WIND™

VXWORKS® 7

RELEASE NOTES

Release SR0540

JUNE 2018

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VxWorks® 7

Release Notes, Release SR0540 JUNE 2018

13 June 2018

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What's New

Features in This Release

This release includes new features and defect fixes for various areas of VxWorks 7.

Some features may not be available in your installation depending on the VxWorks 7 Profiles you have purchased.

Configuration

SMP Default VxWorks Build

The default build for VxWorks projects has been changed from uniprocessor (UP) to symmetric multiprocessor (SMP), when the CPU and BSP support SMP. In SR0530, this change applied only to projects built using Workbench. It now also applies to command-line projects. Uniprocessor builds must be intentionally selected.

Kernel Task Priority Configuration

The task priority for a sub-set of system tasks can be configured with parameters to the **INCLUDE_SYSTEM_TASK_PRIORITIES** component. The following system tasks can be configured:

- exception
- ISR deferral
- job
- kernel shell

- logging daemon
- SSH

NFSD Automatic Startup Configuration

VxWorks 7 now includes an option for delaying NFSD service startup instead of automatically spawning the service during VxWorks startup.

Unique MAC Address Configuration

In addition to the default way of reading a MAC address from the device tree blob (DTB), VxWorks now supports BSP-specific methods for setting a MAC address, so that production systems can guarantee a unique MAC address for each device on a network.

Networking

Real-Time Network Stack (RTNET) Support for IP Multicast

RTNET now includes support for IP multicast, with the following RFCs:

- RFC 1112 *Host Extensions for IP Multicasting*
- RFC 2236 *Internet Group Management Protocol, Version 2*
- RFC 3376 *Internet Group Management Protocol, Version 3*

TCP Delayed Acknowledgement

The VxWorks network stack now provides options to use TCP delayed acknowledgement to combine ACKs of small packets, which improves the networking performance under a high load of small packets.

Security

OpenSSL FIPS 140-2 Module RTP Support

This release adds OpenSSL FIPS 140-2 cryptographic module support for RTP applications.

SSH Server Improvements

VxWorks support for the SSH server now includes additional cryptography support:

- HMAC-SHA2-256, RFC 6668
- HMAC-SHA2-512, RFC 6668
- ECDH key exchange, RFC 5656, including:
  - ecdh-sha2-nistp256
  - ecdh-sha2-nistp384
  - ecdh-sha2-nistp521

Multimedia

OpenCV Support

VxWorks provides support for Open Source Computer Vision (OpenCV) in the form of user mode (RTP) libraries for ARM and Intel processors (with minor limitations). For IA, a static library and a shared library are supported for 32-bit and 64-bit processors. For ARM, a static library and a shared library are supported for 32-bit, and a static library is supported for 64-bit.

OpenCV is an open-source computer vision and machine learning software library. For more information, see VxWorks 7 Third-Party Software Support.

USB Video Class Driver Support

VxWorks 7 now includes support for USB video cameras. For more information, see the VxWorks 7 USB Host Stack Programmer's Guide.

Virtualization

Real-Time Clock Support

Guest operating systems on Intel architecture boards now have access to a fully emulated real-time clock (RTC). Each emulated RTC is isolated, allowing each guest to make changes to its RTC without affecting other guests.

Support for Core Sharing

The Virtualization Profile now allows you to share cores between virtual machines (VMs) on ARM Cortex A53 platforms.

SMMU Support

The xlnx_zynqmp BSP now includes support for the System Memory Management Unit (SMMU).

Virtual I/O Driver Support on Intel

The itl_generic BSP now supports a Virtual I/O (virtio) driver for the KVM e1000 Ethernet NIC provided by KVM.

Workbench

Stop Mode Debugging With a Proxy Agent

You can now use a proxy agent for stop mode debugging from the command line (this feature was introduced for Workbench in SR0530). This feature allows you to use Workbench on one host (Linux or Windows) without a direct connection to your target. Your target is connected to the Workbench host by way of a proxy agent, which runs on another host (Linux or Windows).

For more information, see the VxWorks 7 Using a Proxy Agent for Stop Mode Debugging Tutorial.

Command-Line Debugging Over a Serial Connection

The SR0530 release introduced stop mode debugging over a serial connection using Workbench. This release adds wrdbg command-line support for stop mode debugging over a serial connection.

Board Support Packages

- The fsl_imx6 BSP now supports uSDHC, SATA, and USB on the i.MX6QP, the latest i.MX6 Quad Plus board from NXP Semiconductors N.V.
- The new itl_arria10 BSP provides VxWorks 7 support for the Intel Arria 10 SoC Development Kit.
- The new renesas_rcar_h3 BSP provides support for the Renesas R-Car H3 Salvator-X board.

RPMs in This Release

The features included in this and previous releases are delivered in the form of new or updated RPMs for the related features.

The following RPMs are included in this release of VxWorks 7:

acpica-1.0.2.0-vx7_20180610.noarch.rpm
agent-1.2.5.2-vx7_20180610.noarch.rpm
alt_soc_gen5-1.1.5.0-vx7_20180610.noarch.rpm
altera_common-1.0.0.0-vx7_20180610.noarch.rpm
altera_soc_arria10-1.0.1.0-vx7_20180610.noarch.rpm
avnet_mini_itx_7z-1.0.6.0-vx7_20180610.noarch.rpm
bdm_flash_mtd-1.1.3.0-vx7_20180610.noarch.rpm
bdm_flash_nftl-1.1.1.0-vx7_20180610.noarch.rpm
bdm_sata-1.1.4.0-vx7_20180610.noarch.rpm
bdm_sdmmc-1.2.1.0-vx7_20180610.noarch.rpm
bdm_tffs_drv-1.0.1.4-vx7_20180610.noarch.rpm
boardlib-1.1.3.0-vx7_20180610.noarch.rpm
boot_bios-1.0.2.8-vx7_20180610.noarch.rpm
boot_common-1.0.2.5-vx7_20180610.noarch.rpm
boot_uefi-1.0.2.13-vx7_20180610.noarch.rpm
bootapp-1.0.6.1-vx7_20180610.noarch.rpm
build_dir-1.2.3.0-vx7_20180610.noarch.rpm
build_dir_cert_vsbconfig-1.0.1.0-vx7_20180610.noarch.rpm
build_dir_misc-1.0.5.0-vx7_20180610.noarch.rpm
build_dir_mk-1.0.9.0-vx7_20180610.noarch.rpm
build_dir_tool-1.0.7.0-vx7_20180610.noarch.rpm
build_tools_common-1.0.2.0-vx7_20180610.noarch.rpm
build_tools_hypervisor-1.0.4.0-vx7_20180610.noarch.rpm
core_io-1.2.9.0-vx7_20180610.noarch.rpm
core_kernel-1.2.7.0-vx7_20180610.noarch.rpm
core_ldso-1.0.7.6-vx7_20180610.noarch.rpm
core_rtp-1.1.6.0-vx7_20180610.noarch.rpm
core_safety-1.0.6.0-vx7_20180610.noarch.rpm
core_user-1.2.7.0-vx7_20180610.noarch.rpm
coredump-1.1.1.2-vx7_20180610.noarch.rpm
docs_manuals-1.0.9.0-vx7_20180610.noarch.rpm
end-1.2.9.0-vx7_20180610.noarch.rpm
event-1.0.5.0-vx7_20180610.noarch.rpm
fbdev_itlgmc-1.0.3.1-vx7_20180610.noarch.rpm
fbdev_itlvipsfbii-1.0.0.0-vx7_20180610.noarch.rpm
fdt-1.0.11.0-vx7_20180610.noarch.rpm
fs_core_common-1.1.3.1-vx7_20180610.noarch.rpm
fs_hrfs-1.0.1.2-vx7_20180610.noarch.rpm

fs_nfs-1.0.3.0-vx7_20180610.noarch.rpm
fsl_imx6-1.1.14.0-vx7_20180610.noarch.rpm
fsl_imx6sx_cm4-1.0.3.0-vx7_20180610.noarch.rpm
fsl_k70_twr-1.0.4.0-vx7_20180610.noarch.rpm
fsl_kinetis-1.0.4.1-vx7_20180610.noarch.rpm
fsl_ls102x-1.0.7.0-vx7_20180610.noarch.rpm
fsl_mpc82xx-1.0.2.0-vx7_20180610.noarch.rpm
fsl_p1p2-1.0.8.0-vx7_20180610.noarch.rpm
fsl_p3p4p5-1.0.9.1-vx7_20180610.noarch.rpm
fsl_pq2-1.0.2.0-vx7_20180610.noarch.rpm
fsl_qoriq-1.2.1.0-vx7_20180610.noarch.rpm
fsl_t1-1.0.6.0-vx7_20180610.noarch.rpm
fsl_t2t4-1.0.10.0-vx7_20180610.noarch.rpm
fsl_vf610twr_ca5-1.0.5.0-vx7_20180610.noarch.rpm
fsl_vf610twr_cm4-1.0.4.0-vx7_20180610.noarch.rpm
gpudev_fslviv_demos-1.0.6.2-vx7_20180610.noarch.rpm
gpudev_fslviv_tests-1.0.3.2-vx7_20180610.noarch.rpm
guest-benchmarks-1.0.3.0-vx7_20180610.noarch.rpm
hash-1.1.3.0-vx7_20180610.noarch.rpm
host_mrt_linux-1.0.5.0-vx7_20180610.noarch.rpm
host_mrt_windows-1.0.5.0-vx7_20180610.noarch.rpm
host_windows-1.0.8.0-vx7_20180610.noarch.rpm
hvif-3.2.3.0-vx7_20180610.noarch.rpm
hvif_arm-3.2.3.0-vx7_20180610.noarch.rpm
hvif_ia-3.2.3.0-vx7_20180610.noarch.rpm
hypervisor-3.1.2.0-vx7_20180610.noarch.rpm
hypervisor_arm-3.1.2.0-vx7_20180610.noarch.rpm
hypervisor_ia-3.1.2.0-vx7_20180610.noarch.rpm
image_libjpeg-9.0.0.0-vx7_20180610.noarch.rpm
ipnet_coreip-1.4.3.0-vx7_20180610.noarch.rpm
ipnet_dhcpr-1.0.0.8-vx7_20180610.noarch.rpm
ipnet_dhcps-1.0.0.13-vx7_20180610.noarch.rpm
ipnet_firewall-1.0.1.7-vx7_20180610.noarch.rpm
ipnet_ftp-1.0.4.6-vx7_20180610.noarch.rpm
ipnet_ipsecike-1.0.1.14-vx7_20180610.noarch.rpm
ipnet_linkproto_ppp-1.2.1.5-vx7_20180610.noarch.rpm
ipnet_mobility-1.0.3.0-vx7_20180610.noarch.rpm
ipnet_ntp-1.2.0.7-vx7_20180610.noarch.rpm
ipnet_ptp-1.0.3.2-vx7_20180610.noarch.rpm
ipnet_ssh-1.0.4.0-vx7_20180610.noarch.rpm
ipnet_tsn-1.0.3.1-vx7_20180610.noarch.rpm
ipnet_usrspace-2.0.4.0-vx7_20180610.noarch.rpm
itl_64_vx7-1.1.1.1-vx7_20180610.noarch.rpm
itl_arria10-1.0.0.9-vx7_20180610.noarch.rpm
itl_common-1.0.6.1-vx7_20180610.noarch.rpm
itl_generic-1.0.7.0-vx7_20180610.noarch.rpm
jobqueue-1.0.5.0-vx7_20180610.noarch.rpm
ldapc-1.0.1.1-vx7_20180610.noarch.rpm

libc-kernel-1.0.8.0-vx7_20180610.noarch.rpm
libc-usr-1.0.8.0-vx7_20180610.noarch.rpm
loader-1.1.6.0-vx7_20180610.noarch.rpm
mosquitto-1.4.8.2-vx7_20180610.noarch.rpm
mrt-1.0.6.0-vx7_20180610.noarch.rpm
net_base-1.0.7.0-vx7_20180610.noarch.rpm
nxp_layerscape-1.0.1.0-vx7_20180610.noarch.rpm
openSSL-1.2.2.0-vx7_20180610.noarch.rpm
opencv-3.3.1.0-vx7_20180610.noarch.rpm
openssl_fips-1.1.1.0-vx7_20180610.noarch.rpm
os_arch_arm-1.1.11.0-vx7_20180610.noarch.rpm
os_arch_ia-1.2.6.0-vx7_20180610.noarch.rpm
os_arch_ppc-1.3.3.0-vx7_20180610.noarch.rpm
os_arch_vxsim-1.0.7.10-vx7_20180610.noarch.rpm
os_drv_vxbus_ns_container-1.0.6.0-vx7_20180610.noarch.rpm
os_lang-lib_tool_common-1.0.5.0-vx7_20180610.noarch.rpm
os_vx653_apex-1.0.1.0-vx7_20180610.noarch.rpm
os_vx653_defs-1.0.0.0-vx7_20180610.noarch.rpm
os_vx653_hm-1.0.1.0-vx7_20180610.noarch.rpm
os_vx653_hvif-1.0.2.0-vx7_20180610.noarch.rpm
os_vx653_ns_container-1.0.1.0-vx7_20180610.noarch.rpm
os_vx653_safeipc-1.1.0.0-vx7_20180610.noarch.rpm
ostools-1.0.5.0-vx7_20180610.noarch.rpm
qsp-1.1.3.0-vx7_20180610.noarch.rpm
qsp_arm-1.0.2.0-vx7_20180610.noarch.rpm
qsp_arm64-1.0.1.0-vx7_20180610.noarch.rpm
qsp_ppc-1.1.2.0-vx7_20180610.noarch.rpm
qsp_ppc750-1.0.2.0-vx7_20180610.noarch.rpm
raster_mesa_demos-1.0.4.2-vx7_20180610.noarch.rpm
raster_mesa_tests-1.0.4.2-vx7_20180610.noarch.rpm
raster_vg-1.0.4.3-vx7_20180610.noarch.rpm
renesas_common-1.0.0.0-vx7_20180610.noarch.rpm
renesas_rcar-1.0.1.0-vx7_20180610.noarch.rpm
renesas_rcar_h3-1.0.1.0-vx7_20180610.noarch.rpm
rtnet-1.0.3.0-vx7_20180610.noarch.rpm
runtime_analysis-1.1.4.3-vx7_20180610.noarch.rpm
samples-1.0.2.0-vx7_20180610.noarch.rpm
sdk_tools-1.1.1.0-vx7_20180610.noarch.rpm
sdmmc_device_storage-1.0.2.2-vx7_20180610.noarch.rpm
sdmmc_host_sdhc-1.0.5.2-vx7_20180610.noarch.rpm
sec_crypto-1.0.6.2-vx7_20180610.noarch.rpm
sec_hash-1.0.2.3-vx7_20180610.noarch.rpm
shell-1.1.8.0-vx7_20180610.noarch.rpm
shmem-1.0.2.0-vx7_20180610.noarch.rpm
snmp_agent-1.0.1.6-vx7_20180610.noarch.rpm
snmp_engine-1.0.1.9-vx7_20180610.noarch.rpm
socket-1.0.6.0-vx7_20180610.noarch.rpm
stacktrace-1.0.2.3-vx7_20180610.noarch.rpm

stop_mode_debug_agent-2.0.6.0-vx7_20180610.noarch.rpm
syscalls-1.0.16.0-vx7_20180610.noarch.rpm
systemviewer-1.0.0.13-vx7_20180610.noarch.rpm
tbb-20.18.1.0-vx7_20180610.noarch.rpm
ti_keystone2-1.0.9.0-vx7_20180610.noarch.rpm
ti_sitara_cm4-1.0.4.0-vx7_20180610.noarch.rpm
ti_sitara_ctxa15-1.0.7.0-vx7_20180610.noarch.rpm
ti_sitara_ctxa8-1.1.6.0-vx7_20180610.noarch.rpm
ti_sitara_ctxa9-1.0.6.0-vx7_20180610.noarch.rpm
tilcon_demo-7.2.1.4-vx7_20180610.noarch.rpm
tilcon_kernel-7.2.1.7-vx7_20180610.noarch.rpm
tools_wb_vxworks7_apidoc-1.0.10.0-wb4_20180610.noarch.rpm
toolsrc_cert-1.0.0.1-vx7_20180610.noarch.rpm
toolsrc_llvm-1.0.1.3-vx7_20180610.noarch.rpm
usb_core-1.0.3.1-vx7_20180610.noarch.rpm
usb_ctlr_ehci-1.0.2.4-vx7_20180610.noarch.rpm
usb_ctlr_ohci-1.0.1.11-vx7_20180610.noarch.rpm
usb_ctlr_xhci-1.0.3.5-vx7_20180610.noarch.rpm
usb_host_core-1.0.0.18-vx7_20180610.noarch.rpm
usb_host_serial-1.0.0.10-vx7_20180610.noarch.rpm
usb_host_storage-1.0.1.2-vx7_20180610.noarch.rpm
usb_host_uvc-1.0.0.1-vx7_20180610.noarch.rpm
usb_target_core-1.0.1.11-vx7_20180610.noarch.rpm
usb_target_ser-1.1.0.10-vx7_20180610.noarch.rpm
user_management-1.1.0.3-vx7_20180610.noarch.rpm
user_management_ldap-1.1.1.1-vx7_20180610.noarch.rpm
virtio-1.0.8.0-vx7_20180610.noarch.rpm
vnic-3.2.6.0-vx7_20180610.noarch.rpm
vxbus_buslib-2.1.5.0-vx7_20180610.noarch.rpm
vxbus_core-1.0.10.0-vx7_20180610.noarch.rpm
vxbus_drv-1.2.9.0-vx7_20180610.noarch.rpm
vxbus_subsystem-1.0.14.0-vx7_20180610.noarch.rpm
vxsim_prebuilt_projects_linux-1.0.4.0-vx7_20180610.noarch.rpm
vxsim_prebuilt_projects_windows-1.0.4.0-vx7_20180610.noarch.rpm
vxtestv2_fs-1.0.2.0-vx7_20180610.noarch.rpm
vxtestv2_ns_container-1.0.6.0-vx7_20180610.noarch.rpm
vxtestv2_os_bootapp-1.0.2.0-vx7_20180610.noarch.rpm
vxtestv2_os_bsp-1.0.2.0-vx7_20180610.noarch.rpm
vxtestv2_os_core-1.0.6.0-vx7_20180610.noarch.rpm
vxtestv2_os_driver-1.0.2.0-vx7_20180610.noarch.rpm
vxworks_7_installsets-1.0.0.3-vx7_20180610.noarch.rpm
wassp_test_artifacts-1.0.1.5-vx7_20180610.noarch.rpm
webcli_clidemo-1.0.1.5-vx7_20180610.noarch.rpm
webcli_common-1.0.4.0-vx7_20180610.noarch.rpm
webcli_http-1.0.2.0-vx7_20180610.noarch.rpm
webcli_tools-1.0.1.5-vx7_20180610.noarch.rpm
webcli_webclidemo-1.0.1.8-vx7_20180610.noarch.rpm
webcli_webdemo-1.0.1.11-vx7_20180610.noarch.rpm

xen-1.0.0.2-vx7_20180610.noarch.rpm
xen_arm-1.0.0.2-vx7_20180610.noarch.rpm
xlnx_zynq7k-1.0.11.0-vx7_20180610.noarch.rpm
xlnx_zynqmp-1.0.4.0-vx7_20180610.noarch.rpm
xlnx_zynqmp_r5-1.0.3.0-vx7_20180610.noarch.rpm

Defects Fixed in This Release

A list of defects fixed in this release is available from the Wind River Knowledge Library.

To view the list of defects, see the Fixed Defect List (SR0540).

Defect Version Information Update

For defects found or fixed in VxWorks 7 SR0530 or later, the version information displayed as part of the defect record reflects the overall VxWorks 7 release version, not the layer-specific version. For example, instead of the following:

Found in Version: 1.0.2.3
Fix Version: 1.0.3.0

You now see:

Found in Version: SR0520
Fix Version: SR0530

To determine the RPM versions shipped in this release, see RPMs in This Release on page 4.

To see the RPM versions that are currently installed in your installation, open the latest installer snapshot under *installDir*/**etc/wr.profile.d/snapshots**.

Changes in This Release

The following lists the changes and RPMs that were updated in this and previous releases of VxWorks 7. This includes the RPM name, the current version number, and a synopsis of the changes included within the individual layers within each RPM.

Changes in June 2018 (SR0540)

acpica 1.0.2.0

- updated by merge with vx653 content

agent 1.2.5.2

- TCF update for SR0540 (US106156)
- fixed incorrect start symbol while debugging a DKM written byADA (WB4-7412)
- fixed "step over" works like "step into" when an unnecessarysymbol file is not provided (V7COR-5771)

alt_soc_gen5 1.1.5.0

- added support to configure MAC address by endMacGet() (F6878)

altera_common 1.0.0.0

- initial support (F7155)

altera_soc_arria10 1.0.1.0

- initial support (F7155)

avnet_mini_itx_7z 1.0.6.0

- added support to configure MAC address by endMacGet() (F6878)
- updated bootApp configuration information

bdm_flash_mtd 1.1.3.0

- updated by merge with vx653 content

bdm_flash_nftl 1.1.1.0

- deprecating NFTL layer (F10502)

bdm_sata 1.1.4.0

- deprecating VxBus legacy SATA components (F10606)

bdm_sdmmc 1.2.1.0

- deprecating SDMMC legacy layer (F10502)

bdm_tffs_drv 1.0.1.4

- enable sysTffsProgressCb (V7STO-1065)

boardlib 1.1.3.0

- updated by merge with vx653 content

boot_bios 1.0.2.8

- Add LOCAL_MEM_LOCAL_ADRS option (V7PRO-4415)

boot_common 1.0.2.5

- move LOCAL_MEM_LOCAL_ADRS into file defs.boot (V7PRO-4415)

boot_uefi 1.0.2.13

- Add LOCAL_MEM_LOCAL_ADRS option (V7PRO-4415)

bootapp 1.0.6.1

- fixed loading 32bit gnu images for xilinx ZCU102 failed (V7PRO-4343)

build_dir 1.2.3.0

- Merge vxworks-653 and vxworks-7 content

build_dir_cert_vsbconfig 1.0.1.0

- Updated for 653 merge into vx7

build_dir_misc 1.0.5.0

- Merge vxworks-653 and vxworks-7 content

build_dir_mk 1.0.9.0

- Merge vxworks-653 and vxworks-7 content

build_dir_tool 1.0.7.0

- add support for Strong and Weak symbols
- Expand support for source extensions (V7COR-5718)
- Fix the unaligned section issue (V7PRO-4414)
- Added -m64 option for 64-bit gnu builds

build_tools_common 1.0.2.0

- Merge vxworks-653 and vxworks-7 content

build_tools_hypervisor 1.0.4.0

- Merge vxworks-653 and vxworks-7 content

core_io 1.2.9.0

- updated by merge with vx653 content

core_kernel 1.2.7.0

- doc update for _mmuPageMap() and mmuPageMap()
- fixed the api doc of taskSpawn() to correct return value (V7COR-4766)
- handle timeouts when POSIX high resolution clock enabled (V7COR-5753,V7COR-5694)
- immediate notification for timer_settime() when absolute expire timehas passed (V7COR-5879)
- conditional compilation to fix compiler warnings (V7COR-5397)
- fixed a typo to include cacheDmaPool in the build (V7COR-5733)
- Make kernel task priorities configurable (F573)
- added missing KERNEL_EXIT in semMTakeHard() (V7COR-5756)
- added error case to unmap inverse page table in vmMap (V7COR-5424)
- update API description for tlsLib and tlsLibCommon (V7PRO-4515)

core_ldso 1.0.7.6

- update API description for tlsLib and tlsLibCommon (V7PRO-4515)

core_rtp 1.1.6.0

- updated by merge with vx653 content
- fixed multi_version issue when IA arch layer upgrade from SR0520 toSR0540 (V7PRO-4549)

core_safety 1.0.6.0

- updated by merge with vx653 content

core_user 1.2.7.0

- updated by merge with vx653 content

coredump 1.1.1.2

- Fixed call trace is wrong on core dump connection

end 1.2.9.0

- Fix C++ compatibility issue. (F9668)
- fix possible NULL pointer dereference (V7PRO-4437)
- Fix Tx timestamp acquisition failure (V7NET-1614)
- fixed multi_version issue when IA arch layer upgrade from SR0520 toSR0540 (V7PRO-4549)
- added support to configure MAC address by vxbEndMacAddrGet() (F6878)
- fix media and ALE issues in vxbFdtTiCpswEnd.c (V7PRO-4287)
- Used miiBusMediaListGet to obtain the media list (V7PRO-4286)
- fix END ioctl setting MAC error (V7PRO-4270)
- post Rx job again if frames received in vxbFdtZynqGemEnd.c (V7PRO-4292)
- added EIOCSIFMEDIA and init media list in vxbFdtTiNetcpEndIp.c (V7PRO-4294)
- added etherAvb driver (F8464)
- fixed the device can't be removed in vxbFdtAltSocGen5DwEnd.c and vxbFslSgmiiPhy.c (V7PRO-4340)
- added MegaCoreTSE and SynopsysDwEnd support (F7155)
- fixed multi_version issue when IA arch layer upgrade from SR0520 tonewer release version (V7PRO-4549)
- added vxbEndMacAddrGet() support (F6878)
- fix an address value issue (V7PRO-4271)
- integrated from 3rd party for Marvell Ethernet PHY chips (F7155)

event 1.0.5.0

- updated by merge with vx653 content

fbdev_itlgmc 1.0.3.1

- fixed static analysis

fbdev_itlvipsfbii 1.0.0.0

- initial support (F10006)

fdt 1.0.11.0

- updated by merge with vx653 content

fs_core_common 1.1.3.1

- rewrite fsDeviceValidateMount (V7STO-1062)

fs_hrfs 1.0.1.2

- Add error info printing for hrfsRawCommitBlk (F10081)
- fix deadlock when buffer usage exceeds threshold value (V7STO-1050)

fs_nfs 1.0.3.0

- support NFSD initilalized not during the boot process but later from application (F8433)
- add description for INCLUDE FILES in nfsd.c (V7STO-1028)
- fix description for head file in nfsCommon.c (V7STO-1029)
- fix nfsdStatusShow always returns error when parameter is NFS_VERSION_ALL (V7STO-1030)
- resolve symbolic link and relative path across mount point (V7STO-1051)

fsl_imx6 1.1.14.0

- added support to configure MAC address by endMacGet() (F6878)
- disable USB overcurrent detection on i.MX6Q SABRE Lite board (V7CON-595)

fsl_imx6sx_cm4 1.0.3.0

- added support to configure MAC address by endMacGet() (F6878)

fsl_k70_twr 1.0.4.0

- added support to configure MAC address by endMacGet() (F6878)

fsl_kinetis 1.0.4.1

- added vxbDevShutdown method for vxbFdtFslKinetisRtc.c (V7PRO-4340)

fsl_ls102x 1.0.7.0

- added support to configure MAC address by endMacGet() (F6878)

fsl_mpc82xx 1.0.2.0

- added support to configure MAC address by endMacGet() (F6878)

fsl_p1p2 1.0.8.0

- added support to configure MAC address by endMacGet() (F6878)
- fixed a typo in section Summary in target.ref.(V7PRO-4465)
- updated the BOOTAPP description.

fsl_p3p4p5 1.0.9.1

- updated the BOOTAPP description.

fsl_pq2 1.0.2.0

- added support to configure MAC address by vxbEndMacAddrGet() (F6878)
- fix END ioctl setting MAC error (V7PRO-4270)

fsl_qoriq 1.2.1.0

- make all the cores timebase in sync with each other.(V7PRO-4288)
- added support to configure MAC address by vxbEndMacAddrGet (F6878)
- fix END ioctl setting MAC error (V7PRO-4270)
- add shutdown methods for Bman, Qman and Fman (V7PRO-4341)
- removed a discarded variable ppcE500DCACHE_FLUSH_NUM.(V7PRO-4404)

- detach child devices firstly during FMAN detachment andresolve the multi-deletion issue for memacDevSem (V7PRO-4435)
- fix a QPortal destruction issue (V7PRO-4434)
- correct the type of the UCODE address variable (V7PRO-4430)
- resolve an UCODE parsing issue for little endian CPUs (V7PRO-4441)
- fix MDIO read/write busy check (V7PRO-4456)
- corrected an error in function coreNetSecCpuReset().(V7PRO-4481)
- fix armSysToMonitor() prototype error (V7PRO-4542)

fsl_t1 1.0.6.0

- correct the sdmmc support information
- added support to configure MAC address by endMacGet() (F6878)
- fsl_fman_ucode_t1024_r1.0_108_4_9.obj module (37,560 bytes) is linked to 'vxWorks' for T1024RDB targets,fsl_fman_ucode_t1040_r1.0_106_4_14.obj module (31,672 bytes) for T1040RDB and T1040QDS targets.
- updated the BOOTAPP description.
- updated descriptions for T1024RDB (V7PRO-4562)

fsl_t2t4 1.0.10.0

- correct the sdmmc support information
- added support to configure MAC address by endMacGet() (F6878)
- fix an address value issue for SGMII PHY (V7PRO-4271)
- updated the BOOTAPP description.

fsl_vf610twr_ca5 1.0.5.0

- added support to configure MAC address by endMacGet() (F6878)

fsl_vf610twr_cm4 1.0.4.0

- added support to configure MAC address by endMacGet() (F6878)

gpudev_fslviv_demos 1.0.6.2

- fixed to use OpenGL ES 2.0 (V7GFX-419)

gpudev_fslviv_tests 1.0.3.2

- fixed to use OpenGL ES 2.0 (V7GFX-419)
- added es2context test

guest-benchmarks 1.0.3.0

- Update revision for vx653

hash 1.1.3.0

- Add PPC64 asm files compile.(F8401)
- provide support for the OpenSSL FIPS 140-2 module in RTP (F10530)
- Add PPC32 asm files compile.(F8401)
- Remove ASM compile for ARMV7M

- Add ARM asm files compile.(F8401)
- Remove ASM compile for THUMB instructions.

host_mrt_linux 1.0.5.0

- update RTP_iMRT_edge_Simulator.vxe

host_mrt_windows 1.0.5.0

- update RTP_iMRT_edge_Simulator.vxe

host_windows 1.0.8.0

- NONE

hvif 3.2.3.0

- Merge vx653 with vxworks-7

hvif_arm 3.2.3.0

- Merge vx653 with vxworks-7

hvif_ia 3.2.3.0

- Merge vx653 with vxworks-7

hypervisor 3.1.2.0

- Update revision for vx653

hypervisor_arm 3.1.2.0

- Update revision for vx653

hypervisor_ia 3.1.2.0

- Update revision for vx653

image_libjpeg 9.0.0.0

- update jpeg library to release 9 (F9493)

ipnet_coreip 1.4.3.0

- fix documentation error for arpLib (V7NET-1523)
- move gethostname()/sethostname() from network stack to core
- ignore the error code when the deleting addr is IP_INADDR_ANY (V7NET-1549)
- adding IGMP host support in RTNET (F10019)
- Use at most one task delete hook (V7NET-1571)
- Add FIOFCNTL support (V7NET-1569)
- build shared library
- Add TCP_FORCE_IM_ACK_CNT configuration for tcp (F10151)
- Add VSB/VIP configurations for Firewall/IKE/VLAN/ROUTER (F9305)
- Fix slab command miss issue(V7NET-1609)
- Checking length when adding SACK option. (V7NET-1601)
- improve ARP limit clean mechanism. (V7NET-1602)
- Fix using up all the memory quotas when running in safety profileVIP (V7NET-1619)

- fixed multi_version issue when IA arch layer upgrade from SR0520 toSR0540 (V7PRO-4549)
- Sctp exception when using an IPv4 socket connect to an IPv6 socket. (V7NET-1651)

ipnet_dhcpr 1.0.0.8

- Fix packets on Recv-Q not being processed (V7NET-1592)

ipnet_dhcps 1.0.0.13

- modify time config check (V7NET-1506)

ipnet_firewall 1.0.1.7

- Add VSB/VIP configurations for Firewall/IKE/VLAN/ROUTER (F9305)

ipnet_ftp 1.0.4.6

- fix incorrect ftps reply in ipftps_user. (V7NET-1524)
- increase ftps session number before send IPC message to ftp session task. (V7NET-1547)
- fix memory leak in calling ipftps_load_tls_key() (V7NET-1575)
- Killing FTP server task will automatically terminate all FTP session tasks(V7NET-1635)

ipnet_ipsecike 1.0.1.14

- Add VSB/VIP configurations for Firewall/IKE/VLAN/ROUTER (F9305)

ipnet_linkproto_ppp 1.2.1.5

- memory leak under PPP/PPPOE in LCP Keep-alive reply (V7NET-1589)

ipnet_mobility 1.0.3.0

- updated by merge with vx653 content

ipnet_ntp 1.2.0.7

- Reset system clock adjustment to be 0 after ntpd exit. (V7NET-1634)

ipnet_ptp 1.0.3.2

- keep message print in silence (V7NET-1562)
- Fix pagefault error (V7NET-1590)
- Fix interface name length error (V7NET-1593)

ipnet_ssh 1.0.4.0

- Support to use "" as address in SSH client command (V7SEC-397)
- Add support SHA-256 and SHA-512 (F8401)
- Make kernel task priorities configurable (F573)
- Reduce the key size of DH private keys. It was unnecessarilylarge, which made the SSH connection time long. (F8401)
- Add support ECDH key exchange algorithms (F8401)
- Add warning message if SSH server fails to startdue to lack of DSA/RSA keys (V7SEC-463)
- Unnecessary leading bytes with the value 0 or 255 MUST NOT be included in shared secert.

