Unbreakable Enterprise Kernel

Release Notes for Unbreakable Enterprise Kernel Release 6 Update 1

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Unbreakable Enterprise Kernel Release Notes for Unbreakable Enterprise Kernel Release 6 Update 1,
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Contents

Preface

Unbreakable Enterprise Kernel: Release Notes for Unbreakable Enterprise Kernel Release 6 Update 1 provides a summary of the new features, changes, and known issues in the Unbreakable Enterprise Kernel Release 6 Update 1.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Documentation Accessibility

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Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

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New Features and Changes

Unbreakable Enterprise Kernel Release 6 (UEK R6) is a heavily tested and optimized operating system kernel for Oracle Linux 7.7 and later and for Oracle Linux 8.1 and later. The kernel is developed, built, and tested on Arm (aarch64) Intel x86 and AMD x86 (x86_64). platforms. It is based on the mainline Linux kernel version 5.4. This release also updates drivers and includes bug and security fixes.

Oracle actively monitors upstream check-ins and applies critical bug and security fixes to UEK R6.

UEK R6U1 uses the 5.4.17-2036 version and build of the UEK R6 kernel, which includes security and bug fixes, as well as driver updates.

UEK R6 uses the same versioning model as the mainline Linux kernel version. It is possible that some applications might not understand the 5.4 versioning scheme. However, regular Linux applications are usually neither aware of nor affected by Linux kernel version numbers.

UEK R6 maintains compatibility with the Red Hat Compatible Kernel (RHCK) and does not disable any features that are enabled in RHCK. Additional features are enabled to provide support for key functional requirements and patches are applied to improve performance and optimize the kernel for use on Oracle operating environments.

The kernel's source code is available through a public git source code repository at https://github.com/oracle/linux-uek.

Notable Features and Changes

The following are the major new features of Unbreakable Enterprise Kernel Release 6 Update 1 (UEK R6U1).

Core Kernel Functionality

UEK R6U1 provides equivalent core kernel functionality to UEK R6, making use of the same upstream mainline kernel release and upstream LTS bug fixes, with additional patches to enhance existing functionality and provide some minor bug fixes and security improvements. Key changes are specific to functionality that is required for Oracle Database and other Oracle software.

Padata replaces ktask

Padata is a framework for parallelizing CPU-intensive work in the kernel. In UEK R6, Oracle released the ktask framework for multithreading CPU-intensive kernel work, but contributed to convergence and ongoing development of the padata implementation in the upstream kernel. In UEK R6U1 ktask is replaced with equivalent functionality in padata to align with upstream. The changes should not be user visible, and struct page initialization and VFIO-enabled KVM guest initialization continue to be multithreaded to reduce start-up times.

Documentation for padata is provided in `/usr/share/doc/kernel-uek-doc-5.4/core-api/padata.rst`.

File Systems

The following notable file system changes are implemented in UEK R6U1:

- **Btrfs**

  Upstream patches for security enhancements and bug fixes have been applied. This includes a fix for CVE-2019-19448.

- **CIFS**

  General upstream bug fix patches have been applied.

- **Ext4**

  Upstream bug fixes have been applied, including several fixes for race conditions that resulted in undesirable behavior or system hangs.

- **NFS**

  Bug fixes and performance enhancements have been applied for NFS. Significantly, a fix is included for an issue in the NFSv3 client that stalled the `ls -lrt` command if the directory was being modified when the command was issued.

- **OCFS2**

  Upstream changes for OCFS2 from the 5.7 upstream kernel are back-ported into this kernel release. A bug fix was also applied to resolve an issue that triggered a general protection fault when an NFS server was hosted on an OCFS2 file system.

- **XFS**

  Several bug fixes and performance enhancements have been applied. Significantly, multi-threaded inode flushing is improved to provide better performance and to avoid the small possibility of undesirable behavior resulting from a race condition. Additionally, a fix is included for a bug that could cause an unlock of a freeze lock to fail thereby causing the file system to hang. Security enhancements have also been applied, including a fix for CVE-2020-12655.

Technical Preview Features

Several features are under investigation and ongoing development for release within UEK R6. The following features are available within UEK R6U1 as a technical preview.

Core Scheduling

Core scheduling is a feature enabled in the kernel to limit trusted tasks to run concurrently on CPU cores that share compute resources to help mitigate against certain categories of 'core shared cache' processor bugs that could cause data leakage and other related vulnerabilities.

This feature is implemented in the form of a cgroup, where tasks in a core scheduling enabled cgroup have a unique group "cookie". These tasks are unable to share a core with tasks having a different cookie nor with tasks not in an enabled core scheduling cgroup.

Core scheduling is designed to operate on a system configured with Simultaneous Multi-Threading turned on. However, core scheduling does not eliminate the need for other processor security mitigations that may be needed on a system. To use this feature, ensure that `SMT=on` is configured and then perform the following operations as the root user:

1. Create a regular version 1 CPU controller group. For example, to create a group called `cpu_sched_0`:

   ```
   # mkdir /sys/fs/cgroup/cpu/cpu_sched_0
   ```

2. Add tasks to the cgroup. Tasks are added by writing their process ID (PID) to the `tasks` file in the group:

   ```
   # echo PID > /sys/fs/cgroup/cpu/core_sched_0/tasks
   ```

3. To enable core scheduling for the cpu controller group, write a value of 1 to the `cpu.tag` file:

   ```
   # echo 1 > /sys/fs/cgroup/cpu/core_sched_0/cpu.tag
   ```

   Once the `cpu.tag` file is updated, tasks within the cgroup never share a core with tasks from a different cgroup or tasks not assigned to a cgroup.

This feature is enabled as a technical preview and is in development. Interfaces are subject to change. Hot plugging CPUs in a system with core scheduling cgroups is not advised. Using core scheduling on AMD processors may exhibit wider performance variation and is also not advised.

WireGuard

WireGuard is a faster and more secure replacement for IPsec and OpenVPN. New networks are being built with modern cryptography from WireGuard rather than legacy technologies like IPsec and OpenVPN. WireGuard is enabled as a technical preview in UEK R6U1 and introduces the `wireguard` kernel module at version 1.0.20200712.

Note that the `wireguard-tools` package from the unsupported `ol7_developer_UEKR6` repository is required to configure WireGuard. For access to this yum repository, you should install the appropriate `oraclelinux-developer-release-el7` or `oraclelinux-developer-release-el8` package for your operating environment. Once installed, restrict use of the repository for the `wireguard-tools` package, to avoid accidentally installing pre-release UEK updates.

To install the `wireguard-tools` package on Oracle Linux 7, run:

```
# yum install oraclelinux-developer-release-el7
# yum-config-manager --disable ol7_developer
# yum-config-manager --enable ol7_developer_UEKR6
# yum-config-manager --save --setopt=ol7_developer_UEKR6.includepkgs='wireguard-tools*'
# yum install wireguard-tools
```

To install this package on Oracle Linux 8, run:

```
# dnf install oraclelinux-developer-release-el8
# dnf config-manager --disable ol8_developer
# dnf config-manager --enable ol8_developer_UEKR6
# dnf config-manager --save --setopt=ol8_developer_UEKR6.includepkgs='wireguard-tools*'
# dnf install wireguard-tools
```

NFS v4.2 Server Side Copy

NFS v4.2 Server Side Copy functionality is back-ported from the upstream kernel and is available in UEK R6U1 as a technical preview. The server-side copy features provide mechanisms that allow an NFS client to copy file data on a server or between two servers without the data being transmitted back and forth over the network through the NFS client. Note that intra-server functionality is enabled; whereas inter-server functionality is disabled by default. To enable this functionality set the `nfsd` module's `inter_copy_offload_enable` parameter and restart NFS service. You can do this temporarily by running:

```
# echo y > /sys/module/nfsd/parameters/inter_copy_offload_enable
```

Alternately, to make this change permanent, edit `/etc/modprobe.d/nfsd.conf` to add the line:

```
options nfsd inter_copy_offload_enable=Y
```

Note that the ability to do a server side copy is largely dependent on the capabilities of the server file system. For example, to do an efficient intra-server copy of a file, the underlying target file system needs a snapshot or clone capability for individual files.

Initial testing has indicated some issues with this feature and it is largely considered to be experimental in this release.

Driver Updates

The Unbreakable Enterprise Kernel Release 6 supports a large number of hardware and devices. In close cooperation with hardware and storage vendors, Oracle has updated several device drivers from the versions in mainline Linux 5.4.

A complete list of the driver modules included in UEK R6 along with version information is provided in the appendix at Driver Modules in Unbreakable Enterprise Kernel Release 6 (x86_64).

Notable Driver Features and Updates

The following new features are noted in the drivers shipped with UEK R6U1:

- **AMD-TEE drivers**

  The AMD-TEE drivers, `amdtee` and `tee`, are new additions in this release and are included at version 1.0, as part of a wider initiative to include mainline kernel updates for the AMD Milan CPU family. .

- **Atheros 802.11n HTC wireless LAN card driver**

  The Atheros 802.11n HTC wireless LAN card driver, `ath9k_htc`, is patched and updated for security fixes, including CVE-2019-19073 .

- **Broadcom BCM573xx network driver**

  The Broadcom BCM573xx network driver, `bnxt_en`, is available at version 1.10.1 and includes vendor supplied patches and updates. A patch to better handle statistics collection on older firmware is also included at the vendor's request. Significantly, maintenance of network counters across resets is also improved so that the accumulation of counters during a reset only occurs when the `irq_re_init` parameter is set. Note that one upstream change results in a change to the device name for Broadcom network interfaces that use this driver. For example, a device that may have previously been

identified as *eno3d1* is now identified as *eno3*. This change results because the ports on the network device may belong to different functions and a fix has been applied to improve device naming by avoiding assumptions about port functionality on a device.

- **Intel Ethernet Connection E800 Series driver**

  The Intel Ethernet Connection E800 Series Linux driver, `ice`, is fully updated to version 0.8.2-k with vendor supplied patches and updates to enable support for newer Intel 800-Series Ethernet controllers and PCIe cards, using the *Columbiaville* code-name.

- **Broadcom Emulex LightPulse Fibre Channel SCSI driver**

  The Broadcom Emulex LightPulse Fibre Channel SCSI driver, `lpfc`, is updated to version 12.8.0.3 with vendor supplied patches and bug fixes.

- **Broadcom MegaRAID SAS driver**

  The Broadcom MegaRAID SAS driver, `megaraid_sas`, is updated to version 07.714.04.00-rc1. This update includes vendor supplied patches that bring the driver version in line with the upstream kernel release.

- **LSI MPT Fusion SAS 3.0 Device driver**

  The LSI MPT Fusion SAS 3.0 Device driver, `mpt3sas`, is updated to version 34.100.00.00 to include vendor supplied patches that bring the driver version in line with the upstream kernel release.

- **QLogic Fibre Channel HBA driver**

  The QLogic Fibre Channel HBA driver, `qla2xxx` is updated to version 10.01.00.25-k and includes a large number of vendor supplied patches to bring the driver version in line with the upstream kernel release.

- **Realtek RTL8152/RTL8153 Based USB Ethernet Adapter driver**

  The Realtek RTL8152/RTL8153 Based USB Ethernet Adapter driver, `r8152` is updated to version 1.10.11 with upstream kernel patches.

- **Intel Volume Management Device driver**

  The Intel VMD (Volume Management Device) driver, `vmd`, version 0.6 is added to this kernel release and enables serviceability of NVMe devices, taking advantage of hardware logic provided by the Intel Xeon processor. The driver aggregates NVMe PCIe SSDs and behaves similarly to an HBA for SATA and SAS.

Compatibility

Oracle Linux maintains full user space compatibility with Red Hat Enterprise Linux (RHEL), which is independent of the kernel version that is running underneath the operating system. Existing applications in user space continue to run unmodified on the Unbreakable Enterprise Kernel Release 6 and no re-certifications are needed for RHEL certified applications.

To minimize impact on interoperability during releases, the Oracle Linux team works closely with third-party vendors whose hardware and software have dependencies on kernel modules. The kernel ABI for UEK R6 remains unchanged in all subsequent updates to the initial release. In this release, there are changes to the kernel ABI relative to UEK R5 that require recompilation of third-party kernel modules on the system. Before installing UEK R6, verify its support status with your application vendor.

Notable changes in kernel headers

Upstream changes to kernel headers may mean that third party modules do not compile across different kernel versions without modification to source code. Notably, the `memcg_cache_params` structure has been moved from `include/linux/slab.h` to `mm/slab.h`. This means that code needs to be refactored to account for the change if you are compiling across kernel versions.

To solve this problem, so that the code can compile for both UEK R5 and UEK R6, change header requirements in the source code. For example, change lines like those in the following example to what is shown in the second example:

```
#ifdef CONFIG_SLUB
#include <linux/slub_def.h>
#endif

#if ( LINUX_VERSION_CODE < KERNEL_VERSION(5,4,0) )

#ifdef CONFIG_SLUB
#include <linux/slub_def.h>
#endif

#endif
```

Certification of UEK R6 for Oracle products

Note that the certification of different Oracle products on UEK R6 may not be immediately available at the time of a UEK R6 release. You should always check to ensure that the product you are using is certified for use on UEK R6 before upgrading or installing the kernel. Check certification at https://support.oracle.com/epmos/faces/CertifyHome.

Oracle Automatic Storage Management Cluster File System (Oracle ACFS) certification for different kernel versions is described in Document ID 1369107.1, which is available at https://support.oracle.com/epmos/faces/DocumentDisplay?id=1369107.1.

Oracle Automatic Storage Management Filter Driver (Oracle ASMFD) certification for different kernel versions is described in Document ID 2034681.1, which is available at https://support.oracle.com/epmos/faces/DocumentDisplay?id=2034681.1.

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Security Fixes for CVEs

This chapter lists security vulnerabilities and exposures (CVEs) that are specifically addressed in this release. Note that CVEs are continually handled in patch updates that are made available as errata builds for the current release. For this reason, it is absolutely critical that you keep your system up to date with the latest package updates for this kernel release.

You can keep up to date with the latest CVE information at https://linux.oracle.com/cve.

List of CVEs fixed in this release

The following list describes the CVEs that are fixed in this release. The content provided here is automatically generated and includes the CVE identifier and a summary of the issue. The associated internal Oracle bug identifiers are also included to reference work that was carried out to address each issue.

- **CVE-2019-16089**

  An issue was discovered in the Linux kernel through 5.2.13. nbd_genl_status in drivers/block/nbd.c does not check the nla_nest_start_noflag return value.An improper return check flaw was found in the Linux kernel's network block device driver functionality when the user call query to check the status of existing network block devices. This flaw allows a local user to crash the system. (Bug: 31972480)

- **CVE-2019-19054**

  A memory leak in the cx23888_ir_probe() function in drivers/media/pci/cx23885/cx23888-ir.c in the Linux kernel through 5.3.11 allows attackers to cause a denial of service (memory consumption) by triggering kfifo_alloc() failures, aka CID-a7b2df76b42b. A flaw was found in the Linux kernel. The CX23888 Integrated Consumer Infrared Controller probe code handles resource cleanup low memory conditions. A local attacker able to induce low memory conditions could use this flaw to crash the system. The highest threat from this vulnerability is to system availability. (Bug: 31351668)

  See https://linux.oracle.com/cve/CVE-2019-19054.html for more information.

- **CVE-2019-19073**

  Memory leaks in drivers/net/wireless/ath/ath9k/htc_hst.c in the Linux kernel through 5.3.11 allow attackers to cause a denial of service (memory consumption) by triggering wait_for_completion_timeout() failures. This affects the htc_config_pipe_credits() function, the htc_setup_complete() function, and the htc_connect_service() function, aka CID-853acf7caf10. (Bug: 31351566)

  See https://linux.oracle.com/cve/CVE-2019-19073.html for more information.

- **CVE-2019-19076**

  ** DISPUTED ** A memory leak in the nfp_abm_u32_knode_replace() function in drivers/net/ethernet/netronome/nfp/abm/cls.c in the Linux kernel before 5.3.6 allows attackers to cause a denial of service (memory consumption), aka CID-78beef629fd9. NOTE: This has been argued as not a valid vulnerability. The upstream commit 78beef629fd9 was reverted. A flaw was found in the way the NFP4000/NFP6000 Advanced buffer management NIC driver in the Linux kernel handled memory release on

error handling. This flaw allows an attacker to cause a denial of service and crash the system.

- **CVE-2019-19377**

  In the Linux kernel 5.0.21, mounting a crafted btrfs filesystem image, performing some operations, and unmounting can lead to a use-after-free in btrfs_queue_work in fs/btrfs/async-thread.c. A flaw was found in the Linux kernel's implementation of the BTRFS file system. A local attacker, with the ability to mount a file system, can create a use-after-free memory fault after the file system has been unmounted. This may lead to memory corruption or privilege escalation.

  See https://linux.oracle.com/cve/CVE-2019-19377.html for more information.

- **CVE-2019-19448**

  In the Linux kernel 5.0.21 and 5.3.11, mounting a crafted btrfs filesystem image, performing some operations, and then making a syncfs system call can lead to a use-after-free in try_merge_free_space in fs/btrfs/free-space-cache.c because the pointer to a left data structure can be the same as the pointer to a right data structure. A flaw was found in the Linux kernel's implementation of BTRFS free space management, where the kernel does not correctly manage the lifetime of internal data structures used. An attacker could use this flaw to corrupt memory or escalate privileges.

- **CVE-2019-19769**

  In the Linux kernel 5.3.10, there is a use-after-free (read) in the perf_trace_lock_acquire function (related to include/trace/events/lock.h).A use-after-free flaw was found when wakeup a waiter was in race in the locks_delete_block in fs/locks.c function in the Linux kernel's filesystem. A local attacker with a special user account (or root) may cause a denial of service, a system crash, or a leak in the internal kernel information.

  See https://linux.oracle.com/cve/CVE-2019-19769.html for more information.

- **CVE-2019-19770**

  ** DISPUTED ** In the Linux kernel 4.19.83, there is a use-after-free (read) in the debugfs_remove function in fs/debugfs/inode.c (which is used to remove a file or directory in debugfs that was previously created with a call to another debugfs function such as debugfs_create_file). NOTE: Linux kernel developers dispute this issue as not being an issue with debugfs, instead this is an issue with misuse of debugfs within blktrace.A use-after-free flaw was found in the debugfs_remove function in the Linux kernel. The flaw could allow a local attacker with special user (or root) privilege to crash the system at the time of file or directory removal. This vulnerability can lead to a kernel information leak. The highest threat from this vulnerability is to system availability.

- **CVE-2020-0543**

  Incomplete cleanup from specific special register read operations in some Intel(R) Processors may allow an authenticated user to potentially enable information disclosure via local access.A new domain bypass transient execution attack known as Special Register Buffer Data Sampling (SRBDS) has been found. This flaw allows data values from special internal registers to be leaked by an attacker able to execute code on any core of the CPU. An unprivileged, local attacker can use this flaw to infer values returned by affected instructions known to be commonly used during cryptographic operations that rely on uniqueness, secrecy, or both. (Bug: 31352778 31555697)

  See https://linux.oracle.com/cve/CVE-2020-0543.html for more information.

- **CVE-2020-10757**

  . A flaw was found in the Linux Kernel in versions after 4.5-rc1 in the way mremap handled DAX Huge Pages. This flaw allows a local attacker with access to a DAX enabled storage to escalate their privileges on the system. A flaw was found in the way mremap handled

DAX Huge Pages. This flaw allows a local attacker with access to a DAX enabled storage to escalate their privileges on the system.

See https://linux.oracle.com/cve/CVE-2020-10757.html for more information.

- **CVE-2020-10767**

  . A flaw was found in the Linux kernel before 5.8-rc1 in the implementation of the Enhanced IBPB (Indirect Branch Prediction Barrier). The IBPB mitigation will be disabled when STIBP is not available or when the Enhanced Indirect Branch Restricted Speculation (IBRS) is available. This flaw allows a local attacker to perform a Spectre V2 style attack when this configuration is active. The highest threat from this vulnerability is to confidentiality. A flaw was found in the Linux kernel's implementation of the Enhanced IBPB (Indirect Branch Prediction Barrier). The IBPB mitigation will be disabled when STIBP is not available or when the Enhanced Indirect Branch Restricted Speculation (IBRS) is available. This flaw allows a local attacker to perform a Spectre V2 style attack when this configuration is active. The highest threat from this vulnerability is to confidentiality. (Bug: 31557801)

  See https://linux.oracle.com/cve/CVE-2020-10767.html for more information.

- **CVE-2020-10768**

  . A flaw was found in the Linux Kernel before 5.8-rc1 in the prctl() function, where it can be used to enable indirect branch speculation after it has been disabled. This call incorrectly reports it as being 'force disabled' when it is not and opens the system to Spectre v2 attacks. The highest threat from this vulnerability is to confidentiality. A flaw was found in the prctl() function, where it can be used to enable indirect branch speculation after it has been disabled. This call incorrectly reports it as being 'force disabled' when it is not and opens the system to Spectre v2 attacks. The highest threat from this vulnerability is to confidentiality. (Bug: 31557899)

  See https://linux.oracle.com/cve/CVE-2020-10768.html for more information.

- **CVE-2020-11494**

  An issue was discovered in slc_bump in drivers/net/can/slcan.c in the Linux kernel through 5.6.2. It allows attackers to read uninitialized can_frame data, potentially containing sensitive information from kernel stack memory, if the configuration lacks CONFIG_INIT_STACK_ALL, aka CID-b9258a2cece4. A flaw was discovered in slc_bump in drivers/net/can/slcan.c in CAN Communication Protocol. It allows a local attacker with special user privilege (or root) to read sensitive kernel stack information (considering CONFIG_INIT_STACK_ALL is not enabled) when a partially initialized data structure is exposed over the network layer. (Bug: 31136749)

  See https://linux.oracle.com/cve/CVE-2020-11494.html for more information.

- **CVE-2020-11884**

  In the Linux kernel through 5.6.7 on the s390 platform, code execution may occur because of a race condition, as demonstrated by code in enable_sacf_uaccess in arch/s390/lib/uaccess.c that fails to protect against a concurrent page table upgrade, aka CID-3f777e19d171. A crash could also occur. A flaw was found in the Linux kernel on s390 architecture. The issue occurs on multiprocessing systems when one s390 CPU is in Secondary Address Mode and another CPU does a kernel page table upgrade. An inter-processor interrupt (IPI) is then sent to each active CPU to update the control registers with new page table addresses. In Secondary Address Mode the CPU's CR1 register may hold kernel space address to fetch instructions from, but after IPI processing, the same CR1 register is set to point to a user space address. An unprivileged user or process on the system may use this flaw to crash the system or escalate their privileges on the system. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability.

See https://linux.oracle.com/cve/CVE-2020-11884.html for more information.

- **CVE-2020-12655**

  An issue was discovered in xfs_agf_verify in fs/xfs/libxfs/xfs_alloc.c in the Linux kernel through 5.6.10. Attackers may trigger a sync of excessive duration via an XFS v5 image with crafted metadata, aka CID-d0c7feaf8767. A flaw was discovered in the XFS source in the Linux kernel. This flaw allows an attacker with the ability to mount an XFS filesystem, to trigger a denial of service while attempting to sync a file located on an XFS v5 image with crafted metadata. (Bug: 31350919)

  See https://linux.oracle.com/cve/CVE-2020-12655.html for more information.

