

Zweite Generation der Ginzinger Embedded Linux Distribution. Basierend auf Mainline Linux Kernel 6.18 und 5.10 (i.MX8M)

1 Hardware Unterstützung

- NPTL (Native POSIX Thread Library)
- Compiler Optimierung: O2
- Linker Optimierung: hash=both, O1
- Konsole: automatisch (kernel argumente)

i.MX28:

- ARMv5TEJ
- EABI (embedded-application binary interface)
- softfloat

i.MX53:

- ARMv7-A
- EABI (embedded-application binary interface)
- hardfloat: vfpv3/neon (FPU Register)

i.MX6:

- ARMv7-A
- EABI (embedded-application binary interface)
- hardfloat: vfpv3/neon-fp16 (FPU Register)

i.MX6 UltraLite/ULL:

- ARMv7-VE
- EABI (embedded-application binary interface)
- hardfloat: vfpv4/neon (FPU Register)

i.MX8M:

- ARMv8-A
- AArch64 ABI

i586:

- x86 i586

2 Qt Creator

- qt-creator-v8.0.2

- Qt-570f5b2105df1ea052bec0d6dbf8a00137274371

- Kompatibel: Debian: 11, 12, 13 Ubuntu: 26.04 (LTS)

3 GINZINGER UPDATE MECHANISMUS

- ge_update_V7.19
- Einfache Erzeugung von Update-Images
- Automatische Erkennung der System-Konfiguration (system-type, ...)
- Patch- oder Full-Updates für Patch-Versions-Nummer
- Konfigurierbare Update-Regeln (down-date, re-date, up-date)

- Zusätzliche Checks
- Automatische Display-Rotation
- Unterstützung für Update von MMC/SD-Karten
- Unterstützung Kernel-Parameter für rootfs-, data- und flag-partition
- Unterstützung rootfs-Filesysteme: squashfs, ubifs, jffs2 auf ubi

- Unterstützung data-Filesysteme: jffs2 und ubifs
- Unterstützung für Update vom internen Flash (Daten Partition)
- Verwendung von squashfs statt cramfs für Update Images auf i.MX6, i.MX6UL und i.MX8
- Unterstützung für Headless Devices (ohne Framebuffer)

4 KERNEL SOURCE

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5 PROJECT TEMPLATES

- | | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> • EMPTY • c • cpp | <ul style="list-style-type: none"> • nodejs ^{2,3,4,6} • qtcore • qtgui | <ul style="list-style-type: none"> • qtquick ^{3,4,6} • rust • tflite-label-image ^{2,3,4,6} | <ul style="list-style-type: none"> • tflite-python-label-wav ^{2,3,4,6} |
|---|--|---|--|

6 SOFTWARE PAKETE FÜR GELIN-PROJEKTE

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|--|--|--|---|
| <ul style="list-style-type: none"> • audio_base • audio_tools • busybox • ca_certs • can_utils • datafs_async • datafs_ext4_data_mode_orde • display_eglfskms ^{3,6} • dosfstools • e2fsprogs • firmware_pan9019 • firmware_pan9028 • firmware_rtl8192cu • firmware_tiwli18xx • fonts_X11 • fonts_base • fonts_dejavu • fonts_liberation • gdbserver • ge_ethmgr • ge_update ^{1,2,3,4,6} | <ul style="list-style-type: none"> • ge_wlanmgr • gpg2 • gpio_tools • gstreamer • gstreamer_bayer2rgbneon ^{2,3,4} • gstreamer_v4l2 • hotplugd • i2c_tools • libgecan_tools • libopenssl • linrpcd2 • mariadb ^{1,2,3,4,6} • mtdutils • mtdutils_test • nodejs ^{2,3,4,6} • packages_common_helper.sh • python3 ^{2,3,4,6} • qt_common • qt_display_auto • qt_display_common • qt_display_eglfskms ^{3,6} | <ul style="list-style-type: none"> • qt_display_linuxfb • qt_misc • qt_plugins_3d ^{3,6} • qt_plugins_bearer • qt_plugins_canbus • qt_plugins_imageformats • qt_plugins_input_misc • qt_plugins_location • qt_plugins_multimedia • qt_plugins_qmldebug ^{3,4,6} • qt_plugins_sensors • qt_plugins_sql • qt_plugins_webview ⁶ • qt_qmlmodules_3d ^{3,6} • qt_qmlmodules_bluetooth ^{3,4,6} • qt_qmlmodules_charts ^{3,4,6} • qt_qmlmodules_common ^{3,4,6} • qt_qmlmodules_graphicaleffec ^{3,6} • qt_qmlmodules_location ^{3,4,6} • qt_qmlmodules_multimedia ^{3,6} • qt_qmlmodules_nfc ^{3,4,6} | <ul style="list-style-type: none"> • qt_qmlmodules_qml ^{3,4,6} • qt_qmlmodules_qt_labs ^{3,4,6} • qt_qmlmodules_quick2 ^{3,4,6} • qt_qmlmodules_sensors ^{3,4,6} • qt_qmlmodules_test ^{3,4,6} • qt_qmlmodules_webchannel ^{3,4,6} • qt_qmlmodules_webengine ⁶ • qt_qmlmodules_webkit ^{3,4,6} • qt_qmlmodules_websockets ^{3,4,6} • qt_qmlmodules_webview ⁶ • qt_quick ^{3,6} • qt_touchscreen • qt_webengine ⁶ • rng • rootfs_base • splashscreen • splashscreen_logo • ssh_client • ssh_server • telnet_server • tensorflow_lite ^{2,3,4,6} |
|--|--|--|---|

