Red Hat Virtualization 4.3

Release Notes

Release notes for Red Hat Virtualization 4.3

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Abstract

The Release Notes provide high-level coverage of the improvements and additions that have been implemented in Red Hat Virtualization 4.3.

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CHAPTER 1. INTRODUCTION

1.1. INTRODUCTION TO RED HAT VIRTUALIZATION

Red Hat Virtualization is an enterprise-grade server and desktop virtualization platform built on Red Hat Enterprise Linux. See the Product Guide for more information.

1.2. SUBSCRIPTIONS

To install the Red Hat Virtualization Manager and hosts, your systems must be registered with the Content Delivery Network using Red Hat Subscription Management. This section outlines the subscriptions and repositories required to set up a Red Hat Virtualization environment.

1.2.1. Required Subscriptions and Repositories

The packages provided in the following repositories are required to install and configure a functioning Red Hat Virtualization environment. When one of these repositories is required to install a package, the steps required to enable the repository are provided in the appropriate location in the documentation.

Table 1.1. Red Hat Virtualization Manager

Subscription Pool	Repository Name	Repository Label	Details
Red Hat Enterprise Linux Server	**Red Hat Enterprise Linux Server**	**rhel-7-server-rpms**	Provides the Red Hat Enterprise Linux 7 Server.
Red Hat Enterprise Linux Server	**RHEL Server Supplementary**	**rhel-7-server-supplementary-rpms**	Provides the virtio-win package, which provides the Windows VirtIO drivers for use in virtual machines.
Red Hat Virtualization	**Red Hat Virtualization**	**rhel-7-server-rhv-4.3-manager-rpms**	Provides the Red Hat Virtualization Manager.
Red Hat Virtualization	**Red Hat Virtualization Tools**	**rhel-7-server-rhv-4-manager-tools-rpms**	Provides dependencies for the the Red Hat Virtualization Manager that are common to all Red Hat Virtualization 4 releases.
Red Hat Ansible Engine	**Red Hat Ansible Engine**	**rhel-7-server-ansible-2-rpms**	Provides Red Hat Ansible Engine.
Red Hat Virtualization	**Red Hat JBoss Enterprise Application Platform**	**jb-eap-7.2-for-rhel-7-server-rpms**	Provides the supported release of Red Hat JBoss Enterprise Application Platform on which the Manager runs.

Table 1.2. Red Hat Virtualization Host

Subscription Pool	Repository Name	Repository Label	Details
Red Hat Virtualization	**Red Hat Virtualization Host**	**rhel-7-server-rhvh-4-rpms**	Provides the **rhev-hypervisor7-ng-image-update** package, which allows you to update the image installed on the host.

Table 1.3. Red Hat Enterprise Linux 7 Hosts

Subscription Pool	Repository Name	Repository Label	Details
Red Hat Enterprise Linux Server	**Red Hat Enterprise Linux Server**	**rhel-7-server-rpms**	Provides the Red Hat Enterprise Linux 7 Server.
Red Hat Virtualization	**Red Hat Virtualization Management Agents (RPMs)**	**rhel-7-server-rhv-4-mgmt-agent-rpms**	Provides the QEMU and KVM packages required for using Red Hat Enterprise Linux 7 servers as virtualization hosts.
Red Hat Ansible Engine	**Red Hat Ansible Engine**	**rhel-7-server-ansible-2-rpms**	Provides Red Hat Ansible Engine.

1.2.2. Optional Subscriptions and Repositories

The packages provided in the following repositories are not required to install and configure a functioning Red Hat Virtualization environment. However, they are required to install packages that provide supporting functionality on virtual machines and client systems such as virtual machine resource monitoring. When one of these repositories is required to install a package, the steps required to enable the repository are provided in the appropriate location in the documentation.

Table 1.4. Optional Subscriptions and Repositories

Subscription Pool	Repository Name	Repository Label	Details
Red Hat Enterprise Linux Server	**Red Hat Enterprise Linux 7 Server - RH Common (v.7 Server for x86_64)**	**rhel-7-server-rh-common-rpms**	Provides the **ovirt-guest-agent-common** package for Red Hat Enterprise Linux 7, which allows you to monitor virtual machine resources on Red Hat Enterprise Linux 7 clients.

Subscription Pool	Repository Name	Repository Label	Details
Red Hat Enterprise Linux Server	**Red Hat Enterprise Virt Agent (v.6 Server for x86_64)**	**rhel-6-server-rhv-4-agent-rpms**	Provides the **ovirt-guest-agent-common** package for Red Hat Enterprise Linux 6, which allows you to monitor virtual machine resources on Red Hat Enterprise Linux 6 clients.
Red Hat Enterprise Linux Server	**Red Hat Enterprise Virt Agent (v.5 Server for x86_64)**	**rhel-5-server-rhv-4-agent-rpms**	Provides the **rhevm-guest-agent** package for Red Hat Enterprise Linux 5, which allows you to monitor virtual machine resources on Red Hat Enterprise Linux 5 clients.
Red Hat Virtualization	**Red Hat Virtualization Host Build**	**rhel-7-server-rhvh-4-build-rpms**	Provides packages used to build your own version of the Red Hat Virtualization Host image.

CHAPTER 2. RHV FOR IBM POWER

This release supports Red Hat Enterprise Linux 7 hosts on IBM POWER8, little endian hardware and Red Hat Enterprise Linux 7 virtual machines on emulated IBM POWER8 hardware. From Red Hat Virtualization 4.2.6 Red Hat Enterprise Linux hosts are supported on IBM POWER9, little endian hardware and Red Hat Enterprise Linux 7 virtual machines on emulated IBM POWER9 hardware.

IMPORTANT

Previous releases of RHV for IBM Power required Red Hat Enterprise Linux hosts on POWER8 hardware to be installed from an ISO image. These hosts cannot be updated for use with this release. You must reinstall Red Hat Enterprise Linux 7 hosts using the repositories outlined below.

