# Table of Contents

Preface ................................................................................................................................. v  
1 Shipped Kernel .................................................................................................................. 1  
2 Supported Architectures .................................................................................................... 3  
3 New Features and Changes .................................................................................................. 5  
   3.1 Installation and Image Creation ....................................................................................... 5  
   3.2 Red Hat Compatible Kernel ........................................................................................... 6  
   3.3 Corosync and Pacemaker Included in Oracle Linux 8 Update 1 ............................... 7  
   3.4 Cockpit Web Console .................................................................................................... 7  
   3.5 Compilers and Developer Tools ..................................................................................... 7  
      3.5.1 GCC Toolset 9 ........................................................................................................ 8  
      3.5.2 Compiler Toolsets Updated .................................................................................... 8  
      3.5.3 SystemTap Updated to Version 4.1 ..................................................................... 9  
      3.5.4 elfutils Updated to Version 0.176 ....................................................................... 9  
      3.5.5 Date Formatting for Japanese Reiwa Era Updated .............................................. 9  
   3.6 Database ....................................................................................................................... 9  
   3.7 File Systems and Storage .............................................................................................. 9  
   3.8 Infrastructure Services ................................................................................................. 10  
   3.9 Memory Mode Technology for Intel Optane DC Persistent Memory Feature Added ...... 11  
   3.10 Networking ............................................................................................................... 11  
      3.10.1 PMTU Discovery and Route Redirection for VXLANs and GENEVE Tunnels Added ... 11  
      3.10.2 XDP and Networking eBPF Features Updated to Version 5.0 ......................... 11  
   3.11 Security ..................................................................................................................... 11  
      3.11.1 SELinux Features ............................................................................................... 11  
      3.11.2 OpenScap Features ............................................................................................ 12  
      3.11.3 SSH Features ..................................................................................................... 12  
      3.11.4 New udica Package ........................................................................................... 13  
   3.12 virt-manager Application Deprecated ........................................................................... 13  
   3.13 Compatibility ............................................................................................................. 13  
4 Known Issues ..................................................................................................................... 15  
   4.1 Installation and Upgrade Issues .................................................................................... 15  
      4.1.1 Text-based installation wizard unable to complete when an alternate language is selected ................................................................................................................. 16  
      4.1.2 Changing installation source if alternate installation repository is set at boot results in errors ......................................................................................................................... 16  
      4.1.3 rhnreg ks register command may fail if python3-rhn-virtualization-host package is installed ......................................................................................................................... 16  
      4.1.4 ULN registration wizard not displayed on first boot after an Oracle Linux 8 installation ... 16  
      4.1.5 Syslog Error: Failed to insert module `ip_tables': Operation not permitted ............ 17  
      4.1.6 Graphics controller requirements for an installation on an Oracle VM VirtualBox guest ................................................................................................................................. 17  
      4.1.7 Installation on a KVM guest by using iPXE and iSCSI boot results in incorrect IQN name ................................................................................................................................. 18  
   4.2 Running yum update glusterfs-* fails to upgrade Oracle Linux 8 packages to Oracle Linux 8 Update 1 ..................................................................................................................... 18  
   4.3 Cockpit web console Services page unable to search services by state ....................... 18  
   4.4 libstorage package conflict causes dnf groupinstall command to fail ....................... 18  
   4.5 Oracle Linux 8 does not recognize SAS controllers on older Oracle Sun hardware .......... 19  
   4.6 Cannot create a ULN Mirror on local yum server in Oracle Linux 8 Update 1 ............ 19  
   4.7 File System Issues ....................................................................................................... 20  
      4.7.1 ext4: Frequent or repeated system shutdowns can cause file system corruption .... 20  
   4.8 Kernel Issues ............................................................................................................... 20
4.8.1 KVM guests boot with "amd64_edac_mod: Unknown symbol" errors on AMD 64-bit platforms ................................................................. 20
4.8.2 Output of modinfo does not show Retpoline support ...................................................... 20
4.8.3 Kdump runs out of memory when attempting to mount /sysroot on FC disks that use the Logical Volume Manager ........................................................................ 21
4.9 Networking Issues .............................................................................................................. 21
  4.9.1 tracepath6 does not parse destination IPv6 address correctly ........................................ 21
  4.9.2 Failure to insert ip_tables module .............................................................................. 21
4.10 Running nohup prevents ssh command from executing .................................................. 21
4.11 Restarting firewalld service results in SSH connection timeout .................................... 22
4.12 Error: "mcelog service does not support this processor" .................................................. 22
4.13 Podman Issues .................................................................................................................. 22
  4.13.1 Executing podman attach --latest causes panic if no containers are available .......... 22
  4.13.2 Requirements for using the default podman detach key sequence .............................. 22
  4.13.3 Authentication error displayed when attempting to pull an image and not specifying its correct name .............................................................................. 23
  4.13.4 Oracle Container Registry unable to service requests to search catalog ...................... 23
5 Installation and Availability .................................................................................................. 25
6 Release-Specific Information for Oracle Linux 8 Update 1 (aarch64) .................................. 27
  6.1 VNC Remote Console Available as Technology Preview on 64-bit Arm Platform ......... 27
  6.2 Known Issues (aarch64) ..................................................................................................... 27
    6.3.1 Kdump sometimes fails on ThunderX2 and X-Gene 3 platforms ......................... 27
    6.3.2 Excessive write activity inside a guest can crash the guest kernel ......................... 27
  6.4 Installation and Availability (aarch64) ......................................................................... 28
A Package Changes from the Upstream Release ................................................................. 29
A.1 Changes to Binary Packages ............................................................................................ 29
  A.1.1 Added Binary Packages for BaseOS by Oracle ......................................................... 29
  A.1.2 Modified BaseOS Binary Packages ........................................................................... 29
  A.1.3 Modified Binary Packages for CodeReady Linux Builder by Oracle ....................... 42
  A.1.4 Modified AppStream Binary Packages ..................................................................... 44
  A.1.5 Removed BaseOS Binary Packages .......................................................................... 58
  A.1.6 Removed AppStream Binary Packages ...................................................................... 59
A.2 Changes to Source Packages ............................................................................................ 60
  A.2.1 Added Source Packages for BaseOS by Oracle ......................................................... 60
  A.2.2 Modified BaseOS Source Packages ........................................................................... 60
  A.2.3 Modified AppStream Source Packages .................................................................... 62
  A.2.4 Removed BaseOS Source Packages .......................................................................... 65
  A.2.5 Removed AppStream Source Packages ..................................................................... 66
Preface

Oracle® Linux 8: Release Notes for Oracle Linux 8 Update 1 provides information about the new features and known issues in the Oracle Linux 8 Update 1 release. This document may be updated after it is released.

Document generated on: 2020-03-13 (revision: 9465)

Note

These release notes contain information that applies to both the x86_64 and 64-bit Arm (aarch64) architectures. See Chapter 6, Release-Specific Information for Oracle Linux 8 Update 1 (aarch64) for information that is specific to the 64-bit Arm platform.

Audience

This document is intended for users and administrators of the Oracle Linux 8 Update 1 release. It describes potential issues that you may encounter while using the operating system; and, where appropriate, any corresponding workarounds. Oracle recommends that you read this document before installing Oracle Linux 8 Update 1. It is assumed that readers have a general understanding of the Linux operating system.

Related Documents

The latest version of this document and other documentation for this product are available at:

https://docs.oracle.com/en/operating-systems/linux.html

Conventions

The following text conventions are used in this document:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface</strong></td>
<td>Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.</td>
</tr>
<tr>
<td><em>italic</em></td>
<td>Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.</td>
</tr>
<tr>
<td>monospace</td>
<td>Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.</td>
</tr>
</tbody>
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https://www.oracle.com/corporate/accessibility/learning-support.html#support-tab.
Chapter 1 Shipped Kernel

The Oracle Linux 8 Update 1 release ships with the `kernel-4.18.0-147.el8` Red Hat Compatible Kernel (RHCK) kernel package.

The Oracle Linux release is tested as a bundle, as shipped on the installation media image. When installed from the installation media image, the minimum kernel version that is supported is the kernel that is included in the image. Downgrading kernel packages is not supported, unless recommended by Oracle Support.
Chapter 2 Supported Architectures

The Oracle Linux 8 Update 1 release is supported on the x86_64 platform (Intel and AMD).

Note

The 64-bit Arm (aarch64) platform is also available for installation as a developer preview release in Oracle Linux 8 Update 1. See Chapter 6, Release-Specific Information for Oracle Linux 8 Update 1 (aarch64).
Chapter 3 New Features and Changes

Table of Contents

3.1 Installation and Image Creation ................................................................. 5
3.2 Red Hat Compatible Kernel ......................................................................... 6
3.3 Corosync and Pacemaker Included in Oracle Linux 8 Update 1. .................. 7
3.4 Cockpit Web Console .................................................................................. 7
3.5 Compilers and Developer Tools ................................................................. 7
   3.5.1 GCC Toolset 9 ....................................................................................... 8
   3.5.2 Compiler Toolsets Updated ................................................................. 8
   3.5.3 SystemTap Updated to Version 4.1 ...................................................... 9
   3.5.4 elfutils Updated to Version 0.176 ...................................................... 9
   3.5.5 Date Formatting for Japanese Reiwa Era Updated ............................. 9
3.6 Database ..................................................................................................... 9
3.7 File Systems and Storage .......................................................................... 9
3.8 Infrastructure Services .............................................................................. 10
3.9 Memory Mode Technology for Intel Optane DC Persistent Memory Feature Added .......................................................... 11
3.10 Networking ............................................................................................... 11
   3.10.1 PMTU Discovery and Route Redirection for VXLANs and GENEVE Tunnels Added ..................................................... 11
   3.10.2 XDP and Networking eBPF Features Updated to Version 5.0 ................................. 11
3.11 Security ..................................................................................................... 11
   3.11.1 SE Linux Features ............................................................................. 11
   3.11.2 OpenScap Features ......................................................................... 12
   3.11.3 SSH Features .................................................................................. 12
   3.11.4 New udica Package ........................................................................ 13
3.12 virt-manager Application Deprecated ................................................... 13
3.13 Compatibility ............................................................................................. 13

This chapter describes the new features, major enhancements, bug fixes, and other changes that are included in the Oracle Linux 8 Update 1 release.