- Support IPv6 for remote port forwarding (V7SEC-396)

ipnet_tsn 1.0.3.1

- -Fix name case error

ipnet_usrspace 2.0.4.0

- updated by merge with vx653 content

itl_64_vx7 1.1.1.1

- skip RAM below LOCAL_MEM_LOCAL_ADRS (V7PRO-4415)

itl_arria10 1.0.0.9

- initial support (F7155)

itl_common 1.0.6.1

- add VXB_TIMER_CPU_LOCAL feature to local APIC timer (V7COR-5753)
- access MSR EOI only when WRHV is actually present
- Fix static analysis warning in file vxbIaHpetTimer.c
- Fix hard coded address MULTIBOOT_SCRATCH
- skip RAM below LOCAL_MEM_LOCAL_ADRS (V7PRO-4415)
- fix the MSI HPET one-shot timer issue (V7PRO-4111)

itl_generic 1.0.7.0

- merge vxworks-653 bsp
- fixed multi_version issue when IA arch layer upgrade from SR0520 toSR0540 (V7PRO-4549)

jobqueue 1.0.5.0

- updated by merge with vx653 content

ldapc 1.0.1.1

- fix LDAPC VSB build failure on Windows host.
- Fix openldap port cannot handle multiple callers. (V7SEC-354)

libc-kernel 1.0.8.0

- updated by merge with vx653 content
- PPCE500MC math library configuration should same as E6500 on 32-bit FP mode (V7PRO-4487)
- modified printf to suppress trailing decimal when precision is 0 (V7COR-5800)
- fixed ctime_r() and _vxworks_ctime_r() to be reentrant (V7COR-5721)

libc-usr 1.0.8.0

- updated by merge with vx653 content

loader 1.1.6.0

- updated by merge with vx653 content

mosquitto 1.4.8.2

- fixed broker publisher failed to connect problem (V7IOT-53)

mrt 1.0.6.0

- Support the OpenSSL FIPS 140-2 module in RTP (F10530).
- Fix V7MRT-125/126/127/130

net_base 1.0.7.0

- adding IGMP host support in RTNET (F10019)
- fix floating-point issue after adding INCLUDE_END

nxp_layerscape 1.0.1.0

- added support to configure MAC address by endMacGet() (F6878)
- updated bootApp configuration information

openSSL 1.2.2.0

- Remove ASM compile for THUMB instructions
- Add PPC64 asm files compile.(F8401)
- Provide support for the OpenSSL FIPS 140-2 module in RTP (F10530)
- Add PPC32 asm files compile.(F8401)
- Remove ASM compile for ARMV7M
- Add ARM asm files compile.(F8401)
- Move OPENSSL_cleans from OpenSSL to Hash (V7SEC-602)

opencv 3.3.1.0

- Initial creation

openssl_fips 1.1.1.0

- the RTP support (F10530)
- Added the required component INCLUDE_SHELL. (V7SEC-639)

os_arch_arm 1.1.11.0

- Add flag to use VSB src dir (V7COR-5663)
- fixed ARMv8 AArch64 multi cluster mode issue (F8464)
- fixed setting hard BP for armv8 (WB4-7733)
- defined ARMV8A specific vxCpuPhysIndexGet()

os_arch_ia 1.2.6.0

- Update revision for vx653
- fixed multi_version issue when IA arch layer upgrade from SR0520 toSR0540 (V7PRO-4549)

os_arch_ppc 1.3.3.0

- updated by merge with vx653 content
- D-MMU is enabled too early in PPC603's syscallTrapHandle.

- make INCLUDE_SPE_EXC_HDLR can be individual disabled (V7PRO-4529)
- used HIADJ(globalName) to obtain globalName'sbit 32~47 address in _PPC_RTP_GLOBAL_GET on LP64 mode. (V7PRO-4419)
- removed timebase clear operation on slave threads.(V7PRO-4288)
- removed a discarded variable ppcE500DCACHE_FLUSH_NUM,
- corrected _PPC_MAS0_ESEL field definitions error for e500mc.(V7PRO-4404)
- added function vxL2Cfg0Get() for e500mc core, in cacheL2E500mcLibInit()l2cache size should be obtained through L2CFG0.(V7PRO-4407)
- Add flag to use VSB src dir (V7COR-5663)
- don't include header file vxFdtCpu.h (V7PRO-4439)

os_arch_vxsim 1.0.7.10

- Add flag to use VSB src dir (V7COR-5663)

os_drv_vxbus_ns_container 1.0.6.0

- updated by merge with vx653 content

os_lang-lib_tool_common 1.0.5.0

- merge vx653 with vxworks-7

os_vx653_apex 1.0.1.0

- update Version for integrating with vxworks-7

os_vx653_defs 1.0.0.0

- created

os_vx653_hm 1.0.1.0

- updated Version for merge with vxworks-7

os_vx653_hvif 1.0.2.0

- updated Version for merge with vxworks-7

os_vx653_ns_container 1.0.1.0

- updated for vx7 integration

os_vx653_safeipc 1.1.0.0

- updated Version for change to VM prefix instead of VB prefix

ostools 1.0.5.0

- updated by merge with vx653 content

qsp 1.1.3.0

- added support to configure MAC address by endMacGet (F6878)
- fix END ioctl setting MAC error (V7PRO-4270)

qsp_arm 1.0.2.0

- added support to configure MAC address by endMacGet() (F6878)

qsp_arm64 1.0.1.0

- added support to configure MAC address by endMacGet() (F6878)

qsp_ppc 1.1.2.0

- added support to configure MAC address by endMacGet() (F6878)

qsp_ppc750 1.0.2.0

- added support to configure MAC address by endMacGet() (F6878)

raster_mesa_demos 1.0.4.2

- fixed to use OpenGL ES 2.0 (V7GFX-419)

raster_mesa_tests 1.0.4.2

- fixed to use OpenGL ES 2.0 (V7GFX-419)
- added es2context test

raster_vg 1.0.4.3

- Add FEATURE_REQUIRES JPEG6

renesas_common 1.0.0.0

- initial support (F8464)

renesas_rcar 1.0.1.0

- Add ARMv8 AArch64 support (F8464)

renesas_rcar_h3 1.0.1.0

- Added ARMv8 AArch64 mode support (F8464)

rtnet 1.0.3.0

- fix END devices number out of bounds error (V7NET-1536)
- adding IGMP host support in RTNET (F10019)
- Pad short Ethernet frames with zero (V7NET-1530)
- Fix ioctl () error with request of SIOCGIFINDEX on 64-bit systems (V7NET-1557)

runtime_analysis 1.1.4.3

- include head file tcf/config.h (US106156)

samples 1.0.2.0

- Merge vxworks-653 and vxworks-7 content

sdk_tools 1.1.1.0

- Add support for LLVM tool chain in generated SDK (V7COR-5669)

sdmmc_device_storage 1.0.2.2

- optimize the code (F10081)

sdmmc_host_sdhc 1.0.5.2

- fix build warnings

sec_crypto 1.0.6.2

- updated the description for KEP related routines (V7SEC-525)

- test directory missing in sec_crypto.exclude (V7SEC-610)
- Update the SYNOPSIS for INCLUDE_IPCOM_USE_KEY_DB (V7SEC-583)

sec_hash 1.0.2.3

- Modify secHash API description.(V7SEC-542)

shell 1.1.8.0

- updated by merge with vx653 content

shmem 1.0.2.0

- Update revision for vx653

snmp_agent 1.0.1.6

- snmptalk help command is not correct (V7MAN-302)

snmp_engine 1.0.1.9

- snmpusm created user without auth/priv flag.(V7MAN-293)
- INET6_ONLY is not supported in vxworks7 (V7MAN-298)

socket 1.0.6.0

- Clean-up dependency between RTNET and IPNET (F10019)

stacktrace 1.0.2.3

- Fix memory analyzer stacktrace of RTP on ARM-64.

stop_mode_debug_agent 2.0.6.0

- Merge vxworks-653 and vxworks-7 content

syscalls 1.0.16.0

- add clock_getinfo() system call (V7COR-5753, V7COR-5694)
- updated by merge with vx653 content

systemviewer 1.0.0.13

- Include head file tcf/config.h (US106156)

tbb 20.18.1.0

- Initial creation

ti_keystone2 1.0.9.0

- added support to configure MAC address by endMacGet() (F6878)
- updated bootApp configuration information

ti_sitara_cm4 1.0.4.0

- added support to configure MAC address by endMacGet() (F6878)

ti_sitara_ctxa15 1.0.7.0

- remove sata description
- added support to configure MAC address by endMacGet() (F6878)
- added information about u-boot source code (V7PRO-4337)
- updated bootApp configuration information

ti_sitara_ctxa8 1.1.6.0

- correct the sdmmc support information
- added support to configure MAC address by endMacGet() (F6878)

ti_sitara_ctxa9 1.0.6.0

- added support to configure MAC address by endMacGet() (F6878)

tilcon_demo 7.2.1.4

- NONE

tilcon_kernel 7.2.1.7

- NONE

tools_wb_vxworks7_apidoc 1.0.10.0

- Merge vxworks-653 and vxworks-7 content

toolsrc_cert 1.0.0.1

- Fixed Coverity issue in __mul64 function on kernel side (US112526)Fixed Coverity issue in __mul64 function (US109198)

toolsrc_llvm 1.0.1.3

- add _STD__cxa_finalize in _dtors

usb_core 1.0.3.1

- reduce the timeout value of URB requests
- fix incorrect return description

usb_ctlr_ehci 1.0.2.4

- add "disable-over-current" for i.MX6 series board(V7CON-595)
- fix Port Reset handler of i.MX6 platform;fix write operations of EHCI PORTSC register (V7CON-611)

usb_ctlr_ohci 1.0.1.11

- make vxbPciUsbOhciDrv globaladd vxbPciUsbOhciDrv symbolic link to component INCLUDE_OHCI (V7CON-629)

usb_ctlr_xhci 1.0.3.5

- check validation of the to be deleted list node in functionusbXhcdReleaseRequestInfo(). (V7CON-592)

usb_host_core 1.0.0.18

- fix over-current handler (V7CON-611)
- change the timeout of GetPortStatus and GetHubStatus requests;fix the timeout in usbHstWaitUrbComplete()
- simplify usbHstSetConfiguration() and usbHstSetInterface() (V7CON-625)

usb_host_serial 1.0.0.10

- clear HALT feature when the bulk endpoint is halted;start bulk in transfer only when the device is opened;check the return value of usb2SerialDeviceCreateCallback() (V7CON-611)

usb_host_storage 1.0.1.2

- remove reference about usb2MscBLK.c
- check the length of device name and partition name (V7CON-619)

usb_host_uvc 1.0.0.1

- reset the currframe when stoping video strame input.
- add support for IOCTLS command USB2_VIDEO_IOCTL_ENUM_FRAMES_SIZE.
- add support for IOCTLS command USB2_VIDEO_IOCTL_ENUM_FRAMES_INVL.
- updated some field definitions of TIMING_INFO.
- add IOCTLS commands USB2_VIDEO_IOCTL_GET_FRAME_INT support.
- include parameter USB_GEN2_VIDEO_NAME once component INCLUDE_USB_GEN2_VIDEO enabled.
- updated the description of UVC components.

usb_target_core 1.0.1.11

- save the WCID in target function driver (V7CON-607)

usb_target_ser 1.1.0.10

- fix build warnings

user_management 1.1.0.3

- Wait until the disk for saving UDB file is ready (V7SEC-579)

user_management_ldap 1.1.1.1

- Modify for ldap vip parameters
- Fix openldap port cannot handle multiple callers. (V7SEC-354)
- Go to local user authentication if cache enabled when ldapauthentication failed.

virtio 1.0.8.0

- merged content of SR0540 and 653
- support virtio net guest driver on intel board (F9668)
- fix orphaned components (V7HYP-56)

vnic 3.2.6.0

- updated by merge with vx653 content

vxbus_buslib 2.1.5.0

- updated by merge with vx653 content

vxbus_core 1.0.10.0

- Merge vxworks-653 and vxworks-7 content

vxbus_drv 1.2.9.0

- updated by merge with vx653 content
- fixed SPI Flash read failed on an unaligned word address on LS1046ARDB-PA board.

vxbus_subsystem 1.0.14.0

- added VXB_TIMER_CPU_LOCAL timer feature (V7COR-5753)
- updated by merge with vx653 content

vxsim_prebuilt_projects_linux 1.0.4.0

- Merge vxworks-653 and vxworks-7 content

vxsim_prebuilt_projects_windows 1.0.4.0

- Merge vxworks-653 and vxworks-7 content

vxtestv2_fs 1.0.2.0

- Merge vxworks-653 and vxworks-7 content

vxtestv2_ns_container 1.0.6.0

- Merge vxworks-653 and vxworks-7 content

vxtestv2_os_bootapp 1.0.2.0

- Merge vxworks-653 and vxworks-7 content

vxtestv2_os_bsp 1.0.2.0

- Merge vxworks-653 and vxworks-7 content

vxtestv2_os_core 1.0.6.0

- Merge vxworks-653 and vxworks-7 content

vxtestv2_os_driver 1.0.2.0

- Merge vxworks-653 and vxworks-7 content

vxworks_7_installsets 1.0.0.3

- adding SR0540 install set data

wassp_test_artifacts 1.0.1.5

- add HYP back in

webcli_clidemo 1.0.1.5

- Fix logMsg passing too few arguments (V7MAN-295)

webcli_common 1.0.4.0

- delete unnecessary bind in wmnetTcpConnect (V7MAN-296)
- remove _WRS_UNIT_TEST (F10526)
- memPoolAlloc() return NULL if the number of bytes to allocate is 0(V7MAN-309)

webcli_http 1.0.2.0

- remove _WRS_UNIT_TEST (US111260)
- fix the extend error in type (V7MAN-309)

webcli_tools 1.0.1.5

- fix logMsg passing too few arguments when MCE generatescode. (V7MAN-295)

webcli_webclidemo 1.0.1.8

- fix logMsg passing too few arguments (V7MAN-295)

webcli_webdemo 1.0.1.11

- fix logMsg passing too few arguments (V7MAN-295)
- fix that upload a file and no file present in disk (V7MAN-309)

xen 1.0.0.2

- added common.vxconfig (V7PRO-4336)
- fixed warm reboot issue (V7PRO-4508)

xen_arm 1.0.0.2

- moved hardware debug configuration in common.vxconfig to PSL (V7PRO-4336)

xlnx_zynq7k 1.0.11.0

- added support to configure MAC address by endMacGet() (F6878)
- modified the wrong instruction in target.ref (V7PRO-4507)

xlnx_zynqmp 1.0.4.0

- changed DMA dependency (V7PRO-4429)
- added support to configure MAC address by endMacGet() (F6878)
- updated bootApp configuration information

xlnx_zynqmp_r5 1.0.3.0

- added support to configure MAC address by endMacGet() (F6878)

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About VxWorks 7

Installation and Licensing

Wind River does not support installing VxWorks 7 in the same directory as VxWorks 6.x or another Wind River product. You must create a new directory for VxWorks 7 when installing it.

To install VxWorks 7, go to the email you received from Wind River with the details of your purchase order. It contains a link that is the first step in the process to download and install your products.

- For detailed information on installation and licensing, see the Wind River product installation and licensing guides on the Wind River Support Network site:

  http://www.windriver.com/licensing/documents

- For more information on activating your products, go to the Licensing Portal:

  http://www.windriver.com/licensing/

NOTE: If you are upgrading from VxWorks 6.x to VxWorks 7, you need to generate new license information.

VxWorks 7 Release Numbering

Wind River uses a release number to identify each release of VxWorks 7.

This enables you to identify each release with a number and install that release on your development machine using the Wind River installer. The Wind River installer shows the release number, a six digit alphanumeric number that increments over time to identify the order of release.

For example:

- **SR0040** stands for Standard Release 0040
- **SR0050** stands for Standard Release 0050
- **CR0051** stands for Custom Release 0051

SR releases follow a quarterly cadence.

CR releases are usually created for customer escalations, and are done in exceptional cases only.

Finding Out About New Releases

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RPM Version Numbering

VxWorks RPMs have a four digit version number, incremented according to a specific standard.

RPM version digit one (**1** .0.0.0) is incremented when a new feature is added that breaks source code backward compatibility.

RPM version digit two (1. **0** .0.0) is incremented when it adds functionality and:

- becomes dependent upon a new component
- becomes newly dependent upon a preexisting component

RPM version digit three (1.0. **0** .0) is incremented when it adds functionality without becoming dependent upon a new component.

RPM version digit four (1.0.0. **0**) is incremented when:

- a component fixes defects, and
- no new functionality is added

NOTE: Third-party or open source packages may have more than 4 digits, therefore, their RPMs match the original version numbers.

VxWorks 7 Safety Profile RPM Versioning

The RPMs associated with the VxWorks 7 Safety Profile add an additional digit to signify that this is a frozen branch, or that it is used by certification.

For example, a standard four digit RPM version 1.2.3.4 will become 1.2.3.4.1; if an open source package already has five or six digits, an additional digit is added. Therefore, 1.2.3.4.5.6 becomes 1.2.3.4.5.6.1.

Supported Hosts

VxWorks 7 supports a number of standard operating systems and host architectures.

Host OS	Architecture
Windows 7	x86 64-bit
Windows 8.1	x86 64-bit
Windows 10	x86 64-bit
Red Hat Linux 6.9	x86 64-bit
Red Hat Linux 7.5	x86 64-bit
Ubuntu 14.04 LTS	x86 64-bit
Ubuntu 16.04 LTS	x86 64-bit
Ubuntu 18.04 LTS	x86 64-bit
Fedora 27	x86 64-bit
Open SUSE Leap 42.3	x86 64-bit
Suse Linux Enterprise Desktop (SLED) 12.3	x86 64-bit

NOTE: Support for 32-bit hosts is no longer available.

For details on Workbench integration and Workbench host and target support, see the Workbench 4 Getting Started page on the Knowledge Library, then select the latest version of the Workbench 4 Release Notes.

Supported BSPs

Supported BSPs are listed in the Wind River Marketplace.

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Deprecation Notices and Known Issues

Deprecation Notices

Deprecation notices contain information about VxWorks 7 features that should not be used.

NAND Flash Translation Layer (NFTL)

The NFTL framework and any NAND flash drivers written under this framework are deprecated and will be removed. This includes the following layer:

- **BDM_FLASH_NFTL**

Other managed storage solutions such as hard disks and USB mass storage devices can be used as alternatives.

SDMMC Legacy Framework and Drivers

The SDMMC Gen 1 Framework and associated drivers are deprecated and will be removed. This includes the following layer:

- **BDM_SDMMC**

NOTE: The SDMMC layer placed in *installDir*/**vxworks-7/pkgs/connectivity/sdmmc** supersedes the deprecated **BDM_SDMMC** layer.

VxBus Legacy Framework and Device Drivers

In VxWorks 7, the VxBus legacy layer (**VXBUS_LEGACY**) is used to support VxWorks 6.x-compatible board support packages (BSPs) and cannot be used with VxWorks 7 BSPs. This layer, and all device drivers that depend on this layer, have been deprecated.

Mobility Layer

The VxWorks 7 mobility feature provides Wind River Wireless Ethernet Drivers and Wireless Security and is now deprecated.

This includes the following layers:

MOBILITY
WPS
WLANMLME
WLANDRV
WLAN
DOT1X
8021X

Wind River currently leverages third-party partners for wireless technology.

Intel Graphics Controller Frame Buffer Driver

The Intel graphics controller frame buffer driver for VxBus GEN1, **FBDEV_ITLGCFB**, is now deprecated and will be removed.

Wibu-Systems Software is Removed

Wibu-Systems software is no longer supported as part of VxWorks 7. The VxWorks 7 SR0510 (August 2017) was the last release to contain this software. As of SR0520, all Wibu-Software is removed from the VxWorks 7 distribution. Existing users should contact Wibu-Systems directly for any support issues.

The Wind River Agent (former EMS Agent) is Removed

The Wind River Edge Management System (EMS) agent (**vxworks-7/pkgs/app/ems/wra-1.0.1.1**) has reached end of life (EOL) status and is no longer supported.

OpenSSL Layer Update

The migration of OpenSSL code from the **IPCRYPTO** layer to the **OPENSSL** layer is now complete.

The following layers are now invalid:

IPNET_CRYPTO
IPNET_IPCRYPTO
IPNET_ IPFREESCALE
IPNET_ IPHWCRYPTO
IPNET_SSL

The functionality has been moved to the following layers:

CRYPTOMISC
CRYPTOMISC_IPFREESCALE

CRYPTOMISC_IPHWCRYPTO
OPENSSL

–fvolatile

The **–fvolatile** option of the GNU compiler is deprecated. Update your source code to use the **volatile** type qualifier on pointer declarations as required.

-Xpointers-volatile

The **-Xpointers-volatile** option of the Wind River compiler is deprecated. Update your source code to use the **volatile** type qualifier on pointer declarations as required.

NOTE: The default makefile fragments for GNU 4.8.1 and Wind River Compiler 5.9.1.0, 5.9.4.0, 5.9.6.0, and 5.9.6.1 have been updated so that **–fvolatile** (GNU) and **–Xpointers-volatile** (Diab Compiler) are no longer specified when compiling source files associated with a VIP project; specifically **usrAppInit.c** and **usrRtpAppInit.c**. Update any code in these files to use the **volatile** type qualifier on pointer declarations as required.

Middleware Technologies

The MIPC, TIPC, and DSI middleware technologies are deprecated.

Legacy Interrupt Service Interfaces

intConnect( ), **intDisconnect( )**, **intEnable( )**, and **intDisable( )** are now deprecated.

New device drivers should be based on VxBus Gen2 and use the **vxbIntLib( )** interfaces such as **vxbIntConnect( )**. Legacy driver code should be retrofitted to use the VxBus Gen2 APIs.

Deprecated Board Support Packages

- itl including the following sub BSPs:
  - bsp6x_itl_x86
  - bsp6x_itl_x86__NITX_315
  - bsp6x_itl_x86atom
  - bsp6x_itl_x86atom__NITX_315
  - bsp6x_itl_x86core2
  - bsp6x_itl_x86coreix
  - bsp6x_itl_x86coreix__shumway
- itl_quark
- itl_64
- itl_64_vx7

NOTE: Use itl_generic for both 32- and 64-bit support.

Known Issues

The following issues are known to affect VxWorks 7 functionality:

VxSim with Fedora Hosts

When using the VxWorks simulator, VxSim, on Fedora 25 and Fedora 27 hosts, the target connection fails. To work around this issue, do one of the following, depending on your host type (32-bit or 64-bit):

NOTE: For both workarounds, **vxsim** must be executed from the command line. You must then use Workbench to connect to the target as you would with actual target hardware.

For 32-bit hosts:

1. Copy the C libraries from Red Hat 7.5 to a directory on Fedora. Call the directory **$LIBDIR**.
2. On Fedora, execute the following commands:

```
$ cd $WIND_HOME
$ ./wrenv.sh -p vxworks-7
$ export LD_LIBRARY_PATH=$LIBDIR:$LD_LIBRARY_PATH
$ $LIBDIR/ld-linux.so.2 $WIND_HOME/vxworks-7/host/x86-linux2/bin/vxsim -f
vxworks-7/samples/prebuilt_projects/vip_vxsim_linux_gnu/default/vxWorks
```

For 64-bit hosts:

1. Ensure that your environment is set up properly (using **./wrenv.sh -p vxworks-7**).
2. Execute the following command from your VxWorks image project (VIP) directory:

```
$ vxsim -d simnet_nat -p 0 -f ./default/vxWorks -nice -exitOnError -size 512MB
```

(V7COR-5439)

AXON autostart fails on VxSim

Autostart fails with Greenwave Systems AXON Predict Analytics on the VxSim target. Until the issue is resolved, you must manually start AXON. To start manually, ensure that the **GW_AXON_AUTOSTART** parameter for the **INCLUDE_GW_AXON** component is set to **FALSE** (the default).

The NXP code signing tool generates faulty X509 certificates

The NXP code signing tool generates X509 certificate files with a problematic format when used with the VxWorks signing tool utility. To resolve the problem remove all of the information before the following line:

```
-----BEGIN CERTIFICATE-----
```

Issues when upgrading **LINKPROTO** layers

When upgrading VxWorks 7 from one release to another, after the upgrade, the old version of the **LINKPROTO** layer is no longer accessible with the old version number because the container has been upgraded.

Therefore, if you remove the **LINKPROTO** layer from a VxWorks source build (VSB) project created on an older release and you then decide to add it back into your configuration, you will not get the same version of the **LINKPROTO** layer. Instead, create a new VSB to use **LINKPROTO** with the latest release of VxWorks.

Change in layer dependencies for SSL

There is a small change in layer dependencies that affects how you enable the **IPFTPS_USE_SSL** VSB option with the interactive **vxprj vsb config** command.

Previously, you had to enable **OPENSSL** in order to be prompted for **IPFTPS_USE_SSL**. Now, you must enable **SEC_CRYPTO**, then **OPENSSL**, and then you are prompted for **IPFTPS_USE_SSL**.

Halt Workbench before upgrading

When upgrading Workbench, all command-line configuration (and Workbench itself) must be shut down to accommodate directory structure and other changes.

Braswell (itl_generic) cannot be connected in stop mode

You cannot set up a Stop Mode Debug connection to Braswell (itl_generic) 32-bit and 64-bit targets. The target connection fails because of a polling mode driver issue on ATOM targets.

The **MMULESS_KERNEL** VSB option is only available on ARM

In VxWorks 7, MMU-less systems can be used solely in a kernel-only configuration, which is enabled with the **MMULESS_KERNEL** VSB option. Currently, this option is only available for ARM targets.

Hosts No Longer Supported for VxWorks 7

Starting with the August 2017 SR0510 release, the following hosts are no longer supported:

- Red Hat Linux 6.7
- Red Hat Linux 7.2
- Fedora 22 - 32 bit and 64 bit
- Fedora 23 - 32 bit and 64 bit
- SUSE Linux/Open SUSE 13.2 - 32-bit and 64-bit
- Open Suse Leap 42.1

Starting with the June 2016 SR0470 release, the following hosts are no longer supported:

- Windows 8
- Ubuntu 12.04 LTS
- Fedora 21
- SUSE Linux/OpenSUSE 13.1
- SLED 11.3

Wind River recommends that you migrate to one of the Supported Hosts.

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Limitations

VxBus with RTPs

Complete kernel-resident VxBus support is not available.

The real-time process (RTP)-resident version of VxBus provides most of the core VxBus functionality; however, not every part of the kernel-resident VxBus support is provided. Some of the following limitations may be addressed in future releases.

DMA Operations are Not Filtered

An RTP-resident driver for a device that supports direct memory acccess (DMA) is not limited by the source or destination addresses it programs into the hardware for DMA transfers. It is possible for a faulty driver to program a device to initiate a DMA transfer to or from an address that is outside the address space of the RTP. Data corruption may result if the address coincides with another RTP or with the kernel.

Enforcing DMA safety can be done either via hardware using an input/output memory management unit (IOMMU) or in software using paravirtualization. Not all platforms provide IOMMU hardware, and if an IOMMU is present it may not enforce restrictions on a per-RTP basis. With software DMA safety, the kernel must sanity check the setup of DMA operations requested by the RTP, which requires the kernel to include code specific to the device. This defeats the purpose of encapsulating all of the driver code within an RTP in the first place.

Interrupts are Executed at the Task Level

You cannot directly invoke functions in an RTP executable image (for example, a **.vxe** file) from kernel-resident trap handlers. Consequently, the current implementation relies on executing device interrupt service routines in a task. Furthermore, the system must perform context switching and scheduler operations to begin executing the task, which adds latency to interrupt dispatching.

Support for Dynamic Interrupts such as Message Signaled Interrupts (MSI) and Message Signaled Interrupts Extension (MSI-X) are Not Available

Only the following static interrupt APIs and are supported:

- **vxbIntConnect( )**
- **vxbIntDisconnect( )**
- **vxbIntEnable( )**
- **vxbIntDisable( )**

Interrupt Controller Devices Cannot be Borrowed

You cannot implement a driver for an interrupt controller in an RTP. Currently, there is no mechanism for executing RTP-supplied code (such as instructions from a **.vxe** image) in interrupt context, which makes it impossible to implement the necessary dispatching logic. Because the RTP would have exclusive access to the interrupt controller, you would be unable to use it to dispatch interrupts to devices still managed by the kernel.

I/O Register Accesses on Intel Architecture Must be Proxied

On the Intel Architecture, I/O space registers are accessed using special machine instructions **(inb/outb**, **intw/outw**, **inl/outl**) which can only be executed with supervisor privilege. VxWorks currently does not implement hardware support for allowing execution of these instructions in user mode. Consequently, I/O register accesses must be done using the **vxbReadXX( )/vxbWriteXX( )** APIs, which results in a system call. On other platforms, I/O space registers (which only occur for Peripheral Component Interconnect (PCI) devices) are memory mapped.

Memory-Mapped Registers Without Explicit Page Boundaries Must be Proxied

RTPs must only have access to those registers which correspond to a borrowed device. However, there may be register banks for multiple devices that reside in a single memory management unit (MMU) page (for example, the dual universal asynchronous receiver/transmitter (DUART) devices on NXP QorIQ processors where two universal asynchronous receiver/transmitter (UART) register banks lie within a single 4096-byte region). If these registers are directly mapped to the RTP, the RTP gains access to the registers for the adjacent device as well. For such devices, you must use the **vxbReadXX( )/vxbWriteXX( )** routines, which results in a system call.

Real-Time Network Stack

The real-time network stack (RTNET) has not been verified with any of the existing network applications in VxWorks 7, including the debugging tools.

Internet Control Message Protocol (ICMP) implementation is the bare minimum for operation on IP networks and to handle ECHO-request/response.

Only one AF_INET/SOCK_RAW socket can be created per Internet protocol. The only practical implication is that just one instance of the **ping4** command can be active at any point in time. You can have multiple external ICMP-echo request/response sessions active, as the restriction only applies when running **ping4** on the target in the VxWorks shell.

User-Mode I/O System

In addition to the known limitations of I/O system driver support (such as there are no user-mode I/O system (UMIOS) existing file systems), the initial UMIOS release has some limitations and known problems for UMIOS-enabled real-time processes (RTPs).