- **CVE-2020-12768**

  ** DISPUTED ** An issue was discovered in the Linux kernel before 5.6. svm_cpu_uninit in arch/x86/kvm/svm.c has a memory leak, aka CID-d80b64ff297e. NOTE: third parties dispute this issue because it's a one-time leak at the boot, the size is negligible, and it can't be triggered at will.A flaw was found in the Linux kernel. A memory leak in svm_cpu_init() is possible leading to a system crash. The highest threat from this vulnerability is to system availability. (Bug: 31331480)

  See https://linux.oracle.com/cve/CVE-2020-12768.html for more information.

- **CVE-2020-12770**

  An issue was discovered in the Linux kernel through 5.6.11. sg_write lacks an sg_remove_request call in a certain failure case, aka CID-83c6f2390040.A vulnerability was found in sg_write in drivers/scsi/sg.c in the SCSI generic (sg) driver subsystem. This flaw allows an attacker with local access and special user or root privileges to cause a denial of service if the allocated list is not cleaned with an invalid (Sg_fd * sfp) pointer at the time of failure, also possibly causing a kernel internal information leak problem. (Bug: 31350694)

  See https://linux.oracle.com/cve/CVE-2020-12770.html for more information.

- **CVE-2020-12888**

  The VFIO PCI driver in the Linux kernel through 5.6.13 mishandles attempts to access disabled memory space. A flaw was found in the Linux kernel, where it allows userspace processes, for example, a guest VM, to directly access h/w devices via its VFIO driver modules. The VFIO modules allow users to enable or disable access to the devices' MMIO memory address spaces. If a user attempts to access the read/write devices' MMIO address space when it is disabled, some h/w devices issue an interrupt to the CPU to indicate a fatal error condition, crashing the system. This flaw allows a guest user or process to crash the host system resulting in a denial of service. (Bug: 31439666 31663627)

  See https://linux.oracle.com/cve/CVE-2020-12888.html for more information.

- **CVE-2020-14331**

  . A flaw was found in the Linux kernel’s implementation of the invert video code on VGA consoles when a local attacker attempts to resize the console, calling an ioctl VT_RESIZE, which causes an out-of-bounds write to occur. This flaw allows a local user with access to the VGA console to crash the system, potentially escalating their privileges on the system. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability. A flaw was found in the Linux kernel’s implementation of the invert video code on VGA consoles when a local attacker attempts to resize the console, calling an ioctl VT_RESIZE, which causes an out-of-bounds write to occur. This flaw allows a local user with access to the VGA console to crash the system, potentially escalating their privileges on the system. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability.

See https://linux.oracle.com/cve/CVE-2020-14331.html for more information.

- **CVE-2020-14385**

  . A flaw was found in the Linux kernel before 5.9-rc4. A failure of the file system metadata validator in XFS can cause an inode with a valid, user-creatable extended attribute to be flagged as corrupt. This can lead to the filesystem being shutdown, or otherwise rendered inaccessible until it is remounted, leading to a denial of service. The highest threat from this vulnerability is to system availability. A flaw was found in the Linux kernel. A failure of the file system metadata validator in XFS can cause an inode with a valid, user-creatable extended attribute to be flagged as corrupt. This can lead to the filesystem being shutdown, or otherwise rendered inaccessible until it is remounted, leading to a denial of service. The highest threat from this vulnerability is to system availability. (Bug: 31895364)

  See https://linux.oracle.com/cve/CVE-2020-14385.html for more information.

- **CVE-2020-14386**

  . A flaw was found in the Linux kernel before 5.9-rc4. Memory corruption can be exploited to gain root privileges from unprivileged processes. The highest threat from this vulnerability is to data confidentiality and integrity.A flaw was found in the Linux kernel. Memory corruption can be exploited to gain root privileges from unprivileged processes. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability. (Bug: 31866486)

  See https://linux.oracle.com/cve/CVE-2020-14386.html for more information.

- **CVE-2020-14390**

  . A flaw was found in the Linux kernel in versions before 5.9-rc6. When changing screen size, an out-of-bounds memory write can occur leading to memory corruption or a denial of service. Due to the nature of the flaw, privilege escalation cannot be fully ruled out. A flaw was found in the Linux kernel. When changing screen size, an out-of-bounds memory write can occur leading to memory corruption or a denial of service. Due to the nature of the flaw, privilege escalation cannot be fully ruled out. (Bug: 31914650)

- **CVE-2020-16166**

  The Linux kernel through 5.7.11 allows remote attackers to make observations that help to obtain sensitive information about the internal state of the network RNG, aka CID-f227e3ec3b5c. This is related to drivers/char/random.c and kernel/time/timer.c. A flaw was found in the Linux kernel. The generation of the device ID from the network RNG internal state is predictable. The highest threat from this vulnerability is to data confidentiality. (Bug: 31698077)

  See https://linux.oracle.com/cve/CVE-2020-16166.html for more information.

- **CVE-2020-25211**

  In the Linux kernel through 5.8.7, local attackers able to inject conntrack netlink configuration could overflow a local buffer, causing crashes or triggering use of incorrect protocol numbers in ctnetlink_parse_tuple_filter in net/netfilter/nf_conntrack_netlink.c, aka CID-1cc5ef91d2ff.A flaw was found in the Linux kernel. A local attacker, able to inject conntrack netlink configuration, could overflow a local buffer causing crashes or triggering the use of incorrect protocol numbers in ctnetlink_parse_tuple_filter in net/netfilter/nf_conntrack_netlink.c. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability. (Bug: 31872853)

- **CVE-2020-25284**

  The rbd block device driver in drivers/block/rbd.c in the Linux kernel through 5.8.9 used incomplete permission checking for access to rbd devices, which could be leveraged by local attackers to map or unmap rbd block devices, aka CID-f44d04e696fe. A flaw was found in the capabilities check of the rados block device functionality in the Linux kernel.

Incorrect capability checks could alllow a local user with root priviledges (but no capabilities) to add or remove Rados Block Devices from the system. (Bug: 31884150)

See https://linux.oracle.com/cve/CVE-2020-25284.html for more information.

- **CVE-2020-25285**

  A race condition between hugetlb sysctl handlers in mm/hugetlb.c in the Linux kernel before 5.8.8 could be used by local attackers to corrupt memory, cause a NULL pointer dereference, or possibly have unspecified other impact, aka CID-17743798d812. A flaw was found in the Linux kernels sysctl handling code for hugepages management. When multiple root level processes would write to modify the /proc/sys/vm/nr_hugepages file it could create a race on internal variables leading to a system crash or memory corruption. (Bug: 31884231)

  See https://linux.oracle.com/cve/CVE-2020-25285.html for more information.

- **CVE-2020-25641**

  . A flaw was found in the Linux kernel's implementation of biovecs in versions before 5.9-rc7. A zero-length biovec request issued by the block subsystem could cause the kernel to enter an infinite loop, causing a denial of service. This flaw allows a local attacker with basic privileges to issue requests to a block device, resulting in a denial of service. The highest threat from this vulnerability is to system availability. A flaw was found in the Linux kernel’s implementation of biovecs. A zero-length biovec request issued by the block subsystem could cause the kernel to enter an infinite loop, causing a denial of service. This flaw allows a local attacker with basic privileges to issue requests to a block device, resulting in a denial of service. The highest threat from this vulnerability is to system availability. (Bug: 31955136)

- **CVE-2020-25643**

  . A flaw was found in the HDLC_PPP module of the Linux kernel in versions before 5.9-rc7. Memory corruption and a read overflow is caused by improper input validation in the ppp_cp_parse_cr function which can cause the system to crash or cause a denial of service. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability. A flaw was found in the HDLC_PPP module of the Linux kernel. Memory corruption and a read overflow is caused by improper input validation in the ppp_cp_parse_cr function which can cause the system to crash or cause a denial of service. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability. (Bug: 31989185)

- **CVE-2020-25645**

  . A flaw was found in the Linux kernel in versions before 5.9-rc7. Traffic between two Geneve endpoints may be unencrypted when IPsec is configured to encrypt traffic for the specific UDP port used by the GENEVE tunnel allowing anyone between the two endpoints to read the traffic unencrypted. The main threat from this vulnerability is to data confidentiality. A flaw was found in the Linux kernel. Traffic between two Geneve endpoints may be unencrypted when IPsec is configured to encrypt traffic for the specific UDP port used by the GENEVE tunnel allowing anyone in between the two endpoints to read the traffic unencrypted. The main threat from this vulnerability is to data confidentiality. (Bug: 32013938)

- **CVE-2020-26541**

  The Linux kernel through 5.8.13 does not properly enforce the Secure Boot Forbidden Signature Database (aka dbx) protection mechanism. This affects certs/blacklist.c and certs/system_keyring.c. A flaw was found in the Linux kernel. The Secure Boot Forbidden Signature Database protection mechanism was found to not be properly enforced. The highest threat from this vulnerability is to data confidentiality and integrity as well as system availability. (Bug: 31961115)

- **CVE-2020-27152**

  A stack overflow flaw via an infinite loop condition issue was found in the KVM hypervisor of the Linux kernel. This flaw occurs while processing interrupts because the IRQ state is erroneously set. This flaw allows a guest user to crash the host kernel, resulting in a denial of service. The highest threat from this vulnerability is to system availability. (Bug: 32066585)

- **CVE-2020-8647**

  There is a use-after-free vulnerability in the Linux kernel through 5.5.2 in the vc_do_resize function in drivers/tty/vt/vt.c. A flaw was found in the Linux kernel's virtual console resize functionality. An attacker with local access to virtual consoles can use the virtual console resizing code to gather kernel internal data structures.

  See https://linux.oracle.com/cve/CVE-2020-8647.html for more information.

- **CVE-2020-8649**

  There is a use-after-free vulnerability in the Linux kernel through 5.5.2 in the vgacon_invert_region function in drivers/video/console/vgacon.c. A flaw was found in the Linux kernel's implementation of the invert video code on VGA consoles when a local attacker attempts to resize the console. An out-of-bounds read can occur, leaking information to the console.

  See https://linux.oracle.com/cve/CVE-2020-8649.html for more information.

- **CVE-2020-8835**

  In the Linux kernel 5.5.0 and newer, the bpf verifier (kernel/bpf/verifier.c) did not properly restrict the register bounds for 32-bit operations, leading to out-of-bounds reads and writes in kernel memory. The vulnerability also affects the Linux 5.4 stable series, starting with v5.4.7, as the introducing commit was backported to that branch. This vulnerability was fixed in 5.6.1, 5.5.14, and 5.4.29. (issue is aka ZDI-CAN-10780)An out-of-bounds access flaw was found in the Linux kernel's implementation of the eBPF code verifier, where an incorrect register bounds calculation while checking 32-bit instructions in an eBPF program occurs. This flaw allows an unprivileged user or process to execute eBPF programs to crash the kernel, resulting in a denial of service or potentially gaining root privileges on the system. (Bug: 31117265)

  See https://linux.oracle.com/cve/CVE-2020-8835.html for more information.

3
Known Issues

This chapter describes the known issues for the Unbreakable Enterprise Kernel Release 6.

Unusable or Unavailable Arm Features

The following features are known to not work, remain untested, or have issues that cause the feature to be unusable or unavailable on the 64-bit Arm (aarch64) platform:

- **InfiniBand**

  InfiniBand hardware is currently not supported for Arm architecture using UEK R6.
- **FibreChannel**

  FibreChannel hardware is currently not supported for Arm architecture using UEK R6.
- **RDMA**

  RDMA and any of its subfeatures are not supported for the Arm architecture.
- **Secure Boot and Lockdown**

  The Secure Boot feature and the Kernel Lockdown functionality are not supported or available for the Arm architecture.

Serial port console can crash if the serial port baud rate is too low

On systems that use a physical serial console to monitor system output, such as on an ILOM console interface, it is possible that high levels of output can introduce abnormal system behavior such as kernel deadman timer events that indicate processes are unable to obtain CPU scheduler time. This is typically experienced if the serial console speed is set too low and a log level of 6 or higher is configured for the system. To reduce the likelihood of this issue occurring, either reduce the log level or configure the console for the maximum possible baud rate, 115200.

Starting with UEK R6U1, a warning is displayed in the `dmesg` output if the baud rate is set too low:

```
dmesg | grep -A4 -i baud

[  369.777802] Serial console is set to the default of 9600 baud. This can
[  369.778852] result in stalls or lockups in error conditions requiring a
[  369.779892] large number of console system messages. Please increase the
[  369.780889] rate to the highest your system will allow (for instance,
115200
[  369.781918] or 57600). See Oracle KM Note 2648582.1 for more information.
```

The current console speed for a running Oracle Linux 7 or Oracle Linux 8 system can be set for a configured serial port by running:

```
stty -F /dev/ttyS0 speed 115200
```

To change the serial console speed that is used when the system boots, you must edit the GRUB configuration. Edit `/etc/sysconfig/grub` in a text editor and append console=*ttyS0*,*115200* to the line starting with `GRUB_CMDLINE_LINUX`, for example:

```
GRUB_CMDLINE_LINUX="crashkernel=auto resume=/dev/mapper/linux1-swap rd.lvm.lv=linux1/
root \
  rd.lvm.lv=linux1/swap rhgb quiet console=ttyS0,115200"
```

Note that in the above examples, the serial console is assumed to be *ttyS0*, you may need to change this if you have used an alternate serial port.

To update your grub configuration with the changes so that they are used on the next boot if you are using legacy BIOS, run:

```
sudo grub2-mkconfig -o /boot/grub2/grub.cfg
```

Alternately, if you are booting by using the Unified Extensible Firmware Interface (UEFI), run the following command:

```
sudo grub2-mkconfig -o /boot/efi/EFI/redhat/grub.cfg
```

If you are using Oracle Server hardware, or a system that provides an ILOM interface to the serial console, make sure that you update the serial console configuration on the ILOM to match the speed that you have set within the host operating system. You can set the serial port on the ILOM CLI by running:

```
sudo set /SP/serial/host pendingspeed=115200 commitpending=true
```

To check the current console port speed on the ILOM, using the CLI, run:

```
sudo show /SP/serial/host
```

For more information about ILOM configuration, see https://docs.oracle.com/cd/E19203-01/820-1188-12/core_ilom_managing.html.

(Bug ID 30487830, 30439170)

SELinux "Permission watch" messages displayed

Booting UEK R6 in either the SELinux permissive mode or the enforcing mode produces messages similar to the following:

```
SELinux:  Permission watch in class filesystem not defined in policy.
SELinux:  Permission watch in class file not defined in policy.
SELinux:  Permission watch_mount in class file not defined in policy.
SELinux:  Permission watch_sb in class file not defined in policy.
SELinux: the above unknown classes and permissions will be allowed
```

These messages are displayed because no definitions currently exist for these classes in SELinux policy. Per the last line of the message, classes and permissions are allowed by default; and therefore, the messages can be safely ignored.

(Bug ID 30687021, 30687021)

SELinux in enforcing mode with the MLS policy not supported

When SELinux is configured to use the Multilevel Security (MLS) policy and it is in the enforcing mode, several issues can prevent normal functioning of the operating system,

including permissions errors when attempting to mount file systems and the likelihood of a Systemd freeze when booting the operating system.

SELinux in the enforcing mode with the MLS policy is not supported. Note that you can continue to use SELinux in the enforcing mode by using the targeted policy.

(Bug ID 30797389, 30609238)

Spurious xs_tcp_setup_socket: connect messages when using NFS

When using NFS, inaccurate messages regarding socket connection errors may be emitted. Messages may appear as follows:

```
xs_tcp_setup_socket: connect returned unhandled error -107
```

The underlying connection issue is resolved and any connections that fail are now automatically reopened. Provided no associated functional impact is experienced, this error message may be ignored. Note that this message may also appear as a result of a genuine ongoing connection issue.

(Bug ID 30339848)

mstlink command crashes with core dump when used on Oracle Linux 8

The `mstlink` command crashes when run on an Oracle Linux 8 system running Unbreakable Enterprise Kernel Release 6. The following output is typical:

```
sudo mstlink -d 13:00.1

/usr/include/c++/8/bits/stl_vector.h:932: std::vector<_Tp, _Alloc>::reference
std::vector<_Tp, _Alloc>::operator[](std::vector<_Tp, _Alloc>::size_type)
[with _Tp = unsigned int; _Alloc = std::allocator<unsigned int>;
std::vector< Tp, _Alloc>::reference = unsigned int& std::vector<_Tp,
_Alloc>::size_type = long unsigned int]: Assertion '__builtin_expect(__n <
this->size(), true)' failed.
Aborted (core dumped)
```

This issue is related to system-wide hardening changes introduced upstream and present in Oracle Linux 8. The upstream tools in the `mstflint` package, including `mstlink` do not adequately cater for these hardening changes. Alternate tools can be used to gather and configure link information, including `ip link`, `ethtool`, `ifstat`, and `ibv_devinfo`.

(Bug ID 30993407)

IOMMU kernel option enabled by default

Starting with UEK R5U1, IOMMU functionality is enabled by default in the x86_64 kernel. This change better facilitates single root input-output virtualization (SR-IOV) and other virtualization extensions; however, it is also known to result in boot failure issues on certain hardware that cannot complete discovery when IOMMU is enabled. The status of this feature no longer appears in `/proc/cmd` reporting as `iommu=on`, which means it may need to be explicitly disabled as a kernel `cmdline` option if boot failure occurs. As an alternative workaround, you can disable IOMMU or Intel-Vtd in your system ROM by following your vendor instructions.

These boot failure issues have been observed on equipment with certain Broadcom network devices, such HP Gen8 servers. For more detailed information, see https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-c04565693.

PCIE hot-plug driver error for virtual machines running on Arm platforms

The PCIE hot-plug driver emits an error message when a virtual machine running on an Arm platform is rebooted. The error emitted is similar to the following message:

```
[    3.574244] pcieport 0000:00:02.1: pciehp: Failed to check link status
```

The issue is not replicated on bare metal systems.

(Bug ID 30512596)

(aarch64) Perf tool can result in application slowdown when profiling some virtualized Arm platforms

> **Note:**
>
> The following issue does not affect bare metal installations.

On virtual machines (VMs) that are running on a multi-socket aarch64 platform, if the `perf top` or `perf record` command is invoked, it is possible that application slowdowns may occur. In certain cases, the following message is emitted in a terminal window:

```
kernel:watchdog: BUG: soft lockup
```

You can mitigate this problem as follows:

- To avoid lockup situations and reduce probe effect, you can specify a sample period by using the `-c` flag with the `perf record` command, rather than a frequency by using the `-F` flag. For example, you would use the `perf record -c` command instead of the `perf record -F 100` command.
- Do *not* use the `perf` command with the `--all-cpus` flag. Instead, specify a minimal number of CPUs by using the `perf -C` command.

(Bug ID 32834324)

Messages emitted indicating the route cache is full when using IPv6

On some systems, error messages indicating that the route cache is full, are emitted when using IPv6. An error similar to the following example may be returned:

```
[ 5523.456447] Route cache is full: consider increasing sysctl
net.ipv[4|6].route.max_size.
```

It is unclear what causes these errors or to what size `/proc/sys/net/ipv6/route/max_size` should be increased; but, on a test system, the issue could not be replicated after running the following command:

```
sudo sysctl net.ipv6.route.max_size=32768
```

Because the issue is currently under investigation, increasing this value is a viable workaround.

(Bug ID 30976607)

IPv6 failback fails when using RoCE

The `rdmaip` driver does not send IPv6 address change notification to RDS, which can delay or prevent IPv6 fail over when using RoCE. This is apparent when active bonding is enabled and only occurs for IPv6. The IPv4 failover continues to work correctly.

When the issue is triggered, the following messages may appear in the kernel log:

```
kernel: rdmaip: could not add 2001:db8:0:f101::50%4/64 to ens2f0 (port 1)
kernel: IPv6: ens2f0: IPv6 duplicate address 2001:db8:0:f101::50 used by
        50:6b:4b:cb:ef:23 detected!
```

A fix is in development but is not available at the time of this release. The fix may become available as an errata update.

(Bug ID 31021418)

It is not possible to remove the libpcap package

Attempting to remove the `libpcap` package or performing an action that would attempt to remove the package results in an error because the dependency chain would require the removal of the `systemd` package and this would break the system.

This is expected behavior in Oracle Linux 8; however, the behavior is mentioned here because in previous Oracle Linux releases, it was possible to remove the `libpcap` package

In some circumstances, such as when installing the RDMA packages, `libpcap` may be upgraded to a newer version than the version provided for the operating system. If you remove these packages, you may wish to also downgrade the `libpcap` package to match the highest version provided for the operating system in the BaseOS channel or repository. Typically, this might be most easily done by reverting the installation using the `dnf history undo` command. See the `DNF(8)` manual page for more information.

(Bug ID 30979601)

Early microcode loading

When booting an Oracle Linux 7 bare-metal system with UEK R6, the following may be reported in the dmesg log:

```
This kernel doesn't handle early microcode load properly (it tries to load
microcode even in virtualised environment, which may lead to a panic on some
hypervisors), thus the microcode files have not been added to the initramfs
image.
```

UEK R6 does, in fact, handle late microcode loading properly. The messages are due to a downrev `microcode-ctl` user space package that does not recognize the UEK R6 kernel version.

This issue is fixed in the `microcode_ctl-2.1-61.10.0.1` package or later versions.

(Bug ID 31085618)

Reload of lpfc driver emits error messages

Error messages, similar to the following, may be reported when the Broadcom Emulex LightPulse Fibre Channel SCSI driver, `lpfc`, is unloaded and reloaded:

```
bmx048-ps kernel: lpfc 0000:13:00.1: 1:(0):2858 FLOGI failure
Status:x9/x30000 TMO:x14 Data x101800 x0
bmx048-ps kernel: lpfc 0000:13:00.1: 1:(0):0820 FLOGI Failed (x300). BBCredit
Not Supported
bmx048-ps kernel: lpfc 0000:13:00.0: 0:(0):2858 FLOGI failure
Status:x9/x30000 TMO:x14 Data x101800 x0
bmx048-ps kernel: lpfc 0000:13:00.0: 0:(0):0820 FLOGI Failed (x300). BBCredit
Not Supported
```

These notices can be safely ignored, provided the devices are properly found after the `lpfc` module reload completes.

(Bug ID 31598148)

Network latency may increase on Infiniband fabrics

If the TCP write size is close to the size of the Infiniband (IB) Maximum Transmission Unit (MTU), applications may experience higher latencies on packet transfers. For example, the default IB MTU is 65520 bytes. An application that also uses a TCP write size between 65520 bytes to 128 KB may experience this issue. The issue does not appear when applications use larger (for example, 256 KB) or smaller (for example, 4 KB or 32 KB) TCP write sizes.

Note that Ethernet networks are not affected by this issue.

The default values for the IB MTU and TCP write sizes in Oracle Linux and UEK R6 do not expose the issue. Applications with modified TCP window sizes, or systems with modified MTU values, could overlap and expose this issue.