3.1 Installation and Image Creation

Oracle Linux 8 Update 1 introduces the following notable installation and image creation features and improvements:

• Ability to disable modules during a kickstart installation. You can now disable a module during a kickstart installation to prevent packages from that module from being installed. Use the following command to disable a module during a kickstart installation:

```bash
# module --name=module-name --stream=stream-name--disable
```

• New repo.git blueprint section added to lorax-composer. The new repo.git blueprint section enables you to include extra files in your image build. Note that the files must be hosted in a git repository that is accessible from the lorax-composer build server.

• Image builder includes image creation capability for more cloud providers. Image Builder has been expanded in Oracle Linux 8 Update 1 to include other cloud providers for which it can create an image. For example, you can now create and deploy images on Google Cloud and Alibaba Cloud, as well as run custom instances on these platforms.
3.2 Red Hat Compatible Kernel

The following notable features, enhancements, and changes apply to the Red Hat Compatible Kernel (RHCK) that is shipped with Oracle Linux 8 Update 1.

- **Early Kdump.** The early Kdump feature enables the crash kernel and `initramfs` to load early so that `vmcore` can be captured early enough to also include information about early crashes. More details about early kdump can be found in the `/usr/share/doc/kexec-tools/early-kdump-howto.txt` file. See also *Working With Kernel Dumps* in *Oracle Linux 8: Monitoring and Tuning a System*.

- **ipcmni_extend kernel command-line parameter added.** The new `ipcmni_extend` kernel command-line parameter extends a number of unique System V Inter-process Communication (IPC) identifiers from the current maximum of 32 KB (15 bits), up to 16 MB (24 bits). This enhancement enables users with applications that produce a large amount of shared memory segments to create a stronger IPC identifier, without exceeding the 32 KB limit.

  It should be noted that in some cases, use of the `ipcmni_extend` parameter can result in minor performance issues. You should therefore only use this parameter in situations where applications require more than 32 KB of a unique IPC identifier.

- **Persistent memory initialization code includes parallel initialization.** The inclusion of parallel initialization to the persistent memory initialization code greatly reduces the overall memory initialization time on systems that have large amounts of persistent memory. As a result, these systems boot much faster.

- **Optane DC memory systems include capability for EDAC reports.** With this update, EDAC (Error Detection and Correction) properly reports memory corrected/uncorrected events with the accurate memory module information. Previously, EDAC did not properly report these events if the memory address was within a NVDIMM module. This update also includes the Memory Mode for Optane DC Persistent Memory technology.

- **TPM tool updated to version 2.0.** The `tpm2-tools` user-space tool has been updated to version 2.0. This version of the Trusted Platform Module (TPM) tool provides fixes for several defects.

- **UBSan utility enabled in the debug kernel.** The Undefined Behavior Sanitizer (UBSan) utility has been enabled in the debug kernel to enable the system to more easily detect certain types of bugs that previously went undetected; for example, in the case of compiler optimization, where subtle, obscure bugs might appear.

- **bpftrace language added.** Oracle Linux 8 Update 1 includes the `bpftrace` language, a high-level tracing language for extended Berkeley Packet Filter (eBPF) that is used for very specific tracing tasks. A significant benefit of using `bpftrace` is that you can accomplish the same outcome with one line in `bpftrace`, as compared to an entire page of code that mixes the Python and C languages in the BPF Compiler Collection (BCC) library.

- **kernel-rt source tree matches latest Oracle Linux tree.** Sources for the `kernel-rt` source tree have been upgraded so that they are based on the latest RHCK kernel source tree. This change provides a number of bug fixes and enhancements over the previous version.

- **ssdd test added for Real Time 8.** This update includes the `ssdd` test for Real Time 8, which is used for stress testing of the tracing subsystem. The test runs multiple tracing threads to verify that locking is correct within the tracing system.
3.3 Corosync and Pacemaker Included in Oracle Linux 8 Update 1.

The Corosync version 3.0.2 and Pacemaker version 2.0.2 software packages are included in Oracle Linux 8 Update 1. This software is used for clustering and high availability.

3.4 Cockpit Web Console

In Oracle Linux 8 Update 1, the following features, enhancements, and changes for the Cockpit web console are introduced:

- **Capability for SMT configuration by using the Cockpit web console.** Oracle Linux 8 Update 1 includes capability for Simultaneous Multi- Threading (SMT) configuration, which also includes the ability to disable SMT in the Cockpit web console. This added capability enables you to mitigate a class of CPU security vulnerabilities, such as Microarchitectural Data Sampling and L1 Terminal Fault Attack.

  **Note**

  When SMT is disabled on the system, options for SMT are not displayed in the Cockpit web console. See Oracle® Linux: Simultaneous Multithreading Notice for more details.

- **Services page improvements.** To improve the user experience in this update, the web console’s Services page has been updated to include a search box that enables you to search services by name and description. Other improvements include the following: service states have been merged into one list, and the switcher buttons that were located at the top of the page have been replaced with tabs.

- **Networking page updated with new firewall settings.** Additional firewall settings have been added to the web console’s Networking page, including capability for the following: adding and removing zones, adding and removing services to arbitrary zones, and custom port configuration for the firewalld services.

- **Improvements to Virtual Machines page.** Several improvements have been made to the web console’s Virtual Machines page. For example, in this update, you can do the following:

  - Manage various types of storage pools.
  - Configure autostart for a virtual machine (VM).
  - Import existing qcow images.
  - Install VMs by using PXE boot.
  - Change a VM’s memory allocation.
  - Pause and resume a VM.
  - Configure cache characteristics.
  - Change the boot order for a VM.

3.5 Compilers and Developer Tools

Oracle Linux 8 Update 1 introduces the following feature enhancements and changes for compilers and developer tools.
GCC Toolset 9

3.5.1 GCC Toolset 9

Oracle Linux 8 Update 1 introduces the GCC Toolset 9, which is an Application Stream that is distributed in the form of a Software Collection in the `appstream_beta` repository. The GCC Toolset is similar to the Oracle Linux Developer Toolset.

The GCC Toolset 9 contains up-to-date versions of the following developer tools:

- GCC version 9.1.1
- GDB version 8.3
- Valgrind version 3.15.0
- SystemTap version 4.1
- Dyninst version 10.1.0
- `binutils` version 2.32
- `elfutils` version 0.176
- `dwz` version 0.12
- `make` version 4.2.1
- `strace` version 5.1
- `ltrace` version 0.7.91

To install the toolset, use the following command:

```
# dnf install gcc-toolset-9
```

You can run a tool from GCC Toolset 9 by using the following command:

```
$ scl enable gcc-toolset-9 tool
```

Use the following command to run a shell session, where tool versions from the GCC Toolset 9 take precedence over system versions of the same tools:

```
$ scl enable gcc-toolset-9 bash
```

3.5.2 Compiler Toolsets Updated

The following compiler toolsets have been updated. These toolsets are distributed as Application Streams in Oracle Linux 8 Update 1:

- **Clang and LLVM toolset upgraded to version 8.0.0.** This toolset provides the LLVM compiler infrastructure framework, the Clang compiler for the C and C++ languages, the LLDB debugger, and related tools for code analysis, to version 8.0.0
- **Rust toolset upgraded to version 1.35.** This toolset provides the Rust programming language compiler (`rustc`), the `cargo` build tool and dependency manager, and any required libraries.
- **Go toolset upgraded to version 1.12.6.** This toolset provides the Go (`golang`) programming language tools and libraries.
3.5.3 SystemTap Updated to Version 4.1

The SystemTap instrumentation tool has been updated to upstream version 4.1 in this update. This version of SystemTab provides several improvements over the previous version of the tool, including the following:

- The eBPF runtime backend can now handle more features of the scripting language, such as string variables and rich formatted printing.
- Translator performance improvements.
- More types of data in optimized C code can be extracted by using DWARF4 debuginfo constructs.

3.5.4 elfutils Updated to Version 0.176

The elfutils packages have been updated to version 0.176 in this update. This version of elfutils provides numerous bug fixes and resolves the following vulnerabilities:

- CVE-2019-7146
- CVE-2019-7149
- CVE-2019-7150
- CVE-2019-7664
- CVE-2019-7665

3.5.5 Date Formatting for Japanese Reiwa Era Updated

In Oracle Linux 8 Update 1, the GNU C Library has been updated to include correct Japanese era name formatting for the Reiwa era (effective May 1st, 2019). Also, the time-handling API data, which includes the data that is used by the strftime and strptime functions, has been updated. As a result, all APIs now correctly print the Reiwa era, including when strftime is used with one of the era conversion specifiers, such as %EC, %EY, or %Ey.

3.6 Database

Oracle Linux 8 Update 1 ships with version 8.0 of the MySQL database software.

3.7 File Systems and Storage

Oracle Linux 8 Update 1 introduces the following notable file systems and storage features, enhancements, and changes:

- **Btrfs file system removed from RHCK.** The Btrfs file system is removed from RHCK in Oracle Linux 8. As such, you cannot create or mount Btrfs file systems when using this kernel. Also, any Btrfs user-space packages that are provided are not supported with RHCK.

- **OCFS2 file system removed from RHCK.** The Oracle Cluster File System version 2 (OCFS2) file system is removed from RHCK in Oracle Linux 8. As such, you cannot create or mount OCFS2 file systems when using this kernel. Also, any OCFS2 user-space packages that are provided are not supported with RHCK.

- **Data Integrity Field/Data Integrity Extension available in Oracle Linux 8 Update 1.** The Data Integrity Field/Data Integrity Extension (DIF/DIX) feature is available on configurations where the
The DIF/DIX feature is enabled and disabled on the storage device. The method that is used to activate the feature on storage devices is device-dependent.

Note
DIF/DIX is not available for use on the boot device or on virtualized guests. Using the Automatic Storage Management library (ASMLib) when DIF/DIX is enabled is also not supported.

- **VDO Ansible module moved to Ansible packages.** In this update, the VDO Ansible module is provided by the `ansible` package and is located in `/usr/lib/python3.6/site-packages/ansible/modules/system/vdo.py`. In previous updates, the module was provided by the `vdo` RPM package and was located in `/usr/share/doc/vdo/examples/ansible/vdo.py`.

  Note that the `vdo` package continues to distribute the Ansible playbook.

- **Aero adapters.** The following two Aero adapters are included in Oracle Linux 8 Update 1:
  - PCI ID `0x1000:0x00e2` and `0x1000:0x00e6`. These adapters are controlled by the `mpt3sas` driver.
  - PCI ID `0x1000:0x10e5` and `0x1000:0x10e6`. These adapters are controlled by the `megaraid_sas` driver.

  Previously, these adapters were available as a Technology Preview only.

