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Avi Technical Reference (v18.2)

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Hypervisor Support

- Amazon Web Services (AWS)
- Google Cloud Platform
- Microsoft Azure
- Nutanix Acropolis
- Nutanix (Linux Server Cloud)
- Nutanix version 2018.05.01
- OpenStack environments: KVM
- No-Orchestrator: KVM (Red Hat/CentOS- 7.6 and Ubuntu 16.04) with SR-IOV NIC's only (For more details on Linux KVM with SR-IOV data NIC, refer to [Linux KVM with SR-IOV data NIC](#)).
- HSM: SafeNet Network HSM Client Software Release 5.4.1 for 64-bit Linux
- VMware vSphere 5.5, 6.0, 6.5, and 6.7 (starting with Avi Vantage 17.2.12, and 18.1.2).

Note: Third party switches are not supported for VMware vSphere integration. For more information, refer to [Discontinuation of third party vSwitch program](#).

Avi Vantage only works with the following switches in a vCenter cloud:

- Standard Virtual Switch (vSwitch)
- Distributed Virtual Switch (vDS)
- Oracle Cloud Infrastructure (OCI) ? Starting with Avi Vantage 18.2.9, OCI is supported. The following are the limitations:
 - Only Broadcom NetXtreme VFs are supported on OCI.
 - The number of NICs supported is limited to 2 (this limitation comes from Oracle Gen-2 Cloud). The support has been tested and verified for only Gen-2 cloud with dedicated management (inband off).
 - RSS and bonding is currently not supported for the Broadcom VF's.

Bare Metal (Linux Server Cloud)

Bare-Metal Operating Systems

- Bare-metal hosts running
 - OEL 6.9 (starting with Avi Vantage 18.1.2), 7.2, 7.3, 7.4 and 7.5 (starting with 18.1.3)
 - RHEL 7.2, 7.3, 7.4, 7.5 (starting with Avi Vantage release 18.1.3), 7.6 (starting with Avi Vantage release 18.1.5), and 7.7 (starting with Avi Vantage release 18.2.6)
 - CentOS 7.2, 7.3, CentOS 7.4, 7.5 (starting with Avi Vantage release 18.1.2), and CentOS 7.6 (starting with Avi Vantage release 18.1.5)
 - Ubuntu 16.04
- Bare-metal hosts running these kernels:

Supported Linux Kernel Versions	Avi Vantage 18.2.x Releases						
	18.2.1	18.2.2	18.2.3	18.2.4	18.2.5	18.2.6	18.2.7
3.10.0-957.12.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-957.10.1.0.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-957.10.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-957.5.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.10.0-957.1.3.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-957.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-862.29.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-862.14.4.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-693.2.2.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-693.1.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-693.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-514.6.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-327.28.2.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.8.13-35.3.1.el7uek.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-1062.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-957.12.2.0.1.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-514.16.1.el7.x86_64	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-514.el7.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.10.0-514	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.10.0-693	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.10.0-862.20.2.el7.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.10.0-862.11.6.el7.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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3.10.0-862.3.2.el7.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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3.10.0-862.6.3.el7.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-862.9.1.el7.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-862.el7.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.10.0-862	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.10.0-957	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.10.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.8.13-118.10.2.el7uek.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.8.13-16.2.1.el6uek.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.8.13-98.7.1.el7uek.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.8.13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.1.12-112.16.4.el7uek.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.1.12-94.5.9.el6uek.x86_64	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.1.12-94	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.1.12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.15.0-1017-gcp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-146-generic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-137-generic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-112-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.4.0-116-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-21-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-59-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-62-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-66-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-70-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-72-generic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.15.0-1027-gcp	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.1.12-61.1.18.el7uek.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.1.12-94.2.1.el7uek.x86_64	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.0-51-generic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Linux Kernel versions 3.10.0-1062.9.1.el7.x86_64 and 3.10.0-1062.9.1.0.1.el7.x86_64 are supported starting Avi Vantage version 18.2.8.
- Linux Kernel versions 3.10.0-1062.12.1.el7.x86_64, 3.10.0-1062.18.1.el7.x86_64, 3.10.0-1127.0.0.0.1.el7.x86_64, and 4.4.0-178-generic are supported starting Avi Vantage version 18.2.9.

Bare-Metal NICs

- For non-DPDK mode, Avi supports any server NIC.
- For DPDK mode (recommended), Avi Networks has qualified:
 - Intel NICs
 - 82599, X520, X540, X550, X552, X710, and XL710 ? all 18.2.x releases
 - XXV710 ? starting with Avi Vantage version 18.2.2
 - Mellanox NICs
 - ConnectX-4 25G and ConnectX-4 40G ? all 18.2.x releases
 - MCX4121A-ACAT ConnectX-4 Lx EN 25G NICs ? all 18.2.x releases
 - ConnectX-5 (MT27800 Family) ? starting with Avi Vantage version 18.2.2
 - Broadcom NICs
 - Broadcom BCM574XX NetXtreme-E family ? starting with Avi Vantage version 18.2.8

Orchestrator Support

- Kubernetes 1.3+
- Marathon 0.13.x, 0.14.x, 0.15.0, 0.15.1, 0.15.2, and 0.15.3
- Mesos 0.23.0, 0.23.1, 0.24.0, 0.24.1, 0.25.0, 0.26.0, 0.27.0, and 0.27.1
- Mesosphere DC/OS 1.6, 1.7, 1.8, 1.9, 1.10
- OpenShift v3
- OpenStack Version Support:
 - Havana, Icehouse, Juno, Kilo, Liberty, Mitaka, Newton, Ocata, Pike, and Queens. Also supports Rocky since 18.2.3 and Stein since 18.2.6.
- Note: Avi Vantage does not support Neutron DVR mode.
- LBaaS v2. Avi LBaaS driver (required only for OpenStack-managed LBaaS mode) must match the Avi Controller version, not less than 16.3
- Keystone v2 and v3 (Avi Vantage 16.3 or higher required for Keystone v3)
- Support for Keystone v3 in Avi Heat resources.
- Avi SSL extension for OpenStack Horizon required only for OpenStack-managed LBaaS mode, adds tabs to Horizon for accessing Avi Controller (16.3 or higher)
- Neutron extension for allowed-address-pair
 - Community Distribution: Supported from Havana onwards
 - VSP version 5.0
 - Contrail: Version 3.0.2 and 5.0.2
 - OpenContrail
- VMware vCenter 5.5, 6.0, 6.5, vRO and vRA

SDN Solutions

- Cisco APIC version 1.03(f) and later
- Juniper Contrail v3.0.2 and 5.0.2 (only for OpenStack)
- Nuage v5.0 (only for OpenStack)
- VMware NSX 6.2.4+

IPAM / DNS

- Avi DNS
- AWS Route 53
- Infoblox
- Microsoft Azure

Avi Vantage may be deployed in various environments with write (recommended), read, or no access integration with the virtualization orchestrator. The primary difference among these modes is the level of automation performed by Avi Vantage and the cloud orchestrator compared to the level of manual configuration required of administrators. There are no differences in hardware or system requirements among these modes. Servers being load balanced by Avi Vantage may exist within the same virtualization environment or be bare-metal, non-virtualized servers.

Avi supports the ability to manage multiple cloud environments from a single Controller cluster.