The workaround for this issue is to tune either the MTU of the IB interface, or the TCP write size of the application, so that the TCP write size is smaller than the IB MTU or the TCP write size is greater than 2x the IB MTU. You can tune MTUs dynamically by using the `ip link` command. Note that tuning of the TCP write size is application specific.

(Bug ID 31830430)

(aarch64) Kdump fails to allocate crashkernel memory on some Arm systems

On some 64-bit Arm (aarch64) systems, where insufficient low contiguous memory is available, Kdump may fail due to the system's inability to allocate the minimum `crashkernel` memory that is typically reserved when the `auto` value is set.

This issue results in Kdump failing to start and the following errors appearing in the logs:

```
kdumpctl[3812]: No memory reserved for crash kernel
...
systemd[1]: Failed to start Crash recovery kernel arming.
```

To work around this issue, manually set the `crashkernel` low and high values and attempt to set a low value that is below 256 MB. For example, replace `crashkernel=auto` with `crashkernel=800M,high crashkernel=200M,low`.

(Bug ID 31554906)

4

Installation and Availability

You can install Unbreakable Enterprise Kernel Release 6 on Oracle Linux 7.7, or later, and on Oracle Linux 8.1, or later, by running either the Red Hat Compatible Kernel (RHCK) or a previous release of the Unbreakable Enterprise Kernel. If you are still running an older version of Oracle Linux, you must first update your system to the latest available update release.

Unbreakable Enterprise Kernel Release 6 is supported on x86-64 platforms but not on x86. The Unbreakable Enterprise Kernel Release 6 is also supported on 64-bit Arm (aarch64) platforms.

Installation Overview

If you have a subscription to Oracle Unbreakable Linux support, you can obtain the packages for Unbreakable Enterprise Kernel Release 6 by registering your system with the Unbreakable Linux Network (ULN) and subscribing it to additional channels. See Subscribing to ULN Channels.

If your system is not registered with ULN, you can obtain most of the packages from Oracle Linux yum server. See Enabling Access to Oracle Linux Yum Server Repositories.

Having subscribed your system to the appropriate channels on ULN or Oracle Linux yum server, upgrade your system. See Upgrading Your System.

Subscribing to ULN Channels

The following procedure assumes that you have already registered your system with ULN.

To subscribe your system to a channel on ULN:

1. Log in to https://linux.oracle.com with your ULN user name and password.
2. On the Systems tab, click the link named for the system in the list of registered machines.
3. On the System Details page, click **Manage Subscriptions**.
4. On the System Summary page, select each of the required channels from the list of available channels, then click the right arrow to move the channel to the list of subscribed channels.
5. Click **Save Subscriptions**.

For information about using ULN, see Oracle Linux: Unbreakable Linux Network User's Guide for Oracle Linux 6 and Oracle Linux 7 or Oracle Linux: Managing Software on Oracle Linux.

Oracle Linux 7

The kernel image and user space packages are available on the `ol7_x86_64_UEKR6` ULN channel for Oracle Linux 7 on x86_64 platforms. For aarch64 platforms, these packages are available on the `ol7_aarch64_UEKR6` ULN channel.

Oracle Linux 8

Kernel image and user space packages are available on the following ULN channels for Oracle Linux 8 on x86_64 platforms:

- `ol8_x86_64_UEKR6`
- `ol8_x86_64_baseos_latest`

Oracle Linux 8 kernel image and user space packages for Oracle Linux 8 (aarch64) are made available by default on the `ol8_aarch64_baseos_latest` ULN channel.

Enabling Access to Oracle Linux Yum Server Repositories

Packages for UEK R6 and associated user space applications are available on the Oracle Linux yum server at https://yum.oracle.com/.

Oracle Linux 7

All kernel image and associated user space packages for Oracle Linux 7 on the x86_64 and aarch64 platforms are available in the `ol7_UEKR6` repository.

To enable access to the Oracle Linux 7 repositories on the Oracle Linux yum server, use `yum-config-manager`. For example, to enable access to the `ol7_latest` and `ol7_UEKR6` repositories, run the following:

```
sudo yum-config-manager --enable ol7_latest ol7_UEKR6
```

> **Note:**
>
> You can only use `yum-config-manager` to enable or disable repositories where you already have a configuration file for the specified repository. Repository configurations are typically stored in `/etc/yum.repos.d`. The repository configurations required to install UEK on Oracle Linux 7 are included in the `oraclelinux-release-el7` package. You may need to update this package to the latest version to obtain the correct yum repository configuration.

See Oracle Linux 7: Administrator's Guide for more information.

Oracle Linux 8

Kernel images and all associated user space packages for Oracle Linux 8 on x86_64 platforms are available by enabling the `ol8_UEKR6`, `ol8_baseos_latest` and `ol8_addons` repositories.

For aarch64 platforms, these packages are provided by default within the `ol8_baseos_latest` repository.

To enable access to the Oracle Linux 8 repositories for the x86_64 platform on the Oracle Linux yum server, use `dnf config-manager`. For example, to enable access to the `ol8_baseos_latest`, `ol8_addons` and `ol8_UEKR6` repositories, run the following command:

```
sudo dnf config-manager --enable ol8_baseos_latest ol8_addons ol8_UEKR6
```

> **Note:**
>
> You can only use `dnf config-manager` to enable or disable repositories where you already have a configuration file for the specified repository. Repository configurations are typically stored in `/etc/yum.repos.d`. The repository configurations required to install UEK on Oracle Linux 8 are included in the `oraclelinux-release-el8` package. You may need to update this package to the latest version to obtain the correct yum repository configuration.

See Oracle Linux: Managing Software on Oracle Linux for more information.

Upgrading Your System

To upgrade your system to Unbreakable Enterprise Kernel Release 6:

1. Enable access to the appropriate ULN channels or yum repositories as described in Subscribing to ULN Channels and Enabling Access to Oracle Linux Yum Server Repositories. It is good practice to disable any other UEK channels or repositories that you may have configured previously.
2. After enabling access to the appropriate channels, run the following command to upgrade the system to UEK R6 on Oracle Linux 7:

   ```
   sudo yum update
   ```

   Alternatively, run the following command on Oracle Linux 8:

   ```
   sudo dnf update
   ```
3. After upgrading the system, reboot it, selecting the UEK R6 kernel (version 5.4) if this is not the default boot kernel.

For more information about using `yum` and `dnf` to install updates, see Oracle Linux: Unbreakable Linux Network User's Guide for Oracle Linux 6 and Oracle Linux 7 or Oracle Linux: Managing Software on Oracle Linux.

Installing Oracle-Supported RDMA Packages for x86_64 platforms

The following procedure describes how to install the RDMA release packages. The instructions describe how to remove previous existing `oracle-ofed-release` packages and other previously installed RDMA packages that could cause conflicts during the installation of the UEK R6 RDMA packages. Note that the `yum` commands used in this procedure are interchangeable with the `dnf` command available in Oracle Linux 8.

1. In addition to the ULN channels and yum repositories described in Subscribing to ULN Channels and Enabling Access to Oracle Linux Yum Server Repositories, subscribe the system to the appropriate RDMA ULN channel or yum repository.

   If you're using the Oracle Linux yum server, enable the `ol7_UEKR6_RDMA` repository for Oracle Linux 7; or the `ol8_UEKR6_RDMA` repository for Oracle Linux 8. For example, on Oracle Linux 7 run the following command:

   ```
   sudo yum-config-manager --enable ol7_latest ol7_UEKR6 ol7_UEKR6_RDMA
   ```

On Oracle Linux 8 run the following command:

```
sudo dnf config-manager --enable ol8_baseos_latest ol8_UEKR6 ol8_UEKR6_RDMA
```

If you're subscribed to ULN, you can subscribe to `ol7_x86_64_UEKR6_RDMA` for Oracle Linux 7; or `ol8_x86_64_UEKR6_RDMA` for Oracle Linux 8.

2. Remove any existing packages that are related to RDMA, for example:

```
sudo yum remove 'ibacm*'
sudo yum remove 'ib-bonding*'
sudo yum remove 'ibutils*'
sudo yum remove 'infiniband-diags*'
sudo yum remove 'libibacl*'
sudo yum remove 'libibcm*'
sudo yum remove 'libibmad*'
sudo yum remove 'libibumad*'
sudo yum remove 'libibverbs*'
sudo yum remove 'libmlx4*'
sudo yum remove 'librdmacm*'
sudo yum remove 'libsdp*'
sudo yum remove 'mlnx-tools'
sudo yum remove 'mstflint*'
sudo yum remove 'ofed-docs*'
sudo yum remove 'ofed-scripts*'
sudo yum remove 'opensm*'
sudo yum remove 'oracle-ofed-release*'
sudo yum remove 'oracle-rdma-release*'
sudo yum remove 'oracle-rdma-tools'
sudo yum remove 'perftest*'
sudo yum remove 'qperf*'
sudo yum remove 'rdma*'
sudo yum remove 'rds-tools*'
sudo yum remove 'sdpnetstat*'
```

3. Clean all yum cached files from all enabled repositories:

```
sudo yum clean all
```

4. Install the RDMA packages for UEK R6.

   - On Oracle Linux 7, run the following commands:

     ```
     sudo yum install rdma-core
     sudo yum install infiniband-diags
     sudo yum install libibverbs-utils
     sudo yum install librdmacm-utils
     sudo yum install mstflint
     sudo yum install oracle-rdma-tools
     sudo yum install rds-tools
     sudo yum install ibutils
     sudo yum install libibacl
     ```

     – If installing on a bare-metal system, install the `infiniband-diags` package:

       ```
       sudo yum install infiniband-diags
       ```

     – If installing on a guest VM, install the `infiniband-diags-guest` package:

       ```
       sudo yum install infiniband-diags-guest
       ```

   - On Oracle Linux 8, run the following commands:

```
sudo dnf install rdma-core
sudo dnf install libibverbs-utils
sudo dnf install librdmacm-utils
sudo dnf install mlnx-tools
sudo dnf install mstflint
sudo dnf install rds-tools
```

  - If installing on a bare-metal system, install the `infiniband-diags` package:

    ```
    sudo dnf install infiniband-diags
    ```

  - If installing on a guest VM, install the `infiniband-diags-guest` package:

    ```
    sudo dnf install infiniband-diags-guest
    ```

- (Optional) If you require the `perftest` package, install the package by running:

  ```
  sudo yum install perftest
  ```

- (Optional) If you require the `qperf` package, install the package by running:

  ```
  sudo yum install qperf
  ```

- (Optional) If you require the `libpcap` package, install the package by running:

  ```
  sudo yum install libpcap
  ```

- (Optional) If you require the `ibacm` package, install the package by running:

  ```
  sudo yum install ibacm
  ```

- (Optional) If you require the `srp_daemon` package, install the package by running:

  ```
  sudo yum install srp_daemon
  ```

Each UEK release requires a different set of RDMA packages. If you change the kernel on the system to a UEK release before UEK R6, remove the existing UEK R6-based RDMA packages before installing the correct packages for the new kernel.

> **Caution:**
>
> Downgrading UEK versions isn't advisable, except for testing purposes.

Upgrading Oracle-Supported RDMA Packages for x86_64 platforms

Typical upgrade of Oracle-supported RDMA package can be achieved using the `dnf update` or `yum update` command. Note that the `yum` commands used in this procedure are interchangeable with the `dnf` command available in Oracle Linux 8.

If you're upgrading a system where the `oracle-rdma-release` or `oracle-rdma-release-guest` package is installed and the package version is lower than version 0.18.1-1 and you intend to upgrade to version 0.18.1-1 or above, you must first manually remove the `rdma-core-devel` package before performing the upgrade. Remove this package using the `rpm -e --nodeps`

command to remove the package outside of the standard yum or dnf package manager control and leaving any dependencies intact, for example:

```
sudo /bin/rpm -e --nodeps rdma-core-devel
sudo yum update
```

If you're upgrading an older system where the `oracle-ofed-release` or `oracle-ofed-release-guest` package is installed and you intend to upgrade to `oracle-rdma-release` or `oracle-rdma-release-guest` version 0.18.1-1 or above, you must manually remove development packages that were installed for OFED before performing the upgrade or installation of the `oracle-rdma-release` or `oracle-rdma-release-guest` package:

```
sudo /bin/rpm -e --nodeps libibumad-devel libibverbs-devel librdmacm-devel libibmad-devel
sudo yum install oracle-rdma-release-guest
```

Note that these steps are only required for the transition from versions of the `oracle-rdma-release` and `oracle-rdma-release-guest` packages prior to 0.18.1-1 to version 0.18.1-1 or later; or for the transition from `oracle-ofed-release` to `oracle-rdma-release` version 0.18.1-1 or later. These steps aren't required for upgrades after the packages are at version 0.18.1-1 or later.

If the system you have upgraded has the `oracle-rdma-release` or `oracle-rdma-release-guest` package installed and if the package version is version 0.31.0-1, then you can remove it because that package no longer serves any purpose:

```
sudo yum remove oracle-rdma-release*
```

5

Driver Modules in Unbreakable Enterprise Kernel Release 6 (x86_64)

This appendix presents all of the driver modules and their version information as shipped in the current version of UEK R6 (x86_64). This appendix is generated automatically. Note that driver versions and available drivers may change in subsequent errata releases, but the driver versions will always be the same or later than presented here.

acpi Drivers in UEK R6 (x86_64)

Driver	Version	Description
acpi_extlog		Extended MCA Error Log Driver
acpi_ipmi		ACPI IPMI Opregion driver
acpi_pad		ACPI Processor Aggregator Driver
acpi_tad		
einj		APEI Error INJection support
erst-dbg		APEI Error Record Serialization Table debug support
dptf_power		ACPI DPTF platform power driver
ec_sys		ACPI EC sysfs access driver
nfit		
sbs		Smart Battery System ACPI interface driver
sbshc		ACPI SMBus HC driver
video		ACPI Video Driver

ata Drivers in UEK R6 (x86_64)

Driver	Version	Description
acard-ahci	1.0	ACard AHCI SATA low-level driver
ahci	3.0	AHCI SATA low-level driver
ahci_platform		AHCI SATA platform driver
ata_generic	0.2.15	low-level driver for generic ATA
ata_piix	2.13	SCSI low-level driver for Intel PIIX/ICH ATA controllers
libahci		Common AHCI SATA low-level routines

Driver	Version	Description
libahci_platform		AHCI SATA platform library
libata	3.00	Library module for ATA devices
pata_acpi	0.2.3	SCSI low-level driver for ATA in ACPI mode
pata_ali	0.7.8	low-level driver for ALi PATA
pata_amd	0.4.1	low-level driver for AMD and Nvidia PATA IDE
pata_artop	0.4.6	SCSI low-level driver for ARTOP PATA
pata_atiixp	0.4.6	low-level driver for ATI IXP200/300/400
pata_atp867x	0.7.5	low level driver for Artop/Acard 867x ATA controller
pata_cmd64x	0.2.18	low-level driver for CMD64x series PATA controllers
pata_hpt366	0.6.11	low-level driver for the Highpoint HPT366/368
pata_hpt37x	0.6.23	low-level driver for the Highpoint HPT37x/30x
pata_hpt3x2n	0.3.15	low-level driver for the Highpoint HPT3xxN
pata_hpt3x3	0.6.1	low-level driver for the Highpoint HPT343/363
pata_it8213	0.0.3	SCSI low-level driver for the ITE 8213
pata_it821x	0.4.2	low-level driver for the IT8211/ IT8212 IDE RAID controller
pata_jmicron	0.1.5	SCSI low-level driver for Jmicron PATA ports
pata_marvell	0.1.6	SCSI low-level driver for Marvell ATA in legacy mode
pata_netcell	0.1.7	SCSI low-level driver for Netcell PATA RAID
pata_ninja32	0.1.5	low-level driver for Ninja32 ATA
pata_oldpiix	0.5.5	SCSI low-level driver for early PIIX series controllers
pata_pdc2027x	1.0	libata driver module for Promise PDC20268 to PDC20277
pata_pdc202xx_old	0.4.3	low-level driver for Promise 2024x and 20262-20267
pata_piccolo	0.0.1	Low level driver for Toshiba Piccolo ATA
pata_rdc	0.01	SCSI low-level driver for RDC PATA controllers
pata_sch	0.2	SCSI low-level driver for Intel SCH PATA controllers
pata_serverworks	0.4.3	low-level driver for Serverworks OSB4/CSB5/CSB6

Driver	Version	Description
pata_sil680	0.4.9	low-level driver for SI680 PATA
pata_sis	0.5.2	SCSI low-level driver for SiS ATA
pata_via	0.3.4	low-level driver for VIA PATA
pdc_adma	1.0	Pacific Digital Corporation ADMA low-level driver
sata_inic162x	0.4	low-level driver for Initio 162x SATA
sata_mv	1.28	SCSI low-level driver for Marvell SATA controllers
sata_nv	3.5	low-level driver for NVIDIA nForce SATA controller
sata_promise	2.12	Promise ATA TX2/TX4/TX4000 low-level driver
sata_qstor	0.09	Pacific Digital Corporation QStor SATA low-level driver
sata_sil	2.4	low-level driver for Silicon Image SATA controller
sata_sil24		Silicon Image 3124/3132 SATA low-level driver
sata_sis	1.0	low-level driver for Silicon Integrated Systems SATA controller
sata_svw	2.3	low-level driver for K2 SATA controller
sata_sx4	0.12	Promise SATA low-level driver
sata_uli	1.3	low-level driver for ULi Electronics SATA controller
sata_via	2.6	SCSI low-level driver for VIA SATA controllers
sata_vsc	2.3	low-level driver for Vitesse VSC7174 SATA controller

atm Drivers in UEK R6 (x86_64)

Driver	Version	Description
atmtcp		

auxdisplay Drivers in UEK R6 (x86_64)

Driver	Version	Description
cfag12864b		cfag12864b LCD driver
cfag12864bfb		cfag12864b LCD framebuffer driver
ks0108		ks0108 LCD Controller driver

base Drivers in UEK R6 (x86_64)

Driver	Version	Description
regmap-i2c		
regmap-spi		

bcma Drivers in UEK R6 (x86_64)

Driver	Version	Description
bcma		Broadcom's specific AMBA driver

block Drivers in UEK R6 (x86_64)

Driver	Version	Description
aoe	85	AoE block/char driver for 2.6.2 and newer 2.6 kernels
brd		
cryptoloop		loop blockdevice transferfunction adaptor / CryptoAPI
drbd	8.4.11	drbd - Distributed Replicated Block Device v8.4.11
floppy		
loop		
mtip32xx	1.3.1	Micron RealSSD PCIe Block Driver
nbd		Network Block Device
null_blk		
oracleasm	2.0.8	Kernel driver backing the Generic Linux ASM Library.
pktcdvd		Packet writing layer for CD/DVD drives
rbd		RADOS Block Device (RBD) driver
skd		STEC s1120 PCIe SSD block driver
sx8	1.0	Promise SATA SX8 block driver
umem		Micro Memory(tm) PCI memory board block driver
virtio_blk		Virtio block driver
xen-blkback		
xen-blkfront		Xen virtual block device frontend
zram		Compressed RAM Block Device

bluetooth Drivers in UEK R6 (x86_64)

Driver	Version	Description
ath3k	1.0	Atheros AR30xx firmware driver
bcm203x	1.2	Broadcom Blutonium firmware driver ver 1.2
bfusb	1.2	BlueFRITZ! USB driver ver 1.2
bpa10x	0.11	Digianswer Bluetooth USB driver ver 0.11
btbcm	0.1	Bluetooth support for Broadcom devices ver 0.1
btintel	0.1	Bluetooth support for Intel devices ver 0.1
btmrvl	1.0	Marvell Bluetooth driver ver 1.0
btmrvl_sdio	1.0	Marvell BT-over-SDIO driver ver 1.0
btrtl	0.1	Bluetooth support for Realtek devices ver 0.1
btsdio	0.1	Generic Bluetooth SDIO driver ver 0.1
btusb	0.8	Generic Bluetooth USB driver ver 0.8
hci_uart	2.3	Bluetooth HCI UART driver ver 2.3
hci_vhci	1.5	Bluetooth virtual HCI driver ver 1.5

cdrom Drivers in UEK R6 (x86_64)

Driver	Version	Description
cdrom		

char Drivers in UEK R6 (x86_64)

Driver	Version	Description
hangcheck-timer	0.9.1	Hangcheck-timer detects when the system has gone out to lunch past a certain margin.
amd-rng		H/W RNG driver for AMD chipsets
intel-rng		H/W RNG driver for Intel chipsets
timeriomem-rng		Timer IOMEM H/W RNG driver
via-rng		H/W RNG driver for VIA CPU with PadLock
virtio-rng		Virtio random number driver
ipmi_devintf		Linux device interface for the IPMI message handler.