- tensorflow_lite_cpu^{2,3,4,6}
- terminfo
- tpmtools
- tslib

- tslib_tools
- tslib_uinput
- ubiutils
- valgrind_callgrind^{2,3,4,5,6}

- valgrind_common^{2,3,4,5,6}
- valgrind_full^{2,3,4,5,6}
- valgrind_memcheck^{2,3,4,5,6}
- wlan

- zoneinfo

7 QUELLEN PAKETE

7.1 TOOLCHAIN

- binutils-*
- gcc-*
- gettext-tiny*

- glibc-*
- gmp-*
- isl*

- linux-
- mpc-*
- mpfr*

- ncurses*

7.2 BUILDROOT

- acl-2.3.2
- alsa-lib-1.2.13
- alsa-utils-1.2.13
- at-3.2.5
- attr-2.5.2
- aubio-152d6819b360c2e7b379ee3f^{2,3,4,5,6}
- aumix-2.9.1
- autoconf-2.72
- autoconf-archive-2023.02.20
- automake-1.16.5
- avahi-0.8
- bayer2rgb-neon-bc950b3398ba034^{2,3,4,6}
- berkeleydb-5.3.28
- binutils-2.43.1
- bison-3.8.2
- bluez5_utils-5.79

- bluez5_utils-headers-5.79
- boost-1.83.0
- brotli-1.1.0
- bubblewrap-0.11.0
- busybox-1.37.0
- bzip2-1.0.8
- c-ares-1.34.6
- ca-certificates-20250419
- cairo-1.18.4
- can-utils-2023.03
- cifs-utils-7.4
- cmake-3.31.9
- cpuinfo-8a1772a0c5c447df2d18ed^{2,3,4,6}
- cramfs-2.1
- crda-4.15
- cryptsetup-2.8.4
- cups-2.4.16

- cups-filters-1.28.17
- cyrus-sasl-2.1.28
- dbus-1.14.10
- dbus-glib-0.114
- dejavu-2.37
- dhystone-2
- dnsmasq-2.91
- dosfstools-4.2
- dtc-1.7.2
- e2fsprogs-1.47.2
- eigen-3.4.0^{2,3,4,6}
- elfutils-0.193
- ethtool-6.14
- evemu-2.7.0
- evtest-1.35
- expat-2.7.5
- faad2-2.11.1
- fakeroot-1.36

- farmhash-0d859a811870d10f53a59^{2,3,4,6}
- fbdump-0.4.2
- fbgrab-1.5
- fcgiwrap-99c942c90063c73734e56^{2,3,4,6}
- ffmpeg-6.1.3
- fft2d-2006.12.28^{2,3,4,6}
- fftw-double-3.3.10
- firmware-imx-8.24⁶
- flac-1.4.3
- flatbuffers-23.1.21^{1,2,3,4,6}
- flex-2.6.4
- fmt-11.0.2
- fontconfig-2.16.0
- freetype-2.13.3
- gawk-5.3.1
- gcc-final-13.4.0