### 3.8 Infrastructure Services

Oracle Linux 8 Update 1 introduces the following infrastructure services features, enhancements, and changes:

- **Chrony updated to version 3.5.** The `chrony` packages have been updated to version 3.5. This version of Chrony provides several bug fixes and enhancements over the previous version. Some of the more notable changes include the following:
  - More accurate synchronization of the system clock with hardware timestamping in the kernel.
  - Important improvements to hardware timestamping.
  - The range of available polling intervals has been extended.
  - NTP sources include a filter option.

- **Tuned updated to version 2.12.** The `tuned` packages are updated to version 2.12 in this update. This version of Tuned provides several bug fixes and enhancements over the previous version. Some of the more notable changes include the following:
  - An issue related to the handling of removed and re-attached devices has been fixed.
  - Negation of a CPU list has been added.
  - The `sysctl` tool is replaced by a new implementation that is specific to Tuned. This change improves the performance of the run-time kernel parameter.
3.9 Memory Mode Technology for Intel Optane DC Persistent Memory Feature Added

Memory Mode for the Intel Optane DC Persistent Memory technology has been added in Oracle Linux 8 Update 1. This technology is transparent to the operating system and does not require any special drivers or specific certification.

3.10 Networking

Oracle Linux 8 Update 1 introduces the following features, enhancements, and improvements.

3.10.1 PMTU Discovery and Route Redirection for VXLANs and GENEVE Tunnels Added

In this update, the kernel can handle Internet Control Message Protocol (ICMP) "Destination Unreachable" and "Redirect Message" errors. The kernel can also handle ICMPv6 "Packet Too Big" and "Destination Unreachable" messages for Virtual Extensible LAN (VXLAN) and Generic Network Virtualization Encapsulation (GENEVE) tunnels, which is done by adjusting the PMTU and modifying forwarding information. As a result, PMTU discovery and route redirection features are now provided for VXLAN and GENEVE tunnels.

3.10.2 XDP and Networking eBPF Features Updated to Version 5.0

As of this update, the XDP and the networking eBPF features in the kernel package have been updated to version 5.0. This feature version provides a number of bug fixes and enhancements over the previous version, including the following: improvements to BPF programs for better interaction with the TCP/IP stack, flow dissection, a wider range of bpf helpers, and access to new map types. XDP changes include the availability of XDP metadata to AF_XDP sockets.

3.11 Security

Oracle Linux 8 Update 1 introduces the following security features, enhancements, and changes.

3.11.1 SELinux Features

Oracle Linux 8 Update 1 introduces the following features, changes, and improvements for SELinux:

- **SELinux user-space tools updated to version 2.9.** The following SELinux user-space tools have been updated to version 2.9: libsepol, libselinux, libsemanage, policycoreutils, checkpolicy, and mcstrans. This version of the SELinux user-space tools provides several bug fixes and enhancements over the previous version.

- **SETools updated to version 4.2.2.** As of this update, the SETools collection and libraries have been updated to version 4.2.2. This version of the tools include several improvements over the previous version, including the removal of source policy references from manual pages (loading of source policies is no longer supported) and a fix for a performance regression in alias loading.

- **bpf SELinux policy class added.** The new bpf SELinux policy class is introduced in this update. This class enables you to control the Berkeley Packet Filter (BPF) flow through SELinux and also enables the inspection and simple manipulation of Extended Berkeley Packet Filter (eBPF) programs and maps that are controlled by SELinux.
• **boltd_t** SELinux type added. The new `boltd_t` SELinux type confines the `boltd` system daemon that is used to manage Thunderbolt 3 devices. The `boltd` daemon now runs as a confined service in SELinux enforcing mode.

• **selinux-policy** packages updated to version 3.14.3. The `selinux-policy` package is updated to version 3.14.3 in this update. This version of the package provides a number of bug fixes and enhancements over the previous version, including the allowance of additional rules.

• **"SELinux: Class not defined in policy" errors no longer displayed on system boot.** An issue in Oracle Linux 8 that produced errors similar to the following in the `/var/log/messages` file when booting in either SELinux permissive mode or enforcing mode has been resolved:

```
SELinux:  Class bpf not defined in policy.
SELinux:  Class xdp_socket not defined in policy.
SELinux: the above unknown classes and permissions will be allowed
```

### 3.11.2 OpenScap Features

Oracle Linux 8 Update 1 introduces the following features, changes, and improvements for OpenScap.

• **OpenSCAP updated to version 1.3.1.** In Oracle Linux 8 Update 1, the `openscap` packages have been updated to version 1.3.1. This version of OpenSCAP provides many bug fixes and enhancements over the previous version.

• **OpenSCAP includes SCAP version 1.3.** Oracle Linux 8 Update 1 includes the OpenSCAP suite, which supports data streams that conform to the latest version of the SCAP standard (SCAP 1.3). You can use SCAP 1.3 data streams the same way that you use SCAP 1.2 data streams, with no additional usability restrictions.

• **scap-security-guide packages updated to version 0.1.44.** The `scap-security-guide` packages have been updated to version 0.1.44 in this update. This version of the packages provides several bug fixes and enhancements over the previous version. Most notably, * SCAP content conforms to the latest version of the SCAP standard, and SCAP 1.3 * SCAP content supports UBI images.

### 3.11.3 SSH Features

The following new OpenSSH and SSH features, enhancements, and changes are included in Oracle Linux 8 Update 1:

• **OpenSSH updated to version 8.0p1.** In Oracle Linux 8 Update 1, the `openssh` packages have been updated to version 8.0p1. This version of OpenSSH provides several bug fixes and enhancements over the previous version, including the following:

  • Default RSA key size increased to 3072 bits for the `ssh-keygen` tool
  • Support for the `ShowPatchLevel` configuration option has been removed.
  • Numerous GSSAPI key exchange code fixes applied, including a fix for some Kerberos clean-up tasks.
  • Fall back to the `sshd_net_t` SELinux context has been removed.
  • `Match final` blocks added.
  • Minor issues with the `ssh-copy-id` command have been fixed.
  • Fixes for several Common Vulnerabilities and Exposures (CVE) related to the `scp` utility, namely the following: CVE-2019-6111, CVE-2018-20685, and CVE-2019-6109.
• **libssh complies with the system-wide crypto-policies.** In Oracle Linux 8 Update 1, the libssh client and server now automatically load the `/etc/libssh/libssh_client.config` and `/etc/libssh/libssh_server.config` files, respectively. With the automatic loading of the configuration file, libssh can use the system-wide cryptographic settings that are set by crypto-policies. This change simplifies control over the set of cryptographic algorithms that are used by applications.

### 3.11.4 New udica Package

Udica is a tool for generating SELinux policies for containers. You can use Udica to create a tailored security policy, which provides better control of how a container accesses host system resources. This capability enables you to harden container deployments against security violations, while simplifying and maintaining regulatory compliance.

### 3.12 virt-manager Application Deprecated

The Virtual Machine Manager application (**virt-manager**) is deprecated in Oracle Linux 8 Update 1. Oracle recommends that you use the Cockpit web console to manage virtualization in a GUI. Note that some features in Oracle Linux 8 might only be accessible by using either virt-manager or the command line.

### 3.13 Compatibility

Oracle Linux maintains user-space compatibility with Red Hat Enterprise Linux (RHEL), which is independent of the kernel version that underlies the operating system. To minimize impact on interoperability during releases, the Oracle Linux team works closely with third-party vendors for hardware and software that have dependencies on kernel modules.
Chapter 4 Known Issues

Table of Contents

4.1 Installation and Upgrade Issues .......................................................... 15
  4.1.1 Text-based installation wizard unable to complete when an alternate language is selected .... 16
  4.1.2 Changing installation source if alternate installation repository is set at boot results in errors .............................................................. 16
  4.1.3 rhnreg_ks register command may fail if python3-rhn-virtualization-host package is installed ... 16
  4.1.4 ULN registration wizard not displayed on first boot after an Oracle Linux 8 installation ....... 16
  4.1.5 Syslog Error: Failed to insert module 'ip_tables': Operation not permitted .................. 17
  4.1.6 Graphics controller requirements for an installation on an Oracle VM VirtualBox guest ........ 17
  4.1.7 Installation on a KVM guest by using iPXE and iSCSI boot results in incorrect IQN name ..... 18
4.2 Running yum update glusterfs-* fails to upgrade Oracle Linux 8 packages to Oracle Linux 8
  Update 1 .................................................................................................... 18
4.3 Cockpit web console Services page unable to search services by state ................................. 18
4.4 libstorage package conflict causes dnf groupinstall command to fail ................................. 18
4.5 Oracle Linux 8 does not recognize SAS controllers on older Oracle Sun hardware ................ 19
4.6 Cannot create a ULN Mirror on local yum server in Oracle Linux 8 Update 1 ..................... 19
4.7 File System Issues .................................................................................. 20
  4.7.1 ext4: Frequent or repeated system shutdowns can cause file system corruption ............ 20
4.8 Kernel Issues ......................................................................................... 20
  4.8.1 KVM guests boot with "amd64_edac_mod: Unknown symbol" errors on AMD 64-bit platforms ................................................................. 20
  4.8.2 Output of modinfo does not show Retpoline support ............................................. 20
  4.8.3 Kdump runs out of memory when attempting to mount /sysroot on FC disks that use the Logical Volume Manager .............................................. 21
4.9 Networking Issues ................................................................................. 21
  4.9.1 tracepath6 does not parse destination IPv6 address correctly ................................. 21
  4.9.2 Failure to insert ip_tables module ....................................................... 21
4.10 Running nohup prevents ssh command from executing ................................................ 21
4.11 Restarting firewalld service results in SSH connection timeout ...................................... 22
4.12 Error: "mcelog service does not support this processor" ........................................ 22
4.13 Podman Issues ..................................................................................... 22
  4.13.1 Executing podman attach --latest causes panic if no containers are available .......... 22
  4.13.2 Requirements for using the default podman detach key sequence ............................ 22
  4.13.3 Authentication error displayed when attempting to pull an image and not specifying its correct name ....................................................... 23
  4.13.4 Oracle Container Registry unable to service requests to search catalog .................. 23

This chapter describes known issues that have been encountered in the Oracle Linux 8 Update 1 release.

4.1 Installation and Upgrade Issues

The following are known installation and upgrade issues that have been encountered in Oracle Linux 8 Update 1.
4.1.1 Text-based installation wizard unable to complete when an alternate language is selected

If an alternate language is selected for installation when using the text-based installer, it is not possible to progress through all of the steps in the installation wizard. The installation is blocked with [] bullets for Software selection and Installation Destination, regardless of what is selected for these two options.

