 4 sockets: 48 x 8GB RDIMM</li> <li>• 2 or 4 sockets: 24 x 16GB RDIMM</li> </ul> </li> <li>• <b>OS:</b> Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)</li> <li>• <b>OS+SAP+LOG:</b> 10 x 800GB, 6 x 1.6TB or 1.92TB, or 4 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5</li> <li>• <b>DATA volume:</b> <ul style="list-style-type: none"> <li>• 4 x 800GB</li> <li>• 3 x 1.6TB, 1.92TB, or 3.84TB SAS SSD</li> <li>• Plus 1 hot spare configured as RAID 5</li> </ul> </li> <li>• <b>File system:</b> XFS for DATA and LOG volumes</li> </ul>
<p><b>576GB</b> Single node for SAP Analytics, SAP Business Warehouse, SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA</p>	<ul style="list-style-type: none"> <li>• <b>Server:</b> Dell EMC PowerEdge R840 or R940</li> <li>• <b>CPU:</b> 2 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors</li> <li>• <b>Memory:</b> <ul style="list-style-type: none"> <li>• 2 sockets: 12 x 16GB + 12 x 32GB RDIMM</li> </ul> </li> <li>• <b>OS:</b> Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)</li> <li>• <b>OS+SAP+LOG:</b> 10 x 800GB, 6 x 1.6TB or 1.92TB, or 4 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5</li> <li>• <b>DATA volume:</b> <ul style="list-style-type: none"> <li>• 5 x 800GB SAS SSD</li> <li>• 3 x 1.6TB, 1.92TB, or 3.84TB SAS SSD</li> <li>• Plus 1 hot spare configured as RAID 5</li> </ul> </li> <li>• <b>File system:</b> XFS for DATA and LOG volumes</li> </ul>

## 768GB

Single node for SAP Analytics, SAP Business Warehouse, SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA

- **Server:** Dell EMC PowerEdge R840 or R940
- **CPU:** 2 or 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors
- **Memory:**
  - 2 or 4 sockets: 24 x 32GB RDIMM
  - 2 sockets: 12 x 64GB RDIMM
  - 4 sockets: 48 x 16GB RDIMM
- **OS:** Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)
- **OS+SAP+LOG:** 10 x 800GB, 6 x 1.6TB or 1.92TB, or 4 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5
- **DATA volume:**
  - 7 x 800GB SAS SSD
  - 4 x 1.6TB or 1.92TB SAS SSD
  - 3 x 3.84TB SAS SSD
  - Plus 1 hot spare configured as RAID 5
- **File system:** XFS for DATA and LOG volumes

## 1152GB

Single node for SAP Analytics, SAP Business Warehouse, SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA

- **Server:** Dell EMC PowerEdge R840 or R940
- **CPU:** 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors
- **Memory:**
  - 2 sockets: 12 x 32GB + 12 x 64GB RDIMM
  - 4 sockets: 24 x 16GB + 24 x 32GB RDIMM
- **OS:** Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)
- **OS+SAP+LOG:** 10 x 800GB, 6 x 1.6TB or 1.92TB, or 4 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5
- **DATA volume:**
  - 9 x 800GB
  - 5 x 1.6TB or 1.92TB SAS SSD
  - 3 x 3.84TB SAS SSD
  - Plus 1 hot spare configured as RAID 5
- **File system:** XFS for DATA and LOG volumes

## 1.5TB

Single node for SAP Analytics, SAP Business Warehouse, SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA

- **Server:** Dell EMC PowerEdge R840 or R940
- **CPU:** 2 or 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors
- **Memory:**
  - 2 sockets: 24 x 64GB RDIMM
  - 2 sockets: 12 x 128GB LRDIMM
  - 4 sockets: 48 x 32GB RDIMM
  - 4 sockets: 24 x 64GB RDIMM
- **OS:** Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)
- **OS+SAP+LOG:** 22 x 800GB, 12 x 1.6TB or 1.92TB, or 7 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5
- **DATA volume:**
  - 11 x 800GB
  - 6 x 1.6TB or 1.92TB SAS SSD
  - 4 x 3.84TB SAS SSD
  - Plus 1 hot spare configured as RAID 5
- **File system:** XFS for DATA and LOG volumes