- gcc-initial-13.4.0
- gdb-15.2
- ge-host-rustc-1.1
- ge-mxt-app-15949
- gemmlowp-16e8662c34917be006511^{2,3,4,6}
- genext2fs-1.5.0
- gengetopt-2.23^{2,3,4,6}
- gettext-tiny-0.3.2
- ghostscript-10.06.0
- ghostscript-fonts-8.11
- glib-networking-2.76.0
- glibc-2.41-123-gfb4db64a04ad6c^{2,3,4,6}
- glibmm-2.76.0
- glmark2-2023.01^{3,6}
- gmp-6.3.0
- gnupg-2.4.9
- gnutils-3.8.12
- gperf-3.1
- gst1-libav-1.24.13
- gst1-plugins-bad-1.24.13
- gst1-plugins-base-1.24.13
- gst1-plugins-bayer2rgb-neon-b6^{2,3,4,6}
- gst1-plugins-good-1.24.13
- gst1-plugins-ugly-1.24.13
- gstreamer1-1.24.13
- gutenprint-5.3.5
- gzip-1.13
- harfbuzz-10.3.0^{1,2,3,4,6}
- hostapd-2.11
- hotplugd-14993
- htop-3.3.0
- i2c-tools-4.4
- icu-73-2
- ifplugd-0.28
- imagemagick-7.1.2-15
- imx-mkimage-lf-6.6.23-2.0.0⁶
- inotify-tools-3.20.2.2
- input-event-daemon-0.1.3
- intltool-0.51.0
- iperf3-3.18
- iproute2-6.14.0
- iptables-1.8.11
- isl-0.26
- iw-6.9
- jasper-2.0.33
- jbig2dec-0.20
- jimtcl-0.81
- jitterentropy-library-3.6.1
- jpeg-turbo-2.1.5^{1,2,3,4,6}
- jq-1.7.1
- json-c-0.18
- kbd-2.6.4
- kmod-33
- lame-3.100
- lapack-3.10.1^{1,2,3,4,6}
- lcms2-2.16
- ldd-crosstool-ng-1.24.0
- leveldb-1.23
- libabseil-cpp-20250127.0
- libaio-0.3.113
- libao-1.2.0
- libargon2-20190702
- libassuan-2.5.7
- libatomic_ops-7.8.2
- libbacktrace-9b7f216e867916594^{1,2,3,4,6}
- libbsd-0.11.7
- libcamera-v0.5.0
- libcap-2.73
- libcap-ng-0.8.5
- libcurl-8.19.0
- libdaemon-0.14
- libdrm-2.4.124
- libepoxy-1.5.10^{1,2,3,4,6}
- liberation-2.1.5
- libestr-0.1.11
- libevdev-1.13.1
- libevent-2.1.12
- libfastjson-0.99.9.1
- libfcgi-2.4.7
- libffi-3.4.6
- libftdi-0.20
- libgcrypt-1.11.1
- libgecan-1529
- libglib2-2.82.5
- libglu-9.0.3^{3,6}
- libgpg-error-1.51
- libgpiod-1.6.5
- libhttpparser-2.9.4
- libical-1.0.1
- libjpeg-9f
- libkrb5-1.21.3
- libksba-1.6.7
- liblog4c-localtime-1.0
- liblogging-1.0.6
- libmd-1.1.0
- libmicrohttpd-1.0.3
- libmms-0.6.4
- libmnl-1.0.5
- libmodbus-3.1.11
- libmpeg2-0.5.1
- libnftnl-1.2.7
- libnl-3.11.0
- libnpth-1.8
- libnspr-4.36^{3,4,6}
- libnss-3.108^{3,4,6}
- libogg-1.3.5
- libopenh264-2.5.1
- libopenssl-3.5.6
- libpcap-1.10.5
- libpng-1.6.57
- libpsl-0.21.5
- libpthread-stubs-0.5
- libqrencode-4.1.1
- libseccomp-2.5.5
- libsigc-3.4.0
- libsndfile-1.2.2
- libsocketcan-0.0.12
- libsoup-2.74.3
- libsoup3-3.6.6
- libssh2-1.11.1
- libsysfs-2.1.1

