

Understanding RHEL Certification and Support for AHV Environments

Overview

Red Hat® Enterprise Linux® (RHEL) certified applications are increasingly being run on Nutanix's Enterprise Cloud Platform. RHEL is a widely used Operating System supporting diverse application workloads in physical, virtualized, and cloud environments.

The Nutanix Enterprise Cloud Platform delivers turnkey infrastructure with integrated management, as well as the flexibility to choose the right hypervisor for each application. Nutanix software includes Acropolis, our virtualization and data services operating system and an enterprise grade hypervisor called AHV, along with our Prism management solution. The combination of Acropolis, AHV and Prism makes our Enterprise Cloud Platform ready to run all virtualized enterprise workloads. Additionally, Nutanix Acropolis supports deployment of RHEL on multiple hypervisors, giving customers the freedom of choice.

Nutanix customers have been preferentially adopting AHV at the expense of other Hypervisors due to its performance, low overhead, simplicity, tight integration with Prism and cost (no additional license required).

Driving this rapid adoption is the fact that the Nutanix Enterprise Cloud infrastructure maximizes performance, scalability and availability while enabling fully automated disaster recovery, security, and proactive management and alerting. Additionally, customers gain access to Nutanix's award winning support organization that has averaged a Net Promoter Score (NPS) of 90 for the past five years in a row.

Despite the widespread, tenured virtualization of RHEL applications running on AHV, some RHEL licensees still have questions regarding the impact of running RHEL certified applications on AHV. The purpose of this guide is to provide Nutanix customers with information regarding support of RHEL on Nutanix AHV.

This guide has been developed from the experience and knowledge that Nutanix and proponents of the Nutanix technology have acquired from years of Nutanix customers successfully running RHEL certified applications on AHV. Data from Nutanix's "call home" tool has shown that there are thousands of Virtual Machines in our customer base successfully running the RHEL on AHV without incident.

This guide does not provide legal advice concerning a customer's license or support agreement with Red Hat or any other third party. Rather, this guide is intended to help customers understand potential issues and be better prepared for optimal certification and support interaction with Red Hat and third-party vendors.

RHEL Certification and Support for AHV Environments

Certified Solutions vs. Supported Solutions

At present, Red Hat has not certified AHV as a hypervisor for running RHEL certified applications. However, Red Hat does have an official support policy for handling issues related to uncertified third party hardware and hypervisors that can be publicly viewed here -- <https://access.redhat.com/third-party-software-support>.

Similarly, Red Hat has a broad ecosystem of certified server vendors, but it is not exhaustive. Customers don't allow this restriction to limit their choice to deploying only on RHEL certified hardware; instead many customers exercise their options by deploying on non-certified hardware, receiving support through the support policy above.

In a virtualized environment, Nutanix believes that customers should have the choice of using the Hypervisor and platform that best meets their needs.

In summary, “not certified” does not mean “not supported”.

Support

Red Hat does not certify deployment on non-certified third-party hardware and/or hypervisors. But this does not mean that third party hardware or hypervisors are unsupported. Indeed, Red Hat does provide support for customers on non-certified hardware and hypervisors when:

- a) The uncertified hardware or software are not the suspected cause of the issue giving rise to the support request, OR
- b) The uncertified software or hardware can be removed from the environment and issue reproduced *sans* such third party components, OR
- c) Using TSANet (www.tsanet.org) to work collaboratively on addressing any joint support customer issues between Nutanix and Red Hat Support through membership in this program. Both Nutanix and Red Hat are members of TSANet (Nutanix is a board member).

We recognize that Red Hat's support stance towards uncertified third-party solutions may concern our customers, and may create a perception that customers are somehow at risk, but Nutanix customers who have made the decision to run RHEL on AHV have done so after carefully weighing the benefits against this implied risk.

Nutanix is committed to the compatibility of our products with RHEL and stands ready to go the extra mile for our customers deploying their workloads on RHEL running on Nutanix. Nutanix believes running RHEL on AHV is very low risk for the following reasons:

A) Nutanix Technical Assessment

- Nutanix uses CentOS for our controller VM, Prism Central VM and many other services hosted on Nutanix, and as part of our standard Engineering development and QA processes, we have done rigorous testing with CentOS over several years across the different layers of Nutanix and third-party application stacks.
- CentOS is functionally compatible with RHEL (Source: <https://wiki.centos.org/Manuals/ReleaseNotes/CentOS6.10>, which states *“CentOS is an Enterprise-class Linux Distribution derived from sources freely provided to the public by Red Hat. CentOS conforms fully with Red Hat's redistribution policy and aims to be functionally compatible. CentOS mainly changes packages to remove upstream vendor branding and artwork”*
- Nutanix also explicitly certifies multiple versions of RHEL on AHV as part of various OS testing and certifications we support. The RHEL/AHV compatibility list certified by Nutanix can be found here -- <https://portal.nutanix.com/#/page/compatibilitymatrix/guestos>. (Filter on “OS Vendor” and select “Red Hat”. Nutanix support portal credentials may be required to view this list).
- As stated above, data from Nutanix’s “call home” tool has shown that there are thousands of Virtual Machines in our customer base successfully running the RHEL on AHV without incident. Nutanix has never had a single support case related to RHEL/AHV functional compatibility and have received no reports of incidents in which AHV was determined to have induced a functional bug in either the RHEL OS or running application.

