

Header Data

Released On	17.06.2016 15:17:45
Release Status	Released for Customer
Component	HAN-DB SAP HANA Database
Other Components	BC-OP-LNX-ESX Linux on VmWare ESX
Priority	Recommendations / Additional Info
Category	Consulting

Symptom

You want to install SAP HANA in a virtualized environment using VMware vSphere 6.0 virtual machines

Other Terms

ESXi, VMW, vSphere, virtualized

Reason and Prerequisites

With the release of SAP HANA SPS 11 or higher, SAP declares support for VMware vSphere 6.0 for virtual single-VM deployments in production scenarios of SAP HANA on either certified appliances or through SAP HANA tailored data center integration verified hardware configurations.

Solution

By issuing this SAP Note, SAP extends support for SAP HANA on VMware to include **General Availability** of SAP HANA SPS11 or later on VMware vSphere 6.0 in production, providing the following conditions are met:

- a single SAP HANA virtual machine with production workloads resides on a dedicated SAP HANA certified server.
- The maximum size of a virtual SAP HANA instance is limited by the maximum size of a virtual machine on VMware vSphere 6.0 release, which is 128 vCPUs and 4 TB of memory.
- Each SAP HANA instance / virtual machine is sized according to the existing SAP HANA sizing guidelines and VMware recommendations.
- CPU and Memory overcommitting must not be used.
- SAP HANA certified 2, 4 and 8 socket Intel E7 Haswell EX or Ivy Bridge EX or 2 socket Intel E5 Haswell or Ivy Bridge EP processor-based configurations in single-node, scale up configurations only.
- The Time Stamp Counter (TSC) must be synchronized between all sockets/cores.
- Both SAP HANA appliance and SAP HANA Tailored Datacenter Integration (TDI) delivery methods are supported for SAP HANA on VMware vSphere. Where the SAP HANA system has either been delivered pre-configured on certified SAP HANA appliances, as listed on the SAP HANA hardware directory with the VMware vSphere hypervisor installed by an SAP HANA hardware partner or the SAP HANA installation was done by an SAP certified engineer, qualified as "SAP Certified Technology Specialist - SAP HANA Installation" [1] on SAP HANA certified hardware and successfully verified with the SAP HANA hardware configuration check tool [2].
- Certified OS versions (from SUSE and Redhat) and server combinations as listed on the SAP HANA hardware directory are supported when virtualized.
- VMware vMotion, VMware Distributed Resource Scheduled (DRS), as well as VMware HA capabilities can be used to achieve operational performance and availability between two or more SAP HANA single-node VMs.
- Configuration and overall setup complies with the current version of the "SAP HANA Guidelines for being virtualized with VMware vSphere" [3] and "VMware Best Practices for SAP HANA virtualized with VMware vSphere" [4]. This includes compliance to the SAP HANA core-to-memory ratio as reflected in the HANA Hardware Directory and virtualization calculus as described in the "VMware Best Practices for SAP HANA virtualized with VMware vSphere" [4] as well as priority for SAP HANA production workloads.
- SAP and VMware will jointly support virtual SAP HANA in production adhering to the SLAs defined in the customer support contract. If a reported problem is a known SAP HANA issue with a validated fix, SAP support will recommend the appropriate fix directly to the customer. For all other performance related issues, the customer will be referred within SAP's OSS system to VMware for support. VMware will take ownership and work with SAP HANA HW/OS partner, SAP and the customer to identify the root cause. Due to the abstraction of hardware that occurs when using virtualization, some hardware details are not directly available to SAP HANA support. Work is ongoing between SAP and VMware to improve this visibility inside the SAP HANA virtual machine. In extraordinary circumstances, SAP support may request that additional details be gathered by the customer or the SAP HANA HW partner to help with troubleshooting issues or VMware to re-produce the issue on SAP HANA running in a bare metal environment.
- SAP and VMware saw degradation compared in performance on bare metal and this is to be expected in virtualized environments

- CPU and VMware can degradation compared in performance on bare metal, and this to be expected in virtualized environments. Customers are encouraged to test performance before going live.
- To allow for an easier distinction to be made between scenarios which can be considered a good fit against those scenarios which seem to be less suitable for virtualization, more scenario specific examples are being worked out and planned to be attached to this SAP Note upon availability.

The following is NOT supported in GA.

- SAP HANA multi-node and scale-out deployment configurations
- Multiple production SAP HANA virtual machines on a single physical server

[1] <https://training.sap.com/shop/certification/>

[2] <https://scn.sap.com/docs/DOC-62942>

[3] <http://www.saphana.com/docs/DOC-4192>

[4] <http://scn.sap.com/docs/DOC-60470>

Validity

Software Component	From Rel.	To Rel.	And Subsequent
HDB	1.00	1.00	<input checked="" type="checkbox"/>

References

This document refers to:

SAP Notes

2161991 [VMware vSphere configuration guidelines](#)

1995460 [Single SAP HANA VM on VMware vSphere in production](#)

1788665 [SAP HANA Support for virtualized / partitioned \(multi-tenant\) environments](#)

1492000 [General Support Statement for Virtual Environments](#)

1122388 [Linux: VMware vSphere configuration guidelines](#)