- libtalloc-2.4.2
- libtasn1-4.21.0
- libtheora-1.1.1
- libtirpc-1.3.6
- libtool-2.4.6
- libtraceevent-1.8.4
- libtracefs-1.8.2
- libuboot-ge-env-1.5951
- libunistring-1.3
- liburcu-0.14.0
- liburiparser-1.0.0
- libusb-1.0.27
- libusb-compat-0.1.8
- libuv-1.51.0
- libv4l-1.28.1
- libvncserver-0.9.14
- libvorbis-1.3.7
- libvpx-1.16.0
- libwebsockets-4.3.3
- libwpe-1.16.3 ^{1,2,3,4,6}
- libxcb-1.15
- libxcrypt-4.4.38
- libxkbcommon-1.9.2
- libxml-parser-perl-2.47
- libxml2-2.15.2
- libxslt-1.1.45
- libyaml-0.2.5
- libzip-1.10.1
- libzlib-1.3.2
- linrpcd2-17040
- linux-headers-5.4.302 ^{1,2,3,4,5}
- linux-headers-6.12.81 ⁶
- linux-zigbee-0.3.1
- linuxconsoletools-1.8.1
- live555-2021.05.03
- log4cplus-2.1.0
- logrotate-3.22.0
- lrzsz-0.12.21rc
- ltrace-82c66409c7a93ca6ad2e456 ^{1,2,3,4,5}
- lttng-libust-2.13.1
- lvm2-2.03.27
- lz4-1.10.0
- lzip-1.25
- lzo-2.10
- lzop-1.04
- m4-1.4.21
- mariadb-10.11.15 ^{1,2,3,4,6}
- mdadm-4.3
- memstat-1.0
- memtester-4.5.1
- mesa3d-25.0.2
- meson-1.7.0
- minizip-4.0.3 ⁶
- mmc-utils-523d8f3cfb219d800f45 ^{1,2,3,4,6}
- mosquito-2.0.22
- mpc-1.3.1
- mpfr-4.1.1
- mpg123-1.32.8
- mtid-2.2.1
- mtdev-1.1.6
- nano-8.2
- nasm-2.16.03 ⁵
- ncurses-6.4-20230603
- ne10-1.2.1 ^{2,3,4}
- neard-0.19
- neon-2-sse-097a5ecacd527d5b5c3 ^{2,3,4,6}
- netcat-openbsd-1.218
- netsnmp-5.9.3
- nettle-3.10.1
- nfs-utils-2.8.6
- nftables-1.1.0
- nftables-python-1.1.0 ^{1,2,3,4,6}
- nhttp2-1.64.0
- nginx-1.28.3
- ninja-1.11.1.g95dee.kitware.jo ^{1,2,3,4,6}
- nodejs-bin-22.22.0 ^{2,3,4,6}
- nodejs-src-22.22.0 ^{2,3,4,6}
- ntp-4.2.8p18
- numactl-2.0.19 ^{5,6}
- oniguruma-6.9.10
- openblas-0.3.30 ⁶
- opencv4-4.12.0
- opencv4-contrib-4.12.0
- openjpeg-2.5.4
- openldap-2.5.19
- openobex-1.7.2
- openssh-10.3p1
- openvpn-2.6.16
- oprofile-1.4.0
- opus-1.4 ^{3,4,6}
- p11-kit-0.25.3
- patchelf-0.13
- pcre-8.45
- pcre2-10.46
- php-8.3.30
- pixman-0.44.2
- pkgconf-2.3.0
- popl-1.19
- pppd-2.5.2
- pptp-linux-1.10.0
- protobuf-29.3
- pwgen-2.08
- python-attrs-25.1.0 ^{1,2,3,4,6}
- python-calver-2022.6.26 ^{1,2,3,4,6}
- python-cython-3.1.2
- python-dateutil-2.9.0 ^{1,2,3,4,6}
- python-distlib-0.3.9 ^{2,3,4,6}
- python-flit-core-3.11.0
- python-hatch-fancy-pypi-readme ^{1,2,3,4,6}
- python-hatch-vc-0.4.0 ^{1,2,3,4,6}
- python-hatchling-1.27.0 ^{1,2,3,4,6}
- python-iniconfig-2.0.0 ^{1,2,3,4,6}
- python-installer-0.7.0
- python-jinja-2.3.1.6
- python-mako-1.3.8
- python-markupsafe-3.0.2
- python-numpy-1.26.4 ^{1,2,3,4,6}
- python-packaging-24.2
- python-paths-spec-0.12.1 ^{1,2,3,4,6}
- python-pillow-11.1.0 ^{1,2,3,4,6}
- python-pip-25.2 ^{1,2,3,4,6}