The following issues affect RTP code, but not kernel code, when **_WRS_CONFIG_USER_MODE_IOS** is enabled in the VxWorks source build (VSB):

- Removable devices (as in **iosRmvLib.c**) in the UMIOS are not supported.
- Symbolic links are not supported in the UMIOS.
- The **dup2( )** function currently always returns ERROR when called from a UMIOS RTP.
- The growth of an RTP's file descriptor table (after the **ioInit( )** constructor) is not supported for a UMIOS-enabled RTP. Certain POSIX APIs such as **stat( )**, that without UMIOS might grow the RTP's file descriptor table by one slot if called when the file descriptor table is completely full, will fail rather than grow the file descriptor table when UMIOS is enabled. The **rtpIoTableSizeSet( )** routine always fails to grow a UMIOS RTP's file descriptor table.
- Growing **fd_set** space in a task's **select( )** context is not supported for UMIOS. Enough **fd_set** space is allocated for all file descriptors in the RTP's UMIOS file table, which does not grow hereafter.
- The **_epoll( )** functions (for example, **epoll_create( )**, **epoll_ctl( )**, **epoll_wait( )**) are not yet supported in any RTP, whether UMIOS is enabled or not.
- Certain functions work only for kernel-level files in a UMIOS RTP. Typically, routines in this category involve functionality that, at the user level, is provided using system calls, and those system calls have not yet been adapted to allow possible implementation in the UMIOS. For example, currently the **fpathconf( )** function in user mode directly calls the raw system call **_fpathconf( )**, resulting in this function being handled in the kernel. Even if a UMIOS-level driver were available supporting the FIOPATHCONF **ioctl( )**, it would not get called because **fpathconf( )** has not yet been converted to allow implementation at the UMIOS level.

Installed Documentation

The PDF documentation installed with your product may not be the most recent.

As a convenience, PDF documentation is provided as an RPM and can be installed with your software. After installation, the documentation is accessible in the **installDir/docs** directory. However, the documentation provided with the RPM may not be the most recent version available. For current documentation, always use the Wind River Knowledge Library.

NOTE: The API reference documentation available from the Workbench Help Browser is always current to the installed release. API documentation is also available from the Knowledge Library.

Limitations for Intel C++ Compilers

This release has the following limitations for the Intel C++ 12.0 and 16.0 compilers:

Limitations for Intel C++ compiler 12.0 and Intel C++ compiler 16.0 in VxWorks 7:

- The Intel C++ Compiler 12.0 can only be used for RTPs and DKMs with BSPs in VxWorks 6.9 compatibility mode.
- The Intel C++ Compiler 16.0 can be used for RTPs and DKMs with the following VxWorks 7 BSPs:
  - 32- and 64-bit simulators
  - itl_generic (32-bit and 64-bit)

These limitations are summarized in the following table:

VxWorks	Compiler	Valid Yes/No
BSP in VxWorks 6.9 compatibility mode	ICC 12	Yes, RTP and DKM only.
BSP in VxWorks 6.9 compatibility mode	ICC 16	No
VxWorks 7 BSP (32-bit)	ICC 12	No
VxWorks 7 BSP (32-bit)	ICC 16	Yes, itl_generic and 32-bit simulator
VxWorks 7 BSP (64-bit)	ICC 12	No
VxWorks 7 BSP (64-bit)	ICC 16	Yes, itl_generic and 64-bit simulator

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Features and Changes in Previous Releases

Features Delivered in April 2018 (CR0531)

This release included the features added and defects fixed since the CR0530 release of VxWorks 7.

Some features may not be available in your installation depending on the VxWorks 7 Profiles you have purchased.

VxWorks 7 Protection Against Side-Channel Attacks Based on Certain Hardware Exploits

In this release, VxWorks provides support for kernel page-table isolation (KPTI) to reduce security threats that take advantage of hardware exploits such as Meltdown. This kind of hardware exploit allows a rogue (user-mode) process to access all memory, including that of other processes and the operating system itself. The rogue process generally performs some kind of side-channel attack to access unauthorized data (for example, through the timing of speculatively executed code).

VxWorks KPTI mitigates this kind of threat by separating user-space and kernel-space page tables entirely. One set of page tables includes both kernel-space and user-space addresses same (as normally implemented), but this set is only used when the system is running in kernel mode. The second set of page tables is for user mode. It contains a copy of the user-space addresses, plus the minimal set of kernel-space mappings that are required to enter or exit system calls, for interrupts, and for exceptions. On every transition between user mode and supervisor mode (whether initiated by system call, interrupt, or exception), the page table pointer is updated accordingly.

When deciding to use this KPTI implementation, consider the following:

Performance Impact

As is generally the case with KPTI implementations, there is a trade-off between the security provided by VxWorks KPTI and system performance.

The impact on the performance of specific applications is, of course, dependent on many factors, including the frequency of system calls, process context switches, interrupt rates, application memory usage, and so on. Performance overhead is small for processors that support PCIDs, as the increase in TLB misses is potentially smaller. There is no performance impact on systems that run all applications in kernel space (that is, do not execute any RTP applications).

VxWorks Configuration

To configure VxWorks with KPTI, the KPTI option must be selected in the VxWorks source build (VSB) project. It is dependent on the RTP layer, and is disabled by default. When KPTI in enabled in the VSB, it is implicitly enabled when the RTP component **INCLUDE_RTP** is included in the VxWorks image project (VIP).

For more information, see the VxWorks 7 Programmer's Guide.

Changes Delivered in April 2018 (CR0531)

The following changes were delivered as part of the VxWorks 7 CR0531 release:

build_dir 1.2.1.3

- prjFileAdd modified to not trip on similar file names (V7COR-5747)

core_kernel 1.2.6.0

- added kernel page table isolation support (F10159)

core_rtp 1.1.5.0

- added kernel page table isolation support (F10159)

itl_common 1.0.6.0

- Added kernel page table isolation support (F10159)

itl_generic 1.0.6.0

- Added kernel page table isolation support (F10159)

os_arch_ia 1.2.5.0

- Added kernel page table isolation support (F10159)

tools_wb_vxworks7_apidoc 1.0.8.8

- updated to pick up the latest api documentation for CR0531

vxsim_prebuilt_projects_linux 1.0.2.12

- uprev for CR0531

vxsim_prebuilt_projects_windows 1.0.2.12

- uprev for CR0531

vxworks_7_installsets 1.0.0.2

- adding CR0531 install set data

Features Delivered in March 2018 (SR0530)

This release included the features added and defects fixed since the SR0520 release of VxWorks 7.

Some features may not be available in your installation depending on the VxWorks 7 Profiles you have purchased.

AD/LDAP Configuration

The Active Directory/Lightweight Directory Access Protocol (AD/LDAP) server connection parameters can now be configured at runtime, as well as statically. For more information, see the VxWorks 7 Programmer's Guide: *User Authentication and Management*.

Micro Runtime JNI Support

Micro Runtime now supports the standard OpenJDK Java Native Interface (JNI) programming model, in which native C code is provided in a shared library. It also supports an alternative method, in which the native C code is built into a custom MRT Java engine that includes JNI support. For more information, see the VxWorks 7 Micro Runtime Programmer's Guide: *Java Native Interface-JNI*.

OpenSSL Version Update

VxWorks 7 now supports OpenSSL version 1.0.2n.

SSH Cryptographic Support

VxWorks 7 cryptographic support now includes AES-CTR and AES-GCM. For more information, see the VxWorks 7 SSH Programmer's Guide.

Time-Sensitive Networking

Time-sensitive network (TSN) support has been enhanced to reduce jitter in the TSN clock.

For more information, see the following:

- VxWorks 7 NTP and PTP Programmer's Guide
- VxWorks 7 Time-Sensitive Networking Programmer's Guide

USB Improved Key Press Events

This release includes an updated USB keyboard driver that generates a key release event every time a key is pressed and released.

No additional configurations are required to use this feature.

VxWorks 7 Device Cloud Agent

VxWorks 7 now provides support for Wind River Helix Device Cloud. For more information, see:

- Wind River Helix Device Cloud Quick Start for VxWorks 7
- Wind River Helix Device Cloud Device Programmer's Guide
- Wind River Helix Device Cloud Management Portal User's Guide

Board Support Packages

- The fsl_t1 BSP now supports NXP T1023/T1024 processors. This has been validated using a T1024RDB-PC target.
- The fsl_imx6 BSP now supports NXP I.MX6 Quad Plus hardware, including graphics.

Workbench

Symmetric Multiprocessor (SMP) Build Option

In Workbench, the **Processor mode** field now defaults to **SMP support in Libraries**. This action has been taken as an early step in the process of transitioning the current uniprocessor (UP) build option to an SMP build option with the number of cores set to 1.

NOTE: Command line build options still default to using a UP build. Also, a new **-up** build option is available from the command line. This is also part of the transition plan to SMP being the default build option.

New wrdbg Options

You can now set the core affinity and define the working directory for an RTP when you start or debug an RTP application.

Being able to define and change the working directory for an RTP can be useful in a deployed system where you may have to run the RTP from a different location.

Example command for setting the RTP core affinity prior to RTP creation:

```
wrdbg> set rtp create Affinity 2
```

Example command for setting an RTP working directory:

```
wrdbg> rtp create -w <workingDir> helloworld.vxe
```

NOTE: The **Affinity** option is only available when the associated image is for SMP.

Stop Mode Debugging Enhancement

Using the Workbench UI, stop mode debugging now supports the use of serial interface to connect between the host machine and the debug agent running on the target.

Usually the network interface is used to establish a debug connection between the host machine and the target, but in cases where the network interface is not available the serial interface can now be used.

Changes Delivered in March 2018 (SR0530)

The following changes were delivered as part of the VxWorks 7 SR0530 release:

agent 1.2.5.1

- fixed cast long double variable to other type failed (WB4-7450)
- generate docs of application mode agent APIs (V7COR-5384)
- fixed apigen error in debugAgentLib.c (V7COR-5536)
- changed the type of affinity options for "set rtp create" command

alt_soc 1.0.4.2

- fixed compile warnings
- do not reconfigure FPGA when warm reboot (V7PRO-2970)

archive 3.3.2.0

- Initial release

audio_wm8962 1.0.1.6

- removed the dead code

avnet_mini_itx_7z 1.0.5.3

- specify the BD number for END driver (V7PRO-4194)
- updated uVer of board descriptor to 2.0 (V7PRO-4241)

bdm_flash_mtd 1.1.1.3

- fix static analysis warnings

bdm_flash_nftl 1.1.0.3

- fix static analysis warnings

bdm_flash_tffs 1.0.1.3

- fix static analysis warnings

bdm_sata 1.1.3.5

- fix static analysis warnings
- set an error nember when writing BIO fail (V7STO-993)

bdm_tffs_drv 1.0.1.3

- fix static analysis warnings

boardlib 1.1.1.3

- Fixed NULL_RETURNS in sysModel()

boot_loaders 1.0.1.1

- Fix subproject build dependency (V7COR-5277)

bootapp 1.0.6.0

- made start delay configurable (V7PRO-4367). Removed obsoleteINCLUDE_BOOT_DELAYED_INIT.
- fixed static analysis warnings

build_dir 1.2.1.2

- update call to bsp_create_doc to avoid using /tmp/var
- replaced TCLLIBPATH with OSCONFIG_PATH/tcl
- Prevent duplicate files from being added to VIP (V7COR-5302)
- Force clean VIP build when removing subprojects (V7COR-5277)
- fixed validation for string in validateAgainstRequest (V7COR-5569)
- Fix error messages in cmpCreateLayerProject to be recognizable from WB (V7COR-5306)

- modify vxprj::_file to allow removal of non-existent files (V7COR-5646)
- fixed APICHECK issue (V7COR-5709)

build_dir_misc 1.0.3.10

- update document generation to support product split

build_dir_mk 1.0.7.5

- starting to merge 653 make file changes into mainstream
- Fix subproject build dependency (V7COR-5277)

build_dir_tool 1.0.6.1

- add "-mia32" and "-falign-stack=assume-4-byte" (V7PRO-4158)

build_tools_hypervisor 1.0.1.3

- update defs.gnu with new path to munch.tcl

civetweb 1.9.1.0

- Initial release

core_io 1.2.7.1

- limit FD table size conditionally based on FD_SETSIZE (V7COR-5462)
- clean up static analysis warnings

core_kernel 1.2.5.1

- fixed Thread Local variable in DKM override (V7COR-5606)
- fix negative time returns from timer_gettime()/timer_settime() (V7COR-5407)
- add warning about locking of object owner list by objShowAll() (V7COR-4312)
- support _WRS_CONFIG_FD_SET_SIZE parameter of CORE_IO (V7COR-5462)
- Allow taskNameToId() to look up a 'private' task whose namestarts with '/' (V7COR-5445)
- Fix buffer length checking and NUL-termination issues inbootParamsPrompt(); introduce bootStructToStringExt(),bootParamsPromptBp(), and bootParamsPromptExt() (V7COR-5250)
- define NODE and LIST for UT (US107861)
- added component dependence (V7PRO-4226)
- Added prototypes to fix implicit declaration warning (V7COR-5334)
- Fixed incorrect validation size (V7COR-4436)

core_rtp 1.1.4.1

- clean up static analysis warnings

core_safety 1.0.5.1

- fixing static analysis issues

core_user 1.2.5.1

- support _WRS_CONFIG_FD_SET_SIZE parmaeter of CORE_IO (V7COR-5462)

coredump 1.1.1.1

- Fixed static analysis errors

crypto_misc 1.1.0.1

- IPHWCRYPTO_IPSEC_ESP_OPS can be used only when enable IPSECIKE (V7SEC-536)

end 1.2.8.0

- Reduce the jitter of TSN clock timer (F9992)
- Don't start RTL8169 interface for unknown HW revisions (V7PRO-3849)
- Add I350 support for PTP and TSN clock (F9650)
- incorrect multicast mac address is set to chip. (V7PRO-4252)
- Fix muxDevStart fail to start the rtg network (V7PRO-4296)
- Disable DRV layer for simulator andmove vxbEndUtil.c from DRV layer to LIB layer (V7PRO-4155)
- Don't return Error code when enabing or disabling check sumin fslImxEnetEndIoctl. (V7PRO-4162)
- Correct PHY 1000M speed check bit for PHY drivers (V7PRO-4146)
- retrieved BD numbers from DTS (V7PRO-4194)
- Fix jumbo frame transmit failed with 82577/8/9 PHYs (V7NET-1403)
- Add support for Intel i210 errata 25 (V7PRO-4242)
- Add support for Intel I219V Gigabit Ethernet Controller in IntelKabyLake NUC nuc7i3bnk (V7PRO-4249)
- Fix the hardware VLAN tagging transmitting fail with Intel advancedNICs (V7NET-1490)
- Fix VIP build issue in the multiversion case
- Fix 82574L link up/down shock when PTP enabled. (V7PRO-4264)
- Correct the code that checks for PCIe capability (V7PRO-4189)
- Move vxbEndUtil.c from DRV layer to LIB layer (V7PRO-4155)
- added shutdown method for RealTek PHY drivers (V7PRO-4207)
- Fix EIOCGMEDIALIST returning Error issue (V7PRO-4170)

epoll 1.0.0.3

evdev_lib 1.1.3.0

- implemented the multi-key press and release messages for keyboard mappedmode (F10010)
- removed EV_DEV_VERSION, used WRS_CONFIG_EVDEV_LIB_VERSION to show theversion (V7GFX-406)

fbdev_common 1.0.4.2

- Text formatting fix

fbdev_fsldcu 1.0.2.2

- Static analysis fix

fbdev_fslipu 1.0.5.1

- Fix static analysis issue
- Add checks for 'NXP' in gfxFslIpuInit (F9796)
- Add support for i.MX6QP LVDS (F9796)

fbdev_itlgc 1.0.4.0

- Added notice that the driver for VxBus Gen 1 is deprecated (F10091)

fbdev_xlnxlcvc 1.0.2.1

- Static analysis fix

fdt 1.0.9.6

- enable EPAPR_SPIN_TABLE define for UP.(V7PRO-4121)

fs_cdromfs 1.0.1.1

- fix static analysis errors report for storage

fs_core_vdfs 1.0.2.0

- Add support for priority scheduling
- clean build warning

fs_core_vfs 1.0.1.1

- fix static analysis warnings
- add missing description for vnodeAff.c (V7STO-986)

fs_dosfs 1.0.1.1

- fix static analysis

fs_hrfs 1.0.1.1

- update parent link count for directory move (V7STO-983)
- clean build warning
- fix static analysis errors (V7STO-1003)
- check bio state and handle its error (F10082)

fs_nfs 1.0.2.1

- clean up static analysis warnings

fsapi_tcplay 2.0.3.5

- fix static analysis errors report for Storage

fsapi_usr 1.0.1.7

- fix static analysis errors in storage

fsapi_util 1.0.0.8

- clean up static analysis warnings

fsl_imx 1.3.3.1

- fixed compile warnings

fsl_imx6 1.1.13.0

- fix incorrect eMMC support information for some fsl_imx6 boards (V7STO-994)
- added USB support for i.MX6 QuadPlus SABRE SD (F9795)

fsl_imx6sx_cm4 1.0.2.2

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

fsl_k70_twr 1.0.3.2

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

fsl_p1p2 1.0.7.2

- added RPM version dependency on os_arch_ppc and fsl_qoriq.(V7PRO-4121)

fsl_p3p4p5 1.0.8.2

- added RPM version dependency on os_arch_ppc and fsl_qoriq.(V7PRO-4121)
- fix confused SD card information in P4080DS target.ref (V7STO-992)

fsl_pq2 1.0.1.4

- fix polling mode issue for FCC of mpc82xx (V7PRO-3959)

fsl_qoriq 1.2.0.2

- supported new version of dpaa for t1024(F4843)
- fixed incorrect output from lawShow() when a window is 4GBor larger.(V7PRO-4084)
- fix receiving issue of polling mode.(V7NET-1479)
- fix using VxBL, VxWorks image failed to boot.(V7PRO-4056)
- enable the second stage spin on PPC CPU for UP.(V7PRO-4121)
- clear all bits of L2PARs before L2 cache flushing.(V7PRO-4204)
- fix END interface assignments error (V7PRO-4165)
- fix ctrl+x can not reset board for t1024(F4843)
- updated the spec version number requirement for fdt layer.

fsl_t1 1.0.5.0

- fix ctrl+x can not reset board for t1024(F4843)
- added RPM version dependency on os_arch_ppc and fsl_qoriq.(V7PRO-4121)
- updated target.ref for USB description (V7CON-565)

fsl_t2t4 1.0.9.3

- added RPM version dependency on os_arch_ppc and fsl_qoriq.(V7PRO-4121)
- fix incorrect SPI flash information (V7STO-991)
- fix USB support information (V7CON-568)

fsl_vf610twr_ca5 1.0.4.3

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

fsl_vf610twr_cm4 1.0.3.2

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

fsl_vybrid 1.0.3.1

- fixed compile warnings

gsoap_core 2.8.15.6

- synchronize taskid type with taskspawn function (V7MAN-279)
- Add FEATURE_REQUIRES {SEC_CRYPTO, {SEC_CRYPTO KEY_STORE}, } (V7SEC-500)

gsoap_demo 2.8.15.4

- synchronize taskid type with taskspawn function (V7MAN-279)

gsoap_soap 2.8.15.4

- synchronize taskid type with taskspawn function (V7MAN-279)

hash 1.1.2.0

- upgrade openssl to openssl-1.0.2n.(F9481)

hdc_agent 3.0.0.0

- Add Device Cloud library 3.0
- Add dependency to HDC 2.2

host_common 1.0.1.11

- define _WRS_NEED_EH_FRAME when ehFrameNeeded is true for llvm (V7COR-5146)
- moved huils tcl files to runtime RPM build_dir_mk

host_linux 1.0.6.0

- create C++ API for datadocs engine (V7COR-5129)
- create cdfcomp and lib2cdf executables (V7COR-5129)
- added pacman and verconx for 653_40
- removed unused bspCnvtT2_2 script
- update path to use VSB_DIR macro (V7COR-5613)

host_mrt_linux 1.0.4.0

- Remove jeffh
- Update libcore
- Use dynamic rtp for simulator

host_mrt_windows 1.0.4.0

- Remove jeffh
- Update libcore
- Use dynamic rtp for simulator

host_secure_loader_linux 1.0.1.1

- fix wrong month timestamp saved in secure boot signature files (V7SEC-578)

host_secure_loader_windows 1.0.1.1

- fix wrong month timestamp saved in secure boot signature files (V7SEC-578)

host_windows 1.0.7.0

- create C++ API for datadocs engine (V7COR-5129)
- create cdfcomp and lib2cdf executables (V7COR-5129)
- added pacman.exe and verconx.exe
- removed unused bspCnvtT2_2.bat createLib.bat files
- update path to use VSB_DIR macro (V7COR-5613)

hypervisor 3.1.1.0

- refactor VM BIOS to adhere to VxWorks coding standard
- add support for binary image payload
- Aarch32 guest support on A53
- resolve problems found through static analysis

hypervisor_arm 3.1.1.0

- refactor VM BIOS to adhere to VxWorks coding standard
- add support for binary image payload
- Aarch32 guest support on A53
- resolve problems found through static analysis

hypervisor_ia 3.1.1.0

- refactor VM BIOS to adhere to VxWorks coding standard
- add support for binary image payload
- Aarch32 guest support on A53
- resolve problems found through static analysis

iaf 1.0.0.1

- Fix static analysis warning

ieee1394_stack 1.1.0.6

- fix static analysis defects

ipnet_aaa 1.0.1.10

- clean up static analysis warnings
- Add FEATURE_REQUIRES {SEC_CRYPTO KEY_STORE} (V7SEC-500)

ipnet_coreip 1.4.2.0

- Add I350 support for PTP and TSN clock (F9650)
- fix coverity warnings and memory leak. (V7NET-1482)
- Cleanup networking coverity. (F9305)
- convert hostname to ip addr in arpDelete() (V7NET-1492)
- _pingTxLen should not be greater than 65515
- fix boot parameter other field bug (V7NET-1488)
- Add FEATURE_REQUIRES {SEC_CRYPTO KEY_STORE} (V7SEC-500)

- Add FIOREADDIR support in netdrv. (V7NET-1507)
- fix spelling error in ipcom_cmd_socktest_handle_setopt. (V7NET-1517)
- Fix INCLUDE_USER_IDENTIFICATION cannot be removed from VIP.

ipnet_dhcpc 1.0.1.11

- Correct SubProject errors. (V7NET-1518)

ipnet_dhcpc6 1.0.1.9

- Modify coverity issue
- Correct SubProject errors. (V7NET-1518)

ipnet_dhcps 1.0.0.12

- add rca testcase (US106053)
- modify for coverity issue
- fix lease_time config condition (V7NET-1506)

ipnet_dhcps6 1.0.0.9

- Modify coverity issue

ipnet_dnsc 1.0.1.6

- Correct SubProject errors. (V7NET-1518)

ipnet_eap 1.0.0.9

- Add FEATURE_REQUIRES {SEC_CRYPTO KEY_STORE} for (V7SEC-500)

ipnet_ftp 1.0.4.5

- coverity clean-up (F9305)
- Correct SubProject errors. (V7NET-1518)

ipnet_ipsecike 1.0.1.13

- Add FEATURE_REQUIRES {SEC_CRYPTO KEY_STORE} for (V7SEC-500)
- Clean up coverity warnings.

ipnet_linkproto_rohc 1.0.1.8

- coverity clean-up (F9305)

ipnet_mobility 1.0.1.0

ipnet_ntp 1.2.0.6

- task ipntpd has an exception and stoppped in 64bit board (V7NET-1527)

ipnet_ptp 1.0.3.1

- Fix PPS time interval error (V7NET-1407)
- Fix layer dependency error

ipnet_routeproto 1.0.1.6

- coverity clean-up (F9305)

ipnet_ssh 1.0.3.0

- support AES-CTR for ssh(F9996)
- SFTP access automatically granted when SSH access is given. (V7SEC-545)
- Fix SSH send package error.
- Add FEATURE_REQUIRES {SEC_CRYPTO KEY_STORE} (V7SEC-500)
- support AES-GCM for ssh(F9996)

ipnet_tftp 1.0.1.7

- Correct SubProject errors. (V7NET-1518)

ipnet_tsn 1.0.3.0

- Reduce the jitter of TSN clock timer (F9992)
- Add I350 support for PTP and TSN clock (F9650)

ipnet_usrspace 2.0.2.5

- fix coverity warnings and memory leak. (V7NET-1482)
- fix coverity warnings. (V7NET-1525)

ipnet_vrrp 1.0.2.2

- coverity clean-up (F9305)

itl_common 1.0.5.1

- Fix MSI HPET oneshot timer issue (V7PRO-4111)
- Updated SMT supporting (V7PRO-4226)

itl_generic 1.0.5.1

- Add notes for build boot application image and VxWork image onNon-Intel platform (V7PRO-4104)
- Add BSP default component (V7PRO-4226)

itl_quark 1.4.1.0

- fix gcc compiler warning
- Added notice that this BSP is deprecated (F10091)

ldapc 1.0.1.0

- Add cdf file for LDAPC (V7SEC-378)

libc-kernel 1.0.6.2

- fixed stdbool.h _Bool redefinition for Diab/C99 (V7COR-5408)
- fixed ldexp to return value when first parameter is NAN, INF and ZERO (V7COR-5441)
- fixed Coverity issues in dtoa.c, ctime.c

libc-usr 1.0.6.6

- Different printf output on user and kernel side for a null string (V7COR-5348)

loader 1.1.4.1

- fixed static analysis warnings

mosquitto 1.4.8.1

- Add user library support

mrt 1.0.5.1

- Fixed coverity issue in mrtdebugd_main.c (US109198)

net_base 1.0.6.0

- Add I350 support for PTP and TSN clock (F9650)
- clean up static analysis warnings
- Fix END_MIB_2233 flag lost error (V7PRO-4181)
- Put libc objects to libnet_base.a in CERT configuration.

nodejs 4.4.3.2

- fix V7IOT-43
- fix V7IOT-30
- fix V7IOT-17

nxp_layerscape 1.0.0.3

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

nxp_ls2 1.0.1.2

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

openSSL 1.2.1.0

- Broken up INCLUDE_IPCRYPTO_USE_CMDS into individual components(V7SEC-552)
- Fix ssltest command error (V7SEC-533)
- Remove FEATURE_REQUIRES {SEC_CRYPTO KEY_STORE} for (V7SEC-500)
- Update openSSL to 1.0.2n (F9481)

openssl_fips 1.1.0.1

- Add SEC_CRYPTO dependence

optee_client_api 1.0.1.1

- removed the dependency: Requires: os_arch_arm >= 1.1.9.0 (V7SEC-599)

os_arch_arm 1.1.10.2

- exclude tmArmVfpContext for soft fp
- add vxCpuPhysIndexGet function for ARMARCH7 (V7PRO-4112)
- fixed compile warnings
- updated setting method of cpuIndexMap
- supported 8-byte watchpoint (V7PRO-4100)
- fixed compile warnings
- fixed disassembler showed incorrect instructions (V7PRO-4220)
- release mutex semaphore in the error path of mmuTransTblUnionInit andmmuTransTblUnion (V7PRO-4192)

- touch the registers polluted by binary instructions in genTimer (V7PRO-4136)
- round up the size to cache line alignment for cacheDmaMalloc() (V7PRO-4230)

os_arch_ia 1.2.4.1

- Fix the problem that pentiumMcaShow is missed in EDR (V7PRO-4114)
- Fix issues found by source code static analysis (V7PRO-4154)
- Checked X_FIRMWARE_CTRL of FADT (V7PRO-4177)
- Added the register ebp before and after ISR (V7PRO-4167)
- Avoid to call AcpiEvInstallRegionHandlers twice in acpiLibInit (V7PRO-4185)
- Fixed the incorrect access of rip in 64bit OSM (V7PRO-4222)
- Indicated deprecated routine vxCpuShow (V7PRO-4253)
- No updating the TCB cs value in intExit (V7PRO-4166)
- added DBG_INST_ALIGN macro
- Fix the unbalanced execution stack problem (V7PRO-4365)
- Fix potential memory corruption issue (V7PRO-4206)

os_arch_ppc 1.3.1.5

- removed unused code and comments that don't conform to the latest kernelLockGive() (V7PRO-4137)
- enable the second stage spin on e500,e500mc and e6500 for UP.(V7PRO-4121)
- add isync prior to tlbwe and tlbre operation.(V7PRO-4150)
- added DBG_INST_ALIGN macro
- fix wrong access with 64-bit SMP builds. (V7PRO-4120)
- updated some SPIN TABLE related macroes' name in cpuE500ALib.s.

ostools 1.0.3.1

- cleanup static analysis warnings

qsp 1.1.2.1

- fix link status change notification sending issue. (V7PRO-4138)
- fix compile warnings

raster_vg 1.0.4.2

- Fix static analysis issue

rbuff 1.0.0.5

- fixed static analysis warnings

rtnet 1.0.2.3

- clean up static analysis warnings

runtime_analysis 1.1.4.2

- Exclude empty object file for llvm(F9720)
- Fix static analysis warnings

samples 1.0.0.10

- Added ARM64 support. (V7COR-5559)

sdmmc_core 1.0.2.1

- fix static analysis errors report
- add the definition of SDHC_DMABUF_FORCED_BOUNCE (V7STO-974)
- add CMD8 after CMD0 (V7STO-995)
- cleanup duplicate codes (F10081)
- add error recovery (F10081)

sdmmc_device_storage 1.0.2.1

- fix static analysis errors report
- add error handling from underlying driver (V7STO-989)

sdmmc_host_sdhc 1.0.5.1

- fix static analysis errors report
- support to forcedly use bounce buffer (V7STO-974)
- enhance error handling (F10081)

sdmmc_host_timmchs 1.1.1.1

- fix bad FEATURE_REQUIRES

sec_crypto 1.0.6.1

- Add support for multiple X509 certificates in Static Trusted Key Store Provider (V7SEC-541)
- Change OPENSSL from SELECT to LAYER_REQUIRES for (V7SEC-500)
- Update the API name for docs (V7SEC-514)

secure_loader 1.0.1.1

- Fix VSB issue (V7SEC-468)

security_gdoi 1.0.0.3

- Clean static warnings.
- Replace IPNET_IPSECIKE with IPNET_IKE

shell 1.1.6.1

- fix to include tipShellCmdInit in prjConfig.c (V7COR-5399)
- Changed INCLUDE_SECURITY to INCLUDE_USER_IDENTIFICATION incomponent INCLUDE_SHELL_SECURITY since INCLUDE_SECURITYis deprecated. (V7SEC-378)

shmem 1.0.0.3

- Corrected bcopy() calls (HYP-11861)

snmp_agent 1.0.1.5

- replace obsolete routine SNMP_Send_Notify() by SNMP_Send_Notify_Name() (V7MAN-289)

socket 1.0.5.1

- addrlen should be initialized in _acceptSc(). (V7NET-1511)

ssh_client 1.0.0.2

- Fix static analysis warning (F9305)

stacktrace 1.0.2.2

- Use _WRS_ASM instead of asm for inline assembler
- Fix System Viewer stacktrace of RTP on VxSim.(V7COR-5538)
- Fix stacktrace error on ppc.(V7COR-3519)
- ST_trace_error issue when profiling DKM (V7COR-3957)
- Fix call stack of CPU profiler on ARM-64.(V7COR-5242)

stop_mode_debug_agent 2.0.4.4

- add domain for unit test
- generate docs of stop mode agent APIs (V7COR-5384)
- fixed smaLib.c generating apigen error
- added serial debug support for stop mode (US107861)

systemviewer 1.0.0.12

- Fix static analysis warnings

ti_keystone 1.1.3.1

- fixed compile warnings

ti_sitara 1.0.4.2

- fixed compile warnings
- supported baud rates above 115200 (V7PRO-4175)

ti_sitara_cm4 1.0.3.2

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

ti_sitara_ctxa15 1.0.6.1

- update SD description

tilcon_demo 7.2.1.3

- code clean

tilcon_kernel 7.2.1.6

- code cleanup

tools_wb_vxworks7_apidoc 1.0.8.7

- updated to pick up the latest api documentation for SR0530

toolsrc_diab 20.0.4.2

- Fixed Coverity issue in sxpmul64.c (US109198)

toolsrc_llvm 1.0.1.2

- Use _WRS_NEED_EH_FRAME instead of INCLUDE_CPLUS_LANG (V7COR-5146)

trousers 1.0.1.2

- Change OPENSSL from SELECT to LAYER_REQUIRES for (V7SEC-500)
- Remove layer requires of TROUSERS to SEC_CRYPTO (V7SEC-560)

unix 1.0.0.3

- fix intermittent build issue (V7COR-5466)
- add kernel library support

usb_core 1.0.3.0

- added uvc driver support.(F9491)
- fix extern "C" statement (V7CON-563)

usb_ctlr_dwc2dr 1.0.2.3

- fix extern "C" statement (V7CON-563)
- check if the pipe is already deleted (V7CON-569)

usb_ctlr_ehci 1.0.2.3

- fix static analysis defects
- fix extern "C" statement (V7CON-563)
- update isochronous URB scheduling.(V7CON-423)
- use spinlock in SMP mode (V7CON-539)

usb_ctlr_fsldr 1.0.2.5

- fix extern "C" statement (V7CON-563)

usb_ctlr_mhdrc 1.1.1.9

- fix extern "C" statement (V7CON-563)

usb_ctlr_ohci 1.0.1.10

- fix extern "C" statement (V7CON-563)

usb_ctlr_pchudc 1.0.0.6

- fix extern "C" statement (V7CON-563)

usb_ctlr_plx 1.1.0.7

- fix static analysis defects

usb_ctlr_uhci 1.0.1.8

- fix static analysis defects
- fix extern "C" statement (V7CON-563)
- use spinlock in SMP mode (V7CON-567)

usb_ctlr_xhci 1.0.3.4

- fix static analysis defects
- abort transfer when delete the pipe (V7CON-547)
- fix extern "C" statement (V7CON-563)
- fix isochronous transfers on XHCI.(V7CON-423)