<p><b>2304GB</b> Single node for SAP Analytics, SAP Business Warehouse, SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA</p>	<ul style="list-style-type: none"> <li>• <b>Server:</b> Dell EMC PowerEdge R840 or R940</li> <li>• <b>CPU:</b> 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors</li> <li>• <b>Memory:</b> <ul style="list-style-type: none"> <li>• 4 sockets: 24 x 32GB + 24 x 64GB RDIMM</li> </ul> </li> <li>• <b>OS:</b> Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)</li> <li>• <b>OS+SAP+LOG:</b> 22 x 800GB, 12 x 1.6TB or 1.92TB, or 7 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5</li> <li>• <b>DATA volume:</b> <ul style="list-style-type: none"> <li>• 15 x 800GB</li> <li>• 8 x 1.6TB or 1.92TB SAS SSD</li> <li>• 5 x 3.84TB SAS SSD</li> <li>• Plus 1 hot spare configured as RAID 5</li> </ul> </li> <li>• <b>File system:</b> XFS for DATA and LOG volumes</li> </ul>
<p><b>3TB</b> Single node for SAP HANA scale-up virtual (SAP Analytics, SAP Business Warehouse, and SoH)</p>	<ul style="list-style-type: none"> <li>• <b>Server:</b> Dell EMC PowerEdge R840 or R940</li> <li>• <b>CPU:</b> 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors</li> <li>• <b>Memory:</b> <ul style="list-style-type: none"> <li>• 4 sockets: 48 x 64GB RDIMM</li> <li>• 4 sockets: 24 x 128GB LRDIMM</li> </ul> </li> <li>• <b>OS:</b> Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)</li> <li>• <b>OS+SAP+LOG:</b> 22 x 800GB, 12 x 1.6TB or 1.92TB, or 7 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5</li> <li>• <b>DATA volume:</b> <ul style="list-style-type: none"> <li>• 19 x 800GB</li> <li>• 10 x 1.6TB or 1.92TB SAS SSD</li> <li>• 6 x 3.84TB SAS SSD</li> <li>• Plus 1 hot spare configured as RAID 5</li> </ul> </li> <li>• <b>File system:</b> XFS for DATA and LOG volumes</li> </ul>
<p><b>3TB</b> Single node for SAP Business Suite powered by SAP HANA, SAP S/4HANA, and SAP BW/4HANA</p>	<ul style="list-style-type: none"> <li>• <b>Server:</b> Dell EMC PowerEdge R840 or R940</li> <li>• <b>CPU:</b> 2 or 4 x Intel Xeon Platinum 8280/L 2.7GHz or 8276/L 2.3GHz processors</li> <li>• <b>Memory:</b> <ul style="list-style-type: none"> <li>• 2 or 4 sockets: 24 x 128GB LRDIMM</li> <li>• 4 sockets: 48 x 64GB RDIMM</li> </ul> </li> <li>• <b>OS:</b> Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)</li> <li>• <b>OS+SAP+LOG:</b> 22 x 800GB, 12 x 1.6TB or 1.92TB, or 7 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5</li> <li>• <b>DATA volume:</b> <ul style="list-style-type: none"> <li>• 19 x 800GB</li> <li>• 10 x 1.6TB or 1.92TB SAS SSD</li> <li>• 6 x 3.84TB SAS SSD</li> <li>• Plus 1 hot spare configured as RAID 5</li> </ul> </li> <li>• <b>File system:</b> XFS for DATA and LOG volumes</li> </ul>

## 6TB

Single node for SAP Analytics,  
SAP Business Warehouse,  
SAP Business Suite powered  
by SAP HANA

- **Server:** Dell EMC PowerEdge R840 or R940
- **CPU:** 4 x Intel Xeon Platinum 8280L 2.7GHz or 8276L 2.3GHz processors
- **Memory:**
  - 4 sockets: 48 x 128GB LRDIMM
- **OS:** Red Hat Enterprise Linux Server for SAP Solutions (releases 7.6, 8, or 8.1)
- **OS+SAP+LOG:** 22 x 1.6TB or 1.92TB, or 12 x 3.84TB SAS SSD plus 1 hot spare configured as RAID 5
- **DATA volume:**
  - 19 x 1.6TB or 1.92TB SAS SSD
  - 10 x 3.84TB SAS SSD
  - Plus 1 hot spare configured as RAID 5
- **File system:** XFS for DATA and LOG volumes