- python-pluggy-1.5.0 ^{1,2,3,4,6}
- python-ply-3.11
- python-protobuf-29.3 ^{1,2,3,4,6}
- python-py-1.11.0 ^{1,2,3,4,6}
- python-pybind-2.13.6 ^{1,2,3,4,6}
- python-pycparser-2.22 ^{3,6}
- python-pycryptodomex-3.21.0
- python-pypa-build-1.2.2
- python-pyparsing-3.2.1 ^{1,2,3,4,6}
- python-pyproject-hooks-1.2.0
- python-pytest-8.3.4 ^{1,2,3,4,6}
- python-pytz-2025.2 ^{1,2,3,4,6}
- python-pyyaml-6.0.2
- python-pyzmq-25.1.2 ^{1,2,3,4,6}
- python-setuptools-80.9.0
- python-setuptools-scm-8.1.0 ^{1,2,3,4,6}
- python-six-1.17.0 ^{1,2,3,4,6}
- python-toml-0.10.2 ^{1,2,3,4,6}
- python-trove-classifiers-2025. ^{1,2,3,4,6}
- python-typing-extensions-4.12. ^{1,2,3,4,6}
- python-wheel-0.45.1
- python3-3.12.12
- qemu-9.2.0 ^{2,3,4,6}
- qjson-0.9.0
- qpdf-10.5.0
- qt53d-9bf4d03e2515f7c454647d54 ^{3,6}
- qt5base-2b9835f5c9bcfe3105b60a ^{3,6}
- qt5charts-7315c48bcec88014e781 ^{3,6}
- qt5connectivity-99f30db37c6344 ^{3,6}
- qt5declarative-50c8def85480648 ^{3,6}
- qt5graphicaleffects-2c39e673d6 ^{3,6}
- qt5imageformats-4e4f5fc6bdac96 ^{3,6}
- qt5location-3beb9c810611337fde ^{3,6}
- qt5multimedia-53069c9c6eb52b74 ^{3,6}
- qt5quickcontrols-9325659ec390e ^{3,4,6}
- qt5quickcontrols2-69fea340f8f4 ^{3,4,6}
- qt5script-572daa83e990ce88cca2 ^{3,4,6}
- qt5sensors-bf0b718cd0b6c7823e9 ^{3,4,6}
- qt5serialbus-616bc5b962cdcacb1 ^{3,4,6}
- qt5serialport-34c19c6441cd440d ^{3,4,6}
- qt5svg-690128b2b8fb6d6fbd43b2 ^{3,4,6}
- qt5tools-f82ed367d1b80b69d738c ^{3,6}
- qt5webchannel-fca83088ef430f96 ^{3,6}
- qt5webengine-5.15.14 ⁶
- qt5webengine-chromium-18c9261d ⁶
- qt5webengine-chromium-catapult ⁶
- qt5webkit-5.212.0-alpha4 ^{1,2,3,4,6}
- qt5websockets-dbbdc64b804f7c4d ^{1,2,3,4,6}
- qt5webview-bbb1891595aba23ff3c ⁶
- qt5xmlpatterns-087f6f35bd027f9 ⁶
- quazip-1.4
- qwt-6.1.6
- readline-8.2
- rng-tools-6.17
- rp-pppoe-4.0
- rpcbind-1.2.7
- rsync-3.4.1
- rsyslog-8.2412.0
- rt-tests-2.8 ^{5,6}
- ruby-3.4.9 ^{1,2,3,4,6}
- rust-bin-1.82.0
- ruy-83fd40d730feb0804fafbc2d88 ^{2,3,4,6}
- sdl-1.2.15
- sdl2-2.30.12
- sdl_mixer-d1725fcb7c4e987aeb7 ^{2,3,4,6}
- sdl_net-620b0ba7dd84a0fdbd4cc ^{2,3,4,6}
- slirp-4.8.0 ^{2,3,4,6}
- snappy-1.2.1
- socat-1.8.0.3
- softether-4.30-9700-beta
- sox-7524160b29a476f7e87bc14fdd ^{2,3,4,6}
- spawn-fcgi-1.6.4
- spidev_test-4.10 ^{1,2,3,4,5}
- spidev_test-5.8 ⁶
- splashscreen-splashscreen_V2. ^{1,2,3,4,5}
- sqlite-3.50.4
- squashfs-4.6.1
- sshpass-1.10
- strace-6.13
- stress-1.0.7
- sudo-1.9.17p1
- swig-4.1.1 ^{1,2,3,4,6}
- sysstat-12.7.5
- tar-1.35
- tcpdump-4.99.5
- tensorflow-lite-2.13.0 ^{2,3,4,6}
- tiff-4.7.1
- tmux-3.3a
- tpm2-abrmd-2.3.3
- tpm2-openssl-1.2.0
- tpm2-tools-5.7
- tpm2-tss-3.2.3
- tpm2-tss-engine-1.2.0
- trace-cmd-3.3.2
- tremor-7c30a66346199f3f09017a0 ^{2,3,4,6}
- tslib-1.23
- tzdata-2025c
- ubiecdump-13895
- uboot-tools-2021.07
- unifdef-2.12 ^{1,2,3,4,6}
- unzip-6.0
- usb_modeswitch-2.6.1
- util-linux-2.41.4
- valgrind-3.24.0 ^{2,3,4,5,6}
- vorbis-tools-1.4.3
- waf-2.1.5
- wavpack-5.7.0
- wayland-1.23.1 ^{1,2,3,4,6}
- wayland-protocols-1.39 ^{1,2,3,4,6}
- webp-1.5.0 ^{1,2,3,4,6}
- wget-1.25.0
- whetstone-1.2
- wireless-regdb-2026.02.04
- wireless_tools-30.pre9
- wlansimplescan-r274