Driver	Version	Description
ipmi_msghandler	39.2	Incoming and outgoing message routing for an IPMI interface.
ipmi_poweroff		IPMI Poweroff extension to sys_reboot
ipmi_si		Interface to the IPMI driver for the KCS, SMIC, and BT system interfaces.
ipmi_ssif		IPMI driver for management controllers on a SMBus
ipmi_watchdog		watchdog timer based upon the IPMI interface.
lp		
ppdev		
tlclk		
tpm_st33zp24	1.3.0	ST33ZP24 TPM 1.2 driver
tpm_st33zp24_i2c	1.3.0	STM TPM 1.2 I2C ST33 Driver
tpm_atmel	2.0	TPM Driver
tpm_i2c_atmel		Atmel TPM I2C Driver
tpm_i2c_infineon	2.2.0	TPM TIS I2C Infineon Driver
tpm_i2c_nuvoton		Nuvoton TPM I2C Driver
tpm_infineon	1.9.2	Driver for Infineon TPM SLD 9630 TT 1.1 / SLB 9635 TT 1.2
tpm_nsc	2.0	TPM Driver
uv_mmtimer		SGI UV Memory Mapped RTC Timer
virtio_console		Virtio console driver

cpufreq Drivers in UEK R6 (x86_64)

Driver	Version	Description
acpi-cpufreq		ACPI Processor P-States Driver
amd_freq_sensitivity		AMD frequency sensitivity feedback powersave bias for the ondemand governor.
p4-clockmod		cpufreq driver for Pentium(TM) 4/ Xeon(TM)
pcc-cpufreq	1.10.00	Processor Clocking Control interface driver
powernow-k8		AMD Athlon 64 and Opteron processor frequency driver.
speedstep-lib		Library for Intel SpeedStep 1 or 2 cpufreq drivers.

crypto Drivers in UEK R6 (x86_64)

Driver	Version	Description
n5pf	1.2	Cavium CNN55XX PF Driver1.2
ccp-crypto	1.0.0	AMD Cryptographic Coprocessor crypto API support
ccp	1.1.0	AMD Secure Processor driver
chcr	1.0.0.0	Crypto Co-processor for Chelsio Terminator cards.
padlock-aes		VIA PadLock AES algorithm support
padlock-sha		VIA PadLock SHA1/SHA256 algorithms support.
qat_c3xxx	0.6.0	Intel(R) QuickAssist Technology
qat_c3xxxvf	0.6.0	Intel(R) QuickAssist Technology
qat_c62x	0.6.0	Intel(R) QuickAssist Technology
qat_c62xvf	0.6.0	Intel(R) QuickAssist Technology
intel_qat	0.6.0	Intel(R) QuickAssist Technology
qat_dh895xcc	0.6.0	Intel(R) QuickAssist Technology
qat_dh895xccvf	0.6.0	Intel(R) QuickAssist Technology
virtio_crypto		virtio crypto device driver

dax Drivers in UEK R6 (x86_64)

Driver	Version	Description
device_dax		
dax_hmem		
kmem		
dax_pmem		
dax_pmem_compat		
dax_pmem_core		

dca Drivers in UEK R6 (x86_64)

Driver	Version	Description
dca	1.12.1	

devfreq Drivers in UEK R6 (x86_64)

Driver	Version	Description
governor_simpleondemand		

dma Drivers in UEK R6 (x86_64)

Driver	Version	Description
dw_dmac		Synopsys DesignWare DMA Controller platform driver
idma64		iDMA64 core driver
ioatdma	5.00	

edac Drivers in UEK R6 (x86_64)

Driver	Version	Description
amd64_edac_mod		MC support for AMD64 memory controllers - 3.5.0
e752x_edac		MC support for Intel e752x/3100 memory controllers
edac_mce_amd		AMD MCE decoder
i10nm_edac		MC Driver for Intel 10nm server processors
i3000_edac		MC support for Intel 3000 memory hub controllers
i3200_edac		MC support for Intel 3200 memory hub controllers
i5000_edac		MC Driver for Intel I5000 memory controllers - Ver: 2.0.12
i5100_edac		MC Driver for Intel I5100 memory controllers
i5400_edac		MC Driver for Intel I5400 memory controllers - Ver: 1.0.0
i7300_edac		MC Driver for Intel I7300 memory controllers - Ver: 1.0.0
i7core_edac		MC Driver for Intel i7 Core memory controllers - Ver: 1.0.0
i82975x_edac		MC support for Intel 82975 memory hub controllers
ie31200_edac		MC support for Intel Processor E31200 memory hub controllers
pnd2_edac		MC Driver for Intel SoC using Pondicherry memory controller

Driver	Version	Description
sb_edac		MC Driver for Intel Sandy Bridge and Ivy Bridge memory controllers - Ver: 1.1.2
skx_edac		MC Driver for Intel Skylake server processors
x38_edac		MC support for Intel X38 memory hub controllers

firewire Drivers in UEK R6 (x86_64)

Driver	Version	Description
firewire-core		Core IEEE1394 transaction logic
firewire-net		IP over IEEE1394 as per RFC 2734/3146
firewire-ohci		Driver for PCI OHCI IEEE1394 controllers
firewire-sbp2		SCSI over IEEE1394

firmware Drivers in UEK R6 (x86_64)

Driver	Version	Description
edd	0.16	sysfs interface to BIOS EDD information
iscsi_ibft	0.5.0	sysfs interface to BIOS iBFT information
qemu_fw_cfg		QEMU fw_cfg sysfs support

gpio Drivers in UEK R6 (x86_64)

Driver	Version	Description
gpio-amdpt		AMD Promontory GPIO Driver
gpio-generic		Driver for basic memory-mapped GPIO controllers
gpio-ich		GPIO interface for Intel ICH series
gpio-viperboard		GPIO driver for Nano River Techs Viperboard

gpu Drivers in UEK R6 (x86_64)

Driver	Version	Description
amdgpu		AMD GPU

Driver	Version	Description
ast		AST
bochs-drm		
cirrus		
drm		DRM shared core routines DRM bridge infrastructure DRM panel infrastructure
drm_kms_helper		DRM KMS helper
drm_vram_helper		DRM VRAM memory-management helpers
gma500_gfx		DRM driver for the Intel GMA500, GMA600, GMA3600, GMA3650
ch7006		Chrontel ch7006 TV encoder driver
sil164		Silicon Image sil164 TMDS transmitter driver
tda998x		NXP Semiconductors TDA998X HDMI Encoder
i915		Intel Graphics
mgag200		MGA G200 SE
nouveau		nVidia Riva/TNT/GeForce/Quadro/ Tesla/Tegra K1+
qxl		RH QXL
radeon		ATI Radeon
gpu-sched		DRM GPU scheduler
ttm		TTM memory manager subsystem (for DRM device)
udl		
vgem		Virtual GEM provider
virtio-gpu		Virtio GPU driver
vkms		Virtual Kernel Mode Setting
vmwgfx	2.15.0.0	Standalone drm driver for the VMware SVGA device

hid Drivers in UEK R6 (x86_64)

Driver	Version	Description
hid-alps		ALPS HID driver
hid-appleir		HID Apple IR remote controls
hid-asus		Asus HID Keyboard and TouchPad
hid-aureal		
hid-axff		Force feedback support for ACRUX game controllers

Driver	Version	Description
hid-betopff		
hid-cmedia		CM6533 HID jack controls
hid-corsair		HID driver for Corsair devices
hid-cp2112		Silicon Labs HID USB to SMBus master bridge
hid-dr		
hid-elan		Driver for HID ELAN Touchpads
hid-elecom		
hid-elo		
hid-emsff		
hid-gaff		
hid-gembird		HID Gembird joypad driver
hid-gfrm		Google Fiber TV Box remote control driver
hid-gt683r		MSI GT683R led driver
hid-gyration		
hid-holtek-kbd		
hid-holtek-mouse		
hid-holtekff		Force feedback support for Holtek On Line Grip based devices
hid-hyperv		Microsoft Hyper-V Synthetic HID Driver
hid-icade		ION iCade input driver
hid-ite		
hid-jabra		Jabra USB HID Driver
hid-keytouch		
hid-kye		
hid-lcpower		
hid-led		Simple USB RGB LED driver
hid-lenovo		
hid-logitech-dj		
hid-logitech-hidpp		
hid-multitouch		HID multitouch panels
hid-nti		HID driver for Network Technologies USB-SUN keyboard adapter
hid-ortek		
hid-penmount		PenMount HID TouchScreen driver
hid-petalynx		

Driver	Version	Description
hid-picolcd		Minibox graphics PicoLCD Driver
hid-pl		
hid-primax		
hid-prodikeys		
hid-rmi		RMI HID driver
hid-roccat-arvo		USB Roccat Arvo driver
hid-roccat-common		USB Roccat common driver
hid-roccat-isku		USB Roccat Isku/FX driver
hid-roccat-kone		USB Roccat Kone driver
hid-roccat-koneplus		USB Roccat Kone[+]/XTD driver
hid-roccat-konepure		USB Roccat KonePure/Optical driver
hid-roccat-kovaplus		USB Roccat Kova[+] driver
hid-roccat-lua		USB Roccat Lua driver
hid-roccat-pyra		USB Roccat Pyra driver
hid-roccat-ryos		USB Roccat Ryos MK/Glow/Pro driver
hid-roccat-savu		USB Roccat Savu driver
hid-roccat		USB Roccat char device
hid-saitek		
hid-samsung		
hid-sjoy		
hid-sony		
hid-speedlink		
hid-steelseries		
hid-sunplus		
hid-tivo		
hid-tmff		
hid-topseed		
hid-twinhan		
hid-uclogic		
hid-waltop		
hid-wiimote		Driver for Nintendo Wii / Wii U peripherals
hid-xinmo		
hid-zpff		
hid-zydacron		
i2c-hid		HID over I2C core driver

Driver	Version	Description
uhid		User-space I/O driver support for HID subsystem
wacom	v2.00	USB Wacom tablet driver

hv Drivers in UEK R6 (x86_64)

Driver	Version	Description
hv_balloon		Hyper-V Balloon
hv_utils		Hyper-V Utilities
hv_vmbus		Microsoft Hyper-V VMBus Driver

hwmon Drivers in UEK R6 (x86_64)

Driver	Version	Description
abituguru		Abit uGuru Sensor device
abituguru3		Abit uGuru3 Sensor device
acpi_power_meter		ACPI 4.0 power meter driver
ad7414		AD7414 driver
ad7418	0.4	AD7416/17/18 driver
adc128d818		Driver for ADC128D818
adm1021		adm1021 driver
adm1025		ADM1025 driver
adm1026		ADM1026 driver
adm1029		adm1029 driver
adm1031		ADM1031/ADM1030 driver
adm9240		ADM9240/DS1780/LM81 driver
ads7828		Driver for TI ADS7828 A/D converter and compatibles
adt7410		ADT7410/AD7420 driver
adt7411		ADT7411 driver
adt7462		ADT7462 driver
adt7470		ADT7470 driver
adt7475		adt7475 driver
adt7x10		ADT7410/ADT7420, ADT7310/ ADT7320 common code
amc6821		Texas Instruments amc6821 hwmon driver
applesmc		Apple SMC

Driver	Version	Description
asb100		ASB100 Bach driver
asc7621		Andigilog aSC7621 and aSC7621a driver
asus_atk0110		
atxp1	0.6.3	System voltages control via Attansic ATXP1
coretemp		Intel Core temperature monitor
dell-smm-hwmon		Dell laptop SMM BIOS hwmon driver
dme1737		DME1737 sensors
ds1621		DS1621 driver
ds620		DS620 driver
emc1403		emc1403 Thermal Driver
emc2103		SMSC EMC2103 hwmon driver
emc6w201		SMSC EMC6W201 hardware monitoring driver
f71805f		F71805F/F71872F hardware monitoring driver
f71882fg		F71882FG Hardware Monitoring Driver
f75375s		F75373/F75375/F75387 hardware monitoring driver
fam15h_power		AMD Family 15h CPU processor power monitor
fschmd		FSC Poseidon, Hermes, Scylla, Heracles, Heimdall, Hades and Syleus driver
g760a		GMT G760A driver
g762		GMT G762/G763 driver
gl518sm		GL518SM driver
gl520sm		GL520SM driver
hih6130		Honeywell HIH-6130 humidity and temperature sensor driver
hwmon-vid		hwmon-vid driver
i5500_temp		Intel 5500/5520/X58 chipset thermal sensor driver
i5k_amb		Intel 5000 chipset FB-DIMM AMB temperature sensor
ibmaem		IBM AEM power/temp/energy sensor driver
ibmpex		IBM PowerExecutive power/ temperature sensor driver
ina209		INA209 driver
ina2xx		ina2xx driver

Driver	Version	Description
it87		IT8705F/IT871xF/IT872xF hardware monitoring driver
jc42		JC42 driver
k10temp		AMD Family 10h+ CPU core temperature monitor
k8temp		AMD K8 core temperature monitor
lineage-pem		Lineage CPL PEM hardware monitoring driver
lm63		LM63 driver
lm73		LM73 driver
lm75		LM75 driver
lm77		LM77 driver
lm78		LM78/LM79 driver
lm80		LM80 driver
lm83		LM83 driver
lm85		LM85-B, LM85-C driver
lm87		LM87 driver
lm90		LM90/ADM1032 driver
lm92		LM92/MAX6635 driver
lm93		LM93 driver
lm95234		LM95233/LM95234 sensor driver
lm95241		LM95231/LM95241 sensor driver
lm95245		LM95235/LM95245 sensor driver
ltc2945		LTC2945 driver
ltc4151		LTC4151 driver
ltc4215		LTC4215 driver
ltc4222		LTC4222 driver
ltc4245		LTC4245 driver
ltc4260		LTC4260 driver
ltc4261		LTC4261 driver
max16065		MAX16065 driver
max1619		MAX1619 sensor driver
max1668		MAX1668 remote temperature sensor driver
max197		Maxim MAX197 A/D Converter driver
max6639		max6639 driver
max6642		MAX6642 sensor driver
max6650		MAX6650 sensor driver

Driver	Version	Description
max6697		MAX6697 temperature sensor driver
mcp3021		Microchip MCP3021/MCP3221 driver
nct6683		NCT6683D driver
nct6775		Driver for NCT6775F and compatible chips
ntc_thermistor		NTC Thermistor Driver
pc87360		PC8736x hardware monitor
pc87427		PC87427 hardware monitoring driver
pcf8591		PCF8591 driver
adm1275		PMBus driver for Analog Devices ADM1275 and compatibles
lm25066		PMBus driver for LM25066 and compatible chips
ltc2978		PMBus driver for LTC2978 and compatible chips
max16064		PMBus driver for Maxim MAX16064
max34440		PMBus driver for Maxim MAX34440/ MAX34441
max8688		PMBus driver for Maxim MAX8688
pmbus		Generic PMBus driver
pmbus_core		PMBus core driver
tps40422		PMBus driver for TI TPS40422
ucd9000		PMBus driver for TI UCD90xxx
ucd9200		PMBus driver for TI UCD922x, UCD924x
zl6100		PMBus driver for ZL6100 and compatibles
powr1220		POWR1220 driver
sch5627		SMSC SCH5627 Hardware Monitoring Driver
sch5636		SMSC SCH5636 Hardware Monitoring Driver
sch56xx-common		SMSC SCH56xx Hardware Monitoring Common Code
sht15		Sensirion SHT15 temperature and humidity sensor driver
sht21		Sensirion SHT21 humidity and temperature sensor driver
shtc1		Sensirion SHTC1 humidity and temperature sensor driver
sis5595		SiS 5595 Sensor device
smm665		SMM665 driver

Driver	Version	Description
smsc47b397		SMSC LPC47B397 driver
smsc47m1		SMSC LPC47M1xx fan sensors driver
smsc47m192		SMSC47M192 driver
thmc50		THMC50 driver
tmp102		Texas Instruments TMP102 temperature sensor driver
tmp103		Texas Instruments TMP103 temperature sensor driver
tmp401		Texas Instruments TMP401 temperature sensor driver
tmp421		Texas Instruments TMP421/422/423/441/442 temperature sensor driver
via-cputemp		VIA CPU temperature monitor
via686a		VIA 686A Sensor device
vt1211		VT1211 sensors
vt8231		VT8231 sensors
w83627ehf		W83627EHF driver
w83627hf		W83627HF driver
w83781d		W83781D driver
w83791d		W83791D driver
w83792d		W83792AD/D driver for linux-2.6
w83793		w83793 driver
w83795		W83795G/ADG hardware monitoring driver
w83l785ts		W83L785TS-S driver
w83l786ng		w83l786ng driver

i2c Drivers in UEK R6 (x86_64)

Driver	Version	Description
i2c-algo-bit		I2C-Bus bit-banging algorithm
i2c-algo-pca		I2C-Bus PCA9564/PCA9665 algorithm
i2c-amd756-s4882		S4882 SMBus multiplexing
i2c-amd756		AMD756/766/768/8111 and nVidia nForce SMBus driver
i2c-amd8111		AMD8111 SMBus 2.0 driver
i2c-cbus-gpio		CBUS I2C driver

Driver	Version	Description
i2c-designware-core		Synopsys DesignWare I2C bus adapter core Synopsys DesignWare I2C bus master adapter
i2c-designware-pci		Synopsys DesignWare PCI I2C bus adapter
i2c-designware-platform		Synopsys DesignWare I2C bus adapter
i2c-diolan-u2c		i2c-diolan-u2c driver
i2c-gpio		Platform-independent bitbanging I2C driver
i2c-i801		I801 SMBus driver
i2c-isch		Intel SCH SMBus driver
i2c-ismt		Intel SMBus Message Transport (iSMT) driver
i2c-mlxcpld		Mellanox I2C-CPLD controller driver
i2c-nforce2-s4985		S4985 SMBus multiplexing
i2c-nforce2		nForce2/3/4/5xx SMBus driver
i2c-ocores		OpenCores I2C bus driver
i2c-parport-light		I2C bus over parallel port (light)
i2c-parport		I2C bus over parallel port
i2c-pca-platform		I2C-PCA9564/PCA9665 platform driver
i2c-piix4		PIIX4 SMBus driver
i2c-robotfuzz-osif		RobotFuzz OSIF driver
i2c-scmi		ACPI SMBus CMI driver
i2c-simtec		Simtec Generic I2C Bus driver
i2c-sis5595		SIS5595 SMBus driver
i2c-sis630		SIS630 SMBus driver
i2c-sis96x		SiS96x SMBus driver
i2c-taos-evm		TAOS evaluation module driver
i2c-tiny-usb		i2c-tiny-usb driver v1.0
i2c-via		i2c for Via vt82c586b southbridge
i2c-viapro		vt82c596 SMBus driver
i2c-viperboard		I2C master driver for Nano River Techs Viperboard
i2c-xiic		Xilinx I2C bus driver
i2c-dev		I2C /dev entries driver
i2c-mux		I2C driver for multiplexed I2C busses
i2c-smbus		SMBus protocol extensions support
i2c-stub		I2C stub driver

Driver	Version	Description
i2c-mux-mlxcpld		Mellanox I2C-CPLD-MUX driver

iio Drivers in UEK R6 (x86_64)

Driver	Version	Description
industrialio		Industrial I/O core

infiniband Drivers in UEK R6 (x86_64)

Driver	Version	Description
ib_cm		InfiniBand CM
ib_core		core kernel InfiniBand API
ib_umad		InfiniBand userspace MAD packet access
ib_uverbs		InfiniBand userspace verbs access
iw_cm		iWARP CM
rdma_cm		Generic RDMA CM Agent
rdma_ucm		RDMA Userspace Connection Manager Access
resilient_rdmaip		Resilient RDMA IP
bnxt_re		Broadcom NetXtreme-C/E RoCE Driver Driver
iw_cxgb3		Chelsio T3 RDMA Driver
iw_cxgb4		Chelsio T4/T5 RDMA Driver
hfi1		Intel Omni-Path Architecture driver
i40iw		Intel(R) Ethernet Connection X722 iWARP RDMA Driver
mlx4_ib		Mellanox ConnectX HCA InfiniBand driver
mlx5_ib		Mellanox Connect-IB HCA IB driver
ib_mthca		Mellanox InfiniBand HCA low-level driver
ocrdma		Emulex OneConnect RoCE Driver 11.0.0.0
qedr		QLogic 40G/100G ROCE Driver
ib_qib		Intel IB driver
usnic_verbs		Cisco VIC (usNIC) Verbs Driver
vmw_pvrdma		VMware Paravirtual RDMA driver
rdmavt		RDMA Verbs Transport Library

Driver	Version	Description
rdma_rxe		Soft RDMA transport
ib_ipoib		IP-over-InfiniBand net driver
ib_iser		iSER (iSCSI Extensions for RDMA) Datamover
ib_isert		iSER-Target for mainline target infrastructure
opa_vnic		Intel OPA Virtual Network driver
ib_srp		InfiniBand SCSI RDMA Protocol initiator
ib_srpt		SCSI RDMA Protocol target driver

input Drivers in UEK R6 (x86_64)

Driver	Version	Description
input-polldev		Generic implementation of a polled input device
joydev		Joystick device interfaces
gpio_keys		Keyboard driver for GPIOs
gpio_keys_polled		Polled GPIO Buttons driver
matrix_keypad		GPIO Driven Matrix Keypad Driver
mcs_touchkey		Touchkey driver for MELFAS MCS5000/5080 controller
qt1070		Driver for AT42QT1070 QTouch sensor
qt2160		Driver for AT42QT2160 Touch Sensor
tca6416-keypad		Keypad driver over tca6146 IO expander
matrix-keymap		
apanel		Fujitsu Application Panel driver
ati_remote2		ATI/Philips USB RF remote driver
atlas_btns		Atlas button driver
cm109		CM109 phone driver
gp2ap002a00f		Sharp GP2AP002A00F I2C Proximity/ Opto sensor driver
keyspan_remote		Driver for the USB Keyspan remote control.
pcspkr		PC Speaker beeper driver
powermate		Griffin Technology, Inc PowerMate driver
rotary_encoder		GPIO rotary encoder driver

Driver	Version	Description
uinput		User level driver support for input subsystem
xen-kbdfront		Xen virtual keyboard/pointer device frontend
yealink		Yealink phone driver
appletouch		Apple PowerBook and MacBook USB touchpad driver
bcm5974		Apple USB BCM5974 multitouch driver
cyapatp		Cypress APA I2C Trackpad Driver
elan_i2c		Elan I2C/SMBus Touchpad driver
gpio_mouse		GPIO mouse driver
sermouse		Serial mouse driver
synaptics_i2c		Synaptics I2C touchpad driver
synaptics_usb		Synaptics USB device driver
vsxxxaa		Driver for DEC VSXXX-AA and -GA mice and VSXXX-AB tablet
rmi_core		RMI bus RMI F03 module
altera_ps2		Altera University Program PS2 controller driver
arc_ps2		ARC PS/2 Driver
hyperv-keyboard		Microsoft Hyper-V Synthetic Keyboard Driver
ps2mult		TQC PS/2 Multiplexer driver
serio_raw		Raw serio driver
sparse-keymap		Generic support for sparse keymaps
acecad		USB Acecad Flair tablet driver
aiptek		Aiptek HyperPen USB Tablet Driver
gtco		GTCO digitizer USB driver
hanwang		USB Hanwang tablet driver
kbtab		USB KB Gear JamStudio Tablet driver
wacom_serial4		Wacom protocol 4 serial tablet driver
ad7879-i2c		AD7879(-1) touchscreen I2C bus driver
ad7879		AD7879(-1) touchscreen Driver
atmel_mxt_ts		Atmel maXTouch Touchscreen driver
bu21013_ts		bu21013 touch screen controller driver
cy8ctmg110_ts		cy8ctmg110 TouchScreen Driver
dynapro		Dynapro serial touchscreen driver

Driver	Version	Description
eeti_ts		EETI Touchscreen driver
elo		Elo serial touchscreen driver
fujitsu_ts		Fujitsu serial touchscreen driver
gunze		Gunze AHL-51S touchscreen driver
hampshire		Hampshire serial touchscreen driver
inexio		iNexio serial touchscreen driver
mk712		ICS MicroClock MK712 TouchScreen driver
mtouch		MicroTouch serial touchscreen driver
penmount		PenMount serial touchscreen driver
touchit213		Sahara TouchIT-213 serial touchscreen driver
touchright		Touchright serial touchscreen driver
touchwin		Touchwindow serial touchscreen driver
tsc2007		TSC2007 TouchScreen Driver
usbtouchscreen		USB Touchscreen Driver
wacom_i2c		WACOM EMR I2C Driver
wacom_w8001		Wacom W8001 serial touchscreen driver

isdn Drivers in UEK R6 (x86_64)

Driver	Version	Description
capi		CAPI4Linux: Userspace /dev/capi20 interface
kernelcapi		CAPI4Linux: kernel CAPI layer
avmfritz	2.3	
hfcmulti	2.03	
hfcpci		
hfcsusb		
isdnhdlc		General purpose ISDN HDLC decoder
mISDNinfineon	1.0	
mISDNipac	2.0	
mISDNisar	2.1	
netjet	2.0	
speedfax	2.0	
w6692	2.0	

Driver	Version	Description
l1oip		
mISDN_core		
mISDN_dsp		

leds Drivers in UEK R6 (x86_64)