The packages provided in the following repositories are required to install and configure aspects of a Red Hat Virtualization environment on POWER8 hardware.

Table 2.1. Required Subscriptions and Repositories for IBM POWER8, little endian hardware

Component	Subscription Pool	Repository Name	Repository Label	Details
Red Hat Virtualization Manager	**Red Hat Virtualization for IBM Power**	**Red Hat Virtualization for IBM Power**	**rhel-7-server-rhv-4-power-rpms**	Provides the Red Hat Virtualization Manager for use with IBM POWER8 hosts. The Manager itself must be installed on x86_64 architecture.
Red Hat Enterprise Linux 7 hosts, little endian	**Red Hat Enterprise Linux for Power, little endian**	**RHV Management Agent for IBM Power, little endian**	**rhel-7-server-rhv-4-mgmt-agent-for-power-le-rpms**	Provides the QEMU and KVM packages required for using Red Hat Enterprise Linux 7 servers on IBM Power (little endian) hardware as virtualization hosts.
	Red Hat Enterprise Linux for Power, little endian	**Red Hat Enterprise Linux for IBM Power, little endian**	**rhel-7-for-power-le-rpms**	Provides additional packages required for using Red Hat Enterprise Linux 7 servers on IBM Power (little endian) hardware as virtualization hosts.

Component	Subscription Pool	Repository Name	Repository Label	Details
Red Hat Enterprise Linux 7 virtual machines, big endian	**Red Hat Enterprise Linux for Power, big endian**	**RHV Tools for IBM Power**	**rhel-7-server-rhv-4-tools-for-power-le-rpms**	Provides the **ovirt-guest-agent-common** package for Red Hat Enterprise Linux 7 virtual machines on emulated IBM Power (big endian) hardware. The guest agents allow you to monitor virtual machine resources on Red Hat Enterprise Linux 7 clients.
Red Hat Enterprise Linux 7 virtual machines, little endian	**Red Hat Enterprise Linux for Power, little endian**	**RHV Tools for IBM Power, little endian**	**rhel-7-server-rhv-4-tools-for-power-le-rpms**	Provides the **ovirt-guest-agent-common** package for Red Hat Enterprise Linux 7 virtual machines on emulated IBM Power (little endian) hardware. The guest agents allow you to monitor virtual machine resources on Red Hat Enterprise Linux 7 clients.

Table 2.2. Required Subscriptions and Repositories for IBM POWER9, little endian hardware

Component	Subscription Pool	Repository Name	Repository Label	Details
Red Hat Virtualization Manager	**Red Hat Virtualization for IBM Power**	**Red Hat Virtualization for IBM Power**	**rhel-7-server-rhv-4-power-rpms**	Provides the Red Hat Virtualization Manager for use with IBM POWER9 hosts. The Manager itself must be installed on x86_64 architecture.

Component	Subscription Pool	Repository Name	Repository Label	Details
Red Hat Enterprise Linux 7 hosts, little endian	**Red Hat Enterprise Linux for Power, little endian**	**RHV Management Agent for IBM Power, little endian**	**rhel-7-server-rhv-4-mgmt-agent-for-power-9-rpms**	Provides the QEMU and KVM packages required for using Red Hat Enterprise Linux 7 servers on IBM Power (little endian) hardware as virtualization hosts.
	Red Hat Enterprise Linux for Power, little endian	**Red Hat Enterprise Linux for IBM Power, little endian**	**rhel-7-for-power-9-rpms**	Provides additional packages required for using Red Hat Enterprise Linux 7 servers on IBM Power (little endian) hardware as virtualization hosts.
Red Hat Enterprise Linux 7 virtual machines, big endian	**Red Hat Enterprise Linux for Power, big endian**	**RHV Tools for IBM Power**	**rhel-7-server-rhv-4-tools-for-power-le-rpms**	Provides the **ovirt-guest-agent-common** package for Red Hat Enterprise Linux 7 virtual machines on emulated IBM Power (big endian) hardware. The guest agents allow you to monitor virtual machine resources on Red Hat Enterprise Linux 7 clients.

Component	Subscription Pool	Repository Name	Repository Label	Details
Red Hat Enterprise Linux 7 virtual machines, little endian	**Red Hat Enterprise Linux for Power, little endian**	**RHV Tools for IBM Power, little endian**	**rhel-7-server-rhv-4-tools-for-power-le-rpms**	Provides the **ovirt-guest-agent-common** package for Red Hat Enterprise Linux 7 virtual machines on emulated IBM Power (little endian) hardware. The guest agents allow you to monitor virtual machine resources on Red Hat Enterprise Linux 7 clients.

Unsupported Features

The following Red Hat Virtualization features are not supported:

- SPICE display
- SmartCard
- Sound device
- Guest SSO
- Integration with OpenStack Networking (Neutron), OpenStack Image (Glance), and OpenStack Volume (Cinder)
- Self-hosted engine
- Red Hat Virtualization Host (RHVH)
- Disk Block Alignment

For a full list of bugs that affect the RHV for IBM Power release, see https://bugzilla.redhat.com/show_bug.cgi?id=1444027.

CHAPTER 3. TECHNOLOGY PREVIEW AND DEPRECATED FEATURES

3.1. TECHNOLOGY PREVIEW FEATURES

IMPORTANT

Technology Preview features are not supported with Red Hat production service-level agreements (SLAs) and might not be functionally complete, and Red Hat does not recommend using them for production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process. For more information see Red Hat Technology Preview Features Support Scope.

The following table describes features available as Technology Previews in Red Hat Virtualization.