This issue does not occur when performing an installation by using the default language selection of English or when using the graphical installer.

(Bug ID 30535416)

4.1.2 Changing installation source if alternate installation repository is set at boot results in errors

If the installer is booted with the inst.repo option set, changing the installation source to use a CD or DVD device within the installer results in an error that prevents you from continuing the installation, unless you set the source back to the original source that was set at boot.

If you set the inst.repo option to point to a hard disk and then attempt to change the installation source inside the installer, the installer displays an error; but, you can still proceed with the installation.

You can avoid these issues by not setting the inst.repo option at boot if you do not intend to use the installation source that is provided; or, use the inst.repo source that is defined at boot without attempting to change installation source inside the installer.

(Bug ID 30316179)

4.1.3 rhnreg_ks register command may fail if python3-rhn-virtualization-host package is installed

Attempting to register with ULN in Oracle Linux 8 Update 1 by running the rhnreg_ks command may fail if the python3-rhn-virtualization-hosts package is installed on the system. This issue has been observed when the libvirtd service is not running.

To work around this issue, ensure that the libvirtd packages are installed on your system and that the service is enabled and running prior to registering with ULN by using the rhnreg_ks command.

(Bug ID 30366521)

4.1.4 ULN registration wizard not displayed on first boot after an Oracle Linux 8 installation

On new installations of Oracle Linux 8, the ULN registration wizard that provides you with the option to register with ULN and use Oracle Ksplice is not displayed on first boot. This behavior differs from previous Oracle Linux releases, where you were presented with these options on the first boot after completing the installation.

An alternative option is to register with ULN after the installation completes. For instructions, visit https://linux.oracle.com/.

(Bug ID 29933974)
4.1.5 Syslog Error: Failed to insert module 'ip_tables’: Operation not permitted

During an Oracle Linux 8 Update 1 installation, the following message can be observed in the /var/log/messages/systemd log:

: Failed to insert module 'ip_tables': Operation not permitted

This error can be safely ignored, as the ip_tables kernel module subsequently loads successfully, as shown in the output of the following command:

```
# grep IPTABLES /boot/config*
CONFIG_IP_NF_IPTABLES=m
CONFIG_IP6_NF_IPTABLES=m
#
# modinfo ip_tables
filename: /lib/modules/4.18.0-32.el8.x86_64/kernel/net/ipv4/netfilter/ip_tables.ko.xz
alias:   ipt_icmp
description: IPv4 packet filter
author:  Netfilter Core Team <coreteam@netfilter.org>
license: GPL
rhelversion: 8.0
srcversion: 3967C875058C2EE2475C9C2
depends:
retpoline: Y
intree:   Y
name:     ip_tables
vermagic: 4.18.0-32.el8.x86_64 SMP mod_unload modversions
sig_id:   PKCS#7
signer:
sig_key:
sig_hashalgo: md4
82:02:46:02:01:01:31:0D:30:0B:06:09:60:86:48:01:65:03:04:02:
```

(Bug ID 29500599)

4.1.6 Graphics controller requirements for an installation on an Oracle VM VirtualBox guest

A successful installation of Oracle Linux 8 Update 1 on an Oracle VM VirtualBox guest, where the graphical installer is used and where the default install of the Server with GUI environment is set, requires that the Oracle VM VirtualBox guest use the VMSVGA graphics controller and that it is configured with at least 64MB of memory.

Note

Failure to set the graphics controller correctly can result in an installation where the graphical display is unable to start correctly.

The VMSVGA graphics controller is the default controller when you create a new guest by using Oracle VM VirtualBox 6.0 or later for Linux guest operating systems. This issue is more likely to appear if you attempt to install over an existing guest that was created on an earlier Oracle VM VirtualBox release.
Installation on a KVM guest by using iPXE and iSCSI boot results in incorrect IQN name

Oracle recommends that you only attempt to install Oracle Linux 8 on a newly created virtual machine in Oracle VM VirtualBox 6.0, or later.

(Bug ID 30004543)

4.1.7 Installation on a KVM guest by using iPXE and iSCSI boot results in incorrect IQN name

After installing Oracle Linux 8 Update 1 on a KVM guest by using iPXE and iSCSI boot, the SCSI Qualified Name (IQN) in the /etc/iscsi/initiatorname.iscsi file is not correct.

Note that this incorrect configuration could impact kdump functionality.

The workaround for this issue is to manually modify the /etc/iscsi/initiatorname.iscsi file with the correct IQN after the installation completes.

(Bug ID 29536715)

4.2 Running yum update glusterfs-* fails to upgrade Oracle Linux 8 packages to Oracle Linux 8 Update 1

The glusterfs-*.i686 packages are not included in Oracle Linux 8 Update 1. As a result, running the yum update glusterfs* command to upgrade the Oracle Linux 8 packages to Oracle Linux 8 Update 1 fails if both glusterfs-*.i686 and glusterfs-*.x86_64 packages are installed.

The workaround for this issue is to first remove the glusterfs-*.i686 packages from the system and then run the yum update glusterfs* command.

(Bug ID 30279840)

4.3 Cockpit web console Services page unable to search services by state

The Cockpit web console’s Services page has been updated in Oracle Linux 8 Update 1 to enable you to search services by name, description, and state. This new functionality works as expected for filtering services by Name and Description, but if you attempt to filter services by State, an error is produced indicating there are no matching results.

(Bug ID 30286168)

4.4 libstorage package conflict causes dnf groupinstall command to fail

Running the dnf groupinstall command can cause an installation to fail. This issue is due to a conflict with a core dependency package (libstoragemgmt), where a conflict exists between i686 and x86_64 packages.

As a workaround, specify the --nobest option when running the dnf groupinstall command, which allows you to install packages for either build architecture and thus avoid this conflict, for example:

```
# dnf groupinstall "Server with GUI" --nobest
# dnf group update "Server with GUI"
```
4.5 Oracle Linux 8 does not recognize SAS controllers on older Oracle Sun hardware

The Oracle Linux 8 Update 1 installer does not recognize some Serial Attached SCSI (SAS) controllers that are found on older Oracle Sun server models. If you attempt to install Oracle Linux 8 on these server models, the installer does not recognize the local disk and the installation fails. Some examples of these older server models include but are not limited to the following: Oracle Sun Fire X4170 M2 Server, Oracle Sun Fire X4170 M3 Server, Oracle Sun OVCA X3-2 Server, and the Oracle Sun X4-2 Server.

The following SAS controllers have been removed from the mpt2sas driver in RHCK:

- SAS2004, PCI ID 0x1000:0x0070
- SAS2008, PCI ID 0x1000:0x0072
- SAS2108_1, PCI ID 0x1000:0x0074
- SAS2108_2, PCI ID 0x1000:0x0076
- SAS2108_3, PCI ID 0x1000:0x0077
- SAS2116_1, PCI ID 0x1000:0x0064
- SAS2116_2, PCI ID 0x1000:0x0065
- SSS6200, PCI ID 0x1000:0x007E

The following SAS controllers have been removed from the megaraid_sas driver in RHCK:

- Dell PERC5, PCI ID 0x1028:0x15
- SAS1078R, PCI ID 0x1000:0x60
- SAS1078DE, PCI ID 0x1000:0x7C
- SAS1064R, PCI ID 0x1000:0x411
- VERDE_ZCR, PCI ID 0x1000:0x413
- SAS1078GEN2, PCI ID 0x1000:0x78
- SAS0079GEN2, PCI ID 0x1000:0x79
- SAS0073SKINNY, PCI ID 0x1000:0x73
- SAS0071SKINNY, PCI ID 0x1000:0x71

4.6 Cannot create a ULN Mirror on local yum server in Oracle Linux 8 Update 1

Currently, there is no tool for mirroring ULN channels from ULN to a local yum server that is hosted on Oracle Linux 8 Update 1. However, it is still possible to perform ULN mirroring on Oracle Linux 7, as well as mirror any Oracle Linux 8 Update 1 ULN channels onto a yum server that is hosted on Oracle Linux 7.
If you use the Ksplice offline client, where a ULN mirror is required to service Oracle Linux 8 Update 1 hosts, Oracle recommends that you host the ULN mirror on an Oracle Linux 7 host. For instructions, see Creating and Using a Local ULN Mirror in the Oracle® Linux: Unbreakable Linux Network User's Guide for Oracle Linux 6 and Oracle Linux 7. After configuring the system as a yum server, you can subscribe it to any Oracle Linux 8 Update 1 ULN channels that you wish to mirror.

For more information about the Ksplice offline client, see the Oracle® Linux: Ksplice User's Guide.

(Bug ID 30005125)

4.7 File System Issues

The following are known file systems issues that have been encountered in Oracle Linux 8 Update 1.

4.7.1 ext4: Frequent or repeated system shutdowns can cause file system corruption

If a system that is using ext4 is repeatedly or frequently shut down, the file system might become corrupted. Note that this issue is considered to be a corner-case issue, due to the difficulty that is required to replicate it. The issue exists in the upstream code and proposed patches are currently under review.

(Bug ID 27547113)

4.8 Kernel Issues

The following are known kernel issues that have been encountered in Oracle Linux 8 Update 1.

4.8.1 KVM guests boot with "amd64_edac_mod: Unknown symbol" errors on AMD 64-bit platforms

The following errors might be displayed repeatedly when KVM guests are booting on AMD 64-bit systems:

```
[ 12.474069] amd64_edac_mod: Unknown symbol amd_register_ecc_decoder (err 0)
[ 12.474083] amd64_edac_mod: Unknown symbol amd_report_gart_errors (err 0)
[ 12.852250] amd64_edac_mod: Unknown symbol amd_unregister_ecc_decoder (err 0)
[ 12.852297] amd64_edac_mod: Unknown symbol amd_register_ecc_decoder (err 0)
```

These errors occur because the module code for the kernel erroneously returns -EEXIST for modules that failed to load and are in the process of being removed from the module list. The amd64_edac_mod module will not be loaded in a VM. These errors can be ignored, as they do not impact functionality in any way.