Driver	Version	Description
leds-blinkm		BlinkM RGB LED driver
leds-clevo-mail		Clevo mail LED driver
leds-lm3530		Back Light driver for LM3530
leds-lp3944		LP3944 Fun Light Chip
leds-lp5521		LP5521 LED engine
leds-lp5523		LP5523 LED engine
leds-lp5562		Texas Instruments LP5562 LED Driver
leds-lp55xx-common		LP55xx Common Driver
leds-lp8501		Texas Instruments LP8501 LED driver
leds-mlxcpld		Mellanox board LED driver
leds-ss4200		Intel NAS/Home Server ICH7 GPIO Driver
ledtrig-audio		LED trigger for audio mute control
ledtrig-backlight		Backlight emulation LED trigger
ledtrig-camera		LED Trigger for Camera Flash/Torch Control
ledtrig-default-on		Default-ON LED trigger
ledtrig-gpio		GPIO LED trigger
ledtrig-heartbeat		Heartbeat LED trigger
ledtrig-oneshot		One-shot LED trigger
ledtrig-timer		Timer LED trigger
ledtrig-transient		Transient LED trigger

md Drivers in UEK R6 (x86_64)

Driver	Version	Description
dm-bio-prison		device-mapper bio prison
dm-bufio		device-mapper buffered I/O library
dm-cache-smq		smq cache policy

Driver	Version	Description
dm-cache		device-mapper cache target
dm-crypt		device-mapper target for transparent encryption / decryption
dm-delay		device-mapper delay target
dm-era		device-mapper era target
dm-flakey		device-mapper flakey target
dm-integrity		device-mapper target for integrity tags extension
dm-log-userspace		device-mapper userspace dirty log link
dm-log-writes		device-mapper log writes target
dm-log		device-mapper dirty region log
dm-mirror		device-mapper mirror target
dm-mod		device-mapper driver
dm-multipath		device-mapper multipath target
dm-queue-length		(C) Copyright IBM Corp. 2004,2005 All Rights Reserved. device-mapper path selector to balance the number of in-flight I/Os
dm-raid		device-mapper raid0/1/10/4/5/6 target
dm-region-hash		device-mapper region hash
dm-round-robin		device-mapper round-robin multipath path selector
dm-service-time		device-mapper throughput oriented path selector
dm-snapshot		device-mapper snapshot target
dm-switch		device-mapper dynamic path switching target
dm-thin-pool		device-mapper thin provisioning target
dm-verity		device-mapper target for transparent disk integrity checking
dm-writecache		device-mapper writecache target
dm-zero		device-mapper dummy target returning zeros
dm-zoned		device-mapper target for zoned block devices
faulty		Fault injection personality for MD
linear		Linear device concatenation personality for MD
md-cluster		Clustering support for MD
dm-persistent-data		Immutable metadata library for dm
raid0		RAID0 (striping) personality for MD

Driver	Version	Description
raid1		RAID1 (mirroring) personality for MD
raid10		RAID10 (striped mirror) personality for MD
raid456		RAID4/5/6 (striping with parity) personality for MD

media Drivers in UEK R6 (x86_64)

Driver	Version	Description
b2c2-flexcop		B2C2 FlexcopII/II(b)/III digital TV receiver chip
cx2341x		cx23415/6/8 driver
cypress_firmware		Cypress firmware download
saa7146		driver for generic saa7146-based hardware
saa7146_vv		video4linux driver for saa7146-based hardware
smsdvb		SMS DVB subsystem adaptation module
smsmdtv		Siano MDTV Core module
tveeprom		i2c Hauppauge eeprom decoder driver
videobuf2-common		Media buffer core framework
videobuf2-dma-sg		dma scatter/gather memory handling routines for videobuf2
videobuf2-dvb		
videobuf2-memops		common memory handling routines for videobuf2
videobuf2-v4l2		Driver helper framework for Video for Linux 2
videobuf2-vmalloc		vmalloc memory handling routines for videobuf2
dvb-core		DVB Core Driver
a8293		Allegro A8293 SEC driver
af9013		Afatech AF9013 DVB-T demodulator driver
af9033		Afatech AF9033 DVB-T demodulator driver
atbm8830		AltoBeam ATBM8830/8831 GB20600 demodulator driver
au8522_common		Auvitek AU8522 QAM-B/ATSC Demodulator driver
au8522_decoder		

Driver	Version	Description
au8522_dig		Auvitek AU8522 QAM-B/ATSC Demodulator driver
bcm3510		Broadcom BCM3510 ATSC (8VSB/ 16VSB & ITU J83 AnnexB FEC QAM64/256) demodulator driver
cx22700		Conexant CX22700 DVB-T Demodulator driver
cx22702		Conexant CX22702 DVB-T Demodulator driver
cx24110		Conexant CX24110 DVB-S Demodulator driver
cx24113		DVB Frontend module for Conexant CX24113/CX24128hardware
cx24116		DVB Frontend module for Conexant cx24116/cx24118 hardware
cx24117	1.1	DVB Frontend module for Conexant cx24117/cx24132 hardware
cx24120		DVB Frontend module for Conexant CX24120/CX24118 hardware
cx24123		DVB Frontend module for Conexant CX24123/CX24109/CX24113 hardware
cxd2099		Sony CXD2099AR Common Interface controller driver
cxd2820r		Sony CXD2820R demodulator driver
cxd2841er		Sony CXD2837/38/41/43/54ER DVB-C/C2/T/T2/S/S2 demodulator driver
dib0070		Driver for the DiBcom 0070 base-band RF Tuner
dib0090		Driver for the DiBcom 0090 base-band RF Tuner
dib3000mb		DiBcom 3000M-B DVB-T demodulator
dib3000mc		Driver for the DiBcom 3000MC/P COFDM demodulator
dib7000m		Driver for the DiBcom 7000MA/MB/PA/PB/MC COFDM demodulator
dib7000p		Driver for the DiBcom 7000PC COFDM demodulator
dib8000		Driver for the DiBcom 8000 ISDB-T demodulator
dibx000_common		Common function the DiBcom demodulator family
drx39xyj		Micronas DRX39xxj Frontend
drxd		DRXD driver
drxk		DRX-K driver
ds3000		DVB Frontend module for Montage Technology DS3000 hardware

Driver	Version	Description
dvb-pll		dvb pll library
dvb_dummy_fe		DVB DUMMY Frontend
ec100		E3C EC100 DVB-T demodulator driver
gp8psk-fe	1.1	Frontend Driver for Genpix DVB-S
isl6405		Driver for lnb supply and control ic isl6405
isl6421		Driver for lnb supply and control ic isl6421
isl6423		ISL6423 SEC
itd1000		Integrant ITD1000 driver
ix2505v		DVB IX2505V tuner driver
l64781		LSI L64781 DVB-T Demodulator driver
lg2160	0.3	LG Electronics LG216x ATSC/MH Demodulator Driver
lgdt3305	0.2	LG Electronics LGDT3304/5 ATSC/ QAM-B Demodulator Driver
lgdt3306a	0.2	LG Electronics LGDT3306A ATSC/ QAM-B Demodulator Driver
lgdt330x		LGDT330X (ATSC 8VSB & ITU-T J.83 AnnexB 64/256 QAM) Demodulator Driver
lgs8gxx		Legend Silicon LGS8913/LGS8GXX DMB-TH demodulator driver
lnbh25		ST LNBH25 driver
lnbp21		Driver for lnb supply and control ic lnbp21, lnbh24
lnbp22		Driver for lnb supply and control ic lnbp22
m88ds3103		Montage Technology M88DS3103 DVB-S/S2 demodulator driver
m88rs2000	1.13	M88RS2000 DVB-S Demodulator driver
mb86a16		
mb86a20s		DVB Frontend module for Fujitsu mb86A20s hardware
mn88472		Panasonic MN88472 DVB-T/T2/C demodulator driver
mn88473		Panasonic MN88473 DVB-T/T2/C demodulator driver
mt312		Zarlink VP310/MT312/ZL10313 DVB-S Demodulator driver
mt352		Zarlink MT352 DVB-T Demodulator driver

Driver	Version	Description
mxl5xx		MaxLinear MxL5xx DVB-S/S2 tuner-demodulator driver
nxt200x		NXT200X (ATSC 8VSB & ITU-T J.83 AnnexB 64/256 QAM) Demodulator Driver
nxt6000		NxtWave NXT6000 DVB-T demodulator driver
or51132		OR51132 ATSC [pcHDTV HD-3000] (8VSB & ITU J83 AnnexB FEC QAM64/256) Demodulator Driver
or51211		Oren OR51211 VSB [pcHDTV HD-2000] Demodulator Driver
rtl2830		Realtek RTL2830 DVB-T demodulator driver
rtl2832		Realtek RTL2832 DVB-T demodulator driver
s5h1409		Samsung S5H1409 QAM-B/ATSC Demodulator driver
s5h1411		Samsung S5H1411 QAM-B/ATSC Demodulator driver
s5h1420		Samsung S5H1420/PnpNetwork PN1010 DVB-S Demodulator driver
s921		DVB Frontend module for Sharp S921 hardware
si2165		Silicon Labs Si2165 DVB-C/-T Demodulator driver
si2168		Silicon Labs Si2168 DVB-T/T2/C demodulator driver
si21xx		SL SI21XX DVB Demodulator driver
sp2		CIMaX SP2/HF CI driver
sp8870		Spase SP8870 DVB-T Demodulator driver
sp887x		Spase sp887x DVB-T demodulator driver
stb0899		STB0899 Multi-Std frontend
stb6000		DVB STB6000 driver
stb6100		STB6100 Silicon tuner
stv0288		ST STV0288 DVB Demodulator driver
stv0297		ST STV0297 DVB-C Demodulator driver
stv0299		ST STV0299 DVB Demodulator driver
stv0367		ST STV0367 DVB-C/T demodulator driver
stv0900		ST STV0900 frontend
stv090x		STV090x Multi-Std Broadcast frontend

Driver	Version	Description
stv0910		ST STV0910 multistandard frontend driver
stv6110		ST STV6110 driver
stv6110x		STV6110x Silicon tuner
stv6111		ST STV6111 satellite tuner driver
tc90522		Toshiba TC90522 frontend
tda10021		Philips TDA10021 DVB-C demodulator driver
tda10023		Philips TDA10023 DVB-C demodulator driver
tda10048		NXP TDA10048HN DVB-T Demodulator driver
tda1004x		Philips TDA10045H & TDA10046H DVB-T Demodulator
tda10071		NXP TDA10071 DVB-S/S2 demodulator driver
tda10086		Philips TDA10086 DVB-S Demodulator
tda18271c2dd		TDA18271C2 driver
tda665x		TDA665x driver
tda8083		Philips TDA8083 DVB-S Demodulator
tda8261		TDA8261 8PSK/QPSK Tuner
tda826x		DVB TDA826x driver
ts2020		Montage Technology TS2020 - Silicon tuner driver module
tua6100		DVB tua6100 driver
ves1820		VLSI VES1820 DVB-C Demodulator driver
ves1x93		VLSI VES1x93 DVB-S Demodulator driver
zl10036		DVB ZL10036 driver
zl10039		Zarlink ZL10039 DVB-S tuner driver
zl10353		Zarlink ZL10353 DVB-T demodulator driver
firedtv		FireDTV DVB Driver
cs3308		i2c device driver for cs3308 8-channel volume control
cs5345		i2c device driver for cs5345 Audio ADC
cs53l32a		i2c device driver for cs53l32a Audio ADC
cx25840		Conexant CX25840 audio/video decoder driver

Driver	Version	Description
ir-kbd-i2c		input driver for i2c IR remote controls
m52790		i2c device driver for m52790 A/V switch
msp3400		device driver for msp34xx TV sound processor
mt9m111		Micron/Aptina MT9M111/MT9M112/ MT9M131 Camera driver
saa6588		v4l2 driver module for SAA6588 RDS decoder
saa6752hs		device driver for saa6752hs MPEG2 encoder
saa7115		Philips SAA7111/SAA7113/SAA7114/ SAA7115/SAA7118 video decoder driver
saa7127		Philips SAA7127/9 video encoder driver
saa717x		Philips SAA717x audio/video decoder driver
tda7432		bttv driver for the tda7432 audio processor chip
tvaudio		device driver for various i2c TV sound decoder / audiomux chips
upd64031a		uPD64031A driver
upd64083		uPD64083 driver
vp27smpx		vp27smpx driver
wm8739		wm8739 driver
wm8775		wm8775 driver
mc		Device node registration for media drivers
smssdio		Siano SMS1xxx SDIO driver
b2c2-flexcop-pci		flexcop-pci
bt878		
bttv	0.9.19	bttv - v4l/v4l2 driver module for bt848/878 based cards
dst		DST DVB-S/T/C/ATSC Combo Frontend driver
dst_ca		DST DVB-S/T/C Combo CA driver
dvb-bt8xx		Bt8xx based DVB adapter driver
cx18-alsa	1.5.1	CX23418 ALSA Interface
cx18	1.5.1	CX23418 driver
altera-ci		altera FPGA CI module

Driver	Version	Description
cx23885	0.0.4	v4l2 driver module for cx23885 based TV cards Driver for cx23885 based TV cards
cx88-alsa	1.0.0	ALSA driver module for cx2388x based TV cards
cx88-blackbird	1.0.0	driver for cx2388x/cx23416 based mpeg encoder cards
cx88-dvb	1.0.0	driver for cx2388x based DVB cards
cx88-vp3054-i2c		driver for cx2388x VP3054 design
cx8800	1.0.0	v4l2 driver module for cx2388x based TV cards
cx8802	1.0.0	mpeg driver for cx2388x based TV cards
cx88xx		v4l2 driver module for cx2388x based TV cards input driver for cx88 GPIO-based IR remote controls
ddbridge	0.9.33-integrated	Digital Devices PCIe Bridge
dm1105		SDMC DM1105 DVB driver
ivtv	1.4.3	CX23415/CX23416 driver
ivtvfb		
hopper		HOPPER driver
mantis		MANTIS driver
mantis_core		Mantis PCI DTV bridge driver
ngene		nGene
pluto2		Pluto2 driver
earth-pt1		Earthsoft PT1/PT2 Driver
saa7134-alsa		
saa7134-dvb		
saa7134-empress		
saa7134	0, 2, 17	v4l2 driver module for saa7130/34 based TV cards
saa7164		Driver for NXP SAA7164 based TV cards
budget-av		driver for the SAA7146 based so-called budget PCI DVB w/ analog input and CI-module (e.g. the KNC cards)
budget-ci		driver for the SAA7146 based so-called budget PCI DVB cards w/ CI-module produced by Siemens, Technotrend, Hauppauge
budget-core		

Driver	Version	Description
budget-patch		Driver for full TS modified DVB-S SAA7146+AV7110 based so-called Budget Patch cards
budget		driver for the SAA7146 based so-called budget PCI DVB cards by Siemens, Technotrend, Hauppauge
dvb-ttpci		driver for the SAA7146 based AV110 PCI DVB cards by Siemens, Technotrend, Hauppauge
ttpci-eeprom		Decode dvb_net MAC address from EEPROM of PCI DVB cards made by Siemens, Technotrend, Hauppauge
tea575x		Routines for control of TEA5757/5759 Philips AM/FM radio tuner chips
ati_remote		ATI/X10 RF USB Remote Control
ene_ir		Infrared input driver for KB3926B/C/D/E/F (aka ENE0100/ ENE0200/ENE0201/ENE0202) CIR port
fintek-cir		Fintek LPC SuperIO Consumer IR Transceiver driver
iguanair		IguanaWorks USB IR Transceiver
imon	0.9.4	Driver for SoundGraph iMON MultiMedia IR/Display
imon_raw		Early raw iMON IR devices
ir-imon-decoder		iMON IR protocol decoder
ir-jvc-decoder		JVC IR protocol decoder
ir-mce_kbd-decoder		MCE Keyboard/mouse IR protocol decoder
ir-nec-decoder		NEC IR protocol decoder
ir-rc5-decoder		RC5(x/sz) IR protocol decoder
ir-rc6-decoder		RC6 IR protocol decoder
ir-sanyo-decoder		SANYO IR protocol decoder
ir-sharp-decoder		Sharp IR protocol decoder
ir-sony-decoder		Sony IR protocol decoder
ir-xmp-decoder		XMP IR protocol decoder
ite-cir		ITE Tech Inc. IT8712F/ITE8512F CIR driver
rc-adstech-dvb-t-pci		
rc-alink-dtu-m		
rc-anysee		
rc-apac-viewcomp		
rc-astrometa-t2hybrid		
rc-asus-pc39		

Driver	Version	Description
rc-asus-ps3-100		
rc-ati-tv-wonder-hd-600		
rc-ati-x10		
rc-avermedia-a16d		
rc-avermedia-cardbus		
rc-avermedia-dvbt		
rc-avermedia-m135a		
rc-avermedia-m733a-rm-k6		
rc-avermedia-rm-ks		
rc-avermedia		
rc-avertv-303		
rc-azurewave-ad-tu700		
rc-behold-columbus		
rc-behold		
rc-budget-ci-old		
rc-cec		
rc-cinergy-1400		
rc-cinergy		
rc-d680-dmb		
rc-delock-61959		Delock 61959 remote keytable
rc-dib0700-nec		
rc-dib0700-rc5		
rc-digitalnow-tinytwin		
rc-digittrade		
rc-dm1105-nec		
rc-dntv-live-dvb-t		
rc-dntv-live-dvbt-pro		
rc-dtt200u		
rc-dvbsky		
rc-dvico-mce		
rc-dvico-portable		
rc-em-terratec		
rc-encore-enltv-fm53		
rc-encore-enltv		
rc-encore-enltv2		
rc-evga-indtube		

Driver	Version	Description
rc-eztv		
rc-flydvb		
rc-flyvideo		
rc-fusionhdtv-mce		
rc-gadmei-rm008z		
rc-geekbox		
rc-genius-tvgo-a11mce		
rc-gotview7135		
rc-hauppauge		
rc-hisi-poplar		
rc-hisi-tv-demo		
rc-imon-mce		
rc-imon-pad		
rc-imon-rsc		
rc-iodata-bctv7e		
rc-it913x-v1		
rc-it913x-v2		
rc-kaiomy		
rc-khadas		
rc-kworld-315u		
rc-kworld-pc150u		
rc-kworld-plus-tv-analog		
rc-leadtek-y04g0051		
rc-lme2510		
rc-manli		
rc-medion-x10-digitainer		Medion X10 RF remote keytable (Digitainer variant)
rc-medion-x10-or2x		Medion X10 OR22/OR24 RF remote keytable
rc-medion-x10		
rc-msi-digivox-ii		
rc-msi-digivox-iii		
rc-msi-tvanywhere-plus		
rc-msi-tvanywhere		
rc-nebula		
rc-nec-terratec-cinergy-xs		
rc-norwood		

Driver	Version	Description
rc-npgtech		
rc-odroid		
rc-pctv-sedna		
rc-pinnacle-color		
rc-pinnacle-grey		
rc-pinnacle-pctv-hd		
rc-pixelview-002t		
rc-pixelview-mk12		
rc-pixelview-new		
rc-pixelview		
rc-powercolor-real-angel		
rc-proteus-2309		
rc-purpletv		
rc-pv951		
rc-rc6-mce		
rc-real-audio-220-32-keys		
rc-reddo		
rc-snapstream-firefly		
rc-streamzap		
rc-su3000		
rc-tango		
rc-tanix-tx3mini		
rc-tanix-tx5max		
rc-tbs-nec		
rc-technisat-ts35		
rc-technisat-usb2		
rc-terratec-cinergy-c-pci		
rc-terratec-cinergy-s2-hd		
rc-terratec-cinergy-xs		
rc-terratec-slim-2		
rc-terratec-slim		
rc-tevii-nec		
rc-tivo		
rc-total-media-in-hand-02		
rc-total-media-in-hand		
rc-trekstor		

Driver	Version	Description
rc-tt-1500		
rc-twinhan-dtv-cab-ci		
rc-twinhan1027		
rc-videomate-m1f		
rc-videomate-s350		
rc-videomate-tv-pvr		
rc-videostrong-kii-pro		
rc-wetek-hub		
rc-wetek-play2		
rc-winfast-usbii-deluxe		
rc-winfast		
rc-x96max		
rc-xbox-dvd		
rc-zx-irdec		
mceusb		Windows Media Center Ed. eHome Infrared Transceiver device driver
nuvoton-cir		Nuvoton W83667HG-A & W83677HG-I CIR driver
rc-core		
rc-loopback		Loopback device for rc-core debugging
redrat3		RedRat3 USB IR Transceiver Driver
serial_ir		Infra-red receiver driver for serial ports.
sir_ir		Infrared receiver driver for SIR type serial ports
streamzap		Streamzap Remote Control driver
ttusbir		TechnoTrend USB IR Receiver
winbond-cir		Winbond SuperI/O Consumer IR Driver
e4000		Elonics E4000 silicon tuner driver
fc0011		Fitipower FC0011 silicon tuner driver
fc0012	0.6	Fitipower FC0012 silicon tuner driver
fc0013	0.2	Fitipower FC0013 silicon tuner driver
fc2580		FCI FC2580 silicon tuner driver
it913x		ITE IT913X silicon tuner driver
m88rs6000t		Montage M88RS6000 internal tuner driver
max2165		Maxim MAX2165 silicon tuner driver

Driver	Version	Description
mc44s803		Freescale MC44S803 silicon tuner driver
mt2060		Microtune MT2060 silicon tuner driver
mt2063		MT2063 Silicon tuner
mt20xx		Microtune tuner driver
mt2131		Microtune MT2131 silicon tuner driver
mt2266		Microtune MT2266 silicon tuner driver
mxl5005s		MaxLinear MXL5005S silicon tuner driver
mxl5007t	0.2	MaxLinear MxL5007T Silicon IC tuner driver
qm1d1b0004		Sharp QM1D1B0004
qm1d1c0042		Sharp QM1D1C0042 tuner
qt1010	0.1	Quantek QT1010 silicon tuner driver
r820t		Rafael Micro r820t silicon tuner driver
si2157		Silicon Labs Si2141/ Si2146/2147/2148/2157/2158 silicon tuner driver
tda18212		NXP TDA18212HN silicon tuner driver
tda18218		NXP TDA18218HN silicon tuner driver
tda18250		NXP TDA18250 silicon tuner driver
tda18271	0.4	NXP TDA18271HD analog / digital tuner driver
tda827x		DVB TDA827x driver
tda8290		Philips/NXP TDA8290/TDA8295 analog IF demodulator driver
tda9887		
tea5761		Philips TEA5761 FM tuner driver
tea5767		Philips TEA5767 FM tuner driver
tua9001		Infineon TUA9001 silicon tuner driver
tuner-simple		Simple 4-control-bytes style tuner driver
tuner-types		Simple tuner device type database
tuner-xc2028		Xceive xc2028/xc3028 tuner driver
xc4000		Xceive xc4000 silicon tuner driver
xc5000		Xceive xc5000 silicon tuner driver