- fix incorrect debug information (V7CON-573)

usb_host_core 1.0.0.17

- fix static analysis issue
- remove bcdUSB version check for high speed device (V7CON-555)
- check descriptor length to avoid infinite loop (V7CON-558)
- fix extern "C" statement (V7CON-563)

usb_host_helper 1.0.0.7

- fix static analysis defects
- check descriptor length to avoid infinite loop (V7CON-558)

usb_host_hid 1.0.0.5

- fix static analysis issue
- check descriptor length to avoid infinite loop (V7CON-558)
- fix extern "C" statement (V7CON-563)

usb_host_keyboard 1.0.0.9

- fix static analysis defects

usb_host_mouse 1.0.0.5

- fix static analysis defects

usb_host_printer 1.0.0.6

- fix static analysis defects

usb_host_serial 1.0.0.9

- fix static analysis issue
- check if the device is removed when Bulk In transfer failed (V7CON-547)
- correct USB_GEN2_SERIAL_COMMON_TASK_PRIORITY (V7CON-557)
- remove the useless semaphore from input task (V7CON-560)
- delete the input task if can't get semaphore in usb2SerialWrsRemove() (V7CON-561)

usb_host_storage 1.0.1.1

- fix static analysis defects
- check descriptor length to avoid infinite loop (V7CON-558)
- fix extern "C" statement (V7CON-563)
- clear errno before read/write operation (V7CON-564)

usb_host_touchscreen 1.0.0.4

- fix static analysis defects

usb_host_uvc 1.0.0.0

- Initial creation

usb_otg 1.0.0.8

- fix static analysis defects

- cleanup build warnings (V7CON-585)

usb_phy 1.0.6.2

- fix build warnings
- fix extern "C" statement (V7CON-563)
- set the override bit of the internal phy offset 0x18 only if theg_usbPlatformFlag is zero (V7CON-566)

usb_target_core 1.0.1.10

- fix extern "C" statement (V7CON-563)

usb_target_msc 1.0.1.10

- fix static analysis defects
- fix extern "C" statement (V7CON-563)

usb_target_net 1.1.0.14

- fix static analysis errors report

usb_target_print 1.0.1.7

- fix static analysis defects

usb_target_ser 1.1.0.9

- fix static analysis defects
- check the parameter of usbTgtSerShow() and usbTgtSerShowDetail() (V7CON-583)

user_management 1.1.0.2

- Fix static analysis warning (F9305)
- Add userIdentLib.o in the MODULES statement of componentINCLUDE_USER_IDENTIFICATION, add udbMgr.o in the MODULES statementof component INCLUDE_USER_DATABASE, so vxprj can do dependencychecks. (V7SEC-378)
- Update the name section of VXWORKS_LOGIN_PROMPT (V7SEC-573)
- fix initial user doesn't does not prompt when the UDB file is in USBstorage. (V7SEC-568)
- Fix INCLUDE_USER_IDENTIFICATION cannot be removed from VIP.
- Fix missing '\' in SYNOPSIS section in VXWORKS_LOGIN_PROMPT.

user_management_ldap 1.1.1.0

- Add API for configuring ldap parameters in runtime.(F9804)
- Modify for ldap parameter consistency issue.(V7SEC-547)
- Add INCLUDE_LDAPC in the REQUIRES statement of componentINCLUDE_AD_LDAP_AUTH.(V7SEC-378)
- Modify for ldap vip parameters.

virtio 1.0.6.0

- update to provide support for priority scheduling in VDFS

vnic 3.2.4.0

- Add VNIC support for xlnx_zynq platform

vxbus_buslib 2.1.3.4

- fix vxbPciTopoShow does not scan all bus numbers (V7PRO-4050)
- fix PCI enumeration issues.(V7PRO-4026)

vxbus_core 1.0.8.4

- add the definition of VXB_DMABUF_FORCED_BOUNCE (V7STO-974)
- added a new VxBus management API vxbDrvGet()
- Fix the handling of VXB_DMABUF_MAP_CONTINUEwhen bounce buffers are enabled (V7PRO-4189)

vxbus_drv 1.2.7.1

- fix checking channel busy bit is not needed after starting DMA transfer.(V7PRO-4117)
- added shutdown method for ZynqMP RTC and Freescale SRTC (V7PRO-4205)

vxbus_subsystem 1.0.12.1

- fix problems in VxBus interrupt subsystem (V7PRO-4115)
- fix vxbIntEnable can not enable interrupt after vxbIntDisable (V7PRO-4197)

vxdbg 1.0.7.1

- [VXDBG}
- clean up static analysis warnings
- fixed static analysis errors

vxsim_bsp_linux 1.0.2.12

- Fix interrupt resource for the hostsio device (V7COR-5568)

vxsim_bsp_platform 1.0.2.12

- Fix interrupt resource for the hostsio device (V7COR-5568)

vxsim_bsp_windows 1.0.2.12

- Fix interrupt resource for the hostsio device (V7COR-5568)

vxsim_prebuilt_projects_linux 1.0.2.11

- Fix interrupt resource for the hostsio device (V7COR-5568)

vxsim_prebuilt_projects_windows 1.0.2.11

- Fix interrupt resource for the hostsio device (V7COR-5568)

vxworks_7_installsets 1.0.0.1

- adding SR0530 install set data

wassp_test_artifacts 1.0.1.4

- remove OPENCV from all layer builds

webcli_common 1.0.3.5

- Add FEATURE_REQUIRES {SEC_CRYPTO, {SEC_CRYPTO KEY_STORE}, } for (V7SEC-500)

webcli_tools 1.0.1.4

- generate the little and big endian NVM file system. (V7MAN-288)
- enlarge some macros to fix the webcli converted issue.(V7MAN-280)
- fix the issue access level of all commands set to zero.(V7MAN-282)

webcli_webdemo 1.0.1.10

- generate the little and big endian NVM file system. (V7MAN-288)

xen 1.0.0.1

- fixed an miniLayer build issue (V7PRO-4214)
- prebuild src for getting vxbXenMethod.h earlier (V7PRO-4303)

xen_arm 1.0.0.1

- updated uVer of board descriptor to 2.0 (V7PRO-4241)

xlnx_zynq 1.1.7.0

- add VNIC support for xlnx_zynq platform

xlnx_zynq7k 1.0.10.1

- use INCLUDE_MARVELL_PHY instead of INCLUDE_GENERICPHY (V7PRO-4024)
- specify the BD number for END driver (V7PRO-4194)
- updated uVer of board descriptor to 2.0 (V7PRO-4241)

xlnx_zynqmp 1.0.3.0

- add support for 32-bit guest in hypervisor
- specify BD number for END driver (V7PRO-4194)
- updated uVer of board descriptor to 2.0 (V7PRO-4241)
- keep A64 startup code even booting from 32-bit BOOTAPP (V7PRO-4142)
- add DRV_ARM_GEN_TIMER when adding INCLUDE_VXB_TIMESTAMP (V7PRO-4193)

xlnx_zynqmp_r5 1.0.2.1

- specify BD number for END driver (V7PRO-4194)
- updated uVer of board descriptor to 2.0 (V7PRO-4241)

xml 2.2.4.1

- modify for synchronize taskid type with taskspawn function

Features Delivered in December 2017 (SR0520)

This release included the features added and defects fixed since the SR0510 release of VxWorks 7.

Some features may not be available in your installation depending on the VxWorks 7 Profiles you have purchased.

ARM 64-Bit Architecture Support on the Virtualization Profile

The VxWorks 7 Virtualization Profile now supports 64-bit ARM architectures (Xilinx Zynq UltraScale+ MPSoC ZCU102).

Board Support Packages

- The new xen_arm BSP supports a Xen (DomU) guest on a Xilinx Zynq UltraScale+ MPSoC ZCU102 target.
- The fsl_imx6 BSP now supports NXP i.MX6 QuadPlus targets.
- The itl_generic BSP Denverton support has been enhanced to support x2APIC.
- The itl_generic BSP has been updated to support AMD G-series LX family SoCs.
- The nxp_layerscape BSP now supports Quad Serial Peripheral Interface (QSPI) on the NXP LS1046A target.
- The ti_sitara_ctxa8 BSP now supports SD UHS-I speed using the SD/MMC host controller of the TI AM335x target.
- The xlnx_zynqmp BSP has been expanded to include support for GPIO, DMA, and RTC devices on Xilinx Zynq UltraScale+ MPSoC ZCU102 targets.
- The xlnx_zynq7k BSP now supports the extended multiplexed I/O (EMIO) interface for the Zynq ZC702 target. This allows the on-chip network device to use an external PHY device through the FPGA Mezzanine Connector (FMC).

CMake Enhancement

Workbench now supports using the Ninja build system (see https://github.com/martine/ninja) for generated and imported CMake projects.

ELF Secure Loader

The VxWorks 7 Security Profile supports the loading and verification of signed ELF modules; that is: downloadable kernel modules (DKMs), real-time processes (RTPs), and shared libraries. In this release, this support has been enhanced to support encryption. This support was verified using the AES256-CTR encryption algorithm.

Expat XML Parser Version Update

VxWorks 7 now supports version 2.2.4 of the Expat XML parser. For more information on this version, see:

https://libexpat.github.io/

File System Improvements

You can now get the file system type of the mounted file system. For more information, see the VxWorks 7 File Systems Programmer's Guide.

Holding Task Safety while Blocked

VxWorks now allows you to protect a task from deletion and to simultaneously avoid the situation in which deletion might be delayed for an unacceptable amount of time. It provides a mechanism that notifies a deletion-safe task that is blocked, or about to block, that another task has attempted to delete it. The task can then:

1. Complete any necessary operations.
2. Release resources.
3. Revoke its deletion-safety.
4. Be deleted.

For more information on this new mechanism, see the multitasking information in the VxWorks 7 Programmer's Guide.

Intel Kaby Lake HD Graphics

This release supports the Intel Kaby Lake HD graphics processing unit (GPU). This improves the graphics performance on Intel processors that include an integrated GPU.

libcurl Version Update

VxWorks 7 now supports version 7.55.1 of libcurl.

Network Time Protocol (NTP) Update

The NTP daemon has been updated to version 4.2.8p10. This update addresses security vulnerabilities. For more information on this version, see:

http://www.ntp.org

UEFI Secure Loader

The VxWorks 7 Security Profile provides secure boot support for Intel boards that support the secure Unified Extensible Firmware Interface (UEFI). In this release, this support has been enhanced to support encryption. This support was verified using the AES256-CTR encryption algorithm.

UEFI Key Database Key Provider

This release includes a new key store provider option for a UEFI Key DB. For more information, see the VxWorks 7 Security Profile Programmer's Guide.

Time-Sensitive Networking

Time-sensitive network (TSN) support has been enhanced as follows:

- Show routines are now available to help with debugging issues such as precision time protocol (PTP) clock grandmaster identification issues, PTP synchronization issues, and TSN packet flow issues.
- TSN streams (timestamp transmission) are now supported.

- A new API is available to support additional PTP configuration.

For more information, see:

- VxWorks 7 NTP and PTP Programmer's Guide
- VxWorks 7 Time-Sensitive Networking Programmer's Guide

Workbench

- User interface changes

  A new selection has been added to the Workbench user interface that allows you to define a working directory for the RTP when in the Run/Debug a Real-Time Process menu.

Changes Delivered in December 2017 (SR0520)

The following changes were delivered as part of the VxWorks 7 SR0520 release:

acpica 1.0.0.1

- update build configuration to support VXTEST build

agent 1.2.5.0

- Merge latest tcf-c-core V7COR-5318
- define working directorys for RTP (US104038)
- fixed static analysis issue

alt_soc 1.0.4.1

- remove unused code (V7PRO-4133)

avnet_mini_itx_7z 1.0.5.2

- revise gpio node name in dts file (V7PRO-4090)

bdm_flash_mtd 1.1.1.2

- add QSPI NOR flash support for NXP L1046(F9437)
- fixed status check timeout but return OK in vxbSpiFlash.c
- fix static analysis errors in STORAGE
- fix static analysis errors error report for Storage

bdm_flash_nftl 1.1.0.2

- fix static analysis errors report for Storage

bdm_flash_sim 1.0.1.1

- fix static analysis errors in STORAGE
- fix static analysis errors report for Storage

bdm_flash_tffs 1.0.1.2

- fix build warning was reported in usrTffs.c

- fix static analysis errors report for Storage

bdm_nvram 1.0.0.8

- fix static analysis errors report for Storage

bdm_sata 1.1.3.4

- add retry for data transimission (V7STO-900)
- used BAR5 as AHCI register base in vxbAhciCtrlPciAttach().(V7PRO-3917)
- swap the sata device information (V7STO-909)
- fix static analysis errors in STORAGE
- fix static analysis errors report for Storage
- move CLO command to ST enable (V7STO-960)

bdm_sdmmc 1.2.0.9

- disable the API document

bdm_tffs_drv 1.0.1.2

- copy the end of string (V7STO-874)
- fix static analysis errors report for Storage

bdm_xbd 1.0.2.3

- fix static analysis errors in STORAGE
- clean build warning

boardlib 1.1.1.2

- Cleaned up initialization dependencies (V7COR-5320)

boot_bios 1.0.2.7

- Remove WIBU, secure boot (F9917)

boot_common 1.0.2.4

- Remove WIBU, secure boot (F9917)

boot_loaders 1.0.1.0

- Remove Curl_base64_decode (V7SEC-505)
- Add support for image decryption (F9209)
- remove secure boot dependency on INCLUDE_SECURE_LOADER (V7SEC-502)
- Add support for UEFI database trust store (F8920)

boot_uefi 1.0.2.12

- Remove WIBU, secure boot (F9917)

boot_vxbl 1.0.4.1

- check the partition name length (V7PRO-3911)

bsp_legacy_container 6.9.0.9

- Update to add two folder definition (V7COR-5358)

build_dir 1.2.1.1

- fix prjConfig.c file format (V7COR-5290)
- modify cmpCreateLayerProject to fix (V7COR-5306)
- remove sort on compilerList (V7COR-5343)
- added badTDN_ code (V7COR-5338)
- binary layer change (V7COR-5331)

build_dir_cert_vsbconfig 1.0.0.3

- moved commoncert.vxglobalconfig to vxworks-7\pkgs\os\core\safetyprofiles \vsb_profiles

build_dir_misc 1.0.3.9

- add EDOOM to stdErrnoList in apigen.pl (F5593)

build_dir_mk 1.0.7.4

- mods to support product split
- fix 32-bit RTP signing on VxSim for Windows (V7SEC-529)

build_dir_tool 1.0.6.0

- add signtool encryption support (F9210)
- remove VIP signing dependency on INCLUDE_SECURE_LOADER (V7SEC-502)
- Add UEFI database trust store (F8920)
- restored -fno-implicit-fp for IA and enabled it for ARM (V7COR-5371)

build_tools_common 1.0.0.17

- updated the vx7 properties file
- also removed the common post install files

can_core 1.0.1.6

- VSB build failed with minimal VSB and CAN_CORE layer (V7CON-542)

can_ctlr 1.0.4.0

- VSB based on itl_generic build failed with minimal VSB and CAN_CORE layer (V7CON-548)

can_ns_container 1.0.1.0

- VSB build failed with minimal VSB and CAN_CORE layer (V7CON-542)

core_io 1.2.7.0

- introduce anonymous vxworks pipes (pipeAnonCreate());AIO library now uses an anonymous pipe
- make use of EDOOM mechanism for better deletion safety (V7COR-3531, F5593)
- In pipe drivers, handle possible sigprocmask failure (V7COR-5328)
- Prevent pipe device devMutex from termination when original RTPowner/creator dies (V7COR-5375)

- Avoid stack corruption from posting excJobAddDefer() directlyas kernel work in pipeWrite() (V7COR-5319)
- fix static analysis errors in STORAGE
- add _WRS_UNIT_TEST for unit test in ioLib.h
- add file system type id definition (F9150)

core_kernel 1.2.5.0

- adding pipeAnonCreate() prototype in pipeDrv.h
- Removed usage of SPR96639_FIXED macro
- add semMCouldBeOwner() and memSysPartCouldBeOwner() (V7COR-5296)
- RTP locking rework support (V7COR-5328)
- Prevent task stack usage growth each time a pended signal would beunblocked after restoring the mask from running a previous signalhandler (V7COR-5368)
- Update to add folder definition (V7COR-5358)
- Corrected service package version declaration to vxWorksVersionSvcPk.(V7COR-4893)
- Added code to prevent linkage error (V7COR-5307)
- Added _vx_offset_TLS_MODULE_DESC_next in tlsLib.
- Added boot line size check in bootParamsPrompt().(V7COR-5250)
- allow early return from pending calls on deletion attempt (F5593)
- Enforce init order for INCLUDE_IDLE_TASKS component (V7COR-5320)

core_rtp 1.1.4.0

- RTP locking rework to avoid deadlock (V7COR-5328 / V7COR-5367)
- add decryption for secure loader (F9210)

core_safety 1.0.5.0

- system call taskDelayEx() replaces taskDelay() in syscall access test (F5593)
- moving safety profiles

core_user 1.2.5.0

- adding pipeAnonCreate() prototype in pipeDrv.h
- Prevents vxCpuEnabledGet to return obsolete cpu sets running (V7COR-4973)
- removed unnecessary lines from version.h (V7COR-4893)
- allow early return from pending calls on deletion attempt (F5593)

crypto_misc 1.1.0.0

- Add SOCKET into LAYER_REQUIRES (V7SEC-498)
- Correct some text (V7SEC-504)
- Remove Symbol dependency of INCLUDE_IP_SECURITY and INCLUDE_IPHWCRYPTO (V7SEC-491)

end 1.2.7.0

- Add support for timestamp transmission (F9714)

- Fix the coupling between TSN stream and END
- Fix TSN clock timer stop error(V7NET-1425)
- Fix telnet error after adding INCLUDE_BCM52XXPHY(V7PRO-3733)
- EMIO GMII support for GEM driver (F6169)
- make jumboEnable configurable (V7NET-1281)

erf 1.0.1.6

- Clean build warning

etc_post 1.0.0.0

- created

evdev_lib 1.1.2.7

- fixed key press events issue when enabled modifiers (V7GFX-384)

fbdev_demos 1.0.6.1

- fix FPS calculation (V7GFX-376)

fdt 1.0.9.5

- fix coverity issue

fs_cdromfs 1.0.1.0

- integrate file system type magic number (F9150)
- fix static analysis errors report for Storage

fs_core_common 1.1.3.0

- Add file system information show routines (F9150)
- Fix unspecified parameter issue for xbdGptPartAdd (V7STO-923)
- clean build warning
- fix static analysis errors report for Storage

fs_core_devfs 1.0.1.0

- integrate file system type magic number (F9150)
- clean build warning

fs_core_vdfs 1.0.1.0

- Integrate file system type magic number (F9150)
- clean build warning
- updated the number of default max file descriptors
- update number of max open file descriptors (HYP-12099)

fs_core_vfs 1.0.1.0

- integrate file system type magic number (F9150)
- clean build warning
- fix static analysis errors in STORAGE

fs_dosfs 1.0.1.0

- integrate file system type magic number (F9150)
- fix dosFsFmtVolInit status return issue (V7STO-922)
- fix static analysis errors in STORAGE
- fix static analysis errors report for Storage
- handle unexpect return value of calling xbdIoctl (V7STO-951)

fs_hrfs 1.0.1.0

- integrate file system type magic number (F9150)
- fix static analysis errors in STORAGE
- fix static analysis errors report for Storage
- clean build warning

fs_nfs 1.0.2.0

- integrate file system type magic number (F9150)
- clean build warning
- fix static analysis errors in STORAGE
- add nfsCommon.h for user-space build (V7STO-943)
- fix static analysis errors report for Storage
- clean build warning

fs_romfs 1.1.2.0

- integrate file system type magic number (F9150)
- clean build warning

fs_vrfs 1.0.1.0

- integrate file system type magic number (F9150)

fsapi_tcplay 2.0.3.4

- add missing dependency (V7STO-937)
- fix static analysis errors report for Storage

fsapi_usr 1.0.1.6

- set error number for rmdir failure (V7STO-908)
- update description of mv (V7STO-863)
- fix static analysis errors in STORAGE

fsapi_util 1.0.0.7

- set error number for rmdir failure (V7STO-908)
- update description of mv (V7STO-863)
- fix static analysis errors in STORAGE
- fix static analysis errors report for Storage

fsl_imx 1.3.3.0

- added i.MX6QP SABRE SD support (F9191)
- text updates for OCOTP driver
- thermal: do not read data when last measurement is invalid (V7PRO-4030)

fsl_imx6 1.1.12.0

- update U-Boot toolchain URL link in target.ref (V7PRO-3994)
- remove romHeader.

fsl_imx6sx_cm4 1.0.2.1

- added description for romInit (V7PRO-4049)

fsl_k70_twr 1.0.3.1

- added description for romInit (V7PRO-4049)

fsl_ls102x 1.0.6.1

- update U-Boot toolchain URL link in target.ref (V7PRO-3994)

fsl_p3p4p5 1.0.8.1

- add require bdm_sata >= 1.1.3.3.(V7PRO-3981)
- corrected an error in 5040DS support list table.(V7PRO-3980)
- disable vx-built-in DTB components seclection for LP64 mode.

fsl_qoriq 1.2.0.1

- fix orphaned DRV_QORIQ_CLK components (V7PRO-3978)
- add clear RxFQ when halt the Qman (V7PRO-3941)
- fixed a coding error in qoriqClkType (V7PRO-4014)
- remove unused code (V7PRO-4123)
- add LPAE VSB option for ARMARCH7 (V7PRO-4108)

fsl_t2t4 1.0.9.2

- modify the description of eMMC and SATA

fsl_vf610twr_cm4 1.0.3.1

- added description for romInit (V7PRO-4049)

gpudev_fslviv_demos 1.0.6.1

- fix FPS calculation (V7GFX-376)

gpudev_fslviv_tests 1.0.3.1

- fix FPS calculation (V7GFX-376)

gpudev_itli915 4.8.0.1

- update to i915 4.8 to update eDP port status (V7GFX-377)

gpudev_libdrm_demos 1.0.2.1

- fix FPS calculation (V7GFX-376)

gsoap_demo 2.8.15.3

- modify soap building error on itl board

gsoap_soap 2.8.15.3

- modify soap building error on itl board

hash 1.1.1.2

- libopenssl.so can't load

host_common 1.0.1.10

- corrected service package version declaration to vxWorksVersionSvcPk in makeSymTbl.tcl. (V7COR-4893)

host_linux 1.0.5.0

- Convert selected tcl scripts to executable (V7COR-5129)

host_secure_loader_linux 1.0.1.0

- add support for secure loader encryption (F9210)

host_secure_loader_windows 1.0.1.0

- add support for secure loader encryption (F9210)

host_vxsim_windows 1.0.1.4

- Fixed a potential handle leak when rebooting the simulation while using NAT (V7COR-5357)

host_windows 1.0.6.0

- Convert selected tcl scripts to executable (V7COR-5129)
- added egrep.bat to binutils (V7COR-5429)

hvif 3.2.1.0

- introduce PSCI to start ARM64 CPUs

hvif_arm 3.2.1.0

- introduce PSCI to start ARM64 CPUs

hvif_ia 3.2.1.0

- introduce PSCI to start ARM64 CPUs

hypervisor 3.1.0.1

- Gordon peak bring up
- Add SMAP bit to CPUID and add SMAP/SMEP CR4 macros (HYP-12074)
- Add FS_COMMON layer dependency (HYP-12121)
- Update ARM64 support
- Update APCI to version 20161222
- Provide failover on DMAR failures (HYP-12098)
- Update IVT library (HYP-12097)

hypervisor_arm 3.1.0.1

- Gordon peak bring up
- Add FS_COMMON layer dependency (HYP-12121)
- Update ARM64 support
- Update APCI to version 20161222
- Provide failover on DMAR failures (HYP-12098)
- Update IVT library (HYP-12097)

hypervisor_ia 3.1.0.1

- Gordon peak bring up
- Add SMAP bit to CPUID and add SMAP/SMEP CR4 macros (HYP-12074)
- Add FS_COMMON layer dependency (HYP-12121)
- Update ARM64 support
- Update APCI to version 20161222
- Provide failover on DMAR failures (HYP-12098)
- Update IVT library (HYP-12097)

infrastructure_container 1.0.1.1

- moved installset_data to a new RPM

ipnet_aaa 1.0.1.9

- check the buffer space when appends data to radius buffer.(V7NET-1449)

ipnet_coreip 1.4.1.0

- increment/decrement waiting_writers for datagram sockets whenadding/removing SELWRITE select wakeup node
- make use of EDOOM mechanism (F5593)
- Update to add two folder definition (V7COR-5358)
- Fix LAUNCH_OVERFLOW condition not visible on socket (V7NET-1413)
- Fix wassp linked error issue
- Fix the coupling between TSN stream and COREIP
- fix an build error when enable RTNet (V7NET-1483)
- Remove the operation of the used backlog number descreased again (F9305)
- adding support for IP_SIOCINQ in SCTP. (V7NET-1416)
- Remove warning message for default boot.(V7NET-1423)
- IPNET_SHELL KONG cases recovery (F9305)
- check backlog parameter for listen function (V7NET-1438)

ipnet_dhcpc 1.0.1.10

- Remove ip address after configing dhcp (V7NET-1428)

ipnet_dhcps 1.0.0.11

- fix memory issue when dumping dhcps lease (V7NET-1462)

ipnet_ipsecike 1.0.1.12

- Fix ANVL issues IKEv2 suite case 33.1 failed.(V7SEC-469)
- There are errors output when testing ike mefa suit.
- Remove Symbol dependency of INCLUDE_IP_SECURITY and INCLUDE_IPHWCRYPTO (V7SEC-491)

ipnet_mobility 1.0.0.18

- change to binary metadata
- make WPS layer depend on !OPENSSL_FIPS

ipnet_ntp 1.2.0.5

- update ntp version to 4.2.8p10 (F9128)

ipnet_ptp 1.0.3.0

- Add show routine for PTP status (F9495)
- Add more configuration options to VxWorks PTP layer (F9707)

ipnet_qos 1.0.1.3

- Fix qos command not working as expected (V7NET-1427)

ipnet_ssh 1.0.2.4

- modify read failed for subsystem
- Update warning message's level (V7SEC-481)

ipnet_tftp 1.0.1.6

- set errno after receiving an error opcode (V7NET-1453)
- fix memory leak (V7NET-1434)

ipnet_tsn 1.0.2.0

- Fix the coupling between TSN stream and COREIP
- Add support for timestamp transmission (F9714)
- Fix TSN stream show error (V7NET-1411)
- Fix TSN stream name boundary error

ipnet_usrspace 2.0.2.4

- remove WIND_PLATFORM logic in makefile

itl_common 1.0.5.0

- Add SD card support for Apollo Lake (V7STO-761)
- Added support for x2APIC (F8001)
- Fixed the broken input and output when using USB GEN2 keyboard (V7PRO-3811)
- Change to use non-shared MSI vector (V7PRO-3936)

itl_generic 1.0.5.0

- add SD card support for Apollo Lake (V7STO-761)
- Add support for X2APIC (F8001)
- Fix SD card write protect issue for Apollo Lake (V7STO-969)
- Fix SD card mount slow issue for Apollo Lake (V7STO-970)
- fixed itl_generic target.ref api documentation errors (V7PRO-3986)
- revise the command line expression and comment mark (V7PRO-4015)
- add the space allocation description for sysPhysRamDescRAM (V7PRO-3991)

json 1.0.0.5

- Support shared library

ldapc 1.0.0.1

- Add the requires to OPENSSL (V7SEC-499)

libc-usr 1.0.6.5

- Fix static analysis warnings

loader 1.1.4.0

- Remove WIBU (F9917)
- add decryption for secure loader (F9210)

mrt 1.0.4.1

- Fix CryptoTest failure on fsl_imx6 in user mode (V7MRT-77)

net_base 1.0.5.1

- Merge rtnet module telnetdLib.h to telnetLib.h and move telnetLib.hto NET_BASE to fix a rtnet build error (V7NET-1483)

nodejs 4.4.3.1

- fix V7IOT-32
- fix V7IOT-40
- fix V7IOT-44

nxp_layerscape 1.0.0.2

- add QSPI NOR flash support for NXP L1046(F9437)
- update U-Boot toolchain URL link in target.ref (V7PRO-3994)
- add minimum clock rate description for FTM

openSSL 1.2.0.0

- Add SOCKET into LAYER_REQUIRES (V7SEC-506)
- Fix build error in Rt-net (V7SEC-503)
- Fix speed command error (V7SEC-482)
- Add ecparam command (V7SEC-482)
- VIP build error with RTNET and IPSSL(V7SEC-484)