Table 3.1. Technology Preview Features

Technology Preview Feature	Details
NoVNC console option	Option for opening a virtual machine console in the browser using HTML5.
Websocket proxy	Allows users to connect to virtual machines through a noVNC console.
VDSM hook for nested virtualization	Allows a virtual machine to serve as a host.
Import Debian and Ubuntu virtual machines from VMware and RHEL 5 Xen	Allows **virt-v2v** to convert Debian and Ubuntu virtual machines from VMware or RHEL 5 Xen to KVM. **Known Issues:** ● **virt-v2v** cannot change the default kernel in the GRUB2 configuration. The kernel configured on the guest operating system is not changed during the conversion, even if a more optimal version is available. ● After converting a Debian or Ubuntu virtual machine from VMware to KVM, the name of the virtual machine's network interface may change, and will need to be configured manually
Open vSwitch cluster type support	Adds Open vSwitch networking capabilities.
moVirt	Mobile Android app for Red Hat Virtualization.

Technology Preview Feature	Details
Shared and local storage in the same data center	Allows the creation of single-brick Gluster volumes to enable local storage to be used as a storage domain in shared data centers.
Cinderlib Integration	Leverage CinderLib library to use Cinder-supported storage drivers in Red Hat Virtualization without a Full Cinder-OpenStack deployment. Adds support for Ceph storage along with fibre channel and iSCSI storage. The Cinder volume has multipath support on the Red Hat Virtualization Host.
Native 4 KB support and block size of 4 KB	RHHI uses a block size of 4 KB. See: RHHI for Virtualization.
Intel Q35 Chipset	Adds support for the Q35 machine type. Q35 is PCIe-enabled and can use UEFI (OVMF) BIOS and legacy BIOS (SeaBIOS).
SSO with OpenID Connect	Adds support for external OpenID Connect authentication using Keycloak in both the user interface and with the REST API.
oVirt Engine Backup	Adds support to back up and restore Red Hat Virtualization Manager with the Ansible **ovirt-engine-backup** role.
Libvirt	Adds support for Libvirt.

3.2. DEPRECATED FEATURES

The following table describes deprecated features to be removed in a future version of Red Hat Virtualization.

Table 3.2. Deprecated Features

Deprecated Feature	Details
Version 3 REST API	Version 3 of the REST API is no longer supported. Use the version 4 REST API.
Version 3 SDKs	Version 3 of the SDKs for Java, Python, and Ruby are no longer supported. Use the version 4 SDK for Java, Python, or Ruby.
RHEVM Shell	Red Hat Virtualization's specialized command line interface is no longer supported. Use the version 4 SDK for Java, Python, or Ruby, or the version 4 REST API.

Deprecated Feature	Details
Export Domains	Use a data domain. Migrate data domains between data centers and import the virtual machines into the new data center. In Red Hat Virtualization 4.3, some tasks may still require the export domain.
ISO domains	Use a data domain. Upload images to data domains. In Red Hat Virtualization 4.3, some tasks may still require the ISO domain.
Iptables	Use the **firewalld** service.
Conroe, Penryn, Opteron G1, Opteron G2, and Opteron G3 CPU types	Use newer CPU types.
IBRS CPU types	Use newer fixes.
3.6 and 4.0 cluster compatibility versions	Use a newer cluster compatibility version. Upgrade the compatibility version of existing clusters.
ovirt-guest-agent	The **ovirt-guest-agent** project is no longer supported. Use **qemu-guest-agent** version 2.12.0 or later.
cockpit-machines-ovirt	The **cockpit-machines-ovirt** package is not included in Red Hat Enterprise Linux 8 and will not be supported in Red Hat Virtualization Host 4.4. Use the Administration Portal.

CHAPTER 4. RELEASE INFORMATION

These release notes highlight technology preview items, recommended practices, known issues, and deprecated functionality to be taken into consideration when deploying this release of Red Hat Virtualization.

Notes for updates released during the support lifecycle of this Red Hat Virtualization release will appear in the advisory text associated with each update or the *Red Hat Virtualization Technical Notes*. This document is available from the following page:

https://access.redhat.com/documentation/en-us/red_hat_virtualization

4.1. RED HAT VIRTUALIZATION 4.3 GENERAL AVAILABILITY

4.1.1. Enhancements

This release of Red Hat Virtualization features the following enhancements:

BZ#1009608

> This release allows you to limit east-west traffic of VMs, to enable traffic only between the VM and a gateway. The new filter 'clean-traffic-gateway' has been added to libvirt. With a parameter called GATEWAY_MAC, a user can specify the MAC address of the gateway that is allowed to communicate with the VM and vice versa. Note that users can specify multiple GATEWAY_MACs. There are two possible configurations of VM:
>
> 1) A VM with a static IP. This is the recommended setup. It is also recommended to set the parameter CTRL_IP_LEARNING to 'none'. Any other value will result in a leak of initial traffic. This is caused by libvirt's learning mechanism (see https://libvirt.org/formatnwfilter.html#nwfelemsRulesAdvIPAddrDetection and https://bugzilla.redhat.com/show_bug.cgi?id=1647944 for more details).
>
> 2) A VM with DHCP. DHCP is working partially. It is not usable in production currently (https://bugzilla.redhat.com/show_bug.cgi?id=1651499).
>
> The filter has a general issue with ARP leak (https://bugzilla.redhat.com/show_bug.cgi?id=1651467). Peer VMs are able to see that the VM using this feature exists (in their arp table), but are not able to contact the VM, as the traffic from peers is still blocked by the filter.

BZ#1020790

> ovirt-log-collector can now limit the maximum size of logs collected in order to capture only relevant logs. Logs may be extremely large in environments with many hosts or a large number of exceptions, so ovirt-log-collector can now limit the size of the collected logs, defaulting to the last day only.

BZ#1111783

> In the current release, Windows clustering is supported for directly attached LUNs and shared disks.

BZ#1111784

> The current release supports Windows clustering for directly attached LUNs and shared disks.