Driver	Version	Description
au0828	0.0.3	Driver for Auvitek AU0828 based products
b2c2-flexcop-usb		Technisat/B2C2 FlexCop II/IIb/III Digital TV USB Driver
cx231xx-alsa		Cx231xx Audio driver
cx231xx-dvb		driver for cx231xx based DVB cards
cx231xx	0.0.3	Conexant cx231xx based USB video device driver
dvb-usb-a800	1.0	AVerMedia AverTV DVB-T USB 2.0 (A800)
dvb-usb-af9005-remote	1.0	Standard remote control decoder for Afatech 9005 DVB-T USB1.1 stick
dvb-usb-af9005	1.0	Driver for Afatech 9005 DVB-T USB1.1 stick
dvb-usb-az6027	1.0	Driver for AZUREWAVE DVB-S/S2 USB2.0 (AZ6027)
dvb-usb-cinergyT2		Terratec Cinergy T2 DVB-T driver
dvb-usb-cxusb		Driver for Conexant USB2.0 hybrid reference design
dvb-usb-dib0700	1.0	Driver for devices based on DiBcom DiB0700 - USB bridge
dvb-usb-dibusb-common		
dvb-usb-dibusb-mb	1.0	Driver for DiBcom USB DVB-T devices (DiB3000M-B based)
dvb-usb-dibusb-mc-common		
dvb-usb-dibusb-mc	1.0	Driver for DiBcom USB2.0 DVB-T (DiB3000M-C/P based) devices
dvb-usb-digitv	1.0-alpha	Driver for Nebula Electronics uDigiTV DVB-T USB2.0
dvb-usb-dtt200u	1.0	Driver for the WideView/Yakumo/ Hama/Typhoon/Club3D/Miglia DVB-T USB2.0 devices
dvb-usb-dtv5100		AME DTV-5100 USB2.0 DVB-T
dvb-usb-dw2102	0.1	Driver for DVBWorld DVB-S 2101, 2102, DVB-S2 2104, DVB-C 3101 USB2.0, TeVii S421, S480, S482, S600, S630, S632, S650, TeVii S660, S662, Prof 1100, 7500 USB2.0, Geniatech SU3000, T220, TechnoTrend S2-4600, Terratec Cinergy S2 devices
dvb-usb-gp8psk	1.1	Driver for Genpix DVB-S
dvb-usb-m920x	0.1	DVB Driver for ULI M920x
dvb-usb-nova-t-usb2	1.0	Hauppauge WinTV-NOVA-T usb2
dvb-usb-opera	0.1	Driver for Opera1 DVB-S device
dvb-usb-pctv452e		Pinnacle PCTV HDTV USB DVB / TT connect S2-3600 Driver

Driver	Version	Description
dvb-usb-technisat-usb2	1.0	Driver for Technisat DVB-S/S2 USB 2.0 device
dvb-usb-ttusb2	1.0	Driver for Pinnacle PCTV 400e DVB-S USB2.0
dvb-usb-umt-010	1.0	Driver for HanfTek UMT 010 USB2.0 DVB-T device
dvb-usb-vp702x	1.0	Driver for Twinhan StarBox DVB-S USB2.0 and clones
dvb-usb-vp7045	1.0	Driver for Twinhan MagicBox/Alpha and DNTV tinyUSB2 DVB-T USB2.0
dvb-usb	1.0	A library module containing commonly used USB and DVB function USB DVB devices
dvb-usb-af9015		Afatech AF9015 driver
dvb-usb-af9035		Afatech AF9035 driver
dvb-usb-anysee		Driver Anysee E30 DVB-C & DVB-T USB2.0
dvb-usb-au6610	0.1	Driver for Alcor Micro AU6610 DVB-T USB2.0
dvb-usb-az6007	2.0	Driver for AzureWave 6007 DVB-C/T USB2.0 and clones
dvb-usb-ce6230		Intel CE6230 driver
dvb-usb-dvbsky		Driver for DVBSky USB
dvb-usb-ec168		E3C EC168 driver
dvb-usb-gl861	0.1	Driver MSI Mega Sky 580 DVB-T USB2.0 / GL861
dvb-usb-lmedm04	2.07	LME2510(C) DVB-S USB2.0
dvb-usb-mxl111sf	1.0	Driver for MaxLinear MxL111SF
dvb-usb-rtl28xxu		Realtek RTL28xxU DVB USB driver
dvb_usb_v2	2.0	DVB USB common
mxl111sf-demod	0.1	MaxLinear MxL111SF DVB-T demodulator driver
mxl111sf-tuner	0.1	MaxLinear MxL111SF CMOS tuner driver
em28xx-alsa	0.2.2	Empia em28xx device driver - audio interface
em28xx-dvb	0.2.2	Empia em28xx device driver - digital TV interface
em28xx-rc	0.2.2	Empia em28xx device driver - input interface
em28xx	0.2.2	Empia em28xx device driver
gspca_gl860		Genesys Logic USB PC Camera Driver
gspca_benq		Benq DC E300 USB Camera Driver
gspca_conex		GSPCA USB Conexant Camera Driver

Driver	Version	Description
gspca_cpia1		Vision CPiA
gspca_dtcs033		Scopium DTCS033 astro-cam USB Camera Driver
gspca_etoms		Etoms USB Camera Driver
gspca_finepix		Fujifilm FinePix USB V4L2 driver
gspca_jeilinj		GSPCA/JEILINJ USB Camera Driver
gspca_jl2005bcd		JL2005B/C/D USB Camera Driver
gspca_kinect		GSPCA/Kinect Sensor Device USB Camera Driver
gspca_konica		Konica chipset USB Camera Driver
gspca_main	2.14.0	GSPCA USB Camera Driver
gspca_mars		GSPCA/Mars USB Camera Driver
gspca_mr97310a		GSPCA/Mars-Semi MR97310A USB Camera Driver
gspca_nw80x		NW80x USB Camera Driver
gspca_ov519		OV519 USB Camera Driver
gspca_ov534		GSPCA/OV534 USB Camera Driver
gspca_ov534_9		GSPCA/OV534_9 USB Camera Driver
gspca_pac207		Pixart PAC207
gspca_pac7302		Pixart PAC7302
gspca_pac7311		Pixart PAC7311
gspca_se401		Endpoints se401
gspca_sn9c2028		Sonix SN9C2028 USB Camera Driver
gspca_sn9c20x		GSPCA/SN9C20X USB Camera Driver
gspca_sonixb		GSPCA/SN9C102 USB Camera Driver
gspca_sonixj		GSPCA/SONIX JPEG USB Camera Driver
gspca_spca1528		SPCA1528 USB Camera Driver
gspca_spca500		GSPCA/SPCA500 USB Camera Driver
gspca_spca501		GSPCA/SPCA501 USB Camera Driver
gspca_spca505		GSPCA/SPCA505 USB Camera Driver
gspca_spca506		GSPCA/SPCA506 USB Camera Driver
gspca_spca508		GSPCA/SPCA508 USB Camera Driver
gspca_spca561		GSPCA/SPCA561 USB Camera Driver
gspca_sq905		GSPCA/SQ905 USB Camera Driver
gspca_sq905c		GSPCA/SQ905C USB Camera Driver
gspca_sq930x		GSPCA/SQ930x USB Camera Driver

Driver	Version	Description
gspca_stk014		Syntek DV4000 (STK014) USB Camera Driver
gspca_stk1135		Syntek STK1135 USB Camera Driver
gspca_stv0680		STV0680 USB Camera Driver
gspca_sunplus		GSPCA/SPCA5xx USB Camera Driver
gspca_t613		GSPCA/T613 (JPEG Compliance) USB Camera Driver
gspca_topro		Topro TP6800/6810 gspca webcam driver
gspca_tv8532		TV8532 USB Camera Driver
gspca_vc032x		GSPCA/VC032X USB Camera Driver
gspca_vicam		GSPCA ViCam USB Camera Driver
gspca_xirlink_cit		Xirlink C-IT
gspca_zc3xx		GSPCA ZC03xx/VC3xx USB Camera Driver
gspca_m5602		ALi m5602 webcam driver
gspca_stv06xx		STV06XX USB Camera Driver
hdpvr	0.2.1	Hauppauge HD PVR driver
pvrusb2	0.9.1	Hauppauge WinTV-PVR-USB2 MPEG2 Encoder/Tuner
pwc	10.0.15	Philips & OEM USB webcam driver
s2255drv	1.25.1	Sensoray 2255 Video for Linux driver
smsusb		Driver for the Siano SMS1xxx USB dongle
stk1160		STK1160 driver
stkwebcam		Syntek DC1125 webcam driver
tm6000-alsa		ALSA driver module for tm5600/ tm6000/tm6010 based TV cards
tm6000-dvb		DVB driver extension module for tm5600/6000/6010 based TV cards
tm6000		Trident TVMaster TM5600/TM6000/ TM6010 USB2 adapter
dvb-ttusb-budget		TTUSB DVB Driver
ttusb_dec		TechnoTrend/Hauppauge DEC USB
ttusbdecfe		TTUSB DEC DVB-T/S Demodulator driver
usbvision	0.9.11	USBVision USB Video Device Driver for Linux
uvcvideo	1.1.1	USB Video Class driver
zr364xx	0.7.4	Zoran 364xx
tuner		device driver for various TV and TV+FM radio tuners

Driver	Version	Description
v4l2-dv-timings		V4L2 DV Timings Helper Functions
v4l2-fwnode		
videobuf-core		helper module to manage video4linux buffers
videobuf-dma-sg		helper module to manage video4linux dma sg buffers
videobuf-vmalloc		helper module to manage video4linux vmalloc buffers
videodev		Video4Linux2 core driver

memstick Drivers in UEK R6 (x86_64)

Driver	Version	Description
memstick		Sony MemoryStick core driver
mspro_block		Sony MemoryStickPro block device driver
jmb38x_ms		JMicron jmb38x MemoryStick driver
r592		Ricoh R5C592 Memstick/Memstick PRO card reader driver
rtsx_pci_ms		Realtek PCI-E Memstick Card Host Driver
rtsx_usb_ms		Realtek USB Memstick Card Host Driver
tifm_ms		TI FlashMedia MemoryStick driver

message Drivers in UEK R6 (x86_64)

Driver	Version	Description
mptbase	3.04.20	Fusion MPT base driver
mptctl	3.04.20	Fusion MPT misc device (ioctl) driver
mptfc	3.04.20	Fusion MPT FC Host driver
mptlan	3.04.20	Fusion MPT LAN driver
mptsas	3.04.20	Fusion MPT SAS Host driver
mptscsih	3.04.20	Fusion MPT SCSI Host driver
mptspi	3.04.20	Fusion MPT SPI Host driver

mfd Drivers in UEK R6 (x86_64)

Driver	Version	Description
lpc_ich		LPC interface for Intel ICH
lpc_sch		LPC interface for Intel Poulsbo SCH
pcf50633-adc		PCF50633 adc driver
pcf50633-gpio		
pcf50633		I2C chip driver for NXP PCF50633 PMU
rdc321x-southbridge		RDC R-321x MFD southbridge driver
retu-mfd		Retu MFD driver
si476x-core		API for command exchange for si476x Si4761/64/68 AM/FM MFD core device driver
sm501		SM501 Core Driver
ucb1400_core		Philips UCB1400 driver
viperboard		Nano River Technologies viperboard mfd core driver
vx855		Driver for the VIA VX855 chipset

misc Drivers in UEK R6 (x86_64)

Driver	Version	Description
ad525x_dpot-i2c		digital potentiometer I2C bus driver
ad525x_dpot		Digital potentiometer driver
altera-stapl		altera FPGA kernel module
apds9802als		Avago apds9802als ALS Driver
apds990x		APDS990X combined ALS and proximity sensor
bh1770glc		BH1770GLC / SFH7770 combined ALS and proximity sensor
rtsx_pci		Realtek PCI-E Card Reader Driver
rtsx_usb		Realtek USB Card Reader Driver
cb710		ENE CB710 memory card reader driver
at24		Driver for most I2C EEPROMs
eeprom		I2C EEPROM driver
eeprom_93cx6	1.0	EEPROM 93cx6 chip driver
max6875		MAX6875 driver
enclosure		Enclosure Services

Driver	Version	Description
hmc6352		hmc6352 Compass Driver
hpilo	1.5.0	hpilo
ics932s401		ICS932S401 driver
isl29003	1.0	ISL29003 ambient light sensor driver
isl29020		Intersil isl29020 ALS Driver
lis3lv02d		ST LIS3LV02Dx three-axis digital accelerometer driver
lis3lv02d_i2c		lis3lv02d I2C interface
mei-me		Intel(R) Management Engine Interface
mei		Intel(R) Management Engine Interface
gru	0.85	SGI GRU Device Driver0.85
xp		Cross Partition (XP) base
xpc		Cross Partition Communication (XPC) support
xpnet		Cross Partition Network adapter (XPNET)
tifm_7xx1	0.8	TI FlashMedia host driver
tifm_core	0.8	TI FlashMedia core driver
tsl2550	1.2	TSL2550 ambient light sensor driver
vmw_balloon		VMware Memory Control (Balloon) Driver
vmw_vmci	1.1.6.0-k	VMware Virtual Machine Communication Interface.

mmc Drivers in UEK R6 (x86_64)

Driver	Version	Description
mmc_block		Multimedia Card (MMC) block device driver
mmc_core		
sdio_uart		
cb710-mmc		ENE CB710 memory card reader driver - MMC/SD part
cqhci		Command Queue Host Controller Interface driver
rtsx_pci_sdmmc		Realtek PCI-E SD/MMC Card Host Driver
rtsx_usb_sdmmc		Realtek USB SD/MMC Card Host Driver

Driver	Version	Description
sdhci-acpi		Secure Digital Host Controller Interface ACPI driver
sdhci-pci		Secure Digital Host Controller Interface PCI driver
sdhci-pltfm		SDHCI platform and OF driver helper
sdhci		Secure Digital Host Controller Interface core driver
tifm_sd	0.8	TI FlashMedia SD driver
usdhi6rol0		Renesas usdhi6rol0 SD/SDIO host driver
ushc		USB SD Host Controller driver
via-sdmmc		VIA SD/MMC Card Interface driver
vub300		VUB300 USB to SD/MMC/SDIO adapter driver
wbsd		Winbond W83L51xD SD/MMC card interface driver

mtd Drivers in UEK R6 (x86_64)

Driver	Version	Description
cfi_cmdset_0001		MTD chip driver for Intel/Sharp flash chips
cfi_cmdset_0002		MTD chip driver for AMD/Fujitsu flash chips
cfi_cmdset_0020		
cfi_probe		Probe code for CFI-compliant flash chips
cfi_util		
chipreg		Core routines for registering and invoking MTD chip drivers
gen_probe		Helper routines for flash chip probe code
jedec_probe		Probe code for JEDEC-compliant flash chips
map_absent		Placeholder MTD chip driver for 'absent' chips
map_ram		MTD chip driver for RAM chips
map_rom		MTD chip driver for ROM chips
block2mtd		Emulate an MTD using a block device
mtdram		Simulated MTD driver for testing
pmc551		Ramix PMC551 PCI Mezzanine Ram Driver. (C) 1999,2000 Nortel Networks.

Driver	Version	Description
ftl		Support code for Flash Translation Layer, used on PCMCIA devices
inftl		Support code for Inverse Flash Translation Layer, used on M-Systems DiskOnChip 2000, Millennium and Millennium Plus
lpddr_cmds		MTD driver for LPDDR flash chips
qinfo_probe		Driver to probe qinfo flash chips
ck804xrom		MTD map driver for BIOS chips on the Nvidia ck804 southbridge
esb2rom		MTD map driver for BIOS chips on the ESB2 southbridge
map_funcs		
pci		Generic PCI map driver
physmap		Generic configurable MTD map driver
scb2_flash		MTD map driver for Intel SCB2 BIOS Flash
mtd		Core MTD registration and access routines Generic support for concatenating of MTD devices
mtd_blkdevs		Common interface to block layer for MTD 'translation layers'
mtdblock		Caching read/erase/writeback block device emulation access to MTD devices
mtdblock_ro		Simple read-only block device emulation access to MTD devices
mtdoops		MTD Oops/Panic console logger/ driver
mtdswap		Block device access to an MTD suitable for using as swap space
nandcore		Generic NAND framework
diskonchip		M-Systems DiskOnChip 2000, Millennium and Millennium Plus device driver
nand		Generic NAND flash driver code NAND software BCH ECC support
nand_ecc		Generic NAND ECC support
nandsim		The NAND flash simulator
nftl		Support code for NAND Flash Translation Layer, used on M-Systems DiskOnChip 2000 and Millennium
ar7part		MTD partitioning for TI AR7
cmdlinepart		Command line configuration of MTD partitions

Driver	Version	Description
redboot		Parsing code for RedBoot Flash Image System (FIS) tables
rfd_ftl		Support code for RFD Flash Translation Layer, used by General Software's Embedded BIOS
sm_ftl		Smartmedia/xD mtd translation layer
ssfdc		Flash Translation Layer for read-only SSFDC SmartMedia card
ubi	1	UBI - Unsorted Block Images

net Drivers in UEK R6 (x86_64)

Driver	Version	Description
bonding	3.7.1	Ethernet Channel Bonding Driver, v3.7.1
c_can		CAN bus driver for Bosch C_CAN controller
c_can_pci		PCI CAN bus driver for Bosch C_CAN/ D_CAN controller
c_can_platform		Platform CAN bus driver for Bosch C_CAN controller
can-dev		CAN device driver interface
cc770		cc770CAN netdevice driver
cc770_platform		Socket-CAN driver for CC770 on the platform bus
m_can		CAN bus driver for Bosch M_CAN controller
ems_pci		Socket-CAN driver for EMS CPC-PCI/ PCIe/104P CAN cards
kvaser_pci		Socket-CAN driver for KVASER PCAN PCI cards
peak_pci		Socket-CAN driver for PEAK PCAN PCI family cards
plx_pci		Socket-CAN driver for PLX90xx PCI-bridge cards with the SJA1000 chips
sja1000		sja1000CAN netdevice driver
sja1000_platform		Socket-CAN driver for SJA1000 on the platform bus
slcan		serial line CAN interface
softing		Softing DPRAM CAN driver
ems_usb		CAN driver for EMS Dr. Thomas Wuensche CAN/USB interfaces
esd_usb2		CAN driver for esd CAN-USB/2 and CAN-USB/Micro interfaces

Driver	Version	Description
gs_usb		Socket CAN device driver for Geschwister Schneider Technologie-, Entwicklungs- und Vertriebs UG. USB2.0 to CAN interfaces and bytewerk.org candleLight USB CAN interfaces.
kvaser_usb		CAN driver for Kvaser CAN/USB devices
peak_usb		CAN driver for PEAK-System USB adapters
usb_8dev		CAN driver for 8 devices USB2CAN interfaces
vcan		virtual CAN interface
dummy	1.0	
eql		
3c59x		3Com 3c59x/3c9xx ethernet driver
typhoon	1.0	3Com Typhoon Family (3C990, 3CR990, and variants)
starfire	2.1	Adaptec Starfire Ethernet driver
acenic		AceNIC/3C985/GA620 Gigabit Ethernet driver
ena	2.1.0K	Elastic Network Adapter (ENA)
amd8111e		AMD8111 based 10/100 Ethernet Controller. Driver Version 3.0.7
pcnet32		Driver for PCnet32 and PCnetPCI based ethercards
amd-xgbe	1.0.3	AMD 10 Gigabit Ethernet Driver
atlantic	5.4.17-2036.100.6.el7uek.x86_64-kern	aQuantia Corporation(R) Network Driver
alx		Qualcomm Atheros(R) AR816x/ AR817x PCI-E Ethernet Network Driver
atl1c	1.0.1.1-NAPI	Qualcomm Atheros 100/1000M Ethernet Network Driver
atl1e	1.0.0.7-NAPI	Atheros 1000M Ethernet Network Driver
atl1	2.1.3	Atheros L1 Gigabit Ethernet Driver
atl2	2.2.3	Atheros Fast Ethernet Network Driver
b44	2.0	Broadcom 44xx/47xx 10/100 PCI ethernet driver
bnx2	2.2.6	QLogic BCM5706/5708/5709/5716 Driver
bnx2x	1.713.36-0	QLogic BCM57710/57711/57711E/ 57712/57712_MF/57800/57800_MF/ 57810/57810_MF/57840/57840_MF Driver

Driver	Version	Description
bnxt_en	1.10.1	Broadcom BCM573xx network driver
cnic	2.5.22	QLogic cnic Driver
tg3	3.137	Broadcom Tigon3 ethernet driver
bna	3.2.25.1	QLogic BR-series 10G PCIe Ethernet driver
cxgb		Chelsio 10Gb Ethernet Driver
cxgb3	1.1.5-ko	Chelsio T3 Network Driver
cxgb4	2.0.0-ko	Chelsio T4/T5/T6 Network Driver
cxgb4vf	2.0.0-ko	Chelsio T4/T5/T6 Virtual Function (VF) Network Driver
libcxgb	1.0.0-ko	Chelsio common library
enic	2.3.0.53	Cisco VIC Ethernet NIC Driver
de2104x	0.7	Intel/Digital 21040/1 series PCI Ethernet driver
de4x5		
dmfe	1.36.4	Davicom DM910X fast ethernet driver
tulip	1.1.15	Digital 21*4* Tulip ethernet driver
uli526x		ULi M5261/M5263 fast ethernet driver
winbond-840	1.01-e	Winbond W89c840 Ethernet driver
xircom_cb		Xircom Cardbus ethernet driver
dl2k		D-Link DL2000-based Gigabit Ethernet Adapter
sundance		Sundance Alta Ethernet driver
dnet		Dave DNET Ethernet driver
be2net	12.0.0.0	Emulex OneConnect NIC Driver 12.0.0.0
ethoc		OpenCores Ethernet MAC driver
hinic		Huawei Intelligent NIC driver
e100	3.5.24-k2-NAPI	Intel(R) PRO/100 Network Driver
e1000	7.3.21-k8-NAPI	Intel(R) PRO/1000 Network Driver
e1000e	3.2.6-k	Intel(R) PRO/1000 Network Driver
fm10k	0.26.1-k	Intel(R) Ethernet Switch Host Interface Driver
i40e	2.8.20-k	Intel(R) Ethernet Connection XL710 Network Driver
iavf	3.2.3-k	Intel(R) Ethernet Adaptive Virtual Function Network Driver
ice	0.8.2-k	Intel(R) Ethernet Connection E800 Series Linux Driver

Driver	Version	Description
igb	5.6.0-k	Intel(R) Gigabit Ethernet Network Driver
igbvf	2.4.0-k	Intel(R) Gigabit Virtual Function Network Driver
igc	0.0.1-k	Intel(R) 2.5G Ethernet Linux Driver
ixgb	1.0.135-k2-NAPI	Intel(R) PRO/10GbE Network Driver
ixgbe	5.1.0-k	Intel(R) 10 Gigabit PCI Express Network Driver
ixgbevf	4.1.0-k	Intel(R) 10 Gigabit Virtual Function Network Driver
jme	1.0.8	JMicron JMC2x0 PCI Express Ethernet driver
mvmdio		Marvell MDIO interface driver
skge	1.14	SysKonnect Gigabit Ethernet driver
sky2	1.30	Marvell Yukon 2 Gigabit Ethernet driver
mlx4_core	4.0-0	Mellanox ConnectX HCA low-level driver
mlx4_en	4.0-0	Mellanox ConnectX HCA Ethernet driver
mlx5_core	5.0-0	Mellanox 5th generation network adapters (ConnectX series) core driver
mlxfw		Mellanox firmware flash lib
mstflint_access	2.0.0 (Nov-27-2012)	MST Module
myri10ge	1.5.3-1.534	Myricom 10G driver (10GbE)
s2io	2.0.26.28	
vxge		Neterion's X3100 Series 10GbE PCIe I/OVirtualized Server Adapter
nfp	5.4.17-2036.100.6.el7uek.x86_64	The Netronome Flow Processor (NFP) driver.
forcedeth		Reverse Engineered nForce ethernet driver
netxen_nic	4.0.82	QLogic/NetXen (1/10) GbE Intelligent Ethernet Driver
qed	8.37.0.20	QLogic FastLinQ 4xxxx Core Module
qede	8.37.0.20	QLogic FastLinQ 4xxxx Ethernet Driver
qla3xxx	v2.03.00-k5	QLogic ISP3XXX Network Driver v2.03.00-k5
qlcnic	5.3.66	QLogic 1/10 GbE Converged/Intelligent Ethernet Driver
r6040	0.29 04Jul2016	RDC R6040 NAPI PCI FastEthernet driver