- Correct the name of OpenSSL(V7SEC-467)

openssl_fips 1.1.0.0

- Add shell dependence.(V7SEC-508)

os_arch_arm 1.1.10.1

- added workaround for ARM Cortex-A9 erratum 782772 (V7PRO-3998)
- fixed thumb2 branch instruction display issue (V7PRO-4043)
- cleaned up ttbase field in TCB usage on ARM (V7PRO-3972)
- disable TTBR1 translation table walk for non-LPAE (V7PRO-3938)
- defined acs_perms and tex_cb before they're used (V7PRO-4000)
- added workaround for ARM Cortex-A9 erratum 782772 (V7PRO-3998)
- added workaround for ARM Cortex-A9 erratum 751473 (V7PRO-2226)
- fix debug watchpoint range not effective issue (V7PRO-3954)
- fix swap read/write issue for Thumb2 instruction set (V7PRO-4042)
- added workaround for ARM PL310 erratum 769419 (V7PRO-4074)
- add hypervisor compatible early init (F8628)
- extract the branch offset from Bit 5 instead of 4 (V7PRO-3969)
- removed vfpArmLib.c (V7PRO-4092)
- implemented vxTas without LDREXB/STREXB. (V7PRO-4129)
- fixed relocation error when call syscallErrorExit (V7PRO-4054)
- removed _func_vfpExcHandle and vfpExcHandle (V7PRO-4032)
- update for xen (F8146)
- corrected the cortex-m4 cache operation (V7PRO-4089)

os_arch_ia 1.2.4.0

- Add support for X2APIC (F8001)
- Fix logic error in syscallHandle on x86-64 (V7PRO-4039)
- Fix logic error in system call entry syscallHandle on x86-64 (V7PRO-4037)
- Remove the unnecessary files
- Fix the incorrect rsp/esp value in Workbench stopmode (V7PRO-3977)
- Update osvxworksxf to support VXTEST build
- Fix the incorrect way to fetch cs register (V7PRO-4020)

os_arch_ppc 1.3.1.4

- fixed an logic error in bcopy.(V7PRO-3853)

qsp_arm 1.0.1.7

- removed STATIC_MMU_TABLE_BASE as it is needless

qsp_arm64 1.0.0.2

- set DOC_BUILD to NO

raster_mesa_demos 1.0.4.1

- fix FPS calculation (V7GFX-376)

raster_mesa_tests 1.0.4.1

- fix FPS calculation (V7GFX-376)

raster_vg 1.0.4.1

- Fix static analysis issue (V7GFX-390,V7GFX-391)

raster_vg_demos 1.0.5.1

- fix FPS calculation (V7GFX-376)

rtnet 1.0.2.2

- Fixed an build error when enable RTNet (V7NET-1483)

runtime_analysis 1.1.4.1

- Fix wrong attribute in runtime analysis CDF file (V7COR-5316)
- Fix static analysis warnings (US105207)

samples 1.0.0.9

- add Ninja support for CMake RTP and CMake DKM project(F9831)

sdmmc_core 1.0.2.0

- update for AM572X UHS support. (F9151)

sdmmc_device_storage 1.0.2.0

- fix format failure (V7STO-946)
- add XBD_SYNC ioctl command (V7STO-954)

sdmmc_host_sdhc 1.0.5.0

- add pinmux support for non FDT device (US103359)
- fix SD card write protect issue for Apollo Lake (V7STO-969)
- fix SD card mount slow issue for Apollo Lake (V7STO-970)

sdmmc_host_timmchs 1.1.1.0

- Add AM572X UHS support. (F9151)

sec_crypto 1.0.6.0

- Published some API into DOC (V7SEC-472)
- Correct the name of OpenSSL
- Add UEFI database trust store (F8920)
- Added errno for KEP backend routines (V7SEC-525)
- Fix some APIs cannot be linked issue (V7SEC-511)
- Fix error unrecognized mangen markup when createDocs (V7SEC-483)

sec_event 1.0.0.4

- Remove sec_event component from VxWorks 7 Core profile

sec_hash 1.0.2.2

- Should not use C++ keyword template. (V7SEC-512)

secure_loader 1.0.1.0

- add support for secure loader decryption (F9210)

security_scep 1.0.0.4

- Add layer requires IPNET_COREIP (V7SEC-485)

shell 1.1.6.0

- do not grow stack trace output buffer if traced task ownsthe system heap (V7COR-5296)
- fix an build error when enable RTNet (V7NET-1483)

shmem 1.0.0.2

- Add HYPERVISOR_HVIF layer dependency (HYP-12128)

socket 1.0.5.0

- Add deletion protection in socket() and accept() (F5593)

ssh_client 1.0.0.1

- Remove ssh_client component from VxWorks 7 Core profile

stacktrace 1.0.2.1

- Fix static analysis warnings (US105207)
- Fix crawling call stack for i86 64bit CPU Profiler(V7COR-4335)

stop_mode_debug_agent 2.0.4.3

- add task create/delete hook for stop mode. (V7COR-5311)
- add lpae support. (V7COR-5309)
- Integrate UT code for stopmode agent
- fixed static analysis issue

syscalls 1.0.14.0

- adding pipeAnonCreate() system call
- EDOOM syscall changes (taskDelayEx() / eventReceiveEx()) (F5593)
- Fix syntax for randNumGenCtl and taskPxAttrCtl

systemviewer 1.0.0.11

- Fix static analysis warnings (US105207)

ti_sitara 1.0.4.1

- remove unused codes (V7PRO-4124)

ti_sitara_cm4 1.0.3.1

- added description for romInit (V7PRO-4049)

ti_sitara_ctxa15 1.0.6.0

- update for SD UHS support (F9151)
- remove MLO when make clean for vxbl (V7PRO-3948)

ti_sitara_ctxa8 1.1.5.2

- remove MLO when make clean for vxbl (V7PRO-3948)

ti_sitara_ctxa9 1.0.5.1

- update U-Boot toolchain URL link in target.ref (V7PRO-3994)

tilcon_kernel 7.2.1.5

- fixed function TessCubicBezier issue (V7GFX-379)

tools_wb_vxworks7_apidoc 1.0.8.6

- updated to pick up the latest api documentation for SR0520

toolsrc_icc 20.0.0.5

- Replaced intelLibFind.tcl with cpp executable (V7COR-5129)

tpm2_tss 1.0.2.1

- replaced INCLUDE_SEC_VAULT by INCLUDE_SEC_SECRET (V7SEC-521)
- call Tss2_Sys_Shutdown() after accessed TPM device (V7SEC-530)

unix 1.0.0.2

- adding vxTest code
- fix static analysis warning

usb_core 1.0.2.11

- clean up build warnings

usb_ctlr_dwc2dr 1.0.2.2

- delay the task when waiting for controller reset complete and channel enabled (V7CON-531)

usb_ctlr_ehci 1.0.2.2

- fix static analysis issue
- add "fsl,txfilltuning" for i.MX6 (V7CON-530)
- add the support of Stream Disable Mode for i.MX6 according toChip Errata for the i.MX 6Dual/6Quadas, ERR006308 (V7CON-546)

usb_ctlr_fsldr 1.0.2.4

- add the support of Stream Disable Mode for i.MX6 according toChip Errata for the i.MX 6Dual/6Quadas, ERR006308 (V7CON-546)

usb_ctlr_xhci 1.0.3.3

- don't set port power for hardwired hub of xHCI (V7CON-523)
- remove the memory releasing of XHCD data from usbXhcdStop (V7CON-522)
- clear WRC and PRC for USB3 port (V7CON-517)
- clean up build warnings

usb_host_core 1.0.0.16

- fix static analysis issue

usb_host_hid 1.0.0.4

- fix static analysis issue

usb_host_keyboard 1.0.0.8

- add pReportBuf to read data from controller (V7CON-541)

usb_host_network 1.0.0.11

- discard the invalid packet (V7CON-520)

usb_host_serial 1.0.0.8

- use cacheDmaMalloc to allocate input data buffer (V7CON-512)

usb_target_msc 1.0.1.9

- add layer requirement of FS_COMMON (V7CON-543)

usb_target_net 1.1.0.13

- fix the mtu of USB virtual END (V7CON-545)
- add a task delay when all submitted ERPs fail (V7CON-556)

usb_target_ser 1.1.0.8

- add functional descriptors for ACM (V7CON-518)

user_management_ldap 1.1.0.0

- add SHELL dependent(V7SEC-501)

user_privileges 1.1.0.4

- Fix some typos for prvlgManifest.txt (V7SEC-119)
- Fix typos issue for priviledgesLib.c (V7SEC-336)

virtio 1.0.5.0

- fix the name of the layer VIRTIO depends on to OSTOOLS
- add HYPERVISOR_HVIF and OSUTILS layers dependency (HYP-12123)
- update to make rawfs remount actions SMP-safe

vnic 3.2.3.5

- Add END_LIB layer dependency (HYP-12122)

vxbus_buslib 2.1.3.3

- fix coverity issue

vxbus_core 1.0.8.3

- fix coverity issue

vxbus_drv 1.2.7.0

- add SD card support for Apollo Lake (V7STO-761)
- add generic function vxbRtcTimeVerify (F9286)
- added ZynqMP RTC support (F9286)
- add QSPI NOR flash support for NXP L1046(F9437)
- fixed INT vector CPU bind error if e6500's SMT disabled.(V7PRO-3989)

- disabled ASPM for unstable PCIe serial behavior. (V7PRO-3979)

vxbus_subsystem 1.0.12.0

- added SD card support for Apollo Lake (V7STO-761)
- check whether the sysClock or auxClock set rate met withhardware suported range. (V7PRO-4013)

vxdbg 1.0.7.0

- replace use of taskDelaySc() with taskDelayExSc() (F5593)
- fix static analysis warnings for test code

vxworks_7_installsets 1.0.0.0

- created

vxworks_7_properties 1.0.0.0

- created

wassp_test_artifacts 1.0.1.3

- add UNIX layer test cases

webcli_cli 1.0.1.7
webcli_common 1.0.3.4

- fix the resource leak in wmnetTcpConnect() (V7MAN-260)
- fix some ambiguous sentence when running UT. (US104561)
- fix memory leak when re-starting WebCLI web server (V7MAN-262)

webcli_curl 7.55.1.0

- modify the time_t as long in kernel
- fix the issue that sizeof off_t, size_t and time_t arewrong for ILP32 or LP64
- using VxWorks clock_gettime and gettimeofday
- patch for CVE-2017-1000254
- add shared library support

webcli_http 1.0.1.8

- fix memory leak when re-starting WebCLI web server (V7MAN-262)
- remove some conflicting declaration when running UT.(US105184)

webcli_webclidemo 1.0.1.7

- memory leak when re-starting WebCLI web server (V7MAN-262)

webcli_webdemo 1.0.1.9

- memory leak when re-starting WebCLI web server (V7MAN-262)

xen 1.0.0.0

- created (F8146)

xen_arm 1.0.0.0

- initial support (F8146)

xlnx_zynq 1.1.6.0

- fixed defects for ARM64 HV
- added GPIO support for ZynqMP (F9286)
- fixed qspi multi-tasks copy test fail issue (V7STO-891)
- effective bits of MIO_MST_TRI is 32 in pinmux driver (V7PRO-3956)
- added ZDMA support (F9286)
- add PinMux support for Zynq7k and improve PinMux show (F6169)
- fixed forever loop issue in vxbFdtZynqSio.c (V7PRO-4038)

xlnx_zynq7k 1.0.10.0

- EMIO GMII support for GEM driver on ZC702 and PinMux support (F6169)

xlnx_zynqmp 1.0.2.0

- add virtualization profile support (F8628)
- added GPIO support for ZynqMP (F9286)
- updated TTC description in target.ref (V7PRO-3970)
- added RTC support (F9286)
- added ZDMA support (F9286)
- change the MAC address of gem0 to avoid possible collision (V7PRO-4059)

xml 2.2.4.0

- update expat from 2.0.1 to 2.2.4(F9671)
- add XML VIP components: INCLUDE_XML_PARSER, INCLUDE_XML_CANONICALIZER,INCLUDE_XML_PULL_PARSER, and INCLUDE_XML_OUTPUT (V7MAN-269)

Features Delivered in August 2017 (SR0510)

This release included the features added and defects fixed since the SR0500 release of VxWorks 7.

Some features may not be available in your installation depending on the VxWorks 7 Profiles you purchased.

AXON Predict Analytics

AXON Predict Analytics is now available for VxWorks. For more information, see VxWorks 7 Third-Party Software Support.

Cryptography secVault APIs Renamed

The **secVault*( )** APIs have been renamed **secSecret*( )**.

Descriptions of VIP Options

Descriptions of VxWorks image project (VIP) components and configuration options are improved for better usability and consistency.

Diab Compiler 5.9.6.4 Update

For the current Diab compiler updates, see Diab Compiler 5.9.6.

Freescale Security

The VxWorks Safety Profile now provides support for a vault key-encryption-password backend. The backend leverages the Freescale SEC 5.x security engine.

Hardware-Based Trusted Key Store for the i.MX6

The VxWorks Safety Profile now provides a Trusted-Key-Store provider. The provider leverages the super root keys (SRK) in the eFUSE configuration of i.MX6.

Import CMake Projects

Support is now provided to import existing CMake projects into VxWorks 7.

Improved Performance and Usability of Common VSB Operations

This release of VxWorks 7 introduces the baseline feature which improves usability and performance when working with VxWorks source build (VSB) projects. For more information, see the Configuration and Build Guide.

Java Micro Runtime Improvements

Micro Runtime improvements include simplifying the VxWorks configuration, bug fixes, and improved Java Native Interface (JNI) documentation and example code. Other additions include:

- Java Reflection support
- Java Annotation support
- Java application memory use estimation

  The Footprint Advisor facility now provides estimates of Java application memory use.
- Java debug enhancements

  The Micro Runtime (MRT) debug agent facilitates the debug process by launching MRT automatically when a debug request is received from the host.
- netDrv Enhancements

  Support is now provided for network remote file I/O driver (netDrv) enhancements for Java Micro Runtime (MRT).

Login Banners

Support is now provided to display custom banners at the login screen.

Login and Logout Security Notifications

New security events are raised when a user successfully logs in or out of the target shell, SSH server, rlogin server, telnet server, or FTP server.

Multi-Segment Support

Support is now provided for loading RTP executable and linkable format (ELF) images that contain more than two loadable segments. This release supports loading RTP executables (**.vxe** files) containing up to six loadable link segments; however, shared libraries are still restricted to two loadable link segments.

Board Support Packages

- NXP QorIQ LS1043A/LS1046A board support package (BSP)

  Support is now provided for 32- and 64-bit VxWorks on the LS1043A/LS1046A reference design board (RDB), with the nxp_layerscape BSP.

- NXP QorIQ P5040DS BSP

  Support is now provided for the P5040DS board with the fsl_p3p4p5 unified PowerPC BSP. Previously, the P5040DS board was supported in VxWorks 6.9 with the fsl_p5040_ds BSP.

Object Module Loader Enhancement

The **BRANCH_ISLAND_SUPPORT** VSB option enables loading ARMv8 (64-bit ARM) modules into the kernel common heap. The loader automatically creates branch islands for branches to symbols that are too far for relative addressing.

OP-TEE Support Updated to Version 2.3.0

In the VxWorks 7 Security Profile, OP-TEE is upgraded to version 2.3.0. The following boards are now supported:

- NXP i.MX6 Sabre Lite
- NXP TWR-LS1021A-PB
- NXP TWR-LS1021A
- Xilinx Zynq 7000 ZC702
- Xilinx Zynq 7000 ZC706

Secure Loaders

- ELF loader

  The VxWorks 7 Security Profile now provides support for loading and verification of signed ELF modules; that is: downloadable kernel modules (DKMs), real-time processes (RTPs), and shared libraries.

- UEFI loader

  The VxWorks 7 Security Profile now provides secure boot support for Intel boards that support the secure Unified Extensible Firmware Interface (UEFI).

SSH Client

The VxWorks 7 Security Profile now provides SSH client support.

Intel Product Support

Support is provided for the following Intel hardware:

- Kaby Lake processor in the itl_generic BSP
- Denverton processor in the itl_generic BSP
- X550-T 10 Gigabit Ethernet adapter

SD Host Controller Support

Support is provided for the following secure digital (SD) devices:

- The NXP QorIQ LS1043A/LS1046A board which is supported by the nxp_layerscape BSP.
- The Xilinx UltraScale+ MPSoC processor, for the Xilinx ZCU102 board and iVeia Atlas II Z8 board.
- The NXP Kinetis K70 board for the fsl_k70_twr BSP.

USB Keyboards in VMBIOS

Support for USB keyboards in the virtual machine basic input/output system (VMBIOS) now allows selecting guest OS boot options.

QSPI Support

Support is now provided for the Quad Serial Peripheral Interface (QSPI) on the following devices:

- Xilinx UltraScale+ MPSoC processor, for the Xilinx ZCU102 board and iVeia Atlas II Z8 board
- Storage on the TI AM572x board to access flash memory
- VxWorks boot loader (VxBL) with the QSPI as boot media on the AM572x board

Thumb-2 Support

Support is now provided for Thumb-2 on the ARM Cortex R5 on the Xilinx UltraScale+ MPSoC.

Time-Sensitive Networking

Support is now provided for the Precision Time Protocol (PTP) hardware clock to allow precise timing and synchronization of events on a LAN.

Support for time-sensitive networking (TSN) streams enables VxWorks applications to send UDP, TCP, or layer 2 Ethernet packets on an IEEE 802.1 Qbv flow using the VxWorks network stack.

Trusted Key Store

This release includes support for the trusted key store which is used to configure the public key certificates trusted to sign software loaded by the secure loader.

Updated VSB VxWorks Information Tab in the Project Property

More appropriate information is now displayed in the **Project Properties** > **VxWorks Info** dialog box.

Workbench

- Host OS list

See Supported Hosts on page 27.

- Options and parameters during debugging or running VxWorks

  Support for more Workbench 4 options and parameters is now available during debugging or running a VxWorks task.

- User interface changes

  New selections have been added into the Workbench user interface allowing users to change CPU selections during the VSB creation.

Changes Delivered in August 2017 (SR0510)

The following changes were delivered as part of the VxWorks 7 SR0510 release:

acpica 1.0.0.0

- Created (F7775).

agent 1.2.4.0

- use CLOCK_MONOTONIC timestamps in event queue when core kernellayer supports pthread_condattr_setclock() (V7COR-4976)
- Support loading RTPs with more than 2 loadable segments (F7415).
- Updated to use latest TCF open source code.
- Add disable auto-discovery option (WB4-7160).
- Fix TCP connection failed.
- Enable CPU affinity.
- Remove duplicate ia_crawl_lib.c.

alt_soc 1.0.4.0

- Passed startType parameter to armSysToMonitor (V7PRO-3632).
- Added altGpioPinSetDebounce and fixed altGpioIntConfig (V7PRO-3875).

alt_soc_gen5 1.1.4.1

- cdf text changes (F8862).

avnet_mini_itx_7z 1.0.5.1

- Fixed verified hardware description.
- Add INCLUDE_SYS_MEM_MGMT for uncached IPNET tx buffer (V7PRO-3580).
- Added the TTC frequency possible change note (V7PRO-3845).

bdm_flash_mtd 1.1.1.1

- Fix build error with altera_aria10devkit (V7STO-785).
- Remove vxbGpmcCore.c from document build (V7STO-836).
- Remove vxbGpmiCore.c from document build (V7STO-837).

- Add QSPI receive number bits support (F9216).
- Remove vxbSp25SpiFlash.c and vxbSpiFlash.c from document build (V7STO-867).
- Add functions for reading status register in parallel mode (F9215).

bdm_flash_tffs 1.0.1.1

- Fix remove() takes a long time to copy (V7STO-754).
- Fix tffs on norflash can't format when the size is not power of 2 (V7STO-782).
- Fix "/tffs0" wasn't removed from device list when callingusrTffsConfig to rename the TFFS device (V7STO-801).
- Fix TFFS partition was mounted more times after calling"usrTffsConfig" (V7STO-841).

bdm_sata 1.1.3.3

- Add blacklist for SATA device (V7STO-778).
- Fix spelling mistake.
- Enable MSI interrupt for AHCI.
- Support SATA on SVR_PPC_5040E (V7STO-828).

bdm_sdmmc 1.2.0.8

- Disable the API document.

bdm_tffs_drv 1.0.1.1

- Fix sysTffsFormat fail when modify the VXBFLASH_CFG_STR of qspi flash (V7STO-853).

bdm_xbd 1.0.2.2

- Remove some files from document build.

boardlib 1.1.1.1

- cdf text changes (F8862)

boot_bios 1.0.2.6

- Update wibu version to 1.0.3.0. (V7SEC-453).

boot_loaders 1.0.0.0

- Fix CSM video detect code (V7PRO-3847)
- created (F7359)

boot_uefi 1.0.2.11

- Update wibu version to 1.0.3.0. (V7SEC-453).
- Fix CSM video detect code (V7PRO-3847)

boot_vxbl 1.0.4.0

- Used public access functions in omap35xx mmc driver (F9190).

bootapp 1.0.5.7

- Fixed integer overflow in bootGetArg() (V7PRO-2390).
- Fix buffer-overrun issue.(V7PRO-3760).

bsp6x_fsl_p2020_rdb 6.9.1.1

- cdf text changes (F8862)

bsp6x_qsp_arm 6.9.1.1

- cdf text changes (F8862)

build_dir 1.2.1.0

- Added secondary tool for ARMARCH7M (V7PRO-3509).
- Allow LP64_ONLY BSPs.
- Fix vsb_createConfigFile for (V7COR-4972).
- Support LP64_ONLY BSPs (V7COR-5073).
- Separate C and C++ files in VIP (V7COR-4894).
- Deprecate setCpu and setBsp and create new changeCpu routine (V7COR-5128).
- Prohibit CPU VSBs with -compat69 where the CPU does not support compat69 (V7COR-5150).
- Fix for compilers with missing binaries (V7COR-5180).
- Pass kernel and user tools into binary layer generation (V7COR-5178).
- Fix WB discrepancies from command line VSB and VIP generation (V7COR-5209.
- Add __VSB_CHANGES_TO_CLEAN_OBJS to fix (V7COR-4582).

build_dir_misc 1.0.3.8

- Fix BSP reference (V7COR-4881).

build_dir_mk 1.0.7.3

- Accomodate malloc() in VMBIOS linker scripts and makefiles.
- Fix C++ buildspecs (V7COR-4966).
- Eliminated Diab shared vxe build warnings on ARM (V7COR-4932).
- clean object files when HW config is modified (V7COR-4883).
- Update C++ VIP options (V7COR-4894).
- Add versioned shared libraries to common library directory (V7COR-4857).
- Pass kernel and user tools into binary layer generation (V7COR-5178).
- Mods to __VSB_CHANGES_TO_CLEAN_OBJS to fix (V7COR-4582).
- Add / after $(LIBDIR) in mk/usr/autoconf.mk (V7COR-5235).
- Fix hard coded VSB_DIR in buildspecs (V7COR-5224).

build_dir_tool 1.0.5.0

- Specify appropriate common page sizes for vxsim user-side links.
- Added secondary tool for ARMARCH7M (V7PRO-3509).
- Fix libstlstd inclusion.
- Added -fno-builtin for 32 bit RTPs on icc16 (V7COR-5059).
- Accomodate malloc() in VMBIOS scripts and makefiles.

- Use thumb2 gcc libraries for ARM THUMB2_ISA (F8299).
- Added the target2 option for ARM Kernel when using GNU >= 4.8.1.9 (V7COR-4962).
- Eliminated Diab shared vxe build warnings on ARM (V7COR-4932).
- Fix hard coded VSB_DIR in buildspecs (V7COR-5224).

can_core 1.0.1.5

- Adjust initialization order of the Socket Can library (V7CON-451).

can_ctlr 1.0.3.4

- TI DCAN Driver Hangs If No CAN Devices Connected (V7CON-472).

core_io 1.2.6.1

- Better aio support for non-seekable descriptors.
- Add cdf for vxTest code.

core_kernel 1.2.4.0

- Added check to verify if kernel sections fit in first RAM desc (V7COR-4611).
- Changes corresponding to making the kernel virtual memory pool regionsize configurable using configuration parameterKERNEL_VIRT_POOL_REGION_SIZE.(V7COR-5102).
- Increased tLogTask stack size in LP64 (V7COR-5268).
- Fixed missing out parameter value update in sysctlSc() (V7COR-5270).
- Cut the symbol dependency between kernel andINCLUDE_SEC_EVENT_HANDLER (V7SEC-447).
- Update to check mmap protection flags before sync (V7COR-5173).
- Replaced rtpId with kernelId to access kernel mapping (V7COR-5130).
- Use read/write semaphore to protect MIB tree (V7COR-5028).
- Support pthread_condattr_{set | get}clock() in kernel (V7COR-4976).
- Support loading RTPs with more than 2 loadable segments (F7415).
- Version WIND_UTCB; make VX_TASK_CTL_UTCB_SET operation setkernel.stackSize for RTP (V7COR-4763).
- Change some vxTest files type from dos to unix.
- Add PROTOTYPE in INCLUDE_USER_PRE_NETWORK_APPL_INIT (V7NET-1285).
- Fixed PC checking for RTP in memEdrTrcPcValidate() (V7COR-5080).
- Added _WRS_UNIT_TEST to rm some definitions for unit test.
- Added FORCE_CLEAN to fix (V7COR-4582).
- Added _vx_offset__WRS_CONFIG_IA32_PAE (WB4-7352).

core_rtp 1.1.3.0

- Clean up code as part of secure loader changes (F7459).
- Loading RTPs with more than 2 loadable segments (F7415).
- Component description improvements
- Fixed PC checking for RTP in memEdrTrcPcValidate() (V7COR-5080).

core_safety 1.0.4.3

- Unixify line endings in a couple of test module files.

core_user 1.2.4.0

- Cache task stack size from kernel; UTCB version;handle TASK_ID 0 in taskInfoGet() (V7COR-4763).
- Fixed PC checking for RTP in memEdrTrcPcValidate() (V7COR-5080).

coredump 1.1.1.0

- Free pheaders blocks allocated by coreDumpElfPhdrRead() (V7COR-5288).
- Support loading RTPs with more than 2 loadable segments (F7415).
- Eliminate compile warning V7COR-4958.

cplus-kernel 1.0.0.6

- Component description improvements.
- Extended demangle search range (V7COR-4669).

cplus-usr 1.0.3.6

- Updated the SYNOPSIS of the layer (V7COR-4968).

cplus_2011_usr 1.0.5.0

- Marked the layer as DEFAULT.
- YES (V7COR-4968).
- Moved C11_CC configuration to vxworks-7/build/tool (V7COR-5224).
- Fixed a static_cast error when building RTPs using atomic function pointer (V7COR-5177).

disk_encryption 1.0.1.0

- secVault renamed to secSecret.
- Create a secVault backend for the QorIQ SEC5.x engine(F8542).

ems_wra 1.0.2.0

- Remove the Requires line and update the Version line (F8276).

end 1.2.6.0

- Added TSN Clocks and Timers support(F6548).
- Add Fix i219 Ethernet driver not work (V7PRO-3184).
- Fix energy efficient ethernet produces connection loss (V7NET-1318).
- Add geiPhySem to protect PHY register (V7PRO-3724).
- Fix the link issue for 82574L (V7PRO-3721).
- Fix dummy MDIO speed endianness (V7PRO-3732).
- Fix 32-bit drivers not support 64-bit physical address (V7PRO-3750).
- TSN streams integration into the network stack (F9049).
- Add the support for X550T card (F9069).
- Fix endPollSend creates excessive load on the I/O bus (V7PRO-3940).

- Add support for RTL8211F in rtlPhy (F8333).
- Fix the link issue in user mode (V7PRO-3957).
- TSN streams integration into the network stack (F9049).
- Optimize transmit performance by un-cached buffer for GEM (V7PRO-3580).
- Handle invalid PHY situation for GEM (V7PRO-3437).
- Set dummy descriptors for priority RX/TX queue in Zynq GEM (V7PRO-3766).
- Manipulate the ALE table with more specific info in CPSW (V7PRO-3866).
- Give buffer descriptor to DMA at last stage in Altera EMAC (V7PRO-3926).

evdev_lib 1.1.2.6

- Fixed key release events issue (V7GFX-374).

event 1.0.3.0

- Support loading RTPs with more than 2 loadable segments (F7415).

fdt 1.0.9.4

- cdf text changes (F8862).

fs_core_common 1.1.2.2

- To fix typo (V7STO-780).
- Fix strncpy length in fsmNameMap (V7STO-851).
- Remove some files from doc build (V7STO-868).
- Publish gptShowMbr and gptShowPartHdr functions (V7STO-869).
- Clean build warning (V7STO-904).

fs_core_vfs 1.0.0.10

- Remove improper comment.

fs_dosfs 1.0.0.16

- Use safe condition to check volume descriptor (V7STO-898).
- To detect directory entry with file size set (V7STO-808).
- Fix memory leak (V7STO-809).
- Fix DosFs does not auto-check file system when configuring DOS_CHK_REPAIR (V7STO-811).
- Modify the logic of the code checking file attributes (V7STO-794).
- Fix dosFsFmtAutoParams does not recalculate "secPerFat" correct after auto-downgrade from FAT32 to FAT16 (V7STO-793).
- Set dirty flag in boot sector (V7STO-831).
- fat12 set dirty flag in boot sector (V7STO-835).
- Check the byte 0x14-0x15 of the directory entry.Check byte 0 of the long directory entry (V7STO-840).

fs_hrfs 1.0.0.13

- Correct comment of HRFS_MAX_FILENAME_LEN (V7STO-876).

fs_nfs 1.0.1.8

- Add requires INCLUDE_BOOT_LINE_INIT for INCLUDE_NFS_MOUNT_ALL (V7STO-781).

fsapi_tcplay 2.0.3.3

- Remove xbd_tcplay.c from doc build (V7STO-870).

fsl_imx 1.3.2.0

- Fix undefined variable (V7NET-1323).
- Fixed parent clock select issue (V7PRO-3610).
- Passed startType parameter to armSysToMonitor (V7PRO-3632).
- Fixed PCIe Type 1 cfg address translation issue (V7PRO-3436).

fsl_imx6 1.1.11.0

- Added OP-TEE 2.3.0 support (F8659).
- Fixed parent clock select issue (V7PRO-3610).
- Correct usb pinmux (V7PRO-3681).
- Make imx6AI base board SD slot works (V7STO-804).
- Add dts property "dma-mode" for SDHC (V7STO-830).
- Fix boot hang with PCIe component (V7PRO-3846).

fsl_imx6sx_cm4 1.0.2.0

- Added support of gnu as secondary tool (V7PRO-3509).
- Adjust DTB_RELOC_ADDR (V7PRO-3635).

fsl_k70_twr 1.0.3.0

- Added support of gnu as secondary tool (V7PRO-3509).
- Added the verified hardware section in target.ref.
- Adjust DTB_RELOC_ADDR (V7PRO-3635).
- Support NXP TWR-K70F120M SD card (F9148).
- Add dts property "dma-mode" for SDHC (V7STO-830).

fsl_kinetis 1.0.4.0

- Passed startType parameter to armSysToMonitor (V7PRO-3632).

fsl_ls102x 1.0.6.0

- Added OP-TEE 2.3.0 support (F8659).
- Corrected the pcie legacy interrupt configuration (V7PRO-3868).
- Rename group to psl/fsl_qoriq_arm.

fsl_p1p2 1.0.7.1

- Corrected spelling mistakes and description error about VxBL.(V7PRO-3777).
- Move fsl_p1p2 REQUIRES option to 20bsp.cdf.(V7PRO-3757).

fsl_p3p4p5 1.0.8.0

- Add support for P5040DS. (F8609).
- Corrected spelling mistakes and description error about VxBL.(V7PRO-3777).

fsl_pq2 1.0.1.3

- cdf text changes (F8862).

fsl_qoriq 1.2.0.0

- Added support for P5040DS (F8609).
- Corrected a logic error when disable L3 cache.(V7PRO-3734).
- Added NXP_QORIQ_CA53 (F7615).
- Add feature FDT_UNIT_ADDR_GET (V7PRO-3605).
- Change macro QORIQ_CLK_REG_READ to function (V7PRO-3431).
- Added support for Cortex-A72 and DPAA on ARM (F8333).

fsl_t1 1.0.4.1

- Corrected spelling mistakes and description error about VxBL.(V7PRO-3777).
- Updated on how to update RCW.(V7PRO-3817).
- Correct component of SATA (V7STO-884).

fsl_t2t4 1.0.9.1

- Corrected spelling mistakes and description error about VxBL.(V7PRO-3777).
- Updated on how to update RCW.(V7PRO-3817).

fsl_vf610twr_ca5 1.0.4.2

- Formatted the verified hardware section in target.ref.

fsl_vf610twr_cm4 1.0.3.0

- Added support of gnu as secondary tool (V7PRO-3509).

fsl_vybrid 1.0.3.0

- Passed startType parameter to armSysToMonitor (V7PRO-3632).

gpudev_drm 4.9.0.1

- Fix vxoal spinlock problem (V7GFX-372).

gsoap_core 2.8.15.5

- Support gsoap for RTP (V7MAN-247).

gsoap_demo 2.8.15.2

- Support gsoap for RTP (V7MAN-247).
- Fix gsoapcpp demo build (V7MAN-255).

gsoap_soap 2.8.15.2

- Support gsoap for RTP (V7MAN-247).

guest-benchmarks 1.0.1.3

- Comment fix intLatency benchmark.

gw_axon 1.3.0.66

- Update AXON version to 1.3.0.66.

hash 1.1.1.1

- Support ASM for simpc (V7SEC-389).

hdc_agent 2.2.0.2

- Unixify line endings of sample_cfg/etc/iot.cfg.

host_common 1.0.1.9

- Fix handling of weak data symbols in makeSymTbl.tcl (V7COR-4871).

host_linux 1.0.4.0

- Updated CxrDoc for VSB data structures.

host_mrt_linux 1.0.3.0

- Update libcore.
- Upgrade jeffc/jeffh to support java annotation/reflection.
- Move daemon into vxWorks image for simulator.

host_mrt_windows 1.0.3.0

- Update libcore.
- Upgrade jeffc/jeffh to support java annotation/reflection.
- Move daemon into vxWorks image for simulator.

host_secure_loader_linux 1.0.0.0

- Add support for UEFI secure boot (F7359) and secure ELF loader (F7459).

host_secure_loader_windows 1.0.0.0

- Add support for UEFI secure boot (F7359) and secure ELF loader (F7459).

host_windows 1.0.5.0

- Updated CxrDoc and DocDll for VSB data structures.
- Add new version of mkdir.

hvif 3.2.0.0

- Add support for LLVM and ARM64.
- Add alignment to regsets (HYP-11978).

hvif_arm 3.2.0.0

- Add support for LLVM and ARM64.
- Add alignment to regsets (HYP-11978).

hvif_ia 3.2.0.0

- Add support for LLVM and ARM64.
- Add alignment to regsets (HYP-11978).

hypervisor 3.1.0.0

- Add support for LLVM and ARM64.