(Bug ID 29853602)

4.8.2 Output of modinfo does not show Retpoline support

A bug in the Oracle Linux 8 Update 1 code causes Retpoline support to not be displayed in the output of the modinfo command, even though the CONFIG_RETPOLINE flag is set to Y, for example:

```
# modinfo -F retpoline
/usr/lib/modules/4.18.0-80.el8.x86_64/kernel/sound/usb/usx2y/snd-usb-us1221.ko.xz
```

20
Kdump runs out of memory when attempting to mount /sysroot on FC disks that use the Logical Volume Manager

The CONFIG_RETPOLINE=Y flag is still required to add and display Retpoline support. If the parameter is enabled, the kernel will built with a retpoline-capable compiler.

(Bug ID 29894295)

4.8.3 Kdump runs out of memory when attempting to mount /sysroot on FC disks that use the Logical Volume Manager

An issue in Oracle Linux 8 Update 1 causes Kdump to run out of memory if you attempt to mount /sysroot on a Fibre Channel (FC) disk that uses the Logical Volume Manager (LVM). This issue is due to a lack of memory when the crashkernel loads.

To resolve the issue, you can do one of the following:

- Override the crashkernel=auto boot option so that more memory is reserved for Kdump. For example, set the kernel boot parameter to crashkernel=512M.
- Set the Kdump destination to a network location (NFS or SSH).

(Bug ID 29840266)

4.9 Networking Issues

The following are networking issues that might be encountered in Oracle Linux 8 Update 1.

4.9.1 tracepath6 does not parse destination IPv6 address correctly

When running the tracepath6 command in Oracle Linux 8 Update 1, the command fails to parse the destination IPv6 address correctly. As a result, the tool traces a route to the wrong host.

The workaround for this issue is to use another tool with similar capability to tracepath6.

(Bug ID 29540588)

4.9.2 Failure to insert ip_tables module

The ip_tables module fails to insert with an 'Operation not permitted' error. This issue, which is currently under investigation, can occur if SELinux is in enforcing mode.

A workaround for this issue is to set SELinux to permissive mode, which can be done either temporarily by running setenforce 0. Or, you can set SELinux to permissive mode permanently by editing the /etc/selinux/config file and then rebooting the system.

(Bug ID 29517166)

4.10 Running nohup prevents ssh command from executing

If you run the nohup command (as shown in the following example) on an Oracle Linux 8 Update 1 system, and then attempt to remotely connect to that system by using the ssh command, the ssh command hangs:

```
# /usr/bin/nohup ./myscript > nohup.out &
```

The workaround for this issue is to modify the nohup command as follows:
4.11 Restarting firewalld service results in SSH connection timeout

Restarting the firewalld service leads to an SSH connection timeout on the terminal from which the service was started. Note that other SSH terminals remain connected.

(Bug ID 29478124)

4.12 Error: "mcelog service does not support this processor"

An error indicating that the mcelog service does not support the processor can appear in the system log on systems with AMD processors, such as some Oracle Server hardware. The message might appear as follows:

mcelog: ERROR: AMD Processor family 23: mcelog does not support this processor. Please use the edac_mce_amd module instead.

The mcelog daemon is a service that is used on x86_64 platforms to log and handle hardware error messaging, but is not required on AMD systems where the edac_mce_amd kernel module handles machine exception logging. The error should be downgraded to a warning. (Bug ID 29501190)

4.13 Podman Issues

The following are known issues for the Podman container management tool in Oracle Linux 8 Update 1.

4.13.1 Executing podman attach --latest causes panic if no containers are available

If you execute podman attach --latest and no containers exist in your environment, a runtime error occurs:

```
# podman attach --latest
panic: runtime error: index out of range
...
```

Note that this error no longer occurs as soon as there are containers in the environment. Running the command when there are no containers is meaningless.

(Bug ID 29882537)

4.13.2 Requirements for using the default podman detach key sequence

The default key sequence that you use to detach a container (CTRL+P, CTRL+Q) requires a console that can handle detachment (pseudo-tty), as well as an input channel for passing control signals (stdin). Otherwise, you cannot create a container, attach it with the podman attach -l command, and then quit or detach the container by using the default key sequence, as documented in the podman-attach(1) manual page.

To ensure that you can use the default CTRL+P, CTRL+Q key sequence to detach a container, use either of the following methods to create a container:

- Create a container in the background:
Authentication error displayed when attempting to pull an image and not specifying its correct name

```
# podman run --rm -t -d container-registry.oracle.com/os/oraclelinux:7 top -b
```

You can then use the `podman attach -l` command to attach the container and the `CTRL+P, CTRL+Q` key sequence to detach the container.

- Create a container interactively:

```
# podman run --rm -t -i container-registry.oracle.com/os/oraclelinux:7 top -b
```

The interactive method creates the container and automatically attaches it. You can then use the `CTRL +P, CTRL+Q` key sequence to detach the container.

For more information, see the `podman(1)` and `podman-attach(1)` manual pages.

(Bug ID 29882852)

### 4.13.3 Authentication error displayed when attempting to pull an image and not specifying its correct name

If you attempt to pull an image by running the `podman pull image-name` command, but you do not specify the correct or full name of the image, an authentication error occurs.

For example, the following error is displayed because `oracle:latest` was specified as the name of the image instead of `oraclelinux:latest`, which is the correct name for the image:

```
$ podman pull oracle:latest
Trying to pull registry.redhat.io/oracle:latest...Failed
Trying to pull quay.io/oracle:latest...Failed
Trying to pull docker.io/oracle:latest...Failed
error pulling image "oracle:latest": unable to pull oracle:latest: 3 errors occurred:

* Error determining manifest MIME type for
docker://registry.redhat.io/oracle:latest: unable to retrieve auth token: invalid username/password
* Error determining manifest MIME type for docker://quay.io/oracle:latest: Error reading manifest latest in quay.io/oracle: error parsing HTTP 404 response body: invalid character '<' looking for beginning of value:
"<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>404 Not Found</title>
<h1>Not Found</h1>
<p>The requested URL was not found on the server. If you entered the URL manually please check your spelling and try again.</p>
"*
* Error determining manifest MIME type for docker://oracle:latest: Error reading manifest latest in docker.io/library/oracle: errors: denied: requested access to the resource is denied unauthorized: authentication required
```

To prevent this error from occurring, always specify the correct image name with the `podman pull` command.

(Bug ID 29894231)

### 4.13.4 Oracle Container Registry unable to service requests to search catalog

Attempts to search for an image in the Oracle Container Registry by using the `podman search` command fail with an authorization error, even if you are logged into the registry:

```
# podman search oraclelinux
ERROR[0001] error getting search results from v2 endpoint
"container-registry.oracle.com", status code 401 (Unauthorized)
```
The issue is related to how Oracle Container Registry handles token requests for access to "/v2/_catalog". The `podman search` command only requests a token for ping-level access and not for catalog access.

There is currently no workaround for this issue.

(Bug ID 29942671)
Chapter 5 Installation and Availability

You can download a full Oracle Linux 8 Update 1 installation media image from the Oracle Software Delivery Cloud at https://edelivery.oracle.com/. A smaller boot ISO is also available to perform a network-based installation.

You can also install a full Oracle Linux 8 Update 1 media image for the x86_64 platform on a compute instance on Oracle Cloud Infrastructure. To access the image, you must first obtain an Oracle Cloud Infrastructure account. For more information, visit https://www.oracle.com/index.html.

The latest Oracle Linux 8 Update 1 packages are available on the Unbreakable Linux Network (ULN) and the Oracle Linux yum server.

To obtain the latest Oracle Linux 8 Update 1 packages from ULN and install additional software for Oracle Linux 8 Update 1, subscribe to the different channels on ULN by logging in to https://linux.oracle.com and then viewing the Channels option.

To install additional software for Oracle Linux 8 Update 1 from the Oracle Linux yum server, enable the required repositories within your yum configuration. To view the Oracle Linux yum repositories that are available for Oracle Linux 8 Update 1, visit https://yum.oracle.com/.

Note

The Oracle Linux yum server does not provide equivalent repositories for some of the channels that are available on ULN. These channels provide non-open source packages.

Oracle also makes the Oracle Linux 8 Update 1 (aarch64) release for 64-bit Arm (aarch64) platforms available as a developer preview release on Oracle Technology Network at https://www.oracle.com/linux/downloads/linux-beta8-downloads.html. See Chapter 6, Release-Specific Information for Oracle Linux 8 Update 1 (aarch64) for more information.
Chapter 6 Release-Specific Information for Oracle Linux 8 Update 1 (aarch64)

Table of Contents

6.1 System Requirements and Limitations (aarch64) ................................................................. 27
6.2 VNC Remote Console Available as Technology Preview on 64-bit Arm Platform ...................... 27
6.3 Known Issues (aarch64) ............................................................................................................. 27
   6.3.1 Kdump sometimes fails on ThunderX2 and X-Gene 3 platforms ........................................ 27
   6.3.2 Excessive write activity inside a guest can crash the guest kernel ......................................... 27
6.4 Installation and Availability (aarch64) ...................................................................................... 28

Note
The following information pertains to the 64-bit Arm (aarch64) platform, which is available as a developer preview release only in Oracle Linux 8 Update 1.

6.1 System Requirements and Limitations (aarch64)

The system requirements and limitations for the 64bit Arm (aarch64) architecture in Oracle Linux 8 Update 1 (aarch64) are currently under review.

6.2 VNC Remote Console Available as Technology Preview on 64-bit Arm Platform

In this update, the Virtual Network Computing (VNC) remote console is available as a Technology Preview only on the 64-bit Arm (aarch64) platform. The remaining components of the graphics stack are unverified on this platform.

6.3 Known Issues (aarch64)

The following are known issues for the Oracle Linux 8 Update 1 (aarch64) release only. See Chapter 4, Known Issues for information about known issues on the x86_64 platform.

6.3.1 Kdump sometimes fails on ThunderX2 and X-Gene 3 platforms

System hangs might occur during a crash kernel boot on ThunderX2 and X-Gene 3 platforms that are running Oracle Linux 8 Update 1 (aarch64). This issue has been observed at different stages of the boot process. Consequently, Kdump might not work as expected on this hardware.

(Bug IDs 30339519, 30339571)

6.3.2 Excessive write activity inside a guest can crash the guest kernel

In an environment where a guest system is performing excessive write activity to /dev/stdout, subsequent repeated suspend and resume operations on the same guest can cause the guest kernel to crash. Furthermore, the guest kernel can also crash when reverts from a snapshot state that had excessive write activity on /dev/stdout to an idle snapshot state occur.

This issue is related to a patch that is present in the guest kernel for the 64-bit Arm platform and is currently under investigation. A fix is likely to be provided in a subsequent errata release.
(Bug ID 30423465)

6.4 Installation and Availability (aarch64)

The following installation and availability information applies specifically to the 64-bit Arm platform for Oracle Linux 8 Update 1.