BZ#1155676

> In this release, users can now export VM templates to OVA files located on shared storage, and import the OVA files from the shared storage into a different data center.

BZ#1209881

> The iptables and iptables-service have been removed from the list of dependencies in self-hosted engine deployment.

BZ#1284775

> The current release adds support for memory hot-plug for IBM POWER (ppc64le) virtual machines.

BZ#1286219

> In the current release, the disk alias of a cloned virtual machine is `Alias_<Cloned-Virtual-Machine-Name>`.

BZ#1372134

> The current release of the self-hosted engine supports deployment with static IPv6.

BZ#1388098

> The current release provides a software hook for the Manager to disable restarting hosts following an outage. For example, this capability would help prevent thermal damage to hardware following an HVAC failure.

BZ#1408584

> Previously the REST API did not include the CPU Type when it returned information about the host. Now, the CPU Type is included with the rest of the information concerning the host that the REST API returns, which is consistent with the Administration Portal.

BZ#1439733

> In this release, VMs converted to oVirt (from VMware, Xen or OVA) now include RNG device and memory balloon device, provided that the guest OS has the necessary drivers installed.

BZ#1451297

> TLSv1 and TLSv1.1 protocols are no longer secure, so they are forcefully disabled, and cannot be enabled, in the VDSM configuration.
>
> Only TLSv1.2 and higher versions of the protocol are enabled. The exact TLS version depends on the underlying OpenSSL version.

BZ#1454389

> The current release of the Administration Portal supports search queries for virtual machines with a specific cluster compatibility override setting or with a different cluster compatibility override setting (or none): `Vms: custom_compatibility_version = X.Y` or `!= X.Y`.

BZ#1454673

> When renaming a running virtual machine, the new name is now applied immediately, even when the QEMU process is running and is set with the previous name. In this case, the user is provided with a warning that indicates that the running instance of the virtual machine uses the previous name.

BZ#1467332

> Feature: Support default route role on IPv6-only networks, but only for IPv6 static interface configuration.
>
> Reason: oVirt engine should support IPv6 only networks for its existing capabilities.
>
> Result:
> - You can set the default route role on an IPv6-only network provided it has an IPv6 gateway.
> - For Red Hat Virtualization Manager (RHVM) to correctly report the sync status of the interfaces, configure all of the interfaces with static IPv6 addresses only. Also, configure the IPv6 gateway on the logical network that has the default route role.
> - IPv6 dynamic configuration is currently not supported.
> - The IPv6 gateway on the default route role network is applied as the default route for the v6 routing table on the host.
> - You can set an IPv6 gateway on a non-management network. This was previously possible only on the management network).
> - If more that one IPv6 gateway is set on the interfaces of a host, the Manager will be in an undefined state: There will be more than one default route entry in the v6 routing table on the host, which causes the host to report that there are no v6 gateways at all (meaning that the interfaces will appear as out of sync in the Manager.)

BZ#1510336

> This release adds the ability to manage the MTU of VM networks in a centralized way, enabling oVirt to manage MTU all the way from the host network to the guest in the VM. This feature allows for the consistent use of MTUs in logical networks with small MTU (e.g., tunneled networks) and large MTU (e.g., jumbo frames) in VMs, even without DHCP.

BZ#1510856

> Making large snapshots and other abnormal events can pause virtual machines, impacting their system time, and other functions, such as timestamps. The current release provides Guest Time Synchronization, which, after a snapshot is created and the virtual machine is un-paused, uses VDSM and the guest agent to synchronize the system time of the virtual machine with that of the host. The time_sync_snapshot_enable option enables synchronization for snapshots. The time_sync_cont_enable option enables synchronization for abnormal events that may pause virtual machines. By default, these features are disabled for backward compatibility.

BZ#1511234

> The new boot_hostdev hook allows virtual machines to boot from passed through host devices such as NIC VF's, PCI-E SAS/RAID Cards, SCSI devices for example without requiring a normal bootable disk from a Red Hat Virtualization storage domain or direct LUN.

-

BZ#1511891

> Previously, copying volumes to preallocated disks was slower than necessary and did not make optimal use of available network resources. In the current release, qemu-img uses out-of-order writing to improve the speed of write operations by up to six times. These operations include importing, moving, and copying large disks to preallocated storage.

BZ#1518697

> Red Hat Virtualization Manager setup now uses oVirt Task Oriented Pluggable Installer/Implementation (otopi) to generate its answer files to eliminate the need for additional code or manual input on stated questions.

BZ#1526033

> This release enables the export of a VM template to an Open Virtualization Appliance (OVA) file and the import of an OVA file as a VM template to facilitate VM template migration between data centers without using an export domain.

BZ#1527860

> This release adds USB qemu-xhci controller support to SPICE consoles, for Q35 chipset support. Red Hat Virtualization now expects that when a BIOS type using the Q35 chipset is chosen, and USB is enabled, that the USB controller will be qemu-xhci.

BZ#1530031

> The 'engine-backup' script now has default values for several options, so you do not need to supply values for these options.
>
> To see the default values, run 'engine-backup --help'.

BZ#1532969

> Previously, virtual machines could only boot from BIOS. The current release adds support for booting virtual machines via UEFI firmware, a free, newer, more modern way to initialize a system.

BZ#1539829

> This feature provides support for adding security groups and rules using the ovirt-provider-ovn package, as described by the OpenStack Networking API.

BZ#1542136

> Feature: Auto persist changes on SetupNetworks
> Instruct VDSM to commit any changes applied during setup networks immediately upon successful completion of the setup networks process and if connectivity is successfully re-established with the Red Hat Virtualization Manager. If this flag is not specified in the request, it is assumed that it was set to false, which is backward compatible with the previous behavior.
>
> When setupNetworks is invoked from the Administration Portal, the default is 'true'. When it is invoked with a REST API call, the default is 'false'. When it is invoked from an ansible script, the

> default is 'true'.
>
> Reason: When the commit was not part of the setupNetworks request, the following commit request issued by the Manager upon successful re-establishment of the connection with VDSM would sometimes fail, leaving the configuration in a non-persisted state although the intention was to persist it.
>
> Result: The configuration is persisted immediately.

