



LegalInformation:OpenSTLinux licenses - v1.2.0



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A quality version of this page, approved on 16 April 2020, was based off this revision.

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1 Top Software license agreement (SLA) and third-party licences

Contents of SPDX license images:

MACHINE	stm32mp1
IMAGE	st-image-weston-openstlinux-weston-stm32mp1
DISTRO	openstlinux-weston
VERSION	2.6-openstlinux--20-02-19
OE branch	thud

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SLA0048 Rev4/March 2018

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1.2 gcnano userland multi binary

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1.3 Firmware-cypress-bcm4343

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1.4 Firmware-broadcom_bcm43xx

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BROADCOM BCM43XX

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2 Boot partition:

List of packages used during the different boot phases:

Recipe Name	Version	License
linux-stm32mp	4.19	GPLv2
optee-os-stm32mp	3.3.0	BSD-2-Clause & BSD-3-Clause
tf-a-stm32mp	2.0	BSD-3-Clause
u-boot-stm32mp	2018.11	GPLv2+



3 Kernel partitions:

3.1 bootfs partition:

Image	st-image-bootfs-openstlinux-weston-stm32mp1
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Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-imagebootfs	4.19	GPLv2	Linux STM32MP Kernel
u-boot-stm32mp-extlinux	u-boot-stm32mp-extlinux	2.6	MIT	Provide 'extlinux.conf' file for U-Boot
u-boot-stm32mp-splash	u-boot-stm32mp-splash	2018.11	No license to ST trademarks	Universal Boot Loader Splash Screen for stm32mp embedded devices

3.2 rootfs partition:

Image	st-image-weston-openstlinux-weston-stm32mp1
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Recipe Name	Package Name	Version	License	Description
adwaita-icon-theme	adwaita-icon-theme-symbolic	3.28.0	LGPL-3.0	GTK+ icon theme
ai-hand-char-reco-launcher	ai-hand-char-reco-launcher	1.0	GPLv2 & BSD-3-Clause	ai-hand-char-reco-launcher version 1.0-r0
alsa-lib	alsa-conf	1.1.6	LGPLv2.1 & GPLv2+	ALSA sound library
alsa-plugins	alsa-plugins	1.1.6	LGPLv2.1 & GPLv2+	ALSA Plugins
alsa-plugins	alsa-plugins-pulseaudio-conf	1.1.6	LGPLv2.1 & GPLv2+	ALSA Plugins
				Alsa scenario files to enable alsa



Recipe Name	Package Name	Version	License	Description
alsa-state	alsa-state	0.2.0	MIT	state restoration
alsa-state-stm32mp1	alsa-state-stm32mp1	1.0	MIT	Alsa scenario files to enable alsa state restoration
alsa-state	alsa-states	0.2.0	MIT	Alsa scenario files to enable alsa state restoration
alsa-utils	alsa-utils	1.1.6	GPLv2+	ALSA sound utilities
alsa-utils	alsa-utils-acconnect	1.1.6	GPLv2+	ALSA sequencer connection manager
alsa-utils	alsa-utils-alsabat	1.1.6	GPLv2+	Command-line sound tester for ALSA sound card driver
alsa-utils	alsa-utils-alsactl	1.1.6	GPLv2+	Saves/restores ALSA-settings in /etc/asound.state
alsa-utils	alsa-utils-alsaloop	1.1.6	GPLv2+	ALSA PCM loopback utility
alsa-utils	alsa-utils-alsamixer	1.1.6	GPLv2+	ncurses-based control for ALSA mixer and settings
alsa-utils	alsa-utils-alsatplg	1.1.6	GPLv2+	Converts topology text files into binary format for kernel
alsa-utils	alsa-utils-alsaucm	1.1.6	GPLv2+	ALSA Use Case Manager
alsa-utils	alsa-utils-amixer	1.1.6	GPLv2+	Command-line control for ALSA mixer and settings
alsa-utils	alsa-utils-aplay	1.1.6	GPLv2+	Play (and record) sound files using ALSA
alsa-utils	alsa-utils-aseqdump	1.1.6	GPLv2+	Shows the events received at an ALSA sequencer port
alsa-utils	alsa-utils-aseqnet	1.1.6	GPLv2+	Network client/server for ALSA sequencer
alsa-utils	alsa-utils-iecset	1.1.6	GPLv2+	ALSA utility for setting/showing IEC958 (S/PDIF) status bits
alsa-utils	alsa-utils-midi	1.1.6	GPLv2+	Miscellaneous MIDI utilities for ALSA
alsa-utils	alsa-utils-speakertest	1.1.6	GPLv2+	ALSA surround speaker test utility
apt	apt	1.2.24	GPLv2.0+	Advanced front-end for dpkg
apt-openstlinux	apt-openstlinux	1.0	MIT	Add apt configuration files for OpenSTLinux