You can download the Oracle Linux 8 Update 1 (aarch64) release as a developer preview installation media image from the Oracle Technology Network at https://www.oracle.com/linux/downloads/linux-beta8-downloads.html.

The latest Oracle Linux 8 Update 1 (aarch64) packages are available from the Unbreakable Linux Network (ULN) and the Oracle Linux yum server. To explore the channels that are available on ULN, log in to https://linux.oracle.com/ and view the Channels option. Or, you can obtain the latest Oracle Linux 8 (aarch64) packages from the Oracle Linux yum server at https://yum.oracle.com/.

You can use the Oracle Linux 8 (aarch64) ISO image for a standard installation on generic 64-bit Armv8 hardware. The ISO image can be loaded from local media, such as DVD-ROM or USB flash drive; or, you can perform a network-based kickstart installation by using PXE. If you perform a network-based installation and you want to access the graphical interface for the installer, you must change the kernel boot parameters to enable VNC. For example, to enable VNC, set the inst.vnc boot option, and then set the network address to ip=eth0:dhcp at boot.
Appendix A Package Changes from the Upstream Release

Table of Contents

A.1 Changes to Binary Packages ................................................................. 29
  A.1.1 Added Binary Packages for BaseOS by Oracle .................................. 29
  A.1.2 Modified BaseOS Binary Packages .................................................. 29
  A.1.3 Modified Binary Packages for CodeReady Linux Builder by Oracle .......... 42
  A.1.4 Modified AppStream Binary Packages ............................................. 44
  A.1.5 Removed BaseOS Binary Packages ................................................... 58
  A.1.6 Removed AppStream Binary Packages .............................................. 59
A.2 Changes to Source Packages ............................................................... 60
  A.2.1 Added Source Packages for BaseOS by Oracle .................................. 60
  A.2.2 Modified BaseOS Source Packages ................................................ 60
  A.2.3 Modified AppStream Source Packages .......................................... 62
  A.2.4 Removed BaseOS Source Packages ............................................... 65
  A.2.5 Removed AppStream Source Packages ............................................ 66

The following sections list the changes to binary and source packages from the upstream release.

A.1 Changes to Binary Packages

This section contains information about the removed, modified, and new binary packages in this release. For information about the source package changes, see Section A.2, “Changes to Source Packages”.

A.1.1 Added Binary Packages for BaseOS by Oracle

The following binary packages have been added to the BaseOS by Oracle:

- oraclelinux-release-el8
- oraclelinux-release
- oracle-backgrounds
- oracle-logos
- oracle-logos-httpd
- oracle-logos-ipa
- shim-ia32
- shim-x64

A.1.2 Modified BaseOS Binary Packages

The following binary packages from the BaseOS upstream release have been modified:

- python3-dnf-plugin-versionlock
- sudo
- python3-dnf-plugins-core
- dnf-plugins-core
- autofs
- binutils
- boom-boot
- boom-boot-conf
- boom-boot-grub2
- bpftool
- chrony
- dracut
- dracut-caps
- dracut-config-generic
- dracut-config-rescue
- dracut-live
- dracut-network
- dracut-squash
- dracut-tools
- efibootmgr
- efi-rpm-macros
- firewalld
- fuse
- fwupd
- fwupdate
- glibc
- glibc-all-langpacks
- glibc-common
- glibc-devel
- glibc-headers
- glibc-langpack-aa
- glibc-langpack-af
- glibc-langpack-agr
• glibc-langpack-ak
• glibc-langpack-am
• glibc-langpack-an
• glibc-langpack-anp
• glibc-langpack-ar
• glibc-langpack-as
• glibc-langpack-ast
• glibc-langpack-ayc
• glibc-langpack-az
• glibc-langpack-be
• glibc-langpack-bem
• glibc-langpack-ber
• glibc-langpack-bg
• glibc-langpack-bhb
• glibc-langpack-bho
• glibc-langpack-bi
• glibc-langpack-bn
• glibc-langpack-bo
• glibc-langpack-br
• glibc-langpack-brx
• glibc-langpack-bs
• glibc-langpack-byn
• glibc-langpack-ca
• glibc-langpack-ce
• glibc-langpack-chr
• glibc-langpack-cmn
• glibc-langpack-crh
• glibc-langpack-cs
• glibc-langpack-csb
• glibc-langpack-cv
• glibc-langpack-cy
• glibc-langpack-da
• glibc-langpack-de
• glibc-langpack-doi
• glibc-langpack-dsb
• glibc-langpack-dv
• glibc-langpack-dz
• glibc-langpack-el
• glibc-langpack-en
• glibc-langpack-eo
• glibc-langpack-es
• glibc-langpack-et
• glibc-langpack-eu
• glibc-langpack-fa
• glibc-langpack-ff
• glibc-langpack-fi
• glibc-langpack-fil
• glibc-langpack-fo
• glibc-langpack-fr
• glibc-langpack-fur
• glibc-langpack-fy
• glibc-langpack-ga
• glibc-langpack-gd
• glibc-langpack-gez
• glibc-langpack-gl
• glibc-langpack-gu
• glibc-langpack-gv
• glibc-langpack-ha
• glibc-langpack-hak
• glibc-langpack-he
- glibc-langpack-hi
- glibc-langpack-hif
- glibc-langpack-hne
- glibc-langpack-hr
- glibc-langpack-hsb
- glibc-langpack-ht
- glibc-langpack-hu
- glibc-langpack-hy
- glibc-langpack-ia
- glibc-langpack-id
- glibc-langpack-ig
- glibc-langpack-ik
- glibc-langpack-is
- glibc-langpack-it
- glibc-langpack-iu
- glibc-langpack-ja
- glibc-langpack-ka
- glibc-langpack-kab
- glibc-langpack-kk
- glibc-langpack-kl
- glibc-langpack-km
- glibc-langpack-kn
- glibc-langpack-ko
- glibc-langpack-kok
- glibc-langpack-ks
- glibc-langpack-ku
- glibc-langpack-kw
- glibc-langpack-ky
- glibc-langpack-lb
- glibc-langpack-lg
- glibc-langpack-li
- glibc-langpack-lij
- glibc-langpack-ln
- glibc-langpack-lo
- glibc-langpack-lt
- glibc-langpack-lv
- glibc-langpack-lzh
- glibc-langpack-mag
- glibc-langpack-mai
- glibc-langpack-mfe
- glibc-langpack-mg
- glibc-langpack-mhr
- glibc-langpack-mi
- glibc-langpack-miq
- glibc-langpack-mjw
- glibc-langpack-mk
- glibc-langpack-ml
- glibc-langpack-mn
- glibc-langpack-mni
- glibc-langpack-mr
- glibc-langpack-ms
- glibc-langpack-mt
- glibc-langpack-my
- glibc-langpack-nan
- glibc-langpack-nb
- glibc-langpack-nds
- glibc-langpack-ne
- glibc-langpack-nhn
- glibc-langpack-niu
- glibc-langpack-nl
- glibc-langpack-nn
- glibc-langpack-nr
- glibc-langpack-nso
- glibc-langpack-oc
- glibc-langpack-om
- glibc-langpack-or
- glibc-langpack-os
- glibc-langpack-pa
- glibc-langpack-pap
- glibc-langpack-pl
- glibc-langpack-ps
- glibc-langpack-pt
- glibc-langpack-quz
- glibc-langpack-raj
- glibc-langpack-ro
- glibc-langpack-ru
- glibc-langpack-rw
- glibc-langpack-sa
- glibc-langpack-sah
- glibc-langpack-sat
- glibc-langpack-sc
- glibc-langpack-sd
- glibc-langpack-se
- glibc-langpack-sgs
- glibc-langpack-shn
- glibc-langpack-shs
- glibc-langpack-si
- glibc-langpack-sid
- glibc-langpack-sk
- glibc-langpack-sl
• glibc-langpack-sm
• glibc-langpack-so
• glibc-langpack-sq
• glibc-langpack-sr
• glibc-langpack-ss
• glibc-langpack-st
• glibc-langpack-sv
• glibc-langpack-sw
• glibc-langpack-szl
• glibc-langpack-ta
• glibc-langpack-tcy
• glibc-langpack-te
• glibc-langpack-tg
• glibc-langpack-th
• glibc-langpack-the
• glibc-langpack-ti
• glibc-langpack-tig
• glibc-langpack-tk
• glibc-langpack-tl
• glibc-langpack-tn
• glibc-langpack-to
• glibc-langpack-tpi
• glibc-langpack-tr
• glibc-langpack-ts
• glibc-langpack-tt
• glibc-langpack-ug
• glibc-langpack-uk
• glibc-langpack-unm
• glibc-langpack-ur
• glibc-langpack-uz
• glibc-langpack-ve
• glibc-langpack-vi
• glibc-langpack-wa
• glibc-langpack-wae
• glibc-langpack-wal
• glibc-langpack-wo
• glibc-langpack-xh
• glibc-langpack-yi
• glibc-langpack-yo
• glibc-langpack-yue
• glibc-langpack-yuw
• glibc-langpack-zh
• glibc-langpack-zu
• glibc-locale-source
• glibc-minimal-langpack
• gpgme
• grub2-common
• grub2-efi-aa64-modules
• grub2-efi-ia32
• grub2-efi-ia32-cdboot
• grub2-efi-ia32-modules
• grub2-efi-x64
• grub2-efi-x64-cdboot
• grub2-efi-x64-modules
• grub2-pc
• grub2-pc-modules
• grub2-ppc64le-modules
• grub2-tools
• grub2-tools-efi
• grub2-tools-extra
Modified BaseOS Binary Packages

- grub2-tools-minimal
- grubby
- iscsi-initiator-utils
- iscsi-initiator-utils-iscsiuio
- kernel
- kernel-abi-whitelists
- kernel-core
- kernel-cross-headers
- kernel-debug
- kernel-debug-core
- kernel-debug-devel
- kernel-debug-modules
- kernel-debug-modules-extra
- kernel-devel
- kernel-doc
- kernel-headers
- kernel-modules
- kernel-modules-extra
- kernel-tools
- kernel-tools-libs
- kexec-tools
- kmod
- kmod-kvdo
- kmod-libs
- ksc
- libasan
- libatomic
- libatomic-static
- libdnf
- libgcc
• libgfortran
• libgomp
• libgomp-offload-nvptx
• libitm
• libkcap
• libmicrohttpd
• libnsl
• libquadmath
• libreport
• libstdc++
• libtsan
• libubsan
• libxml2
• libxslt
• linux-firmware
• mcelog
• mdadm
• mksh
• mozjs52
• nscd
• nss_db
• opa-address-resolution
• opa-basic-tools
• opa-fastfabric
• opa-ff
• opa-fm
• opa-libopamgt
• OpenIPMI
• openssl
• openssl-devel
Modified BaseOS Binary Packages