- Add USB keyboard support to VMBIOS (F8829).
- Add alignment to regsets_t (HYP-11978).
- Exclude ARMARCH7M (V7PRO-3509).

hypervisor_arm 3.1.0.0

- Add support for LLVM and ARM64.
- Add USB keyboard support to VMBIOS (F8829).
- Add alignment to regsets_t (HYP-11978).
- Exclude ARMARCH7M (V7PRO-3509).

hypervisor_ia 3.1.0.0

- Add support for LLVM and ARM64.
- Add USB keyboard support to VMBIOS (F8829).
- Add alignment to regsets_t (HYP-11978).
- Exclude ARMARCH7M (V7PRO-3509).

iaf 1.0.0.0

- First release of IAF.

infrastructure_container 1.0.1.0

- Added installset_data and updated Requires.

intel 1.1.1.3

- cdf text changes (F8862).

ipnet_coreip 1.4.0.0

- Setting IP_MULTICAST_TTL to 0 (V7NET-1379).
- Fix Unspecified IPv6 address :: configured on the interface (V7NET-1386).
- Add FEATURE_REQUIRES of LOGIN_BANNER (V7SEC-420).
- Add type conversion for some sentences.(F9305).
- Fix login banner and "Login" prompt be show at same line.
- Make FIOSEEK ioctls fail with errno ESPIPE (aio).
- Long delays with TCP transfer (V7NET-1296).
- Add to support login banner (F8950).
- Add security events on login and logout (F8189).
- Add support for TSN Clocks and Timers (F6548).
- Fix ifAllRoutesDelete doesn't follow the logMsg rule (V7NET-1292).
- Stop generating atomic fragments (V7NET-1307).
- Give the scopeid for linklocal address when sending RST (V7NET-1308).
- Fix incorrect close process in ipnet_do_close() (V7NET-1316).
- netDrv: Added support for mv() and mkdir() (F8223).
- Add new API sntpcTimeGet_ex (V7NET-1331).

- Fix buffer overflow in ftp client. (V7NET-1343).
- Fix memory leak. (V7NET-1348).
- Fix tcp throughput drops with all zero data (V7NET-1353).
- Get dst cache after checking ICMP send type (V7NET-1358).
- TSN streams integration into the network stack (F9049).
- Increase ppp receive buffer length. (V7NET-1364).
- Fix MAC address error with getifaddress. (V7NET-1368).
- The max value of send socket buffer is INT_MAX. (V7NET-1387).
- Enable ASM checksum in PPC32 and ARM32. (V7NET-1349).
- Typo in ipnet_sig_from_instance (V7NET-1402).
- Segment received should reset keep-alive timer. (V7NET-1406).
- Ping command caused the board t2080qds rebooting itself (V7NET-1422).

ipnet_crypto 1.0.0.10

- cdf text changes (F8862).

ipnet_dhcpc 1.0.1.9

- Fix autoip issue after dhcp client fail to get ip address (V7NET-1371).

ipnet_dhcpc6 1.0.1.8

- Check if fqdn exists before accessing fqdn information. (V7NET-1299).

ipnet_firewall 1.0.1.6

- Replace non-reentrant ipcom_strtok to ipcom_strtok_r. (V7NET-1377).

ipnet_ftp 1.0.4.4

- Add FEATURE_REQUIRES of LOGIN_BANNER (V7SEC-420).
- Remove the login banner's limitation of 256 characters (V7SEC-439).
- Add to support login banner (F8950).
- Add security events on login and logout (F8189).
- Fix memory leak on ftp server (V7NET-1283).
- Fix Empty FTP User String causes Page Fault (V7NET-1337).
- Add new VIP config parameter FTPS_DATABUF_SIZE. (V7NET-1346).
- Set nodelay option for FTP control socket (V7NET-1173).
- FTP APIs not return IPFTPC_ESUCCESS as expected.(V7NET-1381).

ipnet_ipsecike 1.0.1.11

- SPI bits handling not as per RFC 4301 when IPsec AH + ESP is used(V7SEC-400).
- Using IKEv1, when initiator is AH and responder is ESP,the tunnel is still created (V7SEC-434).

ipnet_linkproto_ppp 1.2.1.4

- pppconfig process multiple options incorrectly (V7NET-1214).

- Fix build errors (V7NET-1352).

ipnet_mobility 1.0.0.17

- Change to binary data.

ipnet_ntp 1.2.0.4

- Update ntp version to 4.2.8p9 (V7NET-1291.)
- NTP task crashes due to memory partition errors. (V7NET-1255).

ipnet_ptp 1.0.2.0

- Added TSN Clocks and Timers support (F6548).
- Add PTP task priority to vip kernel configuration (V7NET-827).
- Fix system time error with software time-stamping (V7NET-1339).
- Fix peer delay message interval error in IEEE802.1AS (V7NET-1408).

ipnet_sntp 1.0.1.0

- Add new API (V7NET-1331).

ipnet_ssh 1.0.2.3

- Add FEATURE_REQUIRES of LOGIN_BANNER (V7SEC-420).
- Remove the login banner's limitation of 256 characters (V7SEC-439).
- Add the a bounds-check to the packet's message length (V7SEC-444).
- Deactivate DSA key usage for SSH(V7SEC-318).
- SSH client build failed with -inet4 option.
- Add to support login banner (F8950).
- Add security events on login and logout (F8189).
- Add SSH client feature (F7508).
- SSH client message error issue (V7SEC-450).

ipnet_tftp 1.0.1.5

- Fix memory leak (V7NET-1348).

ipnet_tsn 1.0.1.0

- TSN streams integration into the network stack (F9049).
- Add support for TSN Clocks and Timers (F6548).

ipnet_usrspace 2.0.2.3

- Fix MAC address error with getifaddress (V7NET-1368).

itl 2.2.1.0

- Update document link in target.ref (V7PRO-3535).
- Added notice that this BSP is deprecated (F8263).

itl_64 1.3.1.0

- Update document link in target.ref (V7PRO-3535).
- Added notice that this BSP is deprecated (F8263).

itl_64_vx7 1.1.1.0

- Update document link in target.ref (V7PRO-3535).
- DATA_MODEL is set to LP64_ONLY (V7PRO-3600).
- Added notice that this BSP is deprecated (F8263).

itl_common 1.0.4.0

- Changes to detect and modify BOOTAPP.CFG or nvram.txt (V7COR-5142).
- Fixed the duplicate paths for the different ACPI device nodes(V7PRO-3615).
- Fix IO APIC initialization issue (V7PRO-3282).
- Fix boot failed issue (V7PRO-3504).
- Use pmapGlobalMap to map space for saved bootrom image (V7PRO-3582).
- Add configure for TSC deadline mode status (V7PRO-3559).
- Revise the algorithm of TSC deadline.
- Update clock frequency calibration algorithm (V7PRO-3715).
- Fix wrong interrupt trigger mode for SCI (V7PRO-3778).
- Fixed the return value to optimize the ACPI device nodeinitialization logic (V7PRO-3735).
- Fix booting issue when bootstrap processor is non-zero (V7PRO-3834).

itl_generic 1.0.4.0

- Add the support for Kaby Lake CRB (F5528).
- Add the serial port setting description in target.ref (V7PRO-3664).
- Revise vxprj to wrtool in target.ref.
- Update document link in target.ref (V7PRO-3535).
- Change the default vector for the KBD_I8042 driver (V7PRO-3687).
- Add configure for TSC deadline mode status (V7PRO-3559).
- Update virtual machine compatibility section in target.ref (V7PRO-3498).
- Fix multiple version of itl_common layer (V7PRO-3163).
- Add the support for Car Creek CRB and Harcuvar CRB (F7775).

itl_quark 1.4.0.6

- Update document link in target.ref (V7PRO-3535).

jobqueue 1.0.3.0

- Added support for jobQueueIsRunning() (F8638).

khronos_ns_container 1.4.0.1

- Update Khronos RPM to non-singleton.

libc-kernel 1.0.6.1

- Added vxTest code.
- Added hypot under INCLUDE_ANSI_MATH (V7COR-4843).
- Fixed %p format for sscanf function(V7COR-4928).

- Fixed V7COR-5103.
- Fixed scanf() not recognizing "0" as a valid input token (V7COR-5096, V7COR-5103).
- Fixed __ieee754_sqrt() ignoring negative sign on input value (US98030).
- Fixed printf()/scanf() accuracy and format issues (US93572).

libc-usr 1.0.6.4

- Added va_list under std namespace for the scenario where stdarg.his included as the first header (V7COR-4861).
- Moved the symbol definitions for '__fini_atexit_nodep' and 'environ' to wherethey are used in the library (V7COR-4932).

loader 1.1.3.0

- Add support for secure loader (F7459).
- Support more than two loadable segments in RTP executable (F7415).
- Fixed return value from unldByModuleId() caused by vmStateSet() (V7COR-4965).
- Prevented vmStateSet from returning ERROR with address zero and size zero (V7COR-5043).
- Provided Branch Island support for ARM64. (F8938).
- Fixed loaderWeakTestVariable in loaderWeakTest2 build in Diab.
- Added missing unload module at tmLkmTest.lkmTest7.
- Updated loadModuleTest18 in tmLoadLib.c for Branch Island support. (F8938).

mrt 1.0.4.0

- Remove kernel space support (F9469).
- Support SMP (F9469).
- Support all cpu types for IA (F9469).
- Rename this rpm to mrt.
- Install this rpm to os/lang-lib/java/mrt.

net_base 1.0.5.0

- TSN streams integration into the network stack (F9049).

nodejs 4.4.3.0

- init Node.js version.

nxp_layerscape 1.0.0.1

- Initial support (F7615).
- SD card support for NXP LS1043ARDB (F8008).
- Added LS1046ARDB-PA, LS1043ARDB-PC, and DPAA controller support (F8333).
- Corrected the pcie legacy interrupt configuration (V7PRO-3868).
- Add SD support for LS1046ARDB-PA (F8334).
- Add SDHC_DMABUF_CACHE flag for LS1043/46 (V7STO-864).

nxp_ls2 1.0.1.1

- Corrected the pcie legacy interrupt configuration (V7PRO-3868).
- Rename group to psl/fsl_qoriq_arm.

openSSL 1.1.1.1

- Add cpuid asm files (V7SEC-389).
- ecdsatest failed after first time (V7SEC-457).

openssl_fips 1.0.0.4

- Support ARM64, (V7SEC-452).
- Fix ipssh start failed on ARM32, (V7SEC-374).

optee_client_api 1.0.1.0

- Updated to support OP-TEE 2.3.0 (F8659).
- Updated the output message of OPTEE demos (V7SEC-398).

os_arch_arm 1.1.10.0

- Removed unnecessary task lock/unlock in mmuArmLib/mmuArmLpaeLib (V7PRO-3638).
- Adapted for Thumb2 support (F8299).
- Added Cortex-A53 AArch32 support (F7615)
- Add data/instruction sync in vxMemProbeSupRtn (V7PRO-3761).
- Passed startType parameter to armMonitorRebootEntry (V7PRO-3632).
- Add some ARM cortex-a9 errata workarounds (V7PRO-3805 V7PRO-3806 V7PRO-3807).
- Fixed stack corruption issue (V7PRO-3814).
- Add data/instruction sync in vxMemProbeSupRtn (V7PRO-3761).
- Passed startType parameter to armMonitorRebootEntry (V7PRO-3632).
- Read the range before setting TCR.IPS for ARMARCH8A.
- Imported vxMmuEarlyRegMap in mmuArmLib.h (F7615).
- Added parameter sanity checkout for opcode() and memory probe read fordsmInst() (V7PRO-3694).
- Fixed relocation for R_AARCH64_MOVW_UABS__DECODE instructions (V7PRO-3650).
- Removed sharability from non-coherency guarded attribute (V7PRO-3786).
- Added branch island support. (F8938).
- Saving all volatile registers before calling excVmStateSet (V7PRO-3908).
- Adapted for Thumb2 support (F8299).
- cacheArchDisable is unsupported when running at Non-Secure mode (F8659).
- Fixed thumb2 push/pop register list display issue (V7PRO-3739).
- Fixed invalid stack backtrace info (V7PRO-3752).
- Fixed exclusive access issue (V7PRO-3819).

- Use isb for VX_INSTR_BARRIER() for ARMv7 (V7PRO-3768).
- Corrected the conditions in thumb2 IT disassembly block (V7PRO-3772).
- Added Cortex-A53 core type support in common.vxconfig (F7615).
- Add ARCH_MAP and ARCH_UNMAP (V7PRO-3452).
- Fixed CCR_DST_FIX value (V7PRO-3713).
- Add 64-bit timestamp support for generic timer (V7PRO-3864).
- Use compare value for event to improve generic timer precision (V7PRO-3325).
- Fix vxbDmaChanAlloc parameter.
- Clear and disable L2 instead of disabling it at init (V7PRO-3929).
- Add "COMPATIBILITY 7" to ARMARCH7M (V7COR-5150).

os_arch_ia 1.2.3.0

- Add interrupt lock in mmuBufferWrite.
- Optimized the fast system call using sysexit (V7PRO-3603).
- Add the CHILDREN field for INCLUDE_CACHE_QOS_SHOW (V7PRO-3714).
- Add configuration for TSC deadline mode status (V7PRO-3559).
- Fix race condition in quark/edk (V7PRO-3776).
- Add support for new ACPICA layer (F7775).
- Add _WRS_UNIT_TEST to exclude some definitions for unit test.
- Add the check for the ED-bitfix booting issue when bootstrap processor is non-zero (V7PRO-3834).
- Change "COMPATIBILTY 7" to "COMPATIBILITY 7" in arch.cdf (V7COR-5150).
- CDF text updates (F8862).
- ACPI fail to enumerate all GPIO devices on Apollo Lake (V7PRO-3900).

os_arch_ppc 1.3.1.3

- Remove h/arch/ppc/syscallStub.s (V7PRO-3426).
- Modified KERNEL_TLB_SIZE to 1GB size for PPC64.(V7PRO-3539).
- Add ARCH_MAP and ARCH_UNMAP (V7PRO-3452).
- Initialize _func_excOnSigMap for PPC60x.(V7PRO-3682).
- Implemented mmuCacheSync().(V7PRO-3480).
- Added hypot under INCLUDE_ANSI_MATH (V7COR-4843).
- Corrected a logic error in bcopy.(V7PRO-3764).
- Renamed osmGuardRegionSize to osmGuardPageSize and exported as global (V7PRO-3755).
- Added pAltivecDummyContext test prior to allocate memory. (V7PRO-3634).
- Add _WRS_SUPPORT_CACHE_XLATE support (V7PRO-3850).
- mpc82xx unexpected reboot during RTP test.(V7PRO-2676).

os_arch_vxsim 1.0.7.9

- Add ARCH_MAP and ARCH_UNMAP (V7PRO-3452).

os_lang-lib_tool_common 1.0.3.5

- Moved the symbol definitions for '__fini_atexit_nodep' and 'environ' to wherethey are used in the library (V7COR-4932).
- Reverted V7COR-4932.
- Fixed Diab non-unique __dso_handle for shared libraries (V7COR-4953).

os_legacy_config 1.0.2.6

- cdf text changes (F8862).

ostools 1.0.3.0

- Fix deadlock performing stack trace (V7COR-5088).
- Add signed symbol table loader (F7459).

qsp 1.1.2.0

- Passed startType parameter to armSysToMonitor (V7PRO-3632).

qsp_arm 1.0.1.6

- Formatted the verified hardware section in target.ref.

qsp_arm64 1.0.0.1

- Remove C++11 dependency (V7PRO-3675).
- Corrected SCR_EL3 NS bit name (V7PRO-3801).

raster_sdl 2.0.5.1

- Fix ARMARCH7M build (V7PRO-3509).

rtnet 1.0.2.1

- Fixed icmp unreachable issue (V7NET-1335).
- Fixed out of child socket issue in accept (V7NET-1336).
- Updated UT script "run.test" to generate "xml" format reports (F9305).

runtime_analysis 1.1.4.0

- Support loading RTPs with more than 2 loadable segments (F7415).
- Fix building issue of adding INCLUDE_HPC_I86_COREI7_UNCORE (V7COR-4886).
- Refactor code to decrease CCM (US100144).

samples 1.0.0.8

- Fix DKM and RTP hello_cmake (WB4-7266).
- Fix hello_cmake_dkm build error (WB4-7264).

sdmmc_core 1.0.1.0

- Add CMD0 in isMmc FALSE branch.
- Support NXP TWR-K70F120M SD card (F9148).
- Add parameter to let user set the working well frequency (V7STO-843).

- Correct the debug code (V7STO-855).

sdmmc_device_storage 1.0.1.12

- Make imx6AI base board SD slot works (V7STO-804).
- Add parameter to let user set the working well frequency (V7STO-843).

sdmmc_host_sdhc 1.0.4.0

- Add sdio0_mux detect for atlas-ii-z8 (F7387).
- Add SD support for zcu102 (F7389).
- Add DTS parameter description in vxbZynqSdhcCtrl.c (V7STO-787).
- SD card support for NXP LS1043ARDB (F8008).
- Fix mount twice issue when plug in (V7STO-799).
- Make imx6AI base board SD slot works (V7STO-804).
- Support NXP TWR-K70F120M SD card (F9148).
- Support dts property "dma-mode" for SDHC (V7STO-830).
- Fix SD card detect failure issue on vf610 (V7STO-820)
- Add parameter to let user set the working well frequency (V7STO-843).
- Set errno value in sdhcCtrlCmdIssue function (V7STO-847).
- Enable card remove interrupt in fslSdhcInstConnect (V7STO-860).
- Update driver description (V7STO-865).

sdmmc_host_timmchs 1.1.0.11

- Improve the robustness at insert and removal (V7STO-718).
- Add sending init stream when a card is inserted. (V7STO-756).
- Fix spelling mistake.
- Set errno value in tiMmchsCmdIssue function (V7STO-845).

sec_crypto 1.0.5.0

- Renamed secVault to secSecret (F9007).
- Add FRIEND SECURE_LOADER to support secure loading (F7459).
- Add secTrustStore (F8912).
- keyStore import public key pem does not return any statuswhen no key imported (V7SEC-369).

sec_event 1.0.0.3

- Cut the symbol dependency between kernel andINCLUDE_SEC_EVENT_HANDLER (V7SEC-447).

secure_loader 1.0.0.0

- Add support for secure loader of DKMs, RTPs and shared libraries (F7459).

shell 1.1.5.0

- Fix deadlock performing stack trace (V7COR-5088).

- Fix exception occurring on attach to detached RTP (V7COR-5282).
- Added prototypes for iam() and whoami() (V7COR-5190).
- Add FEATURE_REQUIRES of LOGIN_BANNER (V7SEC-420).
- Add to support login banner (F8950).
- Support loading RTPs with more than 2 loadable segments (F7415).
- Add security events on login and logout (F8189).
- Modify dependence for layer (V7SEC-347).

snmp_agent 1.0.1.4

- Fix task delete hook problem (V7MAN-246).

snmp_engine 1.0.1.8

- Fix engine id not accessible for user callback function(V7MAN-242).
- INCLUDE_SYSCTL is needed for snmp module. (V7MAN-261).

snmp_wrsnmp 1.0.1.5

- Fix tunnel MIB not replaceable (V7MAN-232).

socket 1.0.4.0

- TSN streams integration into the network stack (F9049).
- Make getsockopt() store the option length in RTP (V7COR-4930).

ssh_client 1.0.0.0

- SSH client build failed with -inet4 option.
- Create for SSH client, (F7508).

stacktrace 1.0.2.0

- Support loading RTPs with more than 2 segments (F7415).
- Validate call stack frame (V7COR-5058).
- Fix memory_map_lock_give called twice in sdTextRangeDelete(V7COR-5243).

ti_am3x 1.1.4.3

- Minor typo fixes.

ti_keystone 1.1.3.0

- Passed startType parameter to armSysToMonitor (V7PRO-3632).

ti_keystone2 1.0.8.2

- Remove empty ranges (V7PRO-3672).

ti_sitara 1.0.4.0

- Revoke controller reset in GPIO (V7PRO-3549).
- Passed startType parameter to armSysToMonitor (V7PRO-3632).
- Added "ti,omap4-dpll-mpu-clock" compatible support (V7PRO-3827).
- Correct the Sigma-Delta divider calculation (V7PRO-3831).
- Added TI AMxx QSPI driver. (F9216).

- Make sure the interrupt of UART can be disabled (V7PRO-3883).

ti_sitara_cm4 1.0.3.0

- Added support of gnu as secondary tool (V7PRO-3509).
- Adjust DTB_RELOC_ADDR (V7PRO-3635).
- Added description for DRV_TIMER_FDT_CORTEXM (V7PRO-3857).

ti_sitara_ctxa15 1.0.5.0

- Added qspi flash support for vxbl (F9190).
- Gave a reasonable dpll_mpu_ck compatible name (V7PRO-3827).
- Add TI USB3 phy (V7CON-502).
- Added DRV_ARMV7_GEN_TIMER to support list (V7PRO-3857).
- Add QSPI support (F9216).
- Updated clock-frequency for generic timer (V7PRO-3424).

ti_sitara_ctxa8 1.1.5.1

- Update value of usb1 pad (V7CON-474).

tilcon_kernel 7.2.1.4

- Fixed signal issue which affected RTP (V7GFX-371).

tools_wb_vxworks7_apidoc 1.0.8.5

- Updated to pick up the latest api documentation for SR0510.

toolsrc_diab 20.0.4.1

- Component description improvements.

toolsrc_gnu 20.0.2.6

- Component description improvements.

toolsrc_icc 20.0.0.4

- Component description improvements.

toolsrc_llvm 1.0.1.1

- Component description improvements.

tpm 1.0.1.1

- cdf text changes (F8862).

tpm2_tss 1.0.2.0

- Changed the package name to tpm2-tss-1.0.zip (V7SEC-474).
- secVault renamed to secSecret.

unix 1.0.0.1

- Fix published header issues (V7COR-5139).
- Remove the kernel side build to fix poll.h conflict..

usb_core 1.0.2.10

- Add mismatch event for application (V7CON-479).

- Add FEATURE_PROVIDES USB_SPEED_UNKNOWN.
- Add USB EHCD Exit Support (V7CON-461).
- Add USB zero-length packet flag (V7CON-493).

usb_ctlr_dwc2dr 1.0.2.1

- Check if the pRequest has been deleted (V7CON-490).

usb_ctlr_ehci 1.0.2.1

- Replace the conditional layer dependency of USB_PHY withthe conditional feature dependency of USB_PHY_CONNECTION.
- Remove invalid checking for zero-length transfer (V7CON-457).
- Add task spinlock to DMA buffer sync context (V7CON-456).
- Add USB EHCD Exit Support (V7CON-461).
- Support to finish transfer with a zero-length packet (V7CON-493).

usb_ctlr_mhdrc 1.1.1.8

- Add shut down handle for warm reboot (V7CON-482).
- Support to finish transfer with a zero-length packet (V7CON-493).

usb_ctlr_ohci 1.0.1.9

- Move some files to makefile (V7CON-416).

usb_ctlr_xhci 1.0.3.2

- Fix typo in usbXhcdUtil.c (V7CON-486).
- Setup AM572x USB with FDT parameters (V7CON-502).

usb_host_core 1.0.0.15

- Try many times to match class driver (V7CON-448).
- Correct the conflict with coding convention.
- Add mismatch event for application (V7CON-479).
- Add USB EHCD Exit Support (V7CON-461).
- Fix wrong parameters in debug information (V7CON-503).
- Go through the USB devices to match the new added class driver (V7CON-505).

usb_host_keyboard 1.0.0.7

- Fixed key release events issue (V7GFX-374).

usb_host_network 1.0.0.10

- Support to finish transfer with a zero-length packet (V7CON-493).

usb_host_storage 1.0.1.0

- Added usb2MscDevEject() for soft eject (F8638).

usb_phy 1.0.6.1

- Add USB_PHY_CONNECTION to FEATURE_PROVIDES field.
- Setup AM572x USB with FDT parameters (V7CON-502).

usb_target_net 1.1.0.12

- Some RNDIS hosts don't poll RESPONSE_AVAILABLE notification onthe Communication Class interface's Interrupt IN endpointDon't stall the endpoint in this case (V7CON-463).

user_management 1.1.0.1

- Add FEATURE_PROVIDES of LOGIN_BANNER (V7SEC-420).
- Add to support login banner (F8950).
- Add security events on login and logout (F8189).
- Modify dependence for layer (V7SEC-347).
- Modify for build warnings for loginLib (V7SEC-451).
- Modify for build error for loginLib (V7SEC-458).

user_management_ldap 1.0.1.0

- Private semLib APIs used in USER_MANAGEMENT_LDAP (V7SEC-436).
- secVault renamed to secSecret.

virtio 1.0.4.0

- Add support for removable media (F8638).

vnic 3.2.3.4

- Fix static analysis issues for vxbVnicSmEnd.c.

vxbus_buslib 2.1.3.2

- Add feature FDT_UNIT_ADDR_GET (V7PRO-3605).
- Updated vxbPciResourceSort to slove memory spcae allocation issue.(V7PRO-3693).
- initialized align size value for type1 device' BAR0 in vxbPciResourceGet.(V7PRO-3676).
- Add bus check in vxbPciTopoShow(). (V7PRO-1978).
- Return ERROR when MSI width aren't matched. (V7PRO-3815).
- Add QSPI receive number bits support (F9216).
- Added QSPI dummy and address length in SPI_TRANSFERadded QSPI data stripe mode (F9215).

vxbus_core 1.0.8.2

- Add ARCH_MAP and ARCH_UNMAP (V7PRO-3452).
- Fix resource unmapping when RTP borrows a device (V7PRO-3718).
- Remove dead codes and warnings in vxbLib.c.
- Fix incorrect removing driver in vxbLib.c.
- Fix returning ERROR when removing vxbRoot.
- Placed the include statements outside of extern 'C' blocks.(V7PRO-3830).
- Add unit test codes for vxbLib.c.
- Use SELREAD group to wakeup the vxbIntTask (V7PRO-3711).

vxbus_drv 1.2.6.0

- Fix EEPROM read from real time process (V7PRO-3009).
- Added support for NXP Layerscape I2C (F7615).
- Updated the description of vxbAlarmTypeCheck.(V7PRO-3551).
- Added PCF2129 RTC support and FSL EDMA ARM64 support (F8333).
- Corrected localtime and mktime usage in vxbFdtFslSRtc.c (V7PRO-3729).

vxbus_legacy 1.1.4.0

- Fix compile warning in mdio.h.
- Added notice that the legacy VxBus layer is deprecated (F8263).
- Add ARCH_MAP feature (V7PRO-3452).
- Fix energy efficient ethernet produces connection loss(V7NET-1318).
- Fixed CCR_DST_FIX value (V7PRO-3713).
- Add geiPhySem to protect PHY register (V7PRO-3724).
- Enable Flow control in XT540 driver.(V7PRO-3674).

vxbus_subsystem 1.0.11.0

- Added TSN Clocks and Timers support (F6548).
- Use SELREAD group to wakeup the vxbIntTask (V7PRO-3711).

vxdbg 1.0.6.7

- Skip vxdbgCpuTest1 test case for nxp_layerscape.

vxsim_bsp_linux 1.0.2.11

- Remove VSB warning.

vxsim_bsp_platform 1.0.2.11

- Remove VSB warning.

vxsim_bsp_windows 1.0.2.11

- Remove VSB warning.

vxsim_prebuilt_projects_linux 1.0.2.10

- Remove VSB warning.

vxsim_prebuilt_projects_windows 1.0.2.10

- Remove VSB warning.

wassp_test_artifacts 1.0.1.2

- Add pre-ci TC for arm32 with secure loader.
- Add pre-ci TC for itl64 with secure loader.
- Add pre-ci TC for ppc64 with secure loader.

webcli_common 1.0.3.3

- Support SMTP on ipv6 linkloacal address (V7MAN-245).

webcli_curl 7.50.3.1

- Unixify line endings in macos subdirectory.

webcli_http 1.0.1.7

- Add the ipv6 support on httpPortAdd() (V7MAN-236).
- Fix smtp crash without http (V7MAN-251).

webcli_tools 1.0.1.3

- Fix build issue when create windmark(V7MAN-238).
- Fix logical judgement of equals and syn code(V7MAN-253).

webcli_webclidemo 1.0.1.6

- Support SMTP on ipv6 linkloacal address (V7MAN-245).

webcli_webdemo 1.0.1.8

- Support SMTP on ipv6 linkloacal address (V7MAN-245).

wibu_basic_security 1.0.3.0

- Correct makefile flags. (V7SEC-358).
- Disable Wibu Security in ARMv8(64-bit ARM). (V7SEC-363).

xlnx_zynq 1.1.5.0

- Fixed calculation of fifo len for errata: AR#61664 (V7PRO-3645).
- Passed startType parameter to armSysToMonitor (V7PRO-3632).
- Fixed read rxfifo erratum for QSPI: AR#47575 (V7PRO-3455).
- Note linear quad SPI mode doesn't support by zynq706 (V7STO-832).
- Added Zynq UltraScale MPSoC qspi support (F9215).
- Fixed the error of receive data length.

xlnx_zynq7k 1.0.9.0

- Added OP-TEE 2.3.0 support (F8659).
- Fixed verified hardware description.
- Added "List of hardware features" separately for ZC702 and ZC706 intarget.ref (V7PRO-3759).
- Add INCLUDE_SYS_MEM_MGMT for un-cached IPNET tx buffer (V7PRO-3580).
- Note linear quad SPI mode doesn't support by zynq706 (V7STO-832).
- Added the TTC frequency possible change note (V7PRO-3845).

xlnx_zynqmp 1.0.1.0

- Add sdio0_mux detect for atlas-ii-z8 (F7387).
- Add configuration for booting from a 32-bit boot application (V7PRO-3709).
- Clarified that the bootApp must be booted by U-Boot (V7PRO-3745).
- Redefined tty number (V7SEC-375).
- Remove C++11 dependency (V7PRO-3675).