BZ#1553902

> The current release of the User Interface Plugin API supports the updated Administration Portal design with the following changes:
> - Custom secondary menu items can be added to the vertical navigation menu.
> - Some functions have been renamed for consistency with the new Administration Portal design. A deprecation notice is displayed when the old names are used.
> - Some functions no longer support the `alignRight` parameter because the tabs are aligned horizontally, flowing from left to right.

BZ#1559694

> If a VM does not use virtual NUMA nodes, it is better if its whole memory can fit into a single NUMA node on the host. Otherwise, there may be some performance overhead. There are two additions in this RFE:
>
> 1. A new warning message is shown in the audit log if a VM is run on a host where its memory cannot fit into a single host NUMA node.
>
> 2. A new policy unit is added to the scheduler: 'Fit VM to single host NUMA node'. When starting a VM, this policy prefers hosts where the VM can fit into a single NUMA node. This unit is not active by default, because it can cause undesired edge cases. For example, the policy unit would cause the following behavior when starting multiple VMs:
> In the following setup:
> - 9 hosts with 16 GB per NUMA node
> - 1 host with 4 GB per NUMA node
> When multiple VMs with 6 GB of memory are scheduled, the scheduling unit would prevent them from starting on the host with 4 GB per NUMA node, no matter how overloaded the other hosts are. It would use the last host only when all the others do not have enough free memory to run the VM.

BZ#1560132

> In the Administration Portal, it is possible to set a threshold for cluster level monitoring as a percentage or an absolute value, for example, 95% or 2048 MB. When usage exceeds 95% or free memory falls below 2048 MB, a "high memory usage" or "low memory available" event is logged. This reduces log clutter for clusters with large (1.5 TB) amounts of memory.

BZ#1561033

> The current release adds AMD SMT-awareness to VDSM and RHV-M. This change helps meet the constraints of schedulers and software that are licensed per-core. It also improves cache coherency for VMs by presenting a more accurate view of the CPU topology. As a result, SMT works as expected on AMD CPUs.

BZ#1561413

> In the current release of the Red Hat Virtualization Manager, the "Remove" option is disabled if a virtual machine is delete-protected.

BZ#1561539

> A new option, Activate Host After Install, has been added to the Administration Portal under Compute > Hosts, in the New Host or Edit Host screen. This option is selected by default.

BZ#1563271

> An Ansible role, `ovirt-host-deploy-spice-encryption`, has been added to change the cypher string for SPICE consoles. The default cypher string satisfies FIPS requirements ('TLSv1.2+FIPS:kRSA+FIPS:!eNULL:!aNULL'). The role can be customized with the Ansible variable `host_deploy_spice_cipher_string`.

BZ#1570040

> This release adds support for external OpenID Connect authentication using Keycloak in both the user interface and the REST API.

BZ#1570077

> The current release of the User Interface Plugin API provides an "unload" handler that can be attached to a primary/secondary menu item or a details tab to perform clean-up when the user navigates away from these interface elements.

BZ#1571024

> This feature provides the ability to enable live migration for HP VMs (and, in general, to all VM types with pinning settings).
> Previously, Red Hat Virtualization 4.2 added a new High-Performance VM profile type. This required configuration settings including pinning the VM to a host based on the host-specific configuration. Due to the pinning settings, the migration option for the HP VM type was automatically forced to be disabled.
> Now, Red Hat Virtualization 4.3 provides the ability for live migration of HP VMs (and all other VMs with a pinned configuration like NUMA pinning, CPU pinning, and CPU pass-through enabled). For more details, see the feature page:
> https://ovirt.org/develop/release-management/features/virt/high-performance-vm-migration.html

BZ#1571283

> Previously, changing log levels required editing libvirt.conf and restarting the libvirtd service. This restart prevented support from collecting data and made reproducing issues more difficult.
>
> The current release adds the libvirt-admin package to the optional channel for Red Hat Virtualization Host. Installing this package enables you to run the virt-admin command to change libvirt logging levels on the fly.

BZ#1571371

> High-performance virtual machines require pinning to multiple hosts to be highly-available. Previously virtual machines with NUMA pinning enabled could not be configured to run on more than one host. Now virtual machines with NUMA pinning enabled can be configured to run on one or more hosts. All

hosts need to support NUMA pinning, and the NUMA pinning configuration needs to be compatible with all assigned hosts.

BZ#1571399

The current release of the User Interface Plugin API provides greater control over the placement of action buttons.

BZ#1574494

This update adds support for bare-metal machines based on IBM POWER9 CPUs running hypervisors on the RHEL-ALT host operating system. These hypervisors can run virtual machines with POWER8 or POWER9 virtual CPUs. This update also adds support for live migration of virtual machines with POWER8 virtual CPUs between hosts based on either POWER8 or POWER9 CPUs.

BZ#1578339

This release provides an Ansible role to ensure the correct shutdown of Red Hat Virtualization Manager or a Red Hat Hyperconverged Infrastructure environment.

BZ#1578775

The qemufwcfg driver has been added for the built-in firmware configuration (fw_cfg) system device on Windows 10 and Windows Server 2016 guests. As a result, fw_cfg devices are now identified correctly in the Device Manager on these guests.

BZ#1578782

The virtio-smbus driver installer for the built-in SMBus device on Windows 2008 guests has been added to the RHV Windows Guest Tools. As a result, SMBus devices are now identified correctly in the Device Manager on these guests.