- openssl-libs
- openssl-perl
- oraclelinux-release
- oraclelinux-release-el8
- oracle-logos
- os-prober
- parted
- perf
- platform-python
- policycoreutils
- policycoreutils-dbus
- policycoreutils-devel
- policycoreutils-newrole
- policycoreutils-python-utils
- policycoreutils-restorecond
- polkit
- python3-boom
- python3-hawkey
- python3-iscsi-initiator-utils
- python3-kmod
- python3-libdlnf
- python3-libs
- python3-perf
- python3-policycoreutils
- python3-test
- python-configshell
- python-rtslib
- python-urllib3
- redhat-indexhtml
- redhat-release
• redhat-release-eula
• sanlock-lib
• selinux-policy
• selinux-policy-devel
• selinux-policy-doc
• selinux-policy-minimum
• selinux-policy-mls
• selinux-policy-sandbox
• selinux-policy-targeted
• shim-ia32
• shim-x64
• sos
• sos-audit
• stunnel
• systemd
• systemd-container
• systemd-devel
• systemd-journal-remote
• systemd-libs
• systemd-pam
• systemd-tests
• systemd-udev
• tuned
• tuned-profiles-atomic
• tuned-profiles-compat
• tuned-profiles-cpu-partitioning
• tuned-profiles-mssql
• tuned-profiles-oracle
• xfsprogs
• xfsprogs-devel
A.1.3 Modified Binary Packages for CodeReady Linux Builder by Oracle

The following binary packages to CodeReady Linux Builder by Oracle have been modified:

- cups-filters-devel
- dnf-plugin-spacewalk
- gcc-plugin-devel
- glibc-benchtests
- glibc-nss-devel
- glibc-static
- gpgme
- kernel-tools-libs-devel
- kmod-devel
- libmicrohttpd-devel
- libmicrohttpd-doc
- libreoffice-sdk
- libreoffice-sdk-doc
- libstdc++-static
- libvirt
- libvirt-admin
- libvirt-bash-completion
- libvirt-client
- libvirt-daemon
- libvirt-daemon-config-network
- libvirt-daemon-config-nwfilter
- libvirt-daemon-driver-interface
- libvirt-daemon-driver-network
- libvirt-daemon-driver-nodev
- libvirt-daemon-driver-nwfilter
- libvirt-daemon-driver-secret
- libvirt-daemon-driver-storage
- libvirt-daemon-driver-storage-core
• libvirt-daemon-driver-storage-disk
• libvirt-daemon-driver-storage-gluster
• libvirt-daemon-driver-storage-iscsi
• libvirt-daemon-driver-storage-logical
• libvirt-daemon-driver-storage-mpath
• libvirt-daemon-driver-storage-rbd
• libvirt-daemon-driver-storage-scsi
• libvirt-devel
• libvirt-docs
• libvirt-libs
• libvirt-nss
• mingw32-binutils
• mingw32-cpp
• mingw32-gcc
• mingw32-gcc-c++
• mingw32-openssl
• mingw64-binutils
• mingw64-cpp
• mingw64-gcc
• mingw64-gcc-c++
• mingw64-openssl
• mingw-binutils-generic
• mozjs52
• mozjs60
• nss_hesiod
• nvml
• ocaml-libguestfs
• ocaml-libguestfs-devel
• OpenIPMI
• openscap-engine-sce-devel
• PackageKit-glib-devel
• parted
• python3-dnf-plugin-spacewalk
• python3-rhn-client-tools
• python3-rhnlib
• qemu-kvm
• rhn-client-tools
• rhnlib
• sanlock-devel
• shim-unsigned-x64
• tog-pegasus

A.1.4 Modified AppStream Binary Packages

The following binary packages from the AppStream upstream release have been modified:

• abrt
• abrt-java-connector
• anaconda
• anaconda-core
• anaconda-dracut
• anaconda-gui
• anaconda-install-env-deps
• anaconda-tui
• anaconda-user-help
• anaconda-widgets
• ansible-freeipa
• autocorr-af
• autocorr-bg
• autocorr-ca
• autocorr-cs
• autocorr-da
• autocorr-de
- autocorr-en
- autocorr-es
- autocorr-fa
- autocorr-fi
- autocorr-fr
- autocorr-ga
- autocorr-hr
- autocorr-hu
- autocorr-is
- autocorr-it
- autocorr-ja
- autocorr-ko
- autocorr-lb
- autocorr-lt
- autocorr-mn
- autocorr-nl
- autocorr-pl
- autocorr-pt
- autocorr-ro
- autocorr-ru
- autocorr-sk
- autocorr-si
- autocorr-sr
- autocorr-sv
- autocorr-tr
- autocorr-vi
- autocorr-zh
- binutils-devel
- blivet-data
- buildah
Modified AppStream Binary Packages

- buildah-tests
- clang
- clang-analyzer
- clang-devel
- clang-libs
- clang-tools-extra
- cloud-init
- compat-libgfortran-48
- compat-libpthread-nonshared
- composer-cli
- containernetworking-plugins
- containers-common
- cpp
- cups-filters
- cups-filters-libs
- dnf-plugin-spacewalk
- efi-rpm-macros
- firefox
- firewalld
- gcc
- gcc-c++
- gcc-gdb-plugin
- gcc-gfortran
- gcc-offload-nvptx
- git-clang-format
- glibc-utils
- gnome-abrt
- gnome-initial-setup
- gnome-settings-daemon
- golang
• gpgme
• httpd
• httpd-devel
• httpd-filesystem
• httpd-manual
• httpd-tools
• initial-setup
• ipa-client
• ipa-client-common
• ipa-common
• ipa-python-compat
• ipa-server
• ipa-server-common
• ipa-server-dns
• ipa-server-trust-ad
• kernel-rpm-macros
• ksh
• libguestfs
• libguestfs-bash-completion
• libguestfs-benchmarking
• libguestfs-devel
• libguestfs-gfs2
• libguestfs-gobject
• libguestfs-gobject-devel
• libguestfs-inspect-icons
• libguestfs-java
• libguestfs-java-devel
• libguestfs-javadoc
• libguestfs-man-pages-ja
• libguestfs-man-pages-uk
• libguestfs-rescue
• libguestfs-rsync
• libguestfs-tools
• libguestfs-tools-c
• libguestfs-xfs
• libitm-devel
• libquadmath-devel
• libreoffice-base
• libreoffice-calc
• libreoffice-core
• libreoffice-data
• libreoffice-draw
• libreoffice-emailmerge
• libreoffice-filters
• libreoffice-gdb-debug-support
• libreoffice-graphicfilter
• libreoffice-gtk2
• libreoffice-gtk3
• libreoffice-help-ar
• libreoffice-help-bg
• libreoffice-help-bn
• libreoffice-help-ca
• libreoffice-help-cs
• libreoffice-help-da
• libreoffice-help-de
• libreoffice-help-dz
• libreoffice-help-el
• libreoffice-help-en
• libreoffice-help-es
• libreoffice-help-et
• libreoffice-help-eu
• libreoffice-help-fi
• libreoffice-help-fr
• libreoffice-help-gl
• libreoffice-help-gu
• libreoffice-help-he
• libreoffice-help-hi
• libreoffice-help-hr
• libreoffice-help-hu
• libreoffice-help-id
• libreoffice-help-it
• libreoffice-help-ja
• libreoffice-help-ko
• libreoffice-help-lt
• libreoffice-help-lv
• libreoffice-help-nb
• libreoffice-help-nl
• libreoffice-help-nn
• libreoffice-help-pl
• libreoffice-help-pt-BR
• libreoffice-help-pt-PT
• libreoffice-help-ro
• libreoffice-help-ru
• libreoffice-help-si
• libreoffice-help-sk
• libreoffice-help-sl
• libreoffice-help-sv
• libreoffice-help-ta
• libreoffice-help-tr
• libreoffice-help-uk
Modified AppStream Binary Packages

- libreoffice-help-zh-Hans
- libreoffice-help-zh-Hant
- libreoffice-impress
- libreofficekit
- libreoffice-langpack-af
- libreoffice-langpack-ar
- libreoffice-langpack-as
- libreoffice-langpack-bg
- libreoffice-langpack-bn
- libreoffice-langpack-br
- libreoffice-langpack-ca
- libreoffice-langpack-cs
- libreoffice-langpack-cy
- libreoffice-langpack-da
- libreoffice-langpack-de
- libreoffice-langpack-dz
- libreoffice-langpack-el
- libreoffice-langpack-en
- libreoffice-langpack-es
- libreoffice-langpack-et
- libreoffice-langpack-eu
- libreoffice-langpack-fa
- libreoffice-langpack-fi
- libreoffice-langpack-fr
- libreoffice-langpack-ga
- libreoffice-langpack-gl
- libreoffice-langpack-gu
- libreoffice-langpack-he
- libreoffice-langpack-hi
- libreoffice-langpack-hr
• libreoffice-langpack-hu
• libreoffice-langpack-id
• libreoffice-langpack-it
• libreoffice-langpack-ja
• libreoffice-langpack-kk
• libreoffice-langpack-ko
• libreoffice-langpack-lt
• libreoffice-langpack-lv
• libreoffice-langpack-mai
• libreoffice-langpack-ml
• libreoffice-langpack-mr
• libreoffice-langpack-nb
• libreoffice-langpack-nl
• libreoffice-langpack-nn
• libreoffice-langpack-nr
• libreoffice-langpack-nso
• libreoffice-langpack-or
• libreoffice-langpack-pa
• libreoffice-langpack-pl
• libreoffice-langpack-pt-BR
• libreoffice-langpack-pt-PT
• libreoffice-langpack-ro
• libreoffice-langpack-ru
• libreoffice-langpack-si
• libreoffice-langpack-sk
• libreoffice-langpack-sl
• libreoffice-langpack-sr
• libreoffice-langpack-ss
• libreoffice-langpack-st
Modified AppStream Binary Packages