- Corrected SCR_EL3 NS bit name (V7PRO-3801).
- Added the TTC frequency possible change note (V7PRO-3845).

xlnx_zynqmp_r5 1.0.2.0

- Added Thumb2 support (F8299).
- adjust DTB_RELOC_ADDR (V7PRO-3635).
- Added the TTC frequency possible change note (V7PRO-3845).

Features Delivered in March 2017 (SR0500)

This release included features added and defects fixed since the SR0491 release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

Cache Quality of Service (QoS)

Intel cache QoS for both L2 and L3 is now available with VxWorks on Intel hardware.

JIT for Micro Runtime

VxWorks 7 now supports the JIT compiler with Micro Runtime, for both Intel and ARM architectures.

Updated the libcurl library

Addressed security vulnerabilities and delivered enhancements.

The INCLUDE_IPFREESCALE component

The **INCLUDE_IPFREESCALE** can now be built without the inclusion of the **INCLUDE_SHELL** component.

Real-Time Network Stack support

The RTNet Stack can now be run in both kernel and user mode.

TPM-based key-encryption-password backend

VxWorks 7 now supports TPM-based key-encryption-password backend. The TPM 2.0 backend callback seals a password string with TPM 2.0 hardware.

The mkimage has been updated

ARM64 support has been added to the **mkimage**.

i.MX6 SoloX Storage and USB drivers

All the storage and connectivity devices that are supported on other i.MX6 boards are now also supported on the SoloX.

PTP with software timestamping on ARM and PPC

To support PTP with software timestamp the **trunc( )** and **round( )** APIs have been added.

Support for ARM Cortex R5 on the Xilinx Zynq UltraScale+ MPSoC on Xilinx ZCU102

VxWorks 7 now supports the dual R5 cluster on the Xilinx Zynq UltraScale+ MPSoC and the Xilinx SCU102 using the GNU compiler.

Intel Apollo Lake HD graphics GPU

VxWorks 7 now supports the Intel Apollo Lake HD graphics GPU.

ARM Cortex A53 cluster on the Xilinx ZCU102

VxWorks 7 now supports the ARM Cortex A53 cluster on the Xilinx ZCU102.

ARM Cortex A53 cluster on the iVeia Atlas II Z8 board

VxWorks 7 now supports the ARM Cortex A53 cluster on the iVeia Atlas II Z8 board.

Support for the Intel generic VSB

The Intel generic BSP (itl_generic) now supports all Intel microarchitectures.

AM57xx BSP on the IDK Rev 1.3 board

The **ti_sitara_ctxa15** and **ti_sitara_ctxm4** BSP have been validated on the latest rev of the IDK board.

Added support for No-eXecute (NX) bit

Added support for No-eXecute (NX) bit to non-executable parts of the RAM.

Add support for ARM JIT for Micro Runtime

Just-In-Time (JIT) compilation support has been added for the Cortex architecture. This improves the performance on ARM systems.

Added support for a central authentication server (AD/LDAP)

VxWorks 7 Security Profile now supports AD and LDAP authentication with the **USER_MANAGEMENT_LDAP** option in the VxWorks source build.

Controlled power-off using ACPI events

VxWorks 7 now supports the Advanced Configuration and Power Interface (ACPI) specification as defined by the ACPI Component Architecture project.

Support for the T1040 RDB in the fsl_t1 BSP

VxWorks 7 now supports T1040 RDB in the **fsl_t1 BSP**.

VxBus RTC alarm API

VxWorks now supports the VxBus RTC alarm API for all BSPs that currently support the **vxbRtcLib**.

LLVM Compiler Support

LLVM is the primary compiler for ARMv8 and later. Older processors maintain the current selection of compilers.

UNIX Compatibility Layer

The UNIX compatibility layer is provided to enable the integration of third-party open source packages. This layer is not a general purpose feature, but is provided for specific packages that are identified for use with by Wind River. The layer does not provide POSIX compliance, nor is there any guarantee as to its behavior with third-party software.

Port heap cache support (memPartCacheLib) to user space

VxWorks 7 now supports heap cache in user space. This speeds up allocation of small to medium sized memory blocks by tasks that do this frequently.

Support for VxWorks 64-bit ARM

VxWorks 7 now supports 64-bit systems running on ARM in little endian mode. LLVM is the primary compiler for ARMv8 and later. Older processors maintain the current selection of compilers.

Issues and Limitations for the ARM64 Release

- C++ code that uses template static data members with constructors, either directly or via using some class in the libraries, cannot safely be used in DKMs, unless those members have already been initialized in the VIP. This problem does not affect VIPs or RTPs.
- Shared Libraries are not supported with ARMv8.
- Branch Islands for long calls are not supported with ARMv8. This issue results in DKMs not loading in the common heap, therefore branch islands can not be used to do long calls.
- C++ pretty prints are not supported with ARMv8.
- Debugger does not support Thread Local Storage with ARMv8.
- WIBU security is not supported with ARMv8.

CMake for VxWorks 7

VxWorks 7 now supports **cmake** for both VxWorks 7 RTP and DKM to build your existing application software.

Changes Delivered in March 2017 (SR0500)

Beginning with this release Wind River disables using Wind River Diab Compiler as the secondary compiler for IA-32 on 32-bit hosts.

acpi_6_1 1.0.0.0

- created (F6461)

agent 1.2.3.5

- use getpagesize() from CORE_KERNEL (returns int)
- Break hard dependency between END and IPNET (US85582).
- Add basic support for ARM64 (F5261)

alt_soc 1.0.3.2

- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- altSocDbg() returns OK if empty string is met (V7PRO-3505)

alt_soc_gen5 1.1.4.0

- added DRV_I2C_RTC dependency (V7PRO-3500)
- clarified RTC alarm is not supported (F6376)
- Break hard dependency between END and IPNET (US85582).

audio_lib 1.0.2.5

- CDF text improvements (F8336)

avnet_mini_itx_7z 1.0.5.0

- added GPIO and RTC alarm support (F6376)
- Break hard dependency between END and IPNET (US85582).

bdm_flash_mtd 1.1.1.0

- add LP64 support in TFFS layer (F4496)
- update vxbNorFlash.c DTS value and range descriptions (V7STO-735)
- support i.MX6 SoloX QSPI NOR flash (US89250)
- fixed controller registers access issues (V7STO-523)
- fix unintended sign extension issue in vxbNorFlashLib.c.
- fix mtd incorrectly writes over page boundary (V7STO-588)

bdm_flash_nftl 1.1.0.1

- CDF text improvements (F8336)

bdm_flash_sim 1.0.1.0

- add LP64 support in TFFS layer (F4496)

bdm_flash_tffs 1.0.1.0

- fix Zynq706 qspi flash reported "tXbdService" crash (V7STO-777)
- CDF text improvements (F8336)
- add LP64 support in TFFS layer (F4496)

bdm_loopfs 1.0.0.5

- CDF text improvements.(F8336)

bdm_sata 1.1.3.2

- CDF text improvements.(F8336)

- add SVR_PPC_2080 support in fslSataCtrlInit (V7STO-749)
- add SVR_PPC_1040 support for T1040RDB 64bit mode (F6402)
- update AHCI driver for IA32_PAE mode

bdm_tffs_drv 1.0.1.0

- add LP64 support in TFFS_DRV layer (F4496)

bdm_xbd 1.0.2.1

- CDF text improvements (F8336)

boardlib 1.1.1.0

- added board level power off, support ACPI event feature (F6446)
- added missing call sysIntEnableFlagSet (V7PRO-3373)

boot_vxbl 1.0.3.2

- optimized vxbl's Makefile. (V7PRO-3222)

bootapp 1.0.5.6

- CDF text improvements.(F8336)
- added ARM64 support (F5261)
- fix the loading judgement of program header (V7PRO-3351)
- support for OpenAMP (F8373)

bsp6x_arm_a15_ctx 6.9.1.0

- add LP64 support in TFFS layer (F4496)

bsp6x_fsl_p2020_rdb 6.9.1.0

- add LP64 support in TFFS layer (F4496)

bsp6x_qsp_arm 6.9.1.0

- add LP64 support in TFFS layer (F4496)

bsp6x_wrSbcPowerQuiccII 6.9.1.0

- add LP64 support in TFFS layer (F4496)

bsp6x_xlnx_zynq7k 6.9.1.0

- add LP64 support in TFFS layer (F4496)

build_dir 1.2.0.8

- remove debug statement (V7COR-4714)
- add llvm prompt for VSB creation (F5261)

build_dir_misc 1.0.3.7

- add missing help text for STL selection (F8336)
- fix spelling in VSB config files (V7COR-4710)
- add GOLDMONT cpu type (F7370)

build_dir_mk 1.0.7.2

- update to CMake templates

- remove unnecessary tcl script
- remove unnecessary VSB build compiler flag include
- added missing SC_RETVAL_IS_LONG to arm for ARM64 (F5261)

build_dir_tool 1.0.4.0

- remove usage of deprecated -Xpointers-volatile options for Diab (V7COR-4514)
- enabled mkimage support for ARM64 (F5261)
- fix dynamic RTP linking with unnecessary multiple -Wl, -lc (V7COR-4662)
- fix typo findstring
- add GOLDMONT cpu type (F7370)
- enabled RTP __thread TLS support for PPC (TCVXWGCC-144)
- make hv sections page aligned (HYP-11973)
- fix shared library initialization issues with GNU compiler

can_core 1.0.1.4

- Layer metadata change: remove the print info

can_ctlr 1.0.3.3

- fix coverity warnings (V7CON-444)
- static analysis issues cleanup. (V7CON-455)

core_io 1.2.6.0

- Add setrlimit(), getrlimit() (F972)
- fixed the layer dependence for INCLUDE_TM_DIRLIB (F5261)
- CDF text improvements.(F8336)
- Add vxTest code for pipe test

core_kernel 1.2.3.0

- fixed kernel work deferring in task context in SMP (V7COR-4820)
- Add getpagesize() function
- Added Linux TLS ABI support (F5261)
- removed X attribute for non-code memories (F7142)
- added folder FOLDER_KERNEL_HARDENING (F7142)
- added system level power off, support ACPI event feature (F6446)
- cleaned up src/Makefile
- Add useconds_t (F972)
- Fix problems with sigaltstack() system call (V7COR-4729)

core_ldso 1.0.7.5

- avoid early use of new getpagesize() function (F972)
- Corrected _TLS_PADDING macro for LP64. (F6619)
- Modified Makefile to remove warning when creating docs

core_rtp 1.1.2.1

- add vxTest code for rtp test
- Updated for ARM64 (F5261)

core_safety 1.0.4.2

- CDF text improvements (F8336)

core_user 1.2.3.0

- Add usleep(), getpagesize() (F972)
- add VSB option DEFAULT_PTHREAD_PRIO_INHERIT for boost threads (F972)
- header updates for UNIX compatibility layer functions (F972)
- added llvm support (F5261)

coredump 1.1.0.7

- Corrected direct map region range test.

cplus-usr 1.0.3.5

- Fix multiple definitions of _Uninitialized when compiling boost TTI

cplus_2011_usr 1.0.4.2

- avoid duplicate definition of _STCONS when compiling boost (F972)
- Added llvm as supported compiler
- fixed 64-bit builds warning on xlgamma.cpp

crypto_misc 1.0.0.7

- Eliminate the dependency between INCLUDE_IPFREESCALE and INCLUDE_SHELL(F8092)
- Enable CRYPTOMISC components (V7SEC-326)
- Remove needless character. (V7SEC-342)

disk_encryption 1.0.0.1

- fixed diskEncrypt fail on large disk in 32 bit kernel (V7SEC-328)

dsi_kernel 1.0.0.7

- CDF text improvements (F8336)

end 1.2.5.0

- Fix error of building IPNET_ PTP
- fix large integer implicitly truncated
- END drv CDF text improvements (F8336)
- fixed network stack build for ARM64 (F5261)
- fixed GEM driver zynq7kGemPhyWrite () error (F7388)
- fix the match method of Rtl8169Phy for Rtl8169end only (V7PRO-2969)
- renamed GEM driver (F5261)
- Break hard dependency between END and IPNET (US85582).

- added RealTek 8211E support (F5261)
- added TI DP83867IR support (F7388)
- added necessary delay when writing EMAC register for Altera END (V7PRO-3363)
- disabled CRS by default and added option to enable it for Altera END (V7PRO-3364)
- remove unnecessary cacheFlush on uncached area for Zynq GEM (V7PRO-3442)
- updated the document for LS102X related drivers (V7PRO-3433)

epoll 1.0.0.2

- CDF text improvements (F8336)

erf 1.0.1.5

- CDF text improvements (F8336)

evdev_lib 1.1.2.5

- CDF text improvements (F8336)

event 1.0.2.5

- CDF text improvements (F8336)

fbdev_common 1.0.4.1

- CDF text improvements (F8336)

fbdev_demos 1.0.6.0

- update frame buffer main demo (F7580)

fbdev_itlgmc 1.0.3.0

- update to use DRM 4.9 to support Intel ApolloLake graphics (F7580)
- add support for 1920x1200 resolution (F7580)

fbdev_tests 1.0.3.0

- clean up code (F7580)

fs_core_common 1.1.2.1

- Fix Calculation of partition size by xbdCreatePartition andpartLibCreate is not accurate (V7STO-741)
- To enable DOC_BUILD (V7STO-651)
- Cleanup LLVM/Clang compiler warnings
- warning clean for ARM64 (F5261)

fs_core_devfs 1.0.0.8

- fix tErfTask popup exception when do nand flash and nor flash instantiating on target p5020ds (V7STO-698)

fs_core_vfs 1.0.0.9

- Write protect is not checked while removing files from HRFS (V7STO-732)

fs_dosfs 1.0.0.15

- The name "A .B" will be assumed as not a valid 8.3 name but a long file name according to latest Windows.(V7STO-723)

- warning clean for ARM64 (F5261)

fs_hrfs 1.0.0.12

- Make priority of tHrfsCommit configurable (V7STO-758)

fs_nfs 1.0.1.7

- add vxTest code
- warning clean for ARM64 (F5261)

fs_romfs 1.1.1.1

- CDF text improvements (F8336)

fsapi_tcplay 2.0.3.2

- CDF text improvements (F8336)

fsl_imx 1.3.1.0

- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- fixed USB PLL clock enable issue (V7PRO-3441)
- updated the IOMUXC GPRs access method to support GPR0 (V7PRO-3432)
- fixed incorrect restriction of i.MX6SX PHY settings (V7PRO-3494)
- add i.MX6 SoloX qspi2 clock (US89250)
- fixed kprintf returns ERROR for empty string (V7PRO-3505)
- add i.MX6 SoloX Message Unit to support OpenAMP (F8373)
- remove unnecessary clock init in PSL code (V7PRO-3368)
- disable receive data ready Interrupt (V7PRO-3546)

fsl_imx6 1.1.10.0

- added RTC alarm support (F6376)
- added usb for i.MX6 SoloX (US89247)
- add SDHC support (US89248)
- update TFFS usage on spi flash (V7STO-738)
- modified imx6sx IOMUXC memory map (V7PRO-3432)
- remove "fsl,usbmisc" for i.MX6 (V7CON-443)
- add QSPI NOR flash for i.MX6 SoloX (US89250)
- break hard dependency between END and IPNET (US85582).
- add Message Unit to support OpenAMP (F8373)
- correct clock usage (V7PRO-3368)
- set PAD_EIM_D22_GPIO3_IO22 for usb otg

fsl_imx6sx_cm4 1.0.1.0

- added RTC alarm support (F6376)
- modified imx6sx IOMUXC memory map (V7PRO-3432)

- added ELF image build target (V7PRO-3384)
- break hard dependency between END and IPNET (US85582).
- add Message Unit to support OpenAMP (F8373)

fsl_k70_twr 1.0.2.1

- Break hard dependency between END and IPNET (US85582).
- CDF text improvements (F8336)

fsl_kinetis 1.0.3.0

- added RTC alarm support (F6376)
- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- check parameter validity for fslK70Dbg() (V7PRO-3505)

fsl_ls102x 1.0.5.0

- correct the address and size cells of memory (V7PRO-3355)
- updated the document for sysLib.c and corrected the dts usage (V7PRO-3433)

fsl_p1p2 1.0.7.0

- add RTC alarm function support. (US74075)
- extend the vxbl's flash partition for uVxWorks image.(V7PRO-3371)
- corrected some typos in target.ref.(V7PRO-3435)
- added dependency for DRV_FSL_I2C on DRV_I2C_RTC.

fsl_p3p4p5 1.0.7.0

- add RTC alarm function support. (US74075)
- added "NOR Flash TFFS" section (V7STO-747)
- extend the vxbl's flash partition for uVxWorks image.(V7PRO-3371)
- corrected some typos in target.ref.(V7PRO-3435)
- added dependency for DRV_FSL_I2C on DRV_I2C_RTC.

fsl_qoriq 1.1.8.0

- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- updated the document for LS102X related drivers (V7PRO-3433)
- added ISC initialization to support RTC alarm interrupt (F6376)

fsl_t1 1.0.4.0

- extend the vxbl's flash partition for uVxWorks image.(V7PRO-3371)
- added dependency for DRV_FSL_I2C on DRV_I2C_RTC.

fsl_t2t4 1.0.9.0

- add LP64 support in TFFS layer (F4496)
- add SD/eMMC support for T4240QDS (US89907)

- added SATA driver support on PPC64 model (V7STO-749)
- extend the vxbl's flash partition for uVxWorks image.(V7PRO-3371)
- corrected some typos in target.ref.(V7PRO-3435)
- fix t2080qds board can't start up when added DRV_SPIFLASH_SP25 to the VIP.(F4996)
- added dependency for DRV_FSL_I2C on DRV_I2C_RTC.

fsl_vf610twr_ca5 1.0.4.1

- rename vf610-qspi to qspi (US89250)

fsl_vf610twr_cm4 1.0.2.0

- added RTC alarm support (F6376)
- added ELF image build target (V7PRO-3384)
- break hard dependency between END and IPNET (US85582)

fsl_vybrid 1.0.2.2

- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- fixed kprintf returns ERROR for empty string (V7PRO-3505)

gpudev_drm 4.9.0.0

- update to DRM 4.9 to support Intel ApolloLake graphics (F7580)
- change DRM public header files to protected header files (F7580)

gpudev_fslviv_demos 1.0.6.0

- clean up demo code (F7580)

gpudev_fslviv_tests 1.0.3.0

- add es2obj test
- add 2dclear001, 2dclear001so, 2dblit001, 2dblit001so tests (F7580)
- clean up test code (F7580)

gpudev_itli915 4.8.0.0

- update to i915 4.8 to support Intel ApolloLake graphics (F7580)

gpudev_libdrm 2.4.74.0

- the kernel now declares getpagesize() in unistd.h
- update to libdrm 2.4.70 to support Intel ApolloLake graphics (F7580)

gpudev_libdrm_demos 1.0.2.0

- update demos to use DRM 4.9 (F7580)
- add KMS copy, create, plane and main demos (F7580)

gpudev_libdrm_tests 1.0.2.0

- update demos to use DRM 4.9 (F7580)

gpudev_sampledrm 1.0.1.0

- update sample DRM to use DRM 4.9 (F7580)

hash 1.1.1.0

- Upgrade openssl to openssl-1.0.2k (V7SEC-360)

hdc_agent 2.2.0.1

- Clean up build warnings
- Fix static analysis error

host_common 1.0.1.8

- Fix makeSymTbl.tcl to exclude TLS symbols

host_linux 1.0.3.0

-

host_mrt_linux 1.0.2.0

- Add emulator support for run/debug java
- Update libcore
- Fix bugs for mrtc

host_mrt_windows 1.0.2.0

- Add emulator support for run/debug java
- Update libcore
- Fix bugs for mrtc

host_windows 1.0.4.0

- updated mkimage for ARM64 (F8006)
- fix VSB with parallel builds enabled hangs on Windows (V7COR-4807)

hvif 3.1.2.2

- inject chars into i8042 controller (HYP-11849)
- system video BIOS handlers to guests (HYP-11857)

hvif_arm 3.1.2.2

- inject chars into i8042 controller (HYP-11849)
- system video BIOS handlers to guests (HYP-11857)

hvif_ia 3.1.2.2

- inject chars into i8042 controller (HYP-11849)
- system video BIOS handlers to guests (HYP-11857)

hypervisor 3.0.6.2

- HV has to use elf.h from LOADER layer (HYP-11963)
- Clean up display functions

hypervisor_arm 3.0.6.2

- HV has to use elf.h from LOADER layer (HYP-11963)
- Clean up display functions

hypervisor_ia 3.0.6.2

- HV has to use elf.h from LOADER layer (HYP-11963)
- Clean up display functions

ieee1394_stack 1.1.0.5

- Cleanup LLVM/Clang compiler warnings
- Cleanup compiler warnings

image_libpng 1.6.27.0

-

intel 1.1.1.2

- removed X mmu attribute in pmap (F7142)
- fixed vxbLoApicMsgResourceGet algorithm error issue (V7PRO-3419)

ipnet_aaa 1.0.1.8

- clean build warnings

ipnet_coreip 1.3.5.0

- the split pkt should be 2-byte alignment in data (V7NET-1219)
- VIP build fails when using PROFILE_DEVELOPMENT due to missing SEC_VAULT_KEY_ENCRYPTING_PW
- FOLDER_LDAPC is unavailable (V7NET-1231)
- CDF text improvements.(F8336)
- break hard dependency between END and IPNET (US85582).
- retransmission timer is not handled correctly when multiple successive packets are lost (V7NET-1228)
- invalid index of interface will cause assertion (V7NET-1226)
- vlanid could be 0. (V7NET-1061)
- fix incorrect read() usage in ftp6ReplyGet() (V7NET-1221)
- change SIOCXGIFADDR_IN6 to readable (V7NET-1149)
- fix ping fail for certain types of addresses (V7NET-1182)
- Add NOMANUAL for doing not public APIs (V7NET-1201)
- fix crash in ipnet_neigh_tx_dead() for ipv6 (V7NET-1204)
- internal API ipnet_cmd_arp() should not be seen in doc (V7NET-1205)
- Add support for a central authentication server (AD/LDAP) (F6698)
- Default login prompt must be OS 'anonymous' (V7SEC-219)
- include wrapperHost.h in netdb.h so gethostbyaddr(), etc., are available with POSIX specified header (F3024)
- fixed network stack build for ARM64 (F5261)
- fix assert when sending tcp partial data (V7NET-1217)
- remove possible assert (V7NET-1202)

- skip VNIC during early parse of VIP params (HYP-11920)
- Fix telnet child task error (V7NET-1227)
- fix adding a subnet-broadcast damage the netstat output (V7NET-1164)

ipnet_crypto 1.0.0.9

- CDF text improvements (F8336)

ipnet_dhcpc 1.0.1.8

- Fix the send information of dhcp packet (V7NET-1260)
- Fix coverity warning
- CDF text improvements.(F8336)

ipnet_dhcpc6 1.0.1.7

- clean build warnings

ipnet_dhcpr 1.0.0.7

- Fix dhcp relay miss option end (V7NET-1197)
- CDF text improvements.(F8336)

ipnet_dhcps 1.0.0.10

- fix memory leak in dhcps cmd (V7NET-1248)
- CDF text improvements (F8336)
- clean build warnings

ipnet_dhcps6 1.0.0.8

- CDF text improvements (F8336)

ipnet_dnsc 1.0.1.5

- Fix openssl FIPS 140-2 64-bit issue.

ipnet_eap 1.0.0.8

- CDF text improvements.(F8336)

ipnet_ftp 1.0.4.3

- CDF text improvements (F8336)
- Clean llvm warnings (F5261)
- fix endless loop in ipftps_size() (V7NET-1229)
- Default login prompt must be OS 'anonymous' (V7SEC-219)

ipnet_ipsecike 1.0.1.10

- CDF text improvements.(F8336)

ipnet_linkproto_l2tp 1.0.0.7

- Fix V3 AVP hiding is not in line with RFC3931 (V7NET-1210)
- CDF text improvements.(F8336)

ipnet_linkproto_ppp 1.2.1.3

- CDF text improvements.(F8336)

ipnet_linkproto_rohc 1.0.1.7

- clean build warnings

ipnet_mobility 1.0.0.16

- CDF text improvements.(F8336)

ipnet_ntp 1.2.0.3

- CDF text improvements (F8336)
- Increase NTPD task stack size (V7NET-1218)
- avoid conflict with UNIX compatibility function symlink() (F972)

ipnet_ptp 1.0.1.1

- Fix float point unavailable exception (V7NET-1263)
- Add PTP features(F7726). In this feature, we add the round() andtrunc() function to support the PTP with software timestamp onnon-IA arch(ARM and PPC).
- fix spe unavailable exception (V7NET-1215)

ipnet_routeproto 1.0.1.5

- CDF text improvements.(F8336)

ipnet_sntp 1.0.0.5

- CDF text improvements (F8336)
- warning clean for ARM64 (F5261)

ipnet_tftp 1.0.1.4

- CDF text improvements (F8336)

ipnet_tsn 1.0.0.1

- Fix to add IEEE_802_1_QAV depends (V7NET-1208)
- Fix documentation setting

ipnet_usrspace 2.0.2.2

- fix coverity warnings
- remove useless parameter in Ipcom_pkt_struct (V7NET-1217)

ipnet_vrrp 1.0.2.1

- CDF text improvements.(F8336)
- clean warnings. (V7NET-1246)

itl_64 1.3.0.6

- Do not use ACPI static memory pool when using overlapped memory.(F6461)

itl_64_vx7 1.1.0.9

- Do not use ACPI static memory pool when using overlapped memory(F6461)
- Make INCLUDE_I8253_AUX_CLK using correct timer name (V7PRO-3382)
- add X attributes for text regions in sysLib.c (F7142)

itl_common 1.0.3.0

- Declare vxCpuId in header file vxCpuIdLib.h (V7PRO-3490)
- ACPI 6.1 support (F6461)
- Do not use ACPI static memory pool when using overlapped memory.(F6461)
- Add support for ACPI events (F6446)
- Add support for configuration HT (F7227)
- Make INCLUDE_I8253_AUX_CLK using correct timer name (V7PRO-3382)
- updated SYS_MODEL for PAE and removed X attribute for non-code memories (F7142)
- added PAE support (F7142)
- skip RAM below 1MB (F7370)
- fix acpiResourceGet set the incorrect irq attribute (F7370)
- iaPciLockReady is never set to TRUE (V7PRO-3365)
- fix vector ISA and PCI interrupt vector conflict (V7PRO-3096)

itl_generic 1.0.3.0

- change the serial configuration to be compatible with whether FIFO functionality supported (V7PRO-3358)
- ACPI 6.1 support (F6461)
- added support for ACPI event feature (F6446)
- Update target.ref for configuration HT (F7227)
- added IA32-PAE support (F7142)
- update for Oxbow Hill CRB (F7370)
- fix VNIC driver IA parameters (HYP-11850)

itl_quark 1.4.0.5

- Break hard dependency between END and IPNET (US85582).

jobqueue 1.0.2.2

- CDF text improvements (F8336)

json 1.0.0.4

- Fixed llvm build warnings
- Enable CERT build

khronos_container 1.4.0.0

- update Khronos header files for Mesa 13.0 (F7580)

ldapc 1.0.0.0

- Created (F6698)

libc-kernel 1.0.6.0

- added ARM64 support (F5261)
- fixed V7COR-4310

- Add test case for strtoll() and strtoull()
- added alias for random() and srandom() (F972)
- added sclab/drem/_Raise_Inexact for ARM VSBs (V7COR-4642)
- Fixed __getDstInfoSub not checking for NULL/empty when using a TIMEZONE set by environment (V7COR-4823)

libc-usr 1.0.6.3

- Fixes for clean C++ compile with boost (F972)
- Fix incorrect definition of _FE_RND_OFF (part of V7COR-4741)
- vxTest code cleanup
- added inline fabs, fabsf, sqrt, sqrtf for ARMv8 (F5261)
- added ARM64 support (F5261)
- performing a SEEK_END when opening files with fopen a/a+ modes (V7COR-4272)

loader 1.1.2.0

- add module load test case
- Linux TLS ABI support for EM_AARCH64 (F2454)
- do not set X attribute when unload if mmuDataNoExec is TRUE (F7142)

mib2 1.1.1.6

- m2IpRouteTblEntryGet() should return ipRouteMask in network order (V7NET-1159)
- include vxTypesOld.h in m2Lib.h so sysV types defined without VxWorks.h (F972)

mrt_edge_ns_container 1.0.2.0

- Add LAYER_REQUIRES ZLIB. (F972)
- Support JIT for user mode(F7135/F8613)

net_base 1.0.4.0

- Break hard dependency between END and IPNET (US85582).
- Make INCLUDE_IFNAMELIB visible. (V7NET-1223)
- CDF text improvements.(F8336)
- include vxTypesOld.h in if.h so sysV types defined without VxWorks.h (F972)

nxp_ls2 1.0.1.0

- added cpuIndexMap only when clusters and smp enabled
- correct the address and size cells of memory (V7PRO-3355)
- break hard dependency between END and IPNET (US85582).
- modified DRV_I2C_RTC dependency (V7PRO-3499)
- added RTC alarm support (F6376)

openSSL 1.1.1.0

- Upgrade openssl to openssl-1.0.2k (V7SEC-360)

- Eliminate the dependency between INCLUDE_IPFREESCALE and INCLUDE_SHELL(F8092)
- OpenSSL DSO_global_lookup not implemented (V7SEC-327)

optee_client_api 1.0.0.1

- disabled this layer on ARMARCH8A (F7388)

os_arch_arm 1.1.9.1

- updated excVecUpdate for by using vmBuffWrite (F7142)
- removed X attribute for page table themselves (F7142)
- corrected intVecTableWriteProtect (F7142)
- initialized _func_mmuFault

os_arch_ia 1.2.2.0

- Declare vxCpuId in header file vxCpuIdLib.h (V7PRO-3490)
- Support IA Arch L2 Cache QoS (F7283)
- Fix the compiling error when using DIAB with PENTIUM arch BSP (V7PRO-3386)
- ACPI 6.1 support (F6461)
- Do not use ACPI static memory pool when using overlapped memory.(F6461)
- Fix double counting of ISA interrupt entries
- Remove blank duplicate interrupt entries (V7PRO-3027)
- Update showMadt to display additional MADT information
- Unmap memory no longer needed (V7PRO-3085)
- added support for ACPI event feature (F6446)
- Disable SMT option support (F7227)
- added IA32 PAE support (F7142)
- supported 32-bit paging, IA32 PAE paging and IA-32e paging in one singlefile and added PCID support (F7142)
- removed X attribute for some non-code memory (F7142)
- improved intHandlerCreate series routine (F7142)
- update GOLDMONT CPU type (F7370)
- lock interrupt in cacheDisable (F7370)
- fix AcpiOsMapMemory issue (F7370)
- skip RAM below 1MB (F7370)
- remove legacy syscall code
- fixed an memory leak issue for IA 64 (V7PRO-3497)
- fix interrupt source override process produce incorrect interrupt vector in IOAPIC (V7PRO-3507)
- updated for new MMU framework (F5261)

os_arch_ppc 1.3.1.2

- removed X attribute for non-code memories (F7142)
- fixed a compiling warning in peExcLib.c.

os_arch_vxsim 1.0.7.8

- moved INCLUDE_PROTECT_INTERRUPT_STACK to FOLDER_KERNEL_HARDENING (F7142)
- Break hard dependency between END and IPNET (US85582).
- fixed initialization of error buffer for network driver (V7COR-4882)

os_lang-lib_tool_common 1.0.3.4

- added ARM64 support (F5261)

ostools 1.0.2.7

- keep tip delete hook installed

qsp 1.1.1.6

- add qspCpuDisable declaration. (V7PRO-3150)
- check parameter validity for qspDebugWrite() in qspArm.c (V7PRO-3505)

qsp_arm 1.0.1.5

- added INCLUDE_STANDALONE_SYM_TBL by default forPROFILE_DEVELOPMENT (V7PRO-3392)
- break hard dependency between END and IPNET (US85582).