BZ#1580346

In this release, the cluster property "set maintenance reason" is enabled by default.

BZ#1585008

The current release adds a new 'ssl_ciphers' option to VDSM, which enables you to configure available ciphers for encrypted connections (for example, between the Manager and VDSM, or between VDSM and VDSM). The values this option uses conform to the OpenSSL standard. For more information, see https://access.redhat.com/articles/4056301

BZ#1588498

With this release, the size of the `rhvm` package has been reduced.

BZ#1590202

This release adds a feature to control toast notifications. Once any notifications are showing, "Dismiss" and "Do not disturb" buttons will appear that allow the user to silence notifications.

BZ#1592853

> In this release, ovirt-log-collector now supports batch mode.

BZ#1597085

> A new option has been added to the Administration Portal under Compute > Clusters in the Console configuration screen: Enable VNC Encryption

BZ#1598141

> In this release, self-hosted engine installation supports Ansible playbooks that use tags.

BZ#1598318

> The openscap, openscap-utils and scap-security-guide packages have been added to RHVH in order to increase security hardening in RHVH deployments.

BZ#1598391

> Red Hat OpenStack Platform 14's OVN+neutron is now certified as an external network provider for Red Hat Virtualization 4.3.

BZ#1602968

> Previously, "Power Off" was missing from the virtual machine context menu in the Administration Portal; although it was present in previous versions, it was removed as part of the new user interface in 4.2. Now, "Power Off" is once again present when a running virtual machine is right-clicked.

BZ#1609139

> Previously, you could only assign one vGPU device type (mdev_type) to a virtual machine in the Administration Portal. The current release adds support for assigning multiple Nvidia vGPU device types to a single virtual machine.

BZ#1611889

> This feature allows the user to select the cloud-init protocol with which to create a virtual machine's network configuration. The protocol can be selected while creating or editing a VM, or while starting a VM with Run Once. In older versions of cloud-init, backward compatibility needed to be maintained with the ENI protocol, whereas on newer cloud-init versions the OpenStack-Metadata protocol is supported.

BZ#1615348

> In this release, an Ansible playbook enables you to deploy the Metrics Store on a single node or on multiple nodes and to scale out an existing deployment.

BZ#1615974

> The current release replaces Fluentd with Rsyslog, which can collect oVirt logs, engine.log, VDSM logs, and collectd metrics.

> Systems upgraded from 4.2 will still have Fluentd installed, but it will be disabled and stopped. After upgrading to 4.3, you can remove the Fluentd packages. Fluentd will not be supported in RHEL 8. Rsyslog offers better performance.
>
> Rsyslog can output to Elasticsearch on Red Hat OpenShift Container Platform. Sending data to your own instance of Elasticsearch is not currently supported.
>
> Collectd is reconfigured to use write_syslog, a new plugin, to send metrics to Rsyslog. When deploying ovirt metrics, Rsyslog is configured on the Red Hat Virtualization Manager and host to collect and ship the data to the requested target.

BZ#1616415

> Virtual machines can be forcibly shut down in the VM Portal.

BZ#1619210

> In the past, high-performance virtual machines were pinned to specific hosts and did not support live migration. The current release enables live migration of high-performance virtual machines, as well as virtual machines with NUMA pinning, CPU pinning, or CPU pass-through enabled.

BZ#1619391

> In the current release, invoking the ovirt-aaa-jdbc-tool logs the following three events to the syslog server: the user who invokes the ovirt-aaa-jdbc-tool; the parameters passed to ovirt-aaa-jdbc-tool except filter passwords; and whether invoking ovirt-aaa-jdbc-tool was successful.

BZ#1620569

> Qemu Guest Agent packages for several Linux distributions have been added to make it easier to install the guest agent offline.

BZ#1620594

> In this release, virt-v2v attempts to install the QEMU Guest Agent on Linux guests during VM conversion. For this feature to work properly, a current RHV guest tools ISO must be attached during the conversion.

BZ#1625543

> When Importing KVM VMs and Sparseness is specified, the actual Disk Size should be preserved to improve the performance of the Import as well as to conserve disk space on the Destination Storage Domain. Previously, when you set thin provisioning for importing a KVM-based VM into a Red Hat Virtualization environment, the disk size of the VM within the Red Hat Virtualization storage domain was inflated to the volume size or larger, even when the original KVM-based VM was much smaller. KVM Sparseness is now supported so that when you import a virtual machine with thin provisioning enabled into a Red Hat Virtualization environment, the disk size of the original virtual machine image is preserved. However, KVM Sparseness is not supported for Block Storage Domains.

BZ#1625612

> This release adds support for importing VMware virtual machines that include snapshots.

BZ#1629437

> As part of replacing Fluentd with Rsyslog, the RHEL Ansible role `logging`, from the `linux-system-roles` collection of roles, is responsible for deploying Rsyslog configuration files and service handling for multiple projects. This role is maintained by RHEL and makes Rsyslog deployment easier and more maintainable. In this release, the Rsyslog service and configuration are deployed on the oVirt engine and hosts using this role when you deploy oVirt metrics.

BZ#1630243

> During virtual machine live migration, the migration progress bar is now also shown in the host's Virtual Machine tab.

BZ#1631587

> In this release, the Correlation-Id can be passed to the vdsm-client by using the '--flow-id' argument with the vdsm-client tool.

BZ#1636256

> In previous versions, it was not possible to limit the number of simultaneous sessions for each user, so active sessions could significantly grow up until they expired. Now, Red Hat Virtualization Manager 4.3 introduces the ENGINE_MAX_USER_SESSIONS option, which can limit simultaneous sessions per user. The default value is -1 and allows unlimited sessions per user.
>
> To limit the number of simultaneous sessions per user, create the 99-limit-user-sessions.conf file in /etc/ovirt-engine/engine.conf.d and add ENGINE_MAX_USER_SESSIONS=NNN, where NNN is the maximum number of allowed simultaneous sessions per user. Save and restart using: systemctl restart ovirt-engine.