Driver	Version	Description
8139cp	1.3	RealTek RTL-8139C+ series 10/100 PCI Ethernet driver
8139too	0.9.28	RealTek RTL-8139 Fast Ethernet driver
r8169		RealTek RTL-8169 Gigabit Ethernet driver
rocker		Rocker switch device driver
sfc	4.1	Solarflare network driver
sc92031		Silan SC92031 PCI Fast Ethernet Adapter driver
sis190	1.4	SiS sis190/191 Gigabit Ethernet driver
sis900		SiS 900 PCI Fast Ethernet driver
epic100		SMC 83c170 EPIC series Ethernet driver
smsc9420	1.01	
dwmac-generic		Generic dwmac driver
stmmac-platform		STMMAC 10/100/1000 Ethernet platform support
stmmac		STMMAC 10/100/1000 Ethernet device driver
cassini		Sun Cassini(+) ethernet driver
niu	1.1	NIU ethernet driver
sungem		Sun GEM Gbit ethernet driver
sunhme	3.10	Sun HappyMealEthernet(HME) 10/100baseT ethernet driver
tehuti		Tehuti Networks(R) Network Driver
tlan		Driver for TI ThunderLAN based ethernet PCI adapters
fjes	1.2	FUJITSU Extended Socket Network Device Driver
geneve	0.6	Interface driver for GENEVE encapsulated traffic
hv_netvsc		Microsoft Hyper-V network driver
fakelb		
ifb		
ipvlan		Driver for L3 (IPv6/IPv4) based VLANs
ipvtap		
macsec		MACsec IEEE 802.1AE
macvlan		Driver for MAC address based VLANs
macvtap		

Driver	Version	Description
mdio		Generic support for MDIO-compatible transceivers
mii		MII hardware support library
net_failover		Failover driver for Paravirtual drivers
netconsole		Console driver for network interfaces
netdevsim		
nlmon		Netlink monitoring device
ntb_netdev	0.7	ntb_netdev
amd		AMD PHY driver
aquantia		Aquantia PHY driver
at803x		Atheros 803x PHY driver
bcm-phy-lib		Broadcom PHY Library
bcm7xxx		Broadcom BCM7xxx internal PHY driver
bcm87xx		
broadcom		Broadcom PHY driver
cicada		Cicadia PHY driver
cortina		Cortina EDC CDR 10G Ethernet PHY driver
davicom		Davicom PHY driver
dp83640		National Semiconductor DP83640 PHY driver
dp83822		Texas Instruments DP83822 PHY driver
dp83848		Texas Instruments DP83848 PHY driver
dp83867		Texas Instruments DP83867 PHY driver
dp83tc811		Texas Instruments DP83TC811 PHY driver
et1011c		LSI ET1011C PHY driver
icplus		ICPlus IP175C/IP101A/IP101G/IC1001 PHY drivers
intel-xway		Intel XWAY PHY driver
lxt		Intel LXT PHY driver
marvell		Marvell PHY driver
marvell10g		Marvell Alaska X 10Gigabit Ethernet PHY driver (MV88X3310)
mdio-bitbang		

Driver	Version	Description
mdio-cavium		Common code for OCTEON and Thunder MDIO bus drivers
mdio-mscc-miim		Microsemi MIIM driver
mdio-thunder		Cavium ThunderX MDIO bus driver
micrel		Micrel PHY driver
microchip		Microchip LAN88XX PHY driver
microchip_t1		Microchip LAN87XX T1 PHY driver
mscc		Microsemi VSC85xx PHY driver
national		NatSemi PHY driver
qsemi		Quality Semiconductor PHY driver
realtek		Realtek PHY driver
rockchip		Rockchip Ethernet PHY driver
smsc		SMSC PHY driver
ste10Xp		STMicroelectronics STe10Xp PHY driver
teranetics		Teranetics PHY driver
uPD60620		Renesas uPD60620 PHY driver
vitesse		Vitesse PHY driver
xilinx_gmii2rgmii		Xilinx GMII2RGMII converter driver
bsd_comp		
ppp_async		
ppp_deflate		
ppp_generic		
ppp_mppe	1.0.2	Point-to-Point Protocol Microsoft Point-to-Point Encryption support
ppp_synctty		
pppoe		PPP over Ethernet driver
pppox		PPP over Ethernet driver (generic socket layer)
pptp		Point-to-Point Tunneling Protocol
rionet		Ethernet over RapidIO
slhc		
slip		
sungem_phy		
tap		
team		Ethernet team device driver
team_mode_activebackup		Active-backup mode for team
team_mode_broadcast		Broadcast mode for team

Driver	Version	Description
team_mode_loadbalance		Load-balancing mode for team
team_mode_random		Random mode for team
team_mode_roundrobin		Round-robin mode for team
thunderbolt-net		Thunderbolt network driver
tun		Universal TUN/TAP device driver
asix	22-Dec-2011	ASIX AX8817X based USB 2.0 Ethernet Devices
ax88179_178a		ASIX AX88179/178A based USB 3.0/2.0 Gigabit Ethernet Devices
catc		CATC EL1210A NetMate USB Ethernet driver
cdc-phonet		USB CDC Phonet host interface
cdc_eem		USB CDC EEM
cdc_ether		USB CDC Ethernet devices
cdc_mbim		USB CDC MBIM host driver
cdc_ncm		USB CDC NCM host driver
cdc_subset		Simple 'CDC Subset' USB networking links
ch9200		QinHeng CH9200 USB Network device
cx82310_eth		Conexant CX82310-based ADSL router USB ethernet driver
dm9601		Davicom DM96xx USB 10/100 ethernet devices
gl620a		GL620-USB-A Host-to-Host Link cables
hso		USB High Speed Option driver
huawei_cdc_ncm		USB CDC NCM host driver with encapsulated protocol support
int51x1		Intellon usb powerline adapter
ipheth		Apple iPhone USB Ethernet driver
kalmia		Samsung Kalmia USB network driver
kaweth		KL5USB101 USB Ethernet driver
lan78xx		LAN78XX USB 3.0 Gigabit Ethernet Devices
lg-vl600		LG-VL600 modem's ethernet link
mcs7830		USB to network adapter MCS7830)
net1080		NetChip 1080 based USB Host-to-Host Links
pegasus		Pegasus/Pegasus II USB Ethernet driver

Driver	Version	Description
plusb		Prolific PL-2301/2302/25A1/27A1 USB Host to Host Link Driver
qmi_wwan		Qualcomm MSM Interface (QMI) WWAN driver
r8152	v1.10.11	Realtek RTL8152/RTL8153 Based USB Ethernet Adapters
rndis_host		USB Host side RNDIS driver
rtl8150		rtl8150 based usb-ethernet driver
sierra_net	v.2.0	USB-to-WWAN Driver for Sierra Wireless modems
smsc75xx		SMSC75XX USB 2.0 Gigabit Ethernet Devices
smsc95xx		SMSC95XX USB 2.0 Ethernet Devices
sr9700		SR9700 one chip USB 1.1 USB to Ethernet device from http://www.corechip-sz.com/
sr9800	11-Nov-2013	SR9800 USB 2.0 USB2NET Dev : http://www.corechip-sz.com
usbnet		USB network driver framework
zaurus		Sharp Zaurus PDA, and compatible products
veth		Virtual Ethernet Tunnel
virtio_net		Virtio network driver
vmxnet3	1.4.17.0-k	VMware vmxnet3 virtual NIC driver
vsockmon		Vsock monitoring device. Based on nlmon device.
vxlan	0.1	Driver for VXLAN encapsulated traffic
dlci		Frame Relay DLCI layer
hdlc		HDLC support module
hdlc_cisco		Cisco HDLC protocol support for generic HDLC
hdlc_fr		Frame-Relay protocol support for generic HDLC
hdlc_ppp		PPP protocol support for generic HDLC
hdlc_raw		Raw HDLC protocol support for generic HDLC
i2400m-usb		Driver for USB based Intel Wireless WiMAX Connection 2400M (5x50 & 6050)
i2400m		Intel 2400M WiMAX networking bus-generic driver
adm8211		Driver for IEEE 802.11b wireless cards based on ADMtek ADM8211

Driver	Version	Description
ath		Shared library for Atheros wireless LAN cards.
ath10k_core		Core module for Qualcomm Atheros 802.11ac wireless LAN cards.
ath9k		Support for Atheros 802.11n wireless LAN cards.
ath9k_common		Shared library for Atheros wireless 802.11n LAN cards.
ath9k_htc		Atheros driver 802.11n HTC based wireless devices
ath9k_hw		Support for Atheros 802.11n wireless LAN cards.
carl9170		Atheros AR9170 802.11n USB wireless
wil6210		Driver for 60g WiFi WIL6210 card
at76c50x-usb		Atmel at76x USB Wireless LAN Driver
atmel		Support for Atmel at76c50x 802.11 wireless ethernet cards.
atmel_pci		Support for Atmel at76c50x 802.11 wireless ethernet cards.
b43		Broadcom B43 wireless driver
b43legacy		Broadcom B43legacy wireless driver
brcmfmac		Broadcom 802.11 wireless LAN fullmac driver.
brcmsmac		Broadcom 802.11n wireless LAN driver.
brcmutil		Broadcom 802.11n wireless LAN driver utilities.
airo		Support for Cisco/Aironet 802.11 wireless ethernet cards. Direct support for ISA/PCI/MPI cards and support for PCMCIA when used with airo_cs.
ipw2100	git-1.2.2	Intel(R) PRO/Wireless 2100 Network Driver
ipw2200	1.2.2kdmprq	Intel(R) PRO/Wireless 2200/2915 Network Driver
libipw	git-1.1.13	802.11 data/management/control stack
iwl3945	in-tree:ds	Intel(R) PRO/Wireless 3945ABG/BG Network Connection driver for Linux
iwl4965	in-tree:d	Intel(R) Wireless WiFi 4965 driver for Linux
iwlegacy	in-tree:	iwl-legacy: common functions for 3945 and 4965
iwldvm		Intel(R) Wireless WiFi Link AGN driver for Linux

Driver	Version	Description
iwlwifi		Intel(R) Wireless WiFi driver for Linux
iwlmvm		The new Intel(R) wireless AGN driver for Linux
hostap		Host AP common routines
hostap_pci		Support for Intersil Prism2.5-based 802.11 wireless LAN PCI cards.
hostap_plx		Support for Intersil Prism2-based 802.11 wireless LAN cards (PLX).
orinoco		Driver for Lucent Orinoco, Prism II based and similar wireless cards
orinoco_nortel		Driver for wireless LAN cards using the Nortel PCI bridge
orinoco_plx		Driver for wireless LAN cards using the PLX9052 PCI bridge
orinoco_tmd		Driver for wireless LAN cards using the TMD7160 PCI bridge
p54common		Softmac Prism54 common code
p54pci		Prism54 PCI wireless driver
p54usb		Prism54 USB wireless driver
mac80211_hwsim		Software simulator of 802.11 radio(s) for mac80211
libertas		Libertas WLAN Driver Library
libertas_sdio		Libertas SDIO WLAN Driver
usb8xxx		8388 USB WLAN Driver
libertas_tf		Libertas WLAN Thinfirm Driver Library
libertas_tf_usb		8388 USB WLAN Thinfirm Driver
mwifiex	1.0	Marvell WiFi-Ex Driver version 1.0
mwifiex_pcie	1.0	Marvell WiFi-Ex PCI-Express Driver version 1.0
mwifiex_sdio	1.0	Marvell WiFi-Ex SDIO Driver version 1.0
mwifiex_usb	1.0	Marvell WiFi-Ex USB Driver version1.0
mwl8k	0.13	Marvell TOPDOG(R) 802.11 Wireless Network Driver
mt76-usb		
mt76		
mt76x0-common		
mt76x0u		
mt76x02-lib		
mt76x02-usb		

Driver	Version	Description
mt76x2-common		
mt76x2u		
mt7601u		
rt2400pci	2.3.0	Ralink RT2400 PCI & PCMCIA Wireless LAN driver.
rt2500pci	2.3.0	Ralink RT2500 PCI & PCMCIA Wireless LAN driver.
rt2500usb	2.3.0	Ralink RT2500 USB Wireless LAN driver.
rt2800lib	2.3.0	Ralink RT2800 library
rt2800mmio	2.3.0	rt2800 MMIO library
rt2800pci	2.3.0	Ralink RT2800 PCI & PCMCIA Wireless LAN driver.
rt2800usb	2.3.0	Ralink RT2800 USB Wireless LAN driver.
rt2x00lib	2.3.0	rt2x00 library
rt2x00mmio	2.3.0	rt2x00 mmio library
rt2x00pci	2.3.0	rt2x00 pci library
rt2x00usb	2.3.0	rt2x00 usb library
rt61pci	2.3.0	Ralink RT61 PCI & PCMCIA Wireless LAN driver.
rt73usb	2.3.0	Ralink RT73 USB Wireless LAN driver.
rtl818x_pci		RTL8180 / RTL8185 / RTL8187SE PCI wireless driver
rtl8187		RTL8187/RTL8187B USB wireless driver
rtl8xxxu		RTL8XXXu USB mac80211 Wireless LAN Driver
btcoexist		Realtek 802.11n PCI wireless core
rtl8188ee		Realtek 8188E 802.11n PCI wireless
rtl8192c-common		Realtek 8192C/8188C 802.11n PCI wireless
rtl8192ce		Realtek 8192C/8188C 802.11n PCI wireless
rtl8192cu		Realtek 8192C/8188C 802.11n USB wireless
rtl8192de		Realtek 8192DE 802.11n Dual Mac PCI wireless
rtl8192ee		Realtek 8192EE 802.11n PCI wireless
rtl8192se		Realtek 8192S/8191S 802.11n PCI wireless
rtl8723ae		Realtek 8723E 802.11n PCI wireless

Driver	Version	Description
rtl8723be		Realtek 8723BE 802.11n PCI wireless
rtl8723-common		Realtek RTL8723AE/RTL8723BE 802.11n PCI wireless common routines
rtl8821ae		Realtek 8821ae 802.11ac PCI wireless
rtl_pci		PCI basic driver for rtlwifi
rtl_usb		USB basic driver for rtlwifi
rtlwifi		Realtek 802.11n PCI wireless core
rtw88		Realtek 802.11ac wireless core module
rtwpci		Realtek 802.11ac wireless PCI driver
rndis_wlan		Driver for RNDIS based USB Wireless adapters
wl1251		TI wl1251 Wireless LAN Driver Core
wl1251_sdio		
zd1201	0.15	Driver for ZyDAS ZD1201 based USB Wireless adapters
zd1211rw	1.0	USB driver for devices with the ZD1211 chip.
xen-netback		
xen-netfront		Xen virtual network device frontend

ntb Drivers in UEK R6 (x86_64)

Driver	Version	Description
ntb	1.0	PCIe NTB Driver Framework
ntb_transport	4	Software Queue-Pair Transport over NTB

nvdimm Drivers in UEK R6 (x86_64)

Driver	Version	Description
libnvdimm		
nd_blk		
nd_btt		
nd_e820		
nd_pmem		
nd_virtio		
virtio_pmem		Virtio pmem driver

nvme Drivers in UEK R6 (x86_64)

Driver	Version	Description
nvme-core	1.0	
nvme-fabrics		
nvme-fc		
nvme-rdma		
nvme-tcp		
nvme	1.0	
nvme-fcloop		
nvme-loop		
nvmet-fc		
nvmet-rdma		
nvmet-tcp		
nvmet		

parport Drivers in UEK R6 (x86_64)

Driver	Version	Description
parport		
parport_pc		PC-style parallel port driver
parport_serial		Driver for common parallel+serial multi-I/O PCI cards

pci Drivers in UEK R6 (x86_64)

Driver	Version	Description
pci-hyperv-intf		Hyper-V PCI Interface
pci-hyperv		Hyper-V PCI
vmd	0.6	
acpiphp_ibm	1.0.1	ACPI Hot Plug PCI Controller Driver IBM extension
pci-pf-stub		
aer_inject		PCIe AER software error injector

pcmcia Drivers in UEK R6 (x86_64)

Driver	Version	Description
yenta_socket		

pinctrl Drivers in UEK R6 (x86_64)

Driver	Version	Description
pinctrl-broxton		Intel Broxton SoC pinctrl/GPIO driver
pinctrl-cannonlake		Intel Cannon Lake PCH pinctrl/GPIO driver
pinctrl-cedarfork		Intel Cedar Fork PCH pinctrl/GPIO driver
pinctrl-denverton		Intel Denverton SoC pinctrl/GPIO driver
pinctrl-geminilake		Intel Gemini Lake SoC pinctrl/GPIO driver
pinctrl-icelake		Intel Ice Lake PCH pinctrl/GPIO driver
pinctrl-intel		Intel pinctrl/GPIO core driver
pinctrl-lewisburg		Intel Lewisburg pinctrl/GPIO driver
pinctrl-sunrisepoint		Intel Sunrisepoint PCH pinctrl/GPIO driver
pinctrl-amd		AMD GPIO pinctrl driver

platform Drivers in UEK R6 (x86_64)

Driver	Version	Description
chromeos_laptop		Chrome OS Laptop driver
chromeos_pstore		ChromeOS pstore module
acer-wmi		Acer Laptop WMI Extras Driver
acerhdf		Aspire One temperature and fan driver
amilo-rfkill		
apple-gmux		Apple Gmux Driver
asus-laptop		Asus Laptop Support
asus-nb-wmi		Asus Notebooks WMI Hotkey Driver
asus-wmi		Asus Generic WMI Driver
classmate-laptop		
compal-laptop	0.2.7	Compal Laptop Support

Driver	Version	Description
dcdbas	5.6.0-3.3	Dell Systems Management Base Driver (version 5.6.0-3.3)
dell-laptop		Dell laptop driver
dell-rbtn		Dell Airplane Mode Switch driver
dell-smbios		Common functions for kernel modules using Dell SMBIOS
dell-smo8800		Dell Latitude freefall driver (ACPI SMO88XX)
dell-wmi-aio		WMI hotkeys driver for Dell All-In-One series
dell-wmi-descriptor		Dell WMI descriptor driver
dell-wmi-led		Dell LED Control Driver
dell-wmi		Dell laptop WMI hotkeys driver
dell_rbu	3.2	Driver for updating BIOS image on DELL systems
eeepc-laptop		Eee PC Hotkey Driver
eeepc-wmi		Eee PC WMI Hotkey Driver
fujitsu-laptop	0.6.0	Fujitsu laptop extras support
fujitsu-tablet	2.5	Fujitsu tablet pc extras driver
hdaps		IBM Hard Drive Active Protection System (HDAPS) driver
hp-wireless		
hp-wmi		HP laptop WMI hotkeys driver
hp_accel		Glue between LIS3LV02Dx and HP ACPI BIOS and support for disk protection LED.
ibm_rtl		
ideapad-laptop		IdeaPad ACPI Extras
intel-hid		
intel-rst		
intel-smartconnect		
intel-vbtn		
intel-wmi-thunderbolt		Intel WMI Thunderbolt force power driver
intel_ips		Intelligent Power Sharing Driver
intel_oaktrail	0.4ac1	Intel Oaktrail Platform ACPI Extras
mlx-platform		Mellanox platform driver
msi-laptop	0.5	MSI Laptop Support
msi-wmi		MSI laptop WMI hotkeys driver
mxm-wmi		MXM WMI Driver

Driver	Version	Description
panasonic-laptop		ACPI HotKey driver for Panasonic Let's Note laptops
samsung-laptop		Samsung Backlight driver
samsung-q10		Samsung Q10 Driver
sony-laptop		Sony laptop extras driver (SPIC and SNC ACPI device)
thinkpad_acpi	0.26	ThinkPad ACPI Extras
topstar-laptop		Topstar Laptop ACPI Extras driver
toshiba_acpi		Toshiba Laptop ACPI Extras Driver
toshiba_bluetooth		Toshiba Laptop ACPI Bluetooth Enable Driver
wmi-bmof		WMI embedded Binary MOF driver
wmi		ACPI-WMI Mapping Driver

power Drivers in UEK R6 (x86_64)

Driver	Version	Description
bq2415x_charger		bq2415x charger driver
bq24190_charger		TI BQ24190 Charger Driver
bq24735-charger		bq24735 battery charging driver
ds2780_battery		Maxim/Dallas DS2780 Stand-Alone Fuel Gauge IC driver
ds2781_battery		Maxim/Dallas DS2781 Stand-Alone Fuel Gauge IC driver
ds2782_battery		Maxim/Dallas DS2782 Stand-Alone Fuel Gauge IC driver
gpio-charger		Driver for chargers which report their online status through a GPIO
isp1704_charger		ISP170x USB Charger driver
lp8727_charger		TI/National Semiconductor LP8727 charger driver
max17040_battery		MAX17040 Fuel Gauge
max17042_battery		MAX17042 Fuel Gauge
max8903_charger		MAX8903 Charger Driver
sbs-battery		SBS battery monitor driver
smb347-charger		SMB347 battery charger driver

powercap Drivers in UEK R6 (x86_64)

Driver	Version	Description
intel_rapl_common		Intel Runtime Average Power Limit (RAPL) common code
intel_rapl_msr		Driver for Intel RAPL (Running Average Power Limit) control via MSR interface

pps Drivers in UEK R6 (x86_64)

Driver	Version	Description
pps-gpio	1.2.0	Use GPIO pin as PPS source
pps-ldisc		PPS TTY device driver
pps_parport		parallel port PPS client

ptp Drivers in UEK R6 (x86_64)

Driver	Version	Description
ptp_kvm		PTP clock using KVMCLOCK

regulator Drivers in UEK R6 (x86_64)

Driver	Version	Description
fixed		Fixed voltage regulator
lp3971		LP3971 PMIC driver
max1586		MAXIM 1586 voltage regulator driver
tps65023-regulator		TPS65023 voltage regulator driver
tps6507x-regulator		TPS6507x voltage regulator driver
userspace-consumer		Userspace consumer for voltage and current regulators

rtc Drivers in UEK R6 (x86_64)

Driver	Version	Description
rtc-bq32k		TI BQ32000 I2C RTC driver
rtc-bq4802		TI BQ4802 RTC driver
rtc-ds1286		DS1286 RTC driver