Recipe Name	Package Name	Version	License	Description
avahi	avahi-daemon	0.7	GPLv2+ & LGPLv2.1+	Avahi IPv4LL network address configuration daemon
babeltrace	babeltrace	1.5.6	MIT & GPLv2	Babeltrace - Trace Format Babel Tower
base-files	base-files	3.0.14	GPLv2	Miscellaneous files for the base system
base-passwd	base-passwd	3.5.29	GPLv2+	Base system master password /group files
bash	bash	4.4.18	GPLv3+	An sh-compatible command language interpreter
bc	bc	1.07.1	GPLv3+	Arbitrary precision calculator language
bind	bind-libs	9.11.5-P4	ISC & BSD	ISC Internet Domain Name Server
blktool	blktool	4-7	GPLv2+	Tune low-level block device parameters
blktrace	blktrace	1.2.0 +gitAUTOINC +cca113f2fe	GPLv2	Generates traces of I/O traffic on block devices
bluez5	bluez5	5.50	GPLv2+ & LGPLv2.1+	Linux Bluetooth Stack Userland V5
busybox	busybox	1.29.3	GPLv2 & bzip2	Tiny versions of many common UNIX utilities in a single small executable
busybox	busybox-syslog	1.29.3	GPLv2 & bzip2	Tiny versions of many common UNIX utilities in a single small executable
busybox	busybox-udhcp	1.29.3	GPLv2 & bzip2	Tiny versions of many common UNIX utilities in a single small executable
ca-certificates	ca-certificates	20190110	GPL-2.0+ & MPL-2.0	Common CA certificates
can-utils	can-utils	0.0 +gitrAUTOINC C+4c8fb05cb 4	GPLv2 & BSD-3-Clause	Linux CAN network development utilities
ckernit	ckernit	302	BSD-3-Clause	ckernit version 302-r0



Recipe Name	Package Name	Version	License	Description
consolekit	consolekit	0.4.6	GPLv2+	Framework for defining and tracking users, login sessions, and seats
coreutils	coreutils	8.30	GPLv3+	The basic file, shell and text manipulation utilities
cpufrequtils	cpufrequtils	008	GPLv2	cpufrequtils version 008-r5
curl	curl	7.61.0	MIT	Command line tool and library for client-side URL transfers
dbus	dbus-1	1.12.10	GPLv2+	D-Bus message bus
debianutils	debianutils	4.8.6	GPLv2 & SMAIL_GPL	Miscellaneous utilities specific to Debian
debianutils	debianutils-run-parts	4.8.6	GPLv2 & SMAIL_GPL	Miscellaneous utilities specific to Debian
demo-hotspot-wifi	demo-hotspot-wifi	1.0	MIT	demo-hotspot-wifi version 1.0-r0
demo-launcher	demo-launcher	1.0	BSD-3-Clause	Python script which launch several use-cases
dhcp	dhcp-client	4.4.1	ISC	Internet Software Consortium DHCP package
dhcp	dhcp-libs	4.4.1	ISC	Internet Software Consortium DHCP package
dosfstools	dosfstools	4.1	GPLv3	DOS FAT Filesystem Utilities
dpkg	dpkg	1.18.24	GPLv2.0+	Package maintenance system from Debian
dpkg	dpkg-start-stop	1.18.24	GPLv2.0+	Package maintenance system from Debian
dropbear	dropbear	2018.76	MIT & BSD-3-Clause & BSD-2-Clause & PD	A lightweight SSH and SCP implementation
e2fsprogs	e2fsprogs	1.44.3	GPLv2 & LGPLv2 & BSD & MIT	Ext2 Filesystem Utilities
	e2fsprogs-			