BZ#1637015

> With this release, users can now disable pop-up notifications.
> When a pop-up notification appears in the Administration Portal, the following options are now available for disabling notifications:
> - Dismiss All
> - Do Not Disturb
> - for 10 minutes
> - for 1 hour
> - for 1 day
> - until Next Log In

BZ#1641125

> Previously, version 4.2.0 added support for vGPUs and used a Consolidated ("depth-first") allocation policy.
>
> The current release adds support for a Separated ("breadth-first") allocation policy. The default policy is the Consolidated allocation policy.

BZ#1644693

> Previously, for virtual machines with a Windows 10 guest, the host CPU load was too high.

> The current release reduces the CPU load by adding enlightenments that enable the hypervisor synthetic interrupt controller (SynIC) and stimer.
>
> For example, with this enhancement, the host CPU load of a virtual machine running an idle Windows 10 guest should be approximately 0-5%.

BZ#1651225

> Red Hat Enterprise Linux 8 is fully supported as a guest operating system. Note that GNOME single sign-on functionality, guest application list, and guest-side hooks are not supported.

BZ#1651255

> You can now set the number of IO threads in the new/edit VM dialog in the Administration Portal, instead of just the REST API.

BZ#1654253

> The current release presents the OpenSCAP security profile as an option to users installing and upgrading Red Hat Virtualization Hosts. This feature helps organizations comply with the Security Content Automation Protocol (SCAP) standards.

BZ#1656794

> This release disables the "Remove" button on the Everyone permissions page to prevent misconfiguring Red Hat Virtualization Manager permissions.

BZ#1661921

> The release ensures the Red Hat Virtualization internal OVN database connections and OpenStack REST APIs use TLS 1.2 and HIGH ciphers to address configurable OVN internal connections and the default Red Hat Enterprise Linux version 7 OpenSSL configuration allowing insecure ciphers.

BZ#1663288

> The current release updates the QEMU post-copy migration policy from a Technology Preview to a Supported Feature. As a cautionary note, a network failure during migration results in a virtual machine in an inconsistent state, which cannot be recovered by the Manager. Administrators using this feature should be aware of the potential for data loss.

BZ#1664490

> This release enhancement preserves a virtual machine's time zone setting of a virtual machine when moving the virtual machine from one cluster to a different cluster.

BZ#1665072

> In this release, the write_syslog collectd plugin is now automatically installed on the system running the ovirt-engine service to provide metrics store support.

BZ#1665073

-

> In this release, the write_syslog collectd plugin is now automatically installed on managed hosts for metrics store support.

BZ#1667842

> Previously, the background process to migrate virtual machines considered affinity groups. This release updates the background process to migrate virtual machines to consider both affinity groups and affinity labels.

BZ#1669047

> In order to create and use a Managed block storage domain, a new database must be created that is accessible by cinderlib. In this release, a new database can be created during the engine-setup process, using the same procedures described in the documentation for "Configuring the Red Hat Virtualization Manager".

BZ#1671074

> In this release, the available SSL ciphers used in communication between the Red Hat Virtualization Manager and VDSM have been limited, and now exclude weak or anonymous ciphers.

BZ#1673303

> In this release, the IPv6 default route of a host is managed by restricting the IPv6 default gateways so that there is only one such gateway for all host interfaces.
> Note that:
> 1. When the default route role is moved away from a network, its IPv6 gateway is automatically removed from the corresponding interface.
> 2. After moving the default route role to a new network, you should set a static IPv6 gateway on this network.
> 3. If the host and Red Hat Virtualization Manager are not on the same subnet, the Manager will lose connectivity with the host on moving the default route role between networks (see note 1). You should take precautions to avoid this scenario.

BZ#1679133

> The current release ships a new version of Red Hat Gluster Storage, RHGS 3.4.4, in Red Hat Virtualization Host (RHVH).

BZ#1693279

> This enhancement installs the v2v-conversion-host-wrapper RPM by default on Red Hat Virtualization Host.

4.1.2. Technology Preview

The items listed in this section are provided as Technology Previews. For further information on the scope of Technology Preview status, and the associated support implications, refer to https://access.redhat.com/support/offerings/techpreview/.

BZ#1636749

> This technology preview includes the flexvolume-driver and volume-provisioner component to enable

> dynamic storage provisioning for OpenShift Container Platform deployed on Red Hat Virtualization virtual machines. The container can use any of the existing storage technologies Red Hat Virtualization supports.

4.1.3. Release Notes

This section outlines important details about the release, including recommended practices and notable changes to Red Hat Virtualization. You must take this information into account to ensure the best possible outcomes for your deployment.

BZ#1304300

> Large guest operating systems have a significant overhead on the host. The host requires a consecutive non-swapped block of memory that is 1/128th of the virtual machine's memory size. Previously, this overhead was not accounted for when scheduling the virtual machine. If the memory requirement was not satisfied, the virtual machine failed to start with an error message similar to this one: "libvirtError: internal error: process exited while connecting to monitor: ... qemu-kvm: Failed to allocate HTAB of requested size, try with smaller maxmem"
>
> The current release fixes this issue by using dynamic hash page table resizing.

BZ#1403674

> This release allows Red Hat Virtualization Manager to set a display network and open a console to a virtual machine over an IPv6 only network.

BZ#1511697

> Previously, an administrator with the `ClusterAdmin` role was able to modify the self-hosted engine virtual machine, which could cause damage. In the current release, only a `SuperUser` can modify a self-hosted engine and its storage domain.

BZ#1514004

> The TLSv1 and TLSv1.1 protocols are no longer secure. In the current release, they have been forcefully disabled in the VDSM configuration and cannot be enabled. Only TLSv1.2 and higher versions of the protocol are enabled. The exact version enabled depends on the underlying OpenSSL version.