qsp_arm64 1.0.0.0

- initial support

qsp_ppc 1.1.1.5

- added INCLUDE_STANDALONE_SYM_TBL by default forPROFILE_DEVELOPMENT (V7PRO-3392)

qsp_ppc750 1.0.1.5

- CDF text improvments (F8336)

raster_mesa 13.0.3.0

- update to Mesa 13.0 to support Intel Apollo Lake graphics (F7580)

raster_mesa_demos 1.0.4.0

- add OpenGL compute demo (F7580)
- add support for Mesa 13.0 (F7580)
- add contextAttribs for eglCreateContext (F7580)
- add missing gfxGbmPageFlip after eglSwapBuffers (F7580)

raster_mesa_tests 1.0.4.0

- add es2obj test
- add support for Mesa 13.0 (F7580)
- add contextAttribs for eglCreateContext (F7580)

- add missing gfxGbmPageFlip after eglSwapBuffers (F7580)

raster_qtpre 1.0.0.0

- create Qt Prerequisite layer

raster_sdl 2.0.5.0

- add KMSDRM support for Intel GPU (F7580)

raster_sdl_demos 1.0.1.0

- add SDL main demo and update layer file (F7580)

raster_vg_demos 1.0.5.0

- clean up demo code and add fd check before close (F7580)

raster_vg_tests 1.0.3.0

- clean up test code and add fd check before close (F7580)

rbuff 1.0.0.4

- CDF text improvements (F8336)

rpc 1.0.0.12

- CDF text improvements.(F8336)
- clean llvm static analysis warnings (F5261)

rtnet 1.0.2.0

- Support RTNET for VxWorks-7 Safety Profile (CERT) in Kernel.
- Break hard dependency between END and IPNET (US85582).
- fixed build error for llvm.
- fix compiler warning.

runtime_analysis 1.1.3.6

- move getpagesize() to CORE_KERNEL layer
- updated for arm64 (F5261)
- Fix arm64 compile warnings

samples 1.0.0.7

- updated addone.s for ARM64 (F5261)

sdmmc_host_sdhc 1.0.3.0

- add T4240 SD/MMC support. (US89907)
- add support for Apollo Lake boards.
- update for IA32_PAE mode
- add bus-width selection for vxbFslSdhcCtrl.c

sdmmc_host_timmchs 1.1.0.10

- fix clk frequency issue

sec_crypto 1.0.4.0

- added setting KEP backend support (F8021)

- Fix typo issue (V7SEC-345)

sec_event 1.0.0.2

- remove deprecated terms in layer Makefle

sec_hash 1.0.2.1

- CDF text improvements (F8336)

security_gdoi 1.0.0.2

- Removed unwanted public header contributions
- clean coverity warnings (V7SEC-353)
- Fix coverity warning.(V7SEC-337)

security_scep 1.0.0.3

- clean build warnings

shell 1.1.4.3

- Return RTP exit status as result of rtp exec command
- CDF text improvements.(F8336)
- Fixed build warnings (F5261)
- close script file when execution fails. (V7COR-4460)

snmp_agent 1.0.1.3

- clean build warnings

snmp_engine 1.0.1.7

- CDF text improvements (F8336)

socket 1.0.3.2

- CDF text improvements (F8336)
- move POSIX functions from sockLib.h to sys/socket.h (F972)

stacktrace 1.0.1.6

- Fix arm64 compile warnings
- Support ARM64 (US90845)

stop_mode_debug_agent 2.0.4.2

- Break hard dependency between END and IPNET (US85582).
- clean warnings (F5261)

syscalls 1.0.13.0

- Added ARM64 (F5261)

ti_keystone 1.1.2.3

- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- check parameter validity for keystoneDbg() (V7PRO-3505)

ti_keystone2 1.0.8.1

- correct the address and size cells of memory (V7PRO-3355)
- break hard dependency between END and IPNET (US85582)

ti_sitara 1.0.3.0

- added RTC alarm support (F6376)
- update to support AM57xx IDK 1.3B (F7314)
- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- check parameter validity for kprintf implementations (V7PRO-3505)

ti_sitara_cm4 1.0.2.0

- added Mailbox to support OpenAMP (F8373)

ti_sitara_ctxa15 1.0.4.0

- added Mailbox to support OpenAMP (F8373)

ti_sitara_ctxa8 1.1.5.0

- added RTC alarm support (F6376)
- break hard dependency between END and IPNET (US85582).

ti_sitara_ctxa9 1.0.5.0

- added RTC alarm support (F6376)
- break hard dependency between END and IPNET (US85582).

tilcon_demo 7.2.1.2

- code clean

tilcon_kernel 7.2.1.3

- deleted redundant variable (V7GFX-358)
- fixed draw arc incorrectly (V7GFX-351)
- code clean

tipc_kernel 1.0.0.11

- CDF text improvements (F8336)

tools_wb_vxworks7_apidoc 1.0.8.4

- updated to pick up the latest api documentation for SR0500 (V7COR-4719)

toolsrc_llvm 1.0.1.0

- added C++ support (F6625)

tpm2_tss 1.0.1.0

- added TPM 2.0 KEP backend (F8021)

trousers 1.0.1.1

- disabled this layer on ARMARCH8A (F7388)

unix 1.0.0.0

- Initial version of UNIX compatibility layer (F972)

usb_core 1.0.2.9

- add USB_SPEED_UNKNOWN definition (vx7-US89247)

usb_ctlr_ehci 1.0.2.0

- add USB support for i.MX6SX (US89247)
- use OS_DELAY_MS instead of taskDelay in usbEhcdDetach (V7CON-432)
- add the description for DTS property used
- remove "fsl,usbmisc" for i.MX6 (V7CON-443)
- cleanup compiler warnings
- add INCLUDE_USB_PHY_FSL_ONCHIP and DRV_GPIO_FDT_FSL_IMX to the "REQUIRES" field of component INCLUDE_EHCI_INIT if_WRS_CONFIG_FSL_IMX is defined (V7CON-449)
- add INCLUDE_CACHE_DMA32_LIB for IA32_PAE

usb_ctlr_fsldr 1.0.2.3

- cleanup LLVM/Clang compiler warnings

usb_ctlr_mhdrc 1.1.1.7

- fix power on to power good time (V7CON-441)

usb_ctlr_ohci 1.0.1.8

- add INCLUDE_CACHE_DMA32_LIB for IA32_PAE

usb_ctlr_plx 1.1.0.6

- cleanup LLVM/Clang compiler warnings

usb_ctlr_uhci 1.0.1.7

- add INCLUDE_CACHE_DMA32_LIB for IA32_PAE

usb_ctlr_xhci 1.0.3.1

- cleanup LLVM/Clang compiler warnings
- add INCLUDE_CACHE_DMA32_LIB for IA32_PAE

usb_host_core 1.0.0.14

- fix debug message error (V7CON-441)

usb_phy 1.0.6.0

- add USB support for i.MX6SX (US89247)
- add usbPhyFslOnChipConnected and usbPhyFslOnChipDisconnectedfor high-speed connect status detector (US89247)
- add fdtUsbPhyAm335xShutdown() function for warm boot (V7CON-332)
- add USB host support for CycloneV (US66050)

usb_target_core 1.0.1.9

- cleanup static analysis warnings (V7CON-445)

usb_target_net 1.1.0.11

- support dynamic initialization for RNDIS driver (V7CON-422)
- add USBTGT_VRTL_END_POOL_TUPLE_CNT and USBTGT_VRTL_END_JUMBO_BUFFER_SUPPORT (V7CON-430)
- cleanup static analysis warnings (V7CON-445)

usb_target_ser 1.1.0.7

- replace OSS_THREAD_CREATE with OS_CREATE_THREAD (V7CON-426)

user_management 1.1.0.0

- Add support for a central authentication server (AD/LDAP) (F6698)
- HMAC not checked when converting an older version of the user DB (V7SEC-221)
- Login denied message timing difference (V7SEC-220)
- Default login prompt must be OS 'anonymous' (V7SEC-219)
- Modifying the User DB file may lead to the user db being reset and trigger prompting for initial user at next reboot (V7SEC-314)

user_management_ldap 1.0.0.0

- Created (F6698)

virtio 1.0.3.3

- add vblock disk signatures (HYP-11985)

vnic 3.2.3.3

- Resolve VM memory size problem with VNIC (HYP-11978)
- correctly report max and min MTU (HYP-12013)

vxbus_buslib 2.1.3.1

- CDF text improvements (F8336)
- add field "base" in struct "spiTransfer" (US89250)

vxbus_core 1.0.8.1

- add device path name test case
- added support for ARM64 (F5261)
- removed the X attribute in pmapPrivateMap (F7142)
- Fix the incorrect comments for iadtBus.
- update vxbDmaBufLib for IA32_PAE mode
- fix unchecked return value in vxbLockLib.c
- fix build failure in 32 bit user space

vxbus_drv 1.2.5.0

- add TI AM572x mailbox to support OpenAMP (F8373)

vxbus_legacy 1.1.3.7

- CDF text improvements.(F8336)

- declared vxCpuId in header file vxCpuIdLib.h (V7PRO-3490)

vxbus_subsystem 1.0.10.0

- CDF text improvements (F8336)
- add LP64 support in TFFS layer (F4496)
- fixed a error in vxbIsrHandlerShow.(V7PRO-3390)

vxdbg 1.0.6.6

- fixed build error in VIP when TASK_STOP_HOOKS VSB option is disabled.
- use cacheDmaFree to free memory allocated from cacheDmaMalloc (F5261)
- don't build RTP debug library when RTP isn't enabled.
- fixed build error in VIP when TASK_STOP_HOOKS VSB option is disabled.

vxsim_bsp_linux 1.0.2.10

- Break hard dependency between END and IPNET (US85582).
- CDF text improvements (F8336)

vxsim_bsp_platform 1.0.2.10

- Break hard dependency between END and IPNET (US85582).
- CDF text improvements (F8336)

vxsim_bsp_windows 1.0.2.10

- Break hard dependency between END and IPNET (US85582).
- CDF text improvements (F8336)

vxsim_prebuilt_projects_linux 1.0.2.9

- os_arch_vxsim updated to 1.0.7.8 (F7142)

vxsim_prebuilt_projects_windows 1.0.2.9

- os_arch_vxsim updated to 1.0.7.8 (F7142)

vxtestv2_fs 1.0.0.6

- updated for arm64 (F5261)

vxtestv2_ns_container 1.0.4.1

- added ARM64 support (F5261)

vxtestv2_os_bootapp 1.0.0.5

- updated for arm64 (F5261)

vxtestv2_os_bsp 1.0.0.5

- updated for arm64 (F5261)

vxtestv2_os_core 1.0.4.1

- updates for ARM64 (F5261)

vxtestv2_os_driver 1.0.0.7

- updated for arm64 (F5261)

webcli_backplane 1.0.0.8

- fix static analysis issues

webcli_cli 1.0.1.6

-

webcli_clidemo 1.0.1.4

- Fix compiler and static analysis warnings

webcli_common 1.0.3.2

- clean coverity warning

webcli_curl 7.50.3.0

- Removed unwanted files from public headers

webcli_http 1.0.1.6

- clean coverity warning

webcli_mibway 1.0.0.4

- Fix compiler and static analysis warnings

webcli_webdemo 1.0.1.7

-

xlnx_zynq 1.1.4.0

- add support for Zynq UltraScale+ MPSoC (F5261)
- added Xilinx ZynqMP ZCU102 support Cortex-R5 (F7695)
- use vxFdtDefRegGet() to get the address and size of requested controller's register (V7PRO-3355)
- added Xilinx ZynqMP NWL PCIe support (F7388)
- renamed SIO I2C and Timer driver (F5261)
- added GPIO support for RTC alarm interrupt (F6376)
- kprintf() returns OK if empty string is met (V7PRO-3505)

xlnx_zynq7k 1.0.8.0

- updated VXBFLASH_CFG_STR description (V7STO-716)
- clarified RTC alarm function is not supported (F6376)
- fix configuration issue of qspi flash (V7STO-737)
- break hard dependency between END and IPNET (US85582)

xlnx_zynqmp 1.0.0.0

- initial support (F5261)

xlnx_zynqmp_r5 1.0.1.0

- added Xilinx ZynqMP ZCU102 board support (F7695)
- break hard dependency between END and IPNET (US85582).
- correct the speed mode description for GEM (V7PRO-3574)

zlib 1.2.8.6

- In user space, provide library with the standard base name libzas well as the old name libzlib

Features Delivered in December 2016 (CR0491)

This release included features added and defects fixed since the SR0490 release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

Helix Device Cloud 2.2 Agent

This release includes the Helix Device Cloud 2.2 agent. For more information see the Wind River Helix Device Cloud Release Notes, 2.2 in the Wind River Knowledge Library.

Features Delivered in December 2016 (SR0490)

These features were included in the December release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

Tilcon IDT no Longer Supported

The Tilcon IDT is no longer supported on VxWorks 7.

Support for SJA1000 Device

Support for the SJA1000 device with the VxWorks CAN stack.

Support for FSL T2080 RDB to fsl_t2t4

Support for the Freescale T2080 RDB board as part of the fsl_t2t4 bsp.

Haswell GEI Update

Support for an additional Device ID in the GEI.

Memcopy Performance Improvements on PowerPC

An optimization for memcopy in certain configurations.

Improved NAND Performance

An improvement of NAND performance in VxWorks by using the capabilities of newer chipsets.

[TSN] IEEE 1588 PTP Usability Enhancements

Usability enhancements for PTP, including support for 802.1AS, additional configuration options, Boundary Clock support, and general enhancements.

[TSN] Support for Timed Send and Real-time UDP Packets

Timed send delivers microsecond-level accuracy of Ethernet packet sends using the 802.1qbv standard.

Micro Runtime Quality Update

This update provides defect fixes and various quality improvements.

Safety Profile Signal Support

This feature release re-introduces Signal support to the VxWorks 7 Safety Profile for Cert.

Stack Tracing for Thumb2 from the Shell

Ability to trace the stack for thumb2 type instructions from the command-line. Workbench support will follow later.

Support for ARM Cortex R5 on the Xilinx Zynq UltraScale+ MPSoC on iVeia Atlas II Z8

Support for the R5 complex on the Xilinx US+ MPSoC.

USB Support for Cyclone V

Support for USB on the Cyclone V device.

USB 2.0 Host Mode Support on AM57xx

Support for the USB 2.0 device in host mode on the TI Sitara 6 – AM57xx device.

Upgrade NTP to Latest ntpd Version 4.2

Upgrade to the latest NTP version.

FTP Client Support in RTP

Re-enable the FTP client to run in an RTP.

Device Paths Not Unique Problem

The current device path name implementation in VxWorks 7 has limitations that prevent Virtualization customers from correctly blacklisting some devices. This feature updates the implementation to provide an unambiguous device path naming scheme by incorporating the device's unit address (its bus location) into the path name.

For example, the path name for "pci device(vvvv:dddd) unit 0" would be "pci-device(vvvv:dddd)@DD[,F]" where DD is the device number and F is the function number.

Security Profile Q4 Update

This update to the Security Profile brings many new features such as support for ARM TrustZone, TPM 2.0, and Achilles Level 2 Certification. It also upgrades OpenSSL to version 1.0.2j (support for OpenSSL 1.0.1 will cease on December 31, 2016).

Build and Config December 2016 Update

This release provides build and configuration changes for VxWorks Cert and defect fixes.

Real-Time Network Stack Support on Cert Configuration - RTP Only

Support for the Real-Time Network Stack in the cert configuration of the Safety Profile with stack and driver inside an RTP.

Wind River Workbench 4 December 2016 Update

This release provides the ability to add or customize target connections in the Debug Shell.

Fixed Defects

This release included fixes in the GNU 4.8.1.8 compiler.

Features Delivered in September 2016 (CR0481)

This release includes a security update, and defect fixes for the GNU Compiler (GCC).

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

IPP Crypto

This update addresses a security vulnerability (CVE-2016-8100). For more information on this vulnerability, see:

https://security-center.intel.com/advisory.aspx?intelid=INTEL-SA-00060&languageid=en-fr

Features Delivered in September 2016 (SR0480)

These features were included in the September release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

Security Profile Update

This release includes enhancements to the Security Profile, including updates to the secure boot feature.

Wind River Micro Runtime

Wind River Micro Runtime is a Java language embedded runtime environment.

Real-Time Network Stack

The real-time network (RTNET) stack is a deterministic network stack that can run multi-instance, both in kernel and in RTP space. This stack provides known worst-case execution paths through the stack supporting real-time use cases. This stack is also small, which makes it applicable for certified systems.

User Mode I/O System

The User-Mode I/O System (UMIOS) implements much of the core VxWorks I/O system in user space. This in turn allows I/O system device drivers or file systems to also be implemented in an RTP, although at present only a few drivers (most importantly **sockLib( )**) have been ported to the UMIOS environment. This release of the UMIOS is intended primarily to support the Real-Time Network Stack.

IPv6 Support

This release includes IPv6 support for the WebCLI/SMTP component.

Vivanti 5 Driver for SoloX

Support for the Vivanti version 5 driver as needed for the i.MX6 SoloX device.

TWR-LS1021A Board Support

Validation of the fsl-ls1 BSP on the PB revision of the TWR-LS1021A board.

Build and Config Update

This release includes enhancements and defect fixes.

Storage and Connectivity Enhancements

Support for EDMA, PRCM and SATA/SD/MMC and USB2/3 for the AM57xx BSP, as well as general Storage, Connectivity, and USB improvements.

VxBus Improvements

Many END and MDIO drivers have been updated to make use of the **miiBusCreate( )** and **miiBusDelete( )** APIs, and they now implement shutdown and detach methods so that they can be unloaded.

User-Mode VxBus Driver Support

VxBus is now available for use in RTPs. An RTP can now create its own private VxBus device tree, populate it with devices borrowed from the kernel, and attach its own RTP-resident drivers to them. This allows RTP-based applications to directly manipulate hardware.

System Call Changes

The new user mode I/O system (UMIOS) feature introduces some changes to the system call interface between RTPs and the kernel. These changes apply whether or not UMIOS is enabled in your VxWorks system.

Renamed APIs

Some raw system calls relating to I/O or sockets APIs have been renamed. The callable API remains the same, but the actual (raw) system call routine acquires an underscore prefix. For example:

- **recv( )**, formerly a sockets system call in user space, becomes a wrapper function; the actual system call is now **_recv( )**.
- **access( )**, formerly an I/O system call in user space, becomes a wrapper function; the actual system call is now **_access( )**.

When the user-mode I/O system is not enabled, the wrapper function is simple. It directly calls the corresponding raw system call (for example, **recv( )** calls **_recv( )**). Conversely, if the UMIOS (and user mode sockets) is enabled, the wrapper function must determine whether the socket is a UMIOS-level socket or a kernel-level socket. For example, the **recv( )** wrapper calls the **_recv( )** system call for a kernel-level socket. Otherwise, it handles the system call (in this example, **recv( )**) functionality at the user level for a UMIOS-level socket.

The following system call APIs have been modified in this way:

- Sockets APIs:

  socket( )
  bind( )
  listen( )
  accept( )
  connect( )
  sendto( )
  send( )
  sendmsg( )
  recvfrom( )
  recv( )
  recvmsg( )
  getsockopt( )
  getsockname( )
  getpeername( )
  shutdown( )
  setsockopt( )

- I/O APIs:

  dup2( )
  remove( )
  link( )
  unlink( )
  rename( )
  fpathconf( )
  pathconf( )
  access( )

chmod( )

NOTE: Your applications should continue to call the original standard API name, not the renamed raw system call (for example, call **recv( )**, not **_recv( )**).

Changes to Existing Raw System Calls

Two existing raw system calls changed in both name and behavior (acquiring additional arguments):

- **dup( )** has been renamed as **_dup( )**. It acquired a second **int** argument, **startfd**, that specifies a minimum value for the new duplicate file descriptor. This allows the **raw _dup( )** system call to support the **fcntl( ) F_DUPFD** operation as well as the **dup( )** API.
- **select( )** has been replaced by **_selectX( )**. It gained an additional argument that is used internally by the UMIOS select implementation.

NOTE: Your application should continue to call **dup( )** and **select( )** exactly as before, which are now user-mode wrapper functions, rather than the raw **_dup( )** and **_selectX( )** system calls.

New System Calls

Two entirely new system calls were added to support the UMIOS, **_selwakeupOp( )** and **_umiosFdGet( )**.

NOTE: These are internal routines for UMIOS support. You should not call these routines from your application.

Wind River OS Tools and Workbench 4 Update

This Workbench release adds the following features:

- Support for Live Patch Thumb
- Patching of kernel-linked applications
- Updates of project workflows
- Comparison of system analysis runs
- Improvement of breakpoint workflows
- Support for Java run-time Eclipse plugins for Wind River Micro Runtime

Diab Compiler 5.9.6.1 Update

This release includes Altivec support in PowerPC 64-bit and defect fixes.

Fixed Defects

This release included networking defect fixes migrated from VxWorks 6.9 to VxWorks 7, and fixes in the Diab 5.9.6.1 and GNU 4.3.3.2 compilers.

Features Delivered in June 2016 (SR0470)

These features were included in the June release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

Security Profile Update

This update provides enhancements to the user management framework, expands support for TPM on non-Intel architectures, adds a new security events handler, and includes additions to IKEv1 to support GDOI and SCEP.

In addition, security-related components have been grouped together in the Kernel Configuration Editor, to make it easier to find and configure security related options.

Safety Profile Release

This Feature release adds certifiable build into the build and config, which enables customers to know if their build calls only certifiable APIs.

VxBus Interrupt Subsystem and IA Platform Enhancement and Cleanup

The VxBus interrupt subsystem has been updated to support the vectored interrupt model (like that used on the IA platform) in an architecture-independent fashion. The IA platform layers have also been updated to no longer rely on Intel-specific code in the interrupt subsystem, such that usage of the interrupt subsystem APIs is now fully consistent across all architectures.

Intel Arch support for ART, Cache QoS , 32-bit TLS, Apollo Lake, and Miscellaneous Optimizations

Intel Architecture support for Always Running Timer (ART), Cache Quality Of Service (QoS), 32-bit Thread Local Storage (TLS), Intel Apollo Lake on the Oxbow Hill CRB, and miscellaneous optimizations.

Support for Qt 5.5 on Intel HD Graphics

Support for the Qt graphics library from the Qt Company on top of VxWorks on IA boards with support for gpudev or fbdev.

Vx-7 gpudev Driver for Intel Broadwell/Braswell HD Graphics GPU

Support for the graphics device in the Broadwell and Braswell class of processors (GEN8).

VXBL on the AM57xx

Support for VXBL on the AM57 so customers can boot without U-Boot.

Block Traffic Outside a Secure Tunnel

Provides the ability to block all incoming traffic that does not originate from inside of a secure tunnel, in support of RFC1122, chapter 3.3.4.2.

TiIcon Dashed Lines Support and DrawUCSText Decoupling

Provides the ability to draw dashed lines, and decouples DrawUCSText from the OpenVG to draw text with and without OpenVG.

Support for the FSL i.MX6 SoloX (A9 and M4)

Support for the i.MX6 SoloX bsp, including support for running VxWorks on both the ARM Cortex A9, as well as the ARM Cortex M4 processor.

PCIe AER Driver

Provides the ability to use Advanced Error Reporting as part of the PCIe support.

I2C Library API Usability Improvements

Several additions to the I2C library API to make it easier to interact with devices on the I2C bus.

Change to Naming Policy of SATA Devices

The naming policy of SATA devices was changed in SR0460.

Before SR0460, the naming was based on the device index. For example:

```
"/ata1:0"
```

After SR0460, the naming is based on SATA ports. For example:

```
"/ata4:0"
```

Please be aware of this if the device name is used in applications.

OpenSSL Update

This update of OpenSSL addresses the following vulnerabilities:

- Prevent padding oracle in AES-NI CBC MAC check (CVE-2016-2107).
- Fix EVP_EncodeUpdate overflow (CVE-2016-2105).
- Fix EVP_EncryptUpdate overflow (CVE-2016-2106).
- Prevent ASN.1 BIO excessive memory allocation (CVE-2016-2109).
- Modify behavior of ALPN to invoke callback after SNI/servername callback, such that updates to the SSL_CTX affect ALPN.
- Remove LOW from the DEFAULT cipher list. This removes singles DES from the default.
- Only remove the SSLv2 methods with the no-ssl2-method option.

BSP Enhancements

Includes SD card support on AMD Steppe Eagle (AMD G Series), support for eMMC on the T2080 QDS, and other enhancements.

JSON Encoding/Parsing Support

Jansson is an open-source implementation of JSON, a lightweight data-interchange format. Jansson integration will enable VxWorks to programmatically encode and parse JSON-formatted data.

More information on Jansson is available here: http://www.digip.org/jansson/

Workbench 4 and OS Tools Update

This Workbench release improves the LivePatch feature, adds Thumb debugging support, and adds support for installing project-specific API documentation.

For more information, see the Workbench 4 Readme for June 2016 in the Getting Started section of the Wind River Knowledge Library.

Intel C++ Compiler for VxWorks 7 Update

Intel® C++ Compiler for VxWorks 7 is updated to version 16.0 in this release. Intel C++ Compiler 16.0 for VxWorks 7 supports 64-bit host only. It can be used to compile for both 32-bit and 64-bit target binaries. Intel C++ Compiler 16.0 has performance gains over the prior Intel C++ Compiler versions.

Intel IPP for VxWorks 7 Update

Intel IPP for VxWorks 7 is updated to version 9.0.3 in this release.

Features Delivered in April 2016 (SR0460)

These features were included in the April release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

VxWorks 7 Virtualization Profile Update 7

Update 7 is a large update for the Virtualization Profile containing improvements to both IA and ARM Cortex A15 support:

- Support for VxWorks 7 SMP guest OS on both Intel Architecture and ARM Cortex A15
- Support for the itl_generic BSP. itl_64_vx7 support has been deprecated, and customers are recommended to move to itl_generic
- Support for Windows 10 as a guest OS on Intel architecture
- Support for VirtIO on ARM Cortex A15
- Support for Wind River Linux 7 as a guest OS on ARM Cortex A15
- Support for direct interrupts on Intel
- Support for shared memory and inter-VM interrupts on Intel

AMD G-Series Processor Support

Support for AMD G-Series processors as part of the itl_generic BSP.

TSN IEEE 1588 PTP

Support for the IEEE 1588 protocol to synchronize clocks across multiple systems to ensure timeliness of a multi-node system.

Security - DISA User Management

Following recommendations from the Defense Information Systems Agency, the user management framework available in the Security Profile was enhanced to provide support for advanced control functions, such as:

- Maximum number of failed login attempts
- Minimum password length
- Password complexity rules

Polled Mode Serial Driver

Support for polled mode serial driver using standard IO operations.

Freescale fsl_t2t4 BSP Extended Ethernet

The fsl_t2t4 BSP and MEMAC driver software has been updated so that in addition to the two existing 10/100/1000Mbps RGMII MEMAC Ethernet ports, the following are now also available:

- Support for four additional 10Gbps MEMAC Ethernet ports on the Freescale T2080 QDS reference board via on-board SFP+ cages.
- Support for two additional 10Gbps MEMAC Ethernet ports on the Freescale T4240 QDS reference board via optional XAUI riser cards.
- Support for up to 7 additional 10/100/1000Mbps MEMAC Ethernet ports on the Freescale T4240 QDS reference board via optional SGMII riser cards.

Diab Compiler 5.9.4.9 Update

A defect fixing release for Diab 5.9.4.

Features Delivered in March 2016 (SR0450)

These features were included in the March release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

VxWorks Plus: VxWorks Combined with Advanced Capabilities to Meet Industry-Specific Requirements

VxWorks Plus is a new product that combines all of the features of the VxWorks Core Platform and those previously available within the five market profiles (Aerospace, Consumer, Industrial, Medical, and Networking).

Current VxWorks 7 subscription customers who have also purchased a market profile (Aerospace, Consumer, Industrial, Medical, and Networking) may be eligible for VxWorks Plus

at no additional cost. Contact Wind River Sales for product and pricing details at +1-800-872-4977 or inquiries@windriver.com.

VxWorks Regression Test Suite

A standard test suite for customers and partners to validate correct operation of VxWorks on their boards and BSPs.

Freescale LS2085A Support

Support for the Freescale LS2085A in ARMv7 mode.

Unified Intel Architecture BSP on Braswell CRB

Support for the Braswell CRB.

GNU 4.8.1.6 Support

A minor defect fixing release for GNU 4.8.

DHCP "client ID" Type Permits Handling of UUID

This feature changes the code of DHCP client and server that deals with the client ID; it now permits use of UUID as well.

Configuration and Build Updates

In this release, some changes have been made to the directory structure under **vxworks-7/pkgs**. Some folders that in the past were installed without a version number such as:

vxworks-7/pkgs/connectivity/usb
vxworks-7/pkgs/net/ipnet

have been changed such that they will now reflect the version of the layer installed at that location:

vxworks-7/pkgs/connectivity/usb-1.1.0.6
vxworks-7/pkgs/net/ipnet- 1.1.1.2

This was done to remove the possibility of overwriting previous versions of these layers during a maintenance upgrade. A customer who is upgrading will have both the un-versioned and the versioned directories, while a new installation would have only the new directories.

The directories affected are as follows:

app/gsoap/
app/snmp/
app/webcli/
connectivity/can/
connectivity/ieee1394/
connectivity/sdmmc/
connectivity/usb/
ipc/dsi/
ipc/tipc/
net/ipnet/
os/drv/vxbus/

os/lang-lib/cplus/
os/lang-lib/libc/
os/lang-lib/tool/
storage/api/
storage/app/
storage/bdm/
storage/fs/
ui/audio/
ui/evdev/
ui/fbdev/
ui/font/
ui/gpudev/
ui/image/
ui/raster/
ui/tilcon/

gpudev Driver for Intel HD Graphics GPU

Support for openGL with 3D acceleration and frame buffer on the gen 6 and gen 7 Intel HD Graphics GPUs as found in many Atom and Core processors up to the 4th generation Core (Haswell) architecture.

NTP Upgrade

Upgrade of the NTP version to version 4.2.8p4.

OpenSSL as a shared library for RTP

Provides the ability to build OpenSSL as a shared library to be used from RTP space instead of kernel space.

Features Delivered in January 2016 (SR0440)

These features were included in the January release of VxWorks 7.

Some features may not be available in your installation, based on the VxWorks 7 Profiles you purchased.

New VxWorks 7 Release Numbering

Starting with the January 2016 release, Wind River will be using a release number to identify each release of VxWorks 7. This will enable customers to identify each release with a number and then install that release on their development machine using the Wind River installer. The Wind River Installer will show the release number, a six digit alphanumeric number that will increment over time to identify the order of release.

VxWorks 7 Intel Architecture 10 Gb Ethernet Support

Support for the 10 Gb Ethernet interface on the Broadwell DE chip, validated on the Camelback Mountain CRB.

Intel Skylake CRBs

Support for Intel's sixth generation Core processors (codenamed "Skylake").

Security Profile Update

Support for TPM and the TrouSerS Trusted Computing Software stack to access it. It also includes improvements to the user management framework.

Texas Instruments TI AM57xx BSP

Support for the ARM Cortex A15 and ARM Cortex M4 processors in the TI AM57xx on the evaluation module.

Freescale Vybrid VX6xx Frame Buffer Driver

Support for the frame buffer on the Freescale Vybrid Vx6xx board to provide graphics capabilities.

TCP Delayed Acknowledgment Timer

A change to the network stack to make the TCP delayed acknowledgment timer user configurable.

Workbench 4 and OS Tools Update

Support for Live Patch.