Driver	Version	Description
rtc-ds1307		RTC driver for DS1307 and similar chips
rtc-ds1374		Maxim/Dallas DS1374 RTC Driver
rtc-ds1511		Dallas DS1511 RTC driver
rtc-ds1553		Dallas DS1553 RTC driver
rtc-ds1672		Dallas/Maxim DS1672 timekeeper driver
rtc-ds1742		Dallas DS1742 RTC driver
rtc-ds2404		DS2404 RTC
rtc-ds3232		Maxim/Dallas DS3232/DS3234 RTC Driver
rtc-em3027		EM Microelectronic EM3027 RTC driver
rtc-fm3130		RTC driver for FM3130
rtc-isl12022		ISL 12022 RTC driver
rtc-isl1208		Intersil ISL1208 RTC driver
rtc-m41t80		ST Microelectronics M41T80 series RTC I2C Client Driver
rtc-m48t35		M48T35 RTC driver
rtc-m48t59		M48T59/M48T02/M48T08 RTC driver
rtc-m48t86		M48T86 RTC driver
rtc-max6900		Maxim MAX6900 RTC driver
rtc-msm6242		Oki MSM6242 RTC driver
rtc-pcf2127		NXP PCF2127/29 RTC driver
rtc-pcf50633		PCF50633 RTC driver
rtc-pcf85063		PCF85063 RTC driver
rtc-pcf8523		NXP PCF8523 RTC driver
rtc-pcf8563		Philips PCF8563/Epson RTC8564 RTC driver
rtc-pcf8583		PCF8583 I2C RTC driver
rtc-rp5c01		Ricoh RP5C01 RTC driver
rtc-rs5c372		Ricoh RS5C372 RTC driver
rtc-rv3029c2		Micro Crystal RV3029/RV3049 RTC driver
rtc-rx8025		RX-8025 SA/NB RTC driver
rtc-rx8581		Epson RX-8571/RX-8581 RTC driver
rtc-s35390a		S35390A RTC driver
rtc-stk17ta8		Simtek STK17TA8 RTC driver
rtc-v3020		V3020 RTC

Driver	Version	Description
rtc-x1205		Xicor/Intersil X1205 RTC driver

scsi Drivers in UEK R6 (x86_64)

Driver	Version	Description
3w-9xxx	2.26.02.014	3ware 9000 Storage Controller Linux Driver
3w-sas	3.26.02.000	LSI 3ware SAS/SATA-RAID Linux Driver
aacraid	1.2.1[50877]-custom	Dell PERC2, 2/Si, 3/Si, 3/Di, Adaptec Advanced Raid Products, HP NetRAID-4M, IBM ServeRAID & ICP SCSI driver
aic79xx	3.0	Adaptec AIC790X U320 SCSI Host Bus Adapter driver
aic7xxx	7.0	Adaptec AIC77XX/78XX SCSI Host Bus Adapter driver
aic94xx	1.0.3	Adaptec aic94xx SAS/SATA driver
arcmsr	v1.40.00.10-20190116	Areca ARC11xx/12xx/16xx/188x SAS/SATA RAID Controller Driver
be2iscsi	11.4.0.1	Emulex OneConnectOpen-iSCSI Driver version11.4.0.1 Driver 11.4.0.1
bfa	3.2.25.1	QLogic BR-series Fibre Channel HBA Driver fcpim
bnx2fc	2.12.10	QLogic FCoE Driver
bnx2i	2.7.10.1	QLogic NetXtreme II BCM5706/5708/5709/57710/57711/57712/57800/57810/57840 iSCSI Driver
ch		device driver for scsi media changer devices
csiostor	1.0.0-ko	Chelsio FCoE driver
cxgb3i	2.0.1-ko	Chelsio T3 iSCSI Driver
cxgb4i	0.9.5-ko	Chelsio T4-T6 iSCSI Driver
libcxgbi	0.9.1-ko	Chelsio iSCSI driver library
fcoe		FCoE
libfcoe		FIP discovery protocol and FCoE transport for FCoE HBAs
fnic	1.6.0.47	Cisco FCoE HBA Driver
hpsa	3.4.20-170	Driver for HP Smart Array Controller version 3.4.20-170
hptiop		HighPoint RocketRAID 3xxx/4xxx Controller Driver
hv_storvsc		Microsoft Hyper-V virtual storage driver

Driver	Version	Description
imm		
initio		Initio INI-9X00U/UW SCSI device driver
ips	7.12.05	IBM ServeRAID Adapter Driver 7.12.05
isci	1.2.0	
iscsi_boot_sysfs		sysfs interface and helpers to export iSCSI boot information
iscsi_tcp		iSCSI/TCP data-path
libfc		libfc
libiscsi		iSCSI library functions
libiscsi_tcp		iSCSI/TCP data-path
libsas		SAS Transport Layer
lpfc	0:12.8.0.3	Emulex LightPulse Fibre Channel SCSI driver 12.8.0.3
megaraid_mbox	2.20.5.1	LSI Logic MegaRAID Mailbox Driver
megaraid_mm	2.20.2.7	LSI Logic Management Module
megaraid_sas	07.714.04.00-rc1	Broadcom MegaRAID SAS Driver
mpt3sas	35.100.00.00	LSI MPT Fusion SAS 3.0 Device Driver
mvsas	0.8.16	Marvell 88SE6440 SAS/SATA controller driver
mvumi		Marvell UMI Driver
pm80xx	0.1.39	PMC-Sierra PM8001/8006/8081/8088/8089/8074/8076/8077/8070/8072 SAS/SATA controller driver
pmcraid	1.0.3	PMC Sierra MaxRAID Controller Driver
ppa		
qedf	8.42.3.0	QLogic FastLinQ 4xxxx FCoE Module
qedi	8.37.0.20	QLogic FastLinQ 4xxxx iSCSI Module
qla2xxx	10.01.00.25-k	QLogic Fibre Channel HBA Driver
tcm_qla2xxx		TCM QLA24XX+ series NPIV enabled fabric driver
qla4xxx	5.04.00-k6	QLogic iSCSI HBA Driver
raid_class		RAID device class
scsi_debug	0188	SCSI debug adapter driver
scsi_transport_fc		FC Transport Attributes
scsi_transport_iscsi	2.0-870	iSCSI Transport Interface
scsi_transport_sas		SAS Transport Attributes
scsi_transport_spi		SPI Transport Attributes

Driver	Version	Description
scsi_transport_srp		SRP Transport Attributes
sd_mod		SCSI disk (sd) driver
ses		SCSI Enclosure Services (ses) driver
sg	3.5.36	SCSI generic (sg) driver
smartpqi	1.2.10-025	Driver for Microsemi Smart Family Controller version 1.2.10-025
snic	0.0.1.18	Cisco SCSI NIC Driver
sr_mod		SCSI cdrom (sr) driver
st		SCSI tape (st) driver
stex	6.02.0000.01	Promise Technology SuperTrak EX Controllers
sym53c8xx	2.2.3	NCR, Symbios and LSI 8xx and 1010 PCI SCSI adapters
ufshcd-core	0.2	Generic UFS host controller driver Core
ufshcd-pci	0.2	UFS host controller PCI glue driver
virtio_scsi		Virtio SCSI HBA driver
vmw_pvscsi	1.0.7.0-k	VMware PVSCSI driver
xen-scsifront		Xen SCSI frontend driver

ssb Drivers in UEK R6 (x86_64)

Driver	Version	Description
ssb		Sonics Silicon Backplane driver

staging Drivers in UEK R6 (x86_64)

Driver	Version	Description
exfat		exFAT Filesystem Driver
firewire-serial		FireWire Serial TTY Driver
b1		CAPI4Linux: Common support for active AVM cards
b1dma		CAPI4Linux: DMA support for active AVM cards
b1pci		CAPI4Linux: Driver for AVM B1 PCI card
c4		CAPI4Linux: Driver for AVM C2/C4 cards
t1pci		CAPI4Linux: Driver for AVM T1 PCI card

Driver	Version	Description
bas_gigaset		USB Driver for Gigaset 307x
gigaset		Driver for Gigaset 307x
ser_gigaset		Serial Driver for Gigaset 307x using Siemens M101
usb_gigaset		USB Driver for Gigaset 307x using M105
hysdn		ISDN4Linux: Driver for HYSDN cards
qlge	1.00.00.35	QLogic 10 Gigabit PCI-E Ethernet Driver
r8192e_pci	0014.0401.2010	Linux driver for Realtek RTL819x WiFi cards
rtllib		
rtllib_crypt_ccmp		
rtllib_crypt_tkip		
rtllib_crypt_wep		
r8712u		rtl871x wireless lan driver
hwa-rc		Host Wireless Adapter Radio Control Driver
i1480-dfu-usb		Intel Wireless UWB Link 1480 firmware uploader for USB
i1480-est		i1480's Vendor Specific Event Size Tables
umc		UWB Multi-interface Controller capability bus
uwb		Ultra Wide Band core
whc-rc		Wireless Host Controller Radio Control Driver
whci		WHCI UWB Multi-interface Controller enumerator
hwa-hc		Host Wired Adapter USB Host Control Driver
whci-hcd		WHCI Wireless USB host controller driver
wusb-cbaf		Wireless USB Cable Based Association
wusb-wa		Wireless USB Wire Adapter core
wusbcore		Wireless USB core

target Drivers in UEK R6 (x86_64)

Driver	Version	Description
cxgbit	1.0.0-ko	Chelsio iSCSI target offload driver

Driver	Version	Description
iscsi_target_mod	4.1.x	iSCSI-Target Driver for mainline target infrastructure
tcm_loop		TCM loopback virtual Linux/SCSI fabric module
target_core_file		TCM FILEIO subsystem plugin
target_core_iblock		TCM IBLOCK subsystem plugin
target_core_mod		Target_Core_Mod/ConfigFS
target_core_pscsi		TCM PSCSI subsystem plugin
target_core_user		TCM USER subsystem plugin
tcm_fc		FC TCM fabric driver 0.4

tee Drivers in UEK R6 (x86_64)

Driver	Version	Description
amdtee	1.0	AMD-TEE driver
tee	1.0	TEE Driver

thermal Drivers in UEK R6 (x86_64)

Driver	Version	Description
acpi_thermal_rel		Intel acpi thermal rel misc dev driver
int3400_thermal		INT3400 Thermal driver
int3402_thermal		INT3402 Thermal driver
int3403_thermal		ACPI INT3403 thermal driver
int340x_thermal_zone		Intel INT340x common thermal zone handler
processor_thermal_device		Processor Thermal Reporting Device Driver
intel_pch_thermal		Intel PCH Thermal driver
intel_powerclamp		Package Level C-state Idle Injection for Intel CPUs
intel_soc_dts_iosf		
x86_pkg_temp_thermal		X86 PKG TEMP Thermal Driver

tty Drivers in UEK R6 (x86_64)

Driver	Version	Description
cyclades	2.6	

Driver	Version	Description
n_gsm		
n_hdlc		
nozomi		Nozomi driver
altera_jtaguart		Altera JTAG UART driver
altera_uart		Altera UART driver
arc_uart		ARC(Synopsys) On-Chip(fpga) serial driver
jsm		Driver for the Digi International Neo and Classic PCI based product line
synclink		
synclink_gt		
synclinkmp		

uio Drivers in UEK R6 (x86_64)

Driver	Version	Description
uio		
uio_aec		
uio_cif		
uio_hv_generic	0.02.1	Generic UIO driver for VMBus devices
uio_pci_generic	0.01.0	Generic UIO driver for PCI 2.3 devices
uio_pdrv_genirq		Userspace I/O platform driver with generic IRQ handling
uio_sercos3		UIO driver for the Automata Sercos III PCI card

usb Drivers in UEK R6 (x86_64)

Driver	Version	Description
cxacru		Conexant AccessRunner ADSL USB modem driver
speedtch		Alcatel SpeedTouch USB driver
ueagle-atm		ADI 930/Eagle USB ADSL Modem driver
usbatm		Generic USB ATM/DSL I/O
xusbatm		Driver for USB ADSL modems initialized in userspace
cdc-acm		USB Abstract Control Model driver for USB modems and ISDN adapters

Driver	Version	Description
cdc-wdm		USB Abstract Control Model driver for USB WCM Device Management
usblp		USB Printer Device Class driver
usbtmc		
ledtrig-usbport		USB port trigger
sl811-hcd		SL811HS USB Host Controller Driver
u132-hcd		U132 USB Host Controller Driver
mdc800		USB Driver for Mustek MDC800 Digital Camera
microtek		Microtek Scanmaker X6 USB scanner driver
adutux		adutux (see www.ontrak.net)
appledisplay		Apple Cinema Display driver
emi26		Emagic EMI 2|6 firmware loader.
emi62		Emagic EMI 6|2m firmware loader.
ezusb		
ftdi-elan		FTDI ELAN driver
idmouse		Siemens ID Mouse FingerTIP Sensor Driver
iowarrior		USB IO-Warrior driver
isight_firmware		
ldusb		LD USB Driver
legousbtower		LEGO USB Tower Driver
sisusbvga		sisusbvga - Driver for Net2280/ SiS315-based USB2VGA dongles
usb3503		USB3503 USB HUB driver
usblcd		USBLCD Driver Version 1.05
usbsevseg		USB 7 Segment Driver
uss720		USB Parport Cable driver for Cables using the Lucent Technologies USS720 Chip
phy-generic		NOP USB Transceiver driver
aircable		AIRcable USB Driver
ark3116		USB ARK3116 serial/IrDA driver
belkin_sa		USB Belkin Serial converter driver
ch341		
cp210x		Silicon Labs CP210x RS232 serial adaptor driver
cyberjack		REINER SCT cyberJack pinpad/e-com USB Chipcard Reader Driver

Driver	Version	Description
cypress_m8		Cypress USB to Serial Driver
digi_acceleport		Digi AccelePort USB-2/USB-4 Serial Converter driver
empeg		USB Empeg Mark I/II Driver
f81232		Fintek F81232 USB to serial adaptor driver
f81534		Fintek F81532/F81534
ftdi_sio		USB FTDI Serial Converters Driver
garmin_gps		garmin gps driver
io_edgeport		Edgeport USB Serial Driver
io_ti		Edgeport USB Serial Driver
ipaq		USB PocketPC PDA driver
ipw		IPWireless tty driver
ir-usb		USB IR Dongle driver
iuu_phoenix		Infinity USB Unlimited Phoenix driver
keyspan		Keyspan USB to Serial Converter Driver
keyspan_pda		USB Keyspan PDA Converter driver
kl5kusb105		KLSI KL5KUSB105 chipset USB->Serial Converter driver
kobil_sct		KOBIL USB Smart Card Terminal Driver (experimental)
mct_u232		Magic Control Technology USB-RS232 converter driver
metro-usb		Metrologic Instruments Inc. - USB-POS driver
mos7720		Moschip USB Serial Driver
mos7840		Moschip 7840/7820 USB Serial Driver
mxuport		
navman		
omninet		USB ZyXEL omni.net LCD PLUS Driver
opticon		Opticon USB barcode to serial driver (1D)
option		USB Driver for GSM modems
oti6858		Ours Technology Inc. OTi-6858 USB to serial adapter driver
pl2303		Prolific PL2303 USB to serial adaptor driver
qcaux		
qcserial		Qualcomm USB Serial driver

Driver	Version	Description
quatech2		Quatech 2nd gen USB to Serial Driver
safe_serial		USB Safe Encapsulated Serial
sierra		USB Driver for Sierra Wireless USB modems
spcp8x5		SPCP8x5 USB to serial adaptor driver
ssu100		Quatech SSU-100 USB to Serial Driver
symbolserial		
ti_usb_3410_5052		TI USB 3410/5052 Serial Driver
upd78f0730		Renesas uPD78F0730 USB to serial converter driver
usb-serial-simple		
usb_debug		
usb_wwan		USB Driver for GSM modems
visor		USB HandSpring Visor / Palm OS driver
whiteheat		USB ConnectTech WhiteHEAT driver
wishbone-serial		USB Wishbone-Serial adapter
xsens_mt		USB-serial driver for Xsens motion trackers
uas		
ums-alauda		Driver for Alauda-based card readers
ums-cypress		SAT support for Cypress USB/ATA bridges with ATACB
ums-datafab		Driver for Datafab USB Compact Flash reader
ums-eneub6250		Driver for ENE UB6250 reader
ums-freecom		Driver for Freecom USB/IDE adaptor
ums-isd200		Driver for In-System Design, Inc. ISD200 ASIC
ums-jumpshot		Driver for Lexar "Jumpshot" Compact Flash reader
ums-karma		Driver for Rio Karma
ums-onetouch		Maxtor USB OneTouch hard drive button driver
ums-realtek		Driver for Realtek USB Card Reader
ums-sddr09		Driver for SanDisk SDDR-09 SmartMedia reader
ums-sddr55		Driver for SanDisk SDDR-55 SmartMedia reader
ums-usbat		Driver for SCM Microsystems (a.k.a. Shuttle) USB-ATAPI cable
usb-storage		USB Mass Storage driver for Linux

Driver	Version	Description
typec_displayport		DisplayPort Alternate Mode
pi3usb30532		Pericom PI3USB30532 Type-C mux driver
tcpm		USB Type-C Port Manager
tps6598x		TI TPS6598x USB Power Delivery Controller Driver
typec		USB Type-C Connector Class
typec_ucsi		USB Type-C Connector System Software Interface driver
ucsi_acpi		UCSI ACPI driver
usbip-core		USB/IP Core

vfio Drivers in UEK R6 (x86_64)

Driver	Version	Description
mdev	0.1	Mediated device Core Driver
vfio_mdev	0.1	VFIO based driver for Mediated device
vfio-pci	0.2	VFIO PCI - User Level meta-driver
vfio_virqfd	0.1	IRQFD support for VFIO bus drivers

vhost Drivers in UEK R6 (x86_64)

Driver	Version	Description
vhost	0.0.1	Host kernel accelerator for virtio
vhost_iotlb	0.1	VHOST IOTLB
vhost_net	0.0.1	Host kernel accelerator for virtio net
vhost_scsi		VHOST_SCSI series fabric driver
vhost_vsock		vhost transport for vsock

video Drivers in UEK R6 (x86_64)

Driver	Version	Description
apple_bl		Apple Backlight Driver
lcd		LCD Lowlevel Control Abstraction
platform_lcd		
aty128fb		FBDev driver for ATI Rage128 / Pro cards

Driver	Version	Description
atyfb		FBDev driver for ATI Mach64 cards
radeonfb		framebuffer driver for ATI Radeon chipset
cirrusfb		Accelerated FBDev driver for Cirrus Logic chips
fb_ddc		DDC/EDID reading support
fb_sys_fops		Generic file read (fb in system RAM)
syscopyarea		Generic copyarea (sys-to-sys)
sysfillrect		Generic fill rectangle (sys-to-sys)
sysimgblt		1-bit/8-bit to 1-32 bit color expansion (sys-to-sys)
hyperv_fb		Microsoft Hyper-V Synthetic Video Frame Buffer Driver
macmodes		
nvidiafb		Framebuffer driver for nVidia graphics chipset
rivafb		Framebuffer driver for nVidia Riva 128, TNT, TNT2, and the GeForce series
savagefb		FBDev driver for S3 Savage PCI/AGP Chips
sm501fb		SM501 Framebuffer driver
vfb		
vga16fb		Legacy VGA framebuffer device driver
viafb		
xen-fbfront		Xen virtual framebuffer device frontend
vgastate		VGA State Save/Restore

virtio Drivers in UEK R6 (x86_64)

Driver	Version	Description
virtio_balloon		Virtio balloon driver
virtio_input		Virtio input device driver
virtio_pci	1	virtio-pci

w1 Drivers in UEK R6 (x86_64)

Driver	Version	Description
w1_ds2780		1-wire Driver for Maxim/Dallas DS2780 Stand-Alone Fuel Gauge IC
w1_ds2781		1-wire Driver for Maxim/Dallas DS2781 Stand-Alone Fuel Gauge IC
wire		Driver for 1-wire Dallas network protocol.

watchdog Drivers in UEK R6 (x86_64)

Driver	Version	Description
acquirewdt		Acquire Inc. Single Board Computer Watchdog Timer driver
advantechwdt		Advantech Single Board Computer WDT driver
alim1535_wdt		ALi M1535 PMU Watchdog Timer driver
alim7101_wdt		ALi M7101 PMU Computer Watchdog Timer driver
cpu5wdt		sma cpu5 watchdog driver
eurotechwdt		Driver for Eurotech CPU-1220/1410 on board watchdog
f71808e_wdt		F71808E Watchdog Driver
hpwdt	2.0.3	hpe watchdog driver
i6300esb		Watchdog driver for Intel 6300ESB chipsets
iTCO_vendor_support	1.04	Intel TCO Vendor Specific WatchDog Timer Driver Support
iTCO_wdt	1.11	Intel TCO WatchDog Timer Driver
ib700wdt		IB700 SBC watchdog driver
ibmasr		IBM Automatic Server Restart driver
ie6xx_wdt		Intel Atom E6xx Watchdog Device Driver
it8712f_wdt		IT8712F Watchdog Driver
it87_wdt		Hardware Watchdog Device Driver for IT87xx EC-LPC I/O
machzwd		MachZ ZF-Logic Watchdog driver
mei_wdt		Device driver for Intel MEI iAMT watchdog
mena21_wdt		MEN A21 Watchdog
nv_tco		TCO timer driver for NV chipsets

Driver	Version	Description
of_xilinx_wdt		Xilinx Watchdog driver
pc87413_wdt		PC87413 WDT driver
pcwd_pci		Berkshire PCI-PC Watchdog driver
pcwd_usb		Berkshire USB-PC Watchdog driver
sbc60xxwdt		60xx Single Board Computer Watchdog Timer driver
sbc_epx_c3		Hardware Watchdog Device for Winsystems EPX-C3 SBC. Note that there is no way to probe for this device -- so only use it if you are *sure* you are running on this specific SBC system from Winsystems! It writes to IO ports 0x1ee and 0x1ef!
sbc_fitpc2_wdt		SBC-FITPC2 Watchdog
sc1200wdt		Driver for National Semiconductor PC87307/PC97307 watchdog component
sch311x_wdt		SMSC SCH311x WatchDog Timer Driver
smsc37b787_wdt		Driver for SMsC 37B787 watchdog component (Version 1.1)
softdog		Software Watchdog Device Driver
sp5100_tco		TCO timer driver for SP5100/SB800 chipset
via_wdt		Driver for watchdog timer on VIA chipset
w83627hf_wdt		w83627hf/thf WDT driver
w83877f_wdt		Driver for watchdog timer in w83877f chip
w83977f_wdt		Driver for watchdog timer in W83977F I/O chip
wafer5823wdt		ICP Wafer 5823 Single Board Computer WDT driver
wdat_wdt		ACPI Hardware Watchdog (WDAT) driver
wdt_pci		Driver for the ICS PCI-WDT500/501 watchdog cards
xen_wdt		Xen WatchDog Timer Driver

xen Drivers in UEK R6 (x86_64)

Driver	Version	Description
ovmapi		

Driver	Version	Description
xen-acpi-processor		Xen ACPI Processor P-states (and Cx) driver which uploads PM data to Xen hypervisor
xen-evtchn		
xen-front-pgdir-shbuf		Xen frontend/backend page directory based shared buffer handling
xen-gntalloc		User-space grant reference allocator driver
xen-gntdev		User-space granted page access driver
xen-privcmd		
xen-scsiback		Xen SCSI backend driver
xenfs		Xen filesystem