BZ#1550634

> This release removes the Red Hat Virtualization Manager support for clusters levels 3.6 and 4.0. Customers must upgrade their data centers to Red Hat Virtualization Manager 4.1 or later before upgrading to Red Hat Virtualization Manager 4.3.

BZ#1579819

> This release updates the command sequence for Preparing Local Storage for Red Hat Virtualization Hosts by adding a command to mount the logical volume.

BZ#1599321

> There are inconsistencies in the following internal configuration options:

> - HotPlugCpuSupported
> - HotUnplugCpuSupported
> - HotPlugMemorySupported
> - HotUnplugMemorySupported
> - IsMigrationSupported
> - IsMemorySnapshotSupported
> - IsSuspendSupported
> - ClusterRequiredRngSourcesDefault
>
> Systems that have upgraded from RHV 4.0 to RHV 4.1/4.2 and are experiencing problems with these features should upgrade to RHV 4.2.5 or later.

BZ#1609884

> In this release, the oVirt release package for master, ovirt-release-master, enables a new repository hosted on the Cool Other Package Repositories (COPR) service for delivering ovirt-web-ui packages.

BZ#1627753

> The current release replaces Fluentd with Rsyslog for collecting oVirt logs and collectd metrics. Hosts upgraded from 4.2 will still have Fluentd installed, but the service is disabled and stopped. After upgrading to 4.3, you can remove the Fluentd packages.

BZ#1627756

> The current release replaces Fluentd with Rsyslog for collecting oVirt logs and collectd metrics. Systems upgraded from 4.2 will still have Fluentd installed but it will be disabled and stopped. After upgrading to 4.3, you can remove the Fluentd packages.

BZ#1651140

> Red Hat Virtualization Manager now requires JBoss Enterprise Application Platform.

BZ#1653291

> Context-sensitive help has been removed from Red Hat Virtualization (RHV) 4.3. RHV user interfaces no longer include small question mark icons for displaying context-sensitive help information.
>
> To access the RHV documentation, use the RHV welcome page and the Red Hat Documentation tab.

BZ#1655115

> The current release removes the VDSM daemon's support for cluster levels 3.6/4.0 and Red Hat Virtualization Manager 3.6/4.0. This means that VDSM from RHV 4.3 cannot be used with the Manager from RHV 3.6/4.0. To use the new version of VDSM, upgrade the Manager to version 4.1 or later.

BZ#1671635

> oVirt now requires WildFly version 15.0.1 or later.

4.1.4. Known Issues

These known issues exist in Red Hat Virtualization at this time:

BZ#1073434

> When the ISO Uploader uploads ISO image files, it sets the file permissions incorrectly to -rw-r-----. Because the permissions for "other" are none, the ISO files are not visible in the Administration Portal.
>
> Although the ISO Uploader has been deprecated, it is still available. To work around the permissions issue, set the ISO file permissions to -rw-r--r-- by entering: chmod 644 filename.iso
>
> Verify that the system is configured as described in the "Preparing and Adding NFS Storage" section of the Administration Guide for Red Hat Virtualization.
>
> The above recommendations may also apply if you encounter permissions/visibility issues while using the following alternatives to the ISO Uploader:
> * Manually copying an ISO file to the ISO storage domain, as described in https://access.redhat.com/solutions/46518/.
> * In version 4.2 of Red Hat Virtualization onward, uploading virtual disk images and ISO images to the data storage domain using the Administration Portal or REST API.

BZ#1146115

> If the same iSCSI target is used to create two or more storage domains, even if the storage domain is put into maintenance mode, the iscsi session does not get logged out. Red Hat recommends to use different iSCSI targets to create different storage domains. To work around this issue, restart the hypervisor host.

BZ#1543411

> In the current release, Q35 machines cannot support more than 500 devices.

BZ#1636254

> VDSM uses lldpad. Due to a bug, lldpad confuses NetXtreme II BCM57810 FCoE-enabled cards. When the VDSM configuration enables lldpad to read lldp data from the card, it renders the card unusable. To work around this issue, set enable_lldp=false in vdsm.conf.d and restart VDSM. Check that lldpad is disabled on all relevant interfaces by entering the command, "lldptool get-lldp -i $ifname adminStatus". If lldp is enabled, disable it by entering "lldptool set-lldp -i $ifname adminStatus=disabled". After ensuring that lldp support is disabled in VDSM, networking should be unaffected.

4.1.5. Deprecated Functionality

The items in this section are either no longer supported or will no longer be supported in a future release

BZ#1381223

> With this update, ovirt-image-uploader has been retired. In Red Hat Virtualization 4.0 ovirt-image-uploader was deprecated in favor of ovirt-imageio.

BZ#1399709

> The `ovirt-shell` tool has been deprecated since RHV 4.0 and has not been updated since. It is included in RHV 4.3 and later, in order not to break existing scripts, but the tool is now unsupported.

BZ#1399750

> Version 3 of the REST API has been deprecated as of RHV version 4.0. It will not be supported from RHV version 4.3, along with the ovirt-shell and version 3 of the Python SDK Guide, Ruby SDK Guide, and Java SDK Guide.

BZ#1533086

> The "Scan Alignment" feature in the previous versions of the Administration Portal is only relevant to guest OSes that are outdated and unsupported.
>
> The current release removes this "Scan Alignment" feature, along with historical records of disks being aligned or misaligned.

BZ#1540921

> Conroe and Penryn CPU types are no longer supported. They will not appear as options for Compatibility Version 4.3, and a warning is displayed for older versions.

BZ#1627636

> The ovirt-engine-cli package uses the version 3 REST API which is deprecated and unsupported. With this update, ovirt-engine-cli is no longer a dependency and is not installed by default.