- woff2-1.0.2
- wpa_supplicant-2.11
- wpebackendfdo-1.14.3 ^{1,2,3,4,6}
- wpewebkit-2.50.5 ^{1,2,3,4,6}
- x11vnc-0.9.16
- xapp_bdfopcf-1.1.1
- xapp_mkfontscale-1.2.2
- xapp_xauth-1.1.2
- xapp_xbacklight-1.2.3
- xapp_xev-1.2.5
- xapp_xeyes-1.2.0
- xapp_xhost-1.0.9
- xapp_xinput-1.6.4
- xapp_xkbcomp-1.4.6
- xapp_xkbevd-1.1.5
- xapp_xkbprint-1.0.6
- xapp_xlogo-1.0.6
- xapp_xmessage-1.0.6
- xapp_xmodmap-1.0.11

- xapp_xset-1.2.5
- xapp_xsetmode-1.0.0
- xapp_xsetpointer-1.0.1
- xapp_xsetroot-1.1.3
- xcb-proto-1.15.2
- xcb-util-0.4.1
- xcb-util-image-0.4.1
- xcb-util-wm-0.4.2
- xdata_xbitmaps-1.1.3
- xdg-dbus-proxy-0.1.6
- xfont_encodings-1.0.7
- xfont_fontalias-1.0.5
- xfont_font-cursor-misc-1.0.4
- xfont_font-misc-misc-1.1.3
- xfont_font-util-1.4.0
- xkeyboard-config-2.38
- xlib_libICE-1.1.1
- xlib_libSM-1.2.4
- xlib_libX11-1.8.7

- xlib_libXScrnSaver-1.2.4
- xlib_libXau-1.0.11
- xlib_libXaw-1.0.15
- xlib_libXcomposite-0.4.6
- xlib_libXcursor-1.2.1
- xlib_libXdamage-1.1.6
- xlib_libXdmcp-1.1.4
- xlib_libXext-1.3.5
- xlib_libXfixes-6.0.1
- xlib_libXfont-1.5.4
- xlib_libXfont2-2.0.6
- xlib_libXft-2.3.8
- xlib_libXi-1.8.1
- xlib_libXinerama-1.1.5
- xlib_libXmu-1.1.4
- xlib_libXpm-3.5.17
- xlib_libXrandr-1.5.3
- xlib_libXrender-0.9.11
- xlib_libXres-1.2.2

- xlib_libXt-1.3.0
- xlib_libXtst-1.2.4
- xlib_libXv-1.0.12
- xlib_libXxf86vm-1.1.5
- xlib_libfontenc-1.1.7
- xlib_libxcvt-0.1.2 ⁴
- xlib_libxkbfile-1.1.2
- xlib_libxshmfence-1.3.3
- xlib_xtrans-1.5.0
- xmlstarlet-1.6.1
- xorgproto-2024.1
- xterm-389
- xutil_util-macros-1.20.0
- xvkbd-4.1
- xz-5.6.4
- zeromq-4.3.5 ^{1,2,3,4,6}
- zic-2025c
- zip-3.0
- zstd-1.5.7