B) Nutanix’s World Class Support stands behind you

- By choosing AHV, you get access to Nutanix’s award winning support organization that has averaged a Net Promoter Score (NPS) of 90 for the past five years in a row. This outstanding NPS assures you of speedy resolution of any support issues you may encounter. This level of support excellence is unheard of in Enterprise IT, where vendors routinely score in the 20-40 range.
- Nutanix will always take complete ownership of any support request and pursue rapid resolution, in collaboration with the Red Hat support organization through TSANet as needed.

- Nutanix will re-platform the workload to either an alternative hypervisor or physical servers in its labs if necessary to demonstrate any issue is related to RHEL. Because Nutanix customers regularly and routinely run all types of Tier 1 applications on AHV, we have significant expertise in driving root cause and making this a seamless support experience.

C) Obtaining Official Red Hat support

- You can negotiate the terms in your support agreement with Red Hat and insist that Red Hat provide you with the support commitment that meets your needs, including unqualified support for RHEL products running on AHV. Several of Nutanix's larger customers have successfully negotiated such an agreement with Red Hat. Nutanix We will actively support any of our customers' requests for official Red Hat support of RHEL on AHV.

Nutanix Support for RHEL Running on AHV

Nutanix is committed to making our customers' successful deployment of any workloads on our modern, hyperconverged infrastructure and fully supports our customers choice of deploying RHEL on AHV.

Nutanix commits to providing the following to our customers running RHEL on AHV as part of the existing Support and Subscription contract at no additional charge:

- **Total ownership of all RHEL technical issues reported to Nutanix Support.** Nutanix Support will accept accountability for any RHEL related issue reported by a customer. Nutanix has a large number of Red Hat Certified Engineers in the Support organization and continues to invest in training on Red Hat.
- **Access to a team of Red Hat experts within Nutanix Support and Engineering to troubleshoot any issues related to RHEL on AHV.** Red Hat experts in Nutanix Engineering and Solutions teams provide best-practices documentation, subject matter expertise, and internal training to the Nutanix support organization to help with prevention, troubleshooting and resolution of issues our customers may encounter while running RHEL on Nutanix AHV.
- **Rapid resolution of technical issues in Nutanix environments via a TSANet collaborative support arrangement between Nutanix support and RHEL support.** Nutanix Support will drive the issue to resolution regardless of which vendor (Nutanix, RHEL, or others) is responsible for the problem or resolution utilizing TSANet as needed. Nutanix will also advocate on the customer's behalf to engage Red Hat Support in resolving the customer's technical issue, escalating to senior management attention as appropriate. In most cases, reported issues can be

resolved via configuration changes, bug fixes, or feature enhancements by one of the involved vendors.

- **Problem Determination.** Nutanix will re-platform the workload to either an alternative supported hypervisor or physical servers in its labs if necessary to provide any relevant evidence that AHV does not play a part in the RHEL product technical problem. Because many Nutanix customers routinely run all types of Tier 1 applications on RHEL on AHV, Nutanix support has significant expertise in driving root cause and making this a seamless support experience.
- **Third party Support Escalation Management.** In the rare situation that another vendor is unable or unwilling to provide a satisfactory technical resolution, Nutanix Support will immediately notify the customer, assist in escalation and explore other potential technical workarounds with the customer.
- **Support for other RHEL Products.** Nutanix will also assist its customers with technical issues for other Red Hat software products, besides the RHEL and provide similar technical and escalation assistance if needed.
- In short, Nutanix is fully committed to its customers' success and supports their choice to run RHEL on AHV. Nutanix's support affirmation is in Appendix 1.

Appendix 1: Nutanix Commitment to Customers choosing to run RHEL on AHV



Nutanix Support Policy for Red Hat® Enterprise Linux® (RHEL) on AHV

To Our Customers,

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix Enterprise Cloud Platform blends web-scale engineering and consumer-grade design to natively converge server, storage, virtualization and networking into a resilient, software-defined solution with rich machine intelligence. This turnkey infrastructure with integrated management includes the flexibility to choose the right hypervisor for each application, including our enterprise grade hypervisor, AHV.

Nutanix is committed to our customers successfully deploying any workloads on our modern, hyperconverged infrastructure. In a virtualized environment, Nutanix believes that customers should have the choice of using the Hypervisor and Platform that best meets their needs, and fully supports our customers' choice of deploying Red Hat® Enterprise Linux® (RHEL) virtual machines on AHV.

Nutanix Support will accept accountability for any RHEL related issue reported by our customer. Our Support will drive the issue to resolution regardless of which vendor (Red Hat, Nutanix or others) is primarily responsible for the resolution. In most cases, reported issues can be resolved by executing configuration changes, bug fixes, or feature enhancements by one of the vendors involved.

In a rare situation where another vendor is unable or unwilling to provide a technical resolution of the issue, Nutanix Support will immediately assist in escalation and explore other potential technical workarounds, including, to the extent feasible, re-platforming the workload to an alternative Red Hat supported hypervisor to re-produce the issue.

Nutanix will also assist its customers with technical issues for other Red Hat software products besides RHEL and provide similar technical support and escalation assistance if needed.

A handwritten signature in blue ink, appearing to read "D. Sangster", with a horizontal line extending to the right.

David Sangster
Chief Operating Officer
Nutanix, Inc.