- libreoffice-langpack-sv
- libreoffice-langpack-ta
- libreoffice-langpack-te
- libreoffice-langpack-th
- libreoffice-langpack-tn
- libreoffice-langpack-tr
- libreoffice-langpack-ts
- libreoffice-langpack-uk
- libreoffice-langpack-ve
- libreoffice-langpack-xh
- libreoffice-langpack-zh-Hans
- libreoffice-langpack-zh-Hant
- libreoffice-langpack-zu
- libreoffice-math
- libreoffice-ogltrans
- libreoffice-opensymbol-fonts
- libreoffice-pdfimport
- libreoffice-pyuno
- libreoffice-ure
- libreoffice-ure-common
- libreoffice-wiki-publisher
- libreoffice-writer
- libreoffice-x11
- libreoffice-xsltfilter
- libreport
- libreswan
- libstdc++-devel
- libstdc++-docs
- libvirt
- libvirt-admin
• libvirt-bash-completion
• libvirt-client
• libvirt-daemon
• libvirt-daemon-config-network
• libvirt-daemon-config-nwfilter
• libvirt-daemon-driver-interface
• libvirt-daemon-driver-network
• libvirt-daemon-driver-nodedev
• libvirt-daemon-driver-nwfilter
• libvirt-daemon-driver-qemu
• libvirt-daemon-driver-secret
• libvirt-daemon-driver-storage
• libvirt-daemon-driver-storage-core
• libvirt-daemon-driver-storage-disk
• libvirt-daemon-driver-storage-gluster
• libvirt-daemon-driver-storage-iscsi
• libvirt-daemon-driver-storage-logical
• libvirt-daemon-driver-storage-mpath
• libvirt-daemon-driver-storage-rbd
• libvirt-daemon-driver-storage-scsi
• libvirt-daemon-kvm
• libvirt-devel
• libvirt-docs
• libvirt-libs
• libvirt-lock-sanlock
• libvirt-nss
• libxml2
• libxslt
• lld
• llvm
Modified AppStream Binary Packages

- lorax
- lorax-composer
- lorax-lmc-novirt
- lorax-lmc-virt
- lorax-templates-generic
- lorax-templates-rhel
- lua-guestfs
- mecab-ipadic
- mod_ldap
- mod_md
- mod_proxy_http
- mod_session
- mod_ssl
- mozjs60
- NetworkManager-libreswan
- NetworkManager-libreswan-gnome
- nginx
- nginx-all-modules
- nginx-filesystem
- nginx-mod-http-image-filter
- nginx-mod-http-perl
- nginx-mod-http-xslt-filter
- nginx-mod-mail
- nginx-mod-stream
- nvml
- openscap
- openscap-devel
- openscap-engine-sce
- openscap-python3
- openscap-scanner
• openscap-utils
• open-vm-tools
• open-vm-tools-desktop
• osinfo-db
• PackageKit
• PackageKit-command-not-found
• PackageKit-cron
• PackageKit-glib
• PackageKit-gstreamer-plugin
• PackageKit-gtk3-module
• perl-Sys-Guestfs
• perl-XML-Parser
• pesign
• pki-core
• platform-python
• platform-python-debug
• platform-python-devel
• plymouth
• podman
• podman-docker
• podman-manpages
• podman-remote
• podman-tests
• policycoreutils-gui
• policycoreutils-sandbox
• pykickstart
• pyparted
• python2
• python2-debug
• python2-devel
• python2-libs
• python2-test
• python2-tkinter
• python2-tools
• python3-blivet
• python3-clang
• python3-idle
• python3-IPAclient
• python3-ipalib
• python3-ipaserver
• python3-kickstart
• python3-libguestfs
• python3-spacewalk-backend-libs
• python3-systemd
• python3-test
• python3-tkinter
• python-blivet
• python-urllib3
• qemu-kvm
• rear
• redhat-1sb
• redhat-rpm-config
• rhn-client-tools
• rhn-custom-info
• rhnlib
• rhnpush
• rhnsd
• rpmdevtools
• rpm-ostree
• rpm-ostree-libs
• ruby
• ruby-devel
• ruby-doc
• ruby-libs
• rubygem-abrt
• ruby-libguestfs
• sanlk-reset
• sanlock
• scap-security-guide
• scap-security-guide-doc
• scap-workbench
• setroubleshoot
• setroubleshoot-plugins
• setroubleshoot-server
• skopeo
• skopeo-tests
• spacewalk-abrt
• spacewalk-usix
• thunderbird
• tog-pegasus
• tuned-gtk
• tuned-utils
• tuned-utils-systemtap
• virt-dib
• virt-install
• virt-manager
• virt-manager-common
• virt-p2v-maker
• virt-v2v
• WALinuxAgent
A.1.5 Removed BaseOS Binary Packages

The following binary packages from the BaseOS upstream release have been removed:

- dnf-plugin-subscription-manager
- kpatch
- libcxl
- libica
- libocxl
- libreport-plugin-rhtsupport
- libreport-rhel
- libreport-rhel-anaconda-bugzilla
- libreport-rhel-bugzilla
- librtas
- libservicelog
- libvpd
- libzfcphbaapi
- lsvpd
- opal-prd
- openssl-ibmca
- powerpc-utils
- ppc64-diag
- python3-subscription-manager-rhsm
- python3-sympurpose
- qclib
- redhat-backgrounds
- redhat-logos
- redhat-logos-httpd
- redhat-logos-ipa
- redhat-support-lib-python
• redhat-support-tool
• s390utils
• servicelog
• shim-ia32
• shim-x64
• subscription-manager
• subscription-manager-cockpit
• subscription-manager-initial-setup-addon
• subscription-manager-migration
• subscription-manager-migration-data
• subscription-manager-plugin-container
• subscription-manager-plugin-ostree
• subscription-manager-rhsm-certificates

A.1.6 Removed AppStream Binary Packages

The following binary packages from the AppStream upstream release have been removed:

• insights-client
• libreport-plugin-rhtsupport
• libreport-rhel
• libreport-rhel-anaconda-bugzilla
• libreport-rhel-bugzilla
• redhat-backgrounds
• redhat-logos-httpd
• redhat-logos-ipa
• redhat-support-lib-python
• redhat-support-tool
• rhsm-gtk
• SLOF
• subscription-manager-initial-setup-addon
• subscription-manager-migration
• subscription-manager-migration-data
Changes to Source Packages

A.2 Changes to Source Packages

This section contains information about the removed, modified, and new source packages in this release. For information about the binary package changes, see Section A.1, "Changes to Binary Packages".

A.2.1 Added Source Packages for BaseOS by Oracle

The following source packages have been added to the BaseOS by Oracle:

- oraclelinux-release
- oraclelinux-release-el8
- oracle-logos

A.2.2 Modified BaseOS Source Packages

The following source packages from the BaseOS upstream release have been modified:

- autos
- binutils
- boom-boot
- chrony
- compat-libgfortran-48
- coreutils
- dbus
- dracut
- efibootmgr
- efi-rpm-macros
- firewalld
- fuse
- fwupd
- fwupdate
- glibc
- gpgme
- grub2
- grubby
• initial-setup
• iscsi-initiator-utils
• kernel
• kexec-tools
• kmod
• kmod-kvdo
• ksc
• libdnf
• libkcapi
• libreport
• libxml2
• libxslt
• linux-firmware
• lorax-templates-rhel
• mcelog
• mdadm
• mksh
• mozjs52
• opa-ff
• opa-fm
• OpenIPMI
• openscap
• openssl
• oraclelinux-release
• oraclelinux-release-el8
• oracle-logos
• osinfo-db
• os-prober
• parted
• policycoreutils
Modified AppStream Source Packages

- polkit
- pykickstart
- python3
- python-configshell
- python-rtslib
- python-urlib3
- redhat-indexhtml
- redhat-lsb
- redhat-release
- redhat-rpm-config
- rpmdevtools
- rpm-ostree
- selinux-policy
- sos
- stunnel
- systemd
- tuned

A.2.3 Modified AppStream Source Packages

The following source packages from the AppStream upstream release have been modified:

- abrt
- abrt-java-connector
- anaconda
- anaconda-user-help
- buildah
- clang
- cloud-init
- compat-libgfortran-48
- container networking-plugins
- cups-filters
- dnf-plugin-spacewalk
Modified AppStream Source Packages

- efi-rpm-macros
- firefox
- firewalld
- gcc
- gnome-abrt
- gnome-initial-setup
- gnome-settings-daemon
- golang
- gpgme
- httpd
- initial-setup
- ipa
- ksh
- libguestfs
- libreoffice
- libreport
- libreswan
- libvirt
- libxml2
- libxslt
- lld
- llvm
- lorax
- lorax-templates-rhel
- mcelog
- mecab-ipadic
- mozjs60
- nginx
- nvml
- openscap
Modified AppStream Source Packages

- openssl
- open-vm-tools
- osinfo-db
- PackageKit
- perl-XML-Parser
- pesign
- pki-core
- plymouth
- podman
- pykickstart
- pyparted
- python2
- python-blivet
- python-urllib3
- qemu-kvm
- rear
- redhat-1sb
- redhat-rpm-config
- rhn-client-tools
- rhnlib
- rhnpush
- rhnsd
- rpmdevtools
- rpm-ostree
- rubygem-abrt
- sanlock
- scap-security-guide
- scap-workbench
- setroubleshoot
- setroubleshoot-plugins
• skopeo
• spacewalk-abrt
• spacewalk-usix
• thunderbird
• tog-pegasus
• virt-manager
• WALinuxAgent
• wget
• xsane

A.2.4 Removed BaseOS Source Packages

The following source packages from the BaseOS upstream release have been removed:

• dnf-plugin-subscription-manager
• kpatch
• libcxl
• libica
• libical
• libocxl
• librtas
• libservicelog
• libvpd
• libzfcphbaapi
• lsvpd
• opal-prd
• openssl-ibmca
• powerpc-utils
• ppc64-diag
• python3-subscription-manager-rhsm
• qlib
• redhat-logos
• redhat-logos-httpd
• s390utils
• servicelog
• subscription-manager
• subscription-manager-cockpit
• subscription-manager-plugin-container
• subscription-manager-plugin-ostree
• subscription-manager-rhsm-certificates

A.2.5 Removed AppStream Source Packages

The following source packages from the AppStream upstream release have been removed:

• insights-client
• libical-devel
• redhat-logos-ipa
• redhat-support-lib-python
• redhat-support-tool
• SLOF
• subscription-manager-initial-setup-addon
• subscription-manager-migration
• subscription-manager-migration-data
• texlive-etoolbox
• toolbox
• virtio-win
• virt-who