Recipe Name	Package Name	Version	License	Description
e2fsprogs	badblocks	1.44.3	GPLv2	Ext2 Filesystem Utilities
e2fsprogs	e2fsprogs-e2fsck	1.44.3	GPLv2	Ext2 Filesystem Utilities
e2fsprogs	e2fsprogs-mke2fs	1.44.3	GPLv2	Ext2 Filesystem Utilities
e2fsprogs	e2fsprogs-resize2fs	1.44.3	GPLv2 & LGPLv2 & BSD & MIT	Ext2 Filesystem Utilities
elfutils	elfutils	0.175	(GPLv3 & Elfutils-Exception)	Utilities and libraries for handling compiled object files
encodings	encodings	1.0.4	PD	The Xorg font encoding files
ethtool	ethtool	4.19	GPLv2+	Display or change ethernet card settings
event-gtk-player	event-gtk-player	1.0 +gitAUTOINC +eb47b69dab	GPLv2+	GTK player with touch screen management
evtest	evtest	1.33 +AUTOINC+a b140a2dab	GPLv2	Simple tool for input event debugging
fb-test	fb-test	1.1.0	GPLv2	Test suite for Linux framebuffer
file	file	5.34	BSD	File classification tool
font-alias	font-alias	1.0.3	MIT	X font aliases
font-util	font-util	1.3.1	BSD & MIT	X.Org font package creation /installation utilities
fontconfig	fontconfig-utils	2.12.6	MIT-style & MIT & PD	Generic font configuration library
gdb	gdbserver	8.2	GPLv2 & GPLv3 & LGPLv2 & LGPLv3	GNU debugger
glib-networking	glib-networking	2.54.1	LGPLv2	GLib networking extensions
glibc-locale	glibc-binary-localedata-en-us	2.28	GPLv2 & LGPLv2.1	binary locale definition for en-us
glibc-locale	glibc-gconv	2.28	GPLv2 & LGPLv2.1	Locale data from glibc
glibc-	glibc-gconv-		GPLv2 &	gconv module for character set



Recipe Name	Package Name	Version	License	Description
locale	iso8859-1	2.28	LGPLv2.1	iso8859-1
glmark2	glmark2	2017.07 +AUTOINC+5 e0e448ca2	GPLv3+ & SGIv1	OpenGL (ES) 2.0 benchmark
gnupg	gnupg	2.2.12	GPLv3 & LGPLv3	GNU Privacy Guard - encryption and signing tools (2.x)
gobject-introspection	gobject-introspection	1.58.0	LGPLv2+ & GPLv2+	Middleware layer between GObject-using C libraries and language bindings
gptfdisk	gptfdisk	1.0.4	GPLv2	Utility for modifying GPT disk partitioning
grep	grep	3.1	GPLv3	GNU grep utility
gststreamer1.0	gststreamer1.0	1.14.4	LGPLv2+	GStreamer 1.0 multimedia framework
gststreamer1.0-libav	gststreamer1.0-libav	1.14.4	(GPLv3+ & LGPLv3+)	Libav-based GStreamer 1.x plugin
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-accurip	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for accurip
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-adpcmdec	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for adpcmdec
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-adpcmenc	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for adpcmenc
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-aiff	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for aiff
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-asfmux	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for asfmux
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-audiobuffersplit	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for audiobuffersplit
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-audiofxbad	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for audiofxbad



Recipe Name	Package Name	Version	License	Description
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-audiolatency	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for audiolatency
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-audiomixmatrix	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for audiomixmatrix
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-audiovisualizers	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for audiovisualizers
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-autoconvert	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for autoconvert
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-bayer	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for bayer
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-bluez	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for bluez
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-bz2	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for bz2
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-camerabin	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for camerabin
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-coloreffects	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for coloreffects
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-compositor	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for compositor
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-curl	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for curl
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-dashdemux	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for dashdemux
gststreamer1	gststreamer1.0-		GPLv2+ &	



Recipe Name	Package Name	Version	License	Description
.0-plugins-bad	plugins-bad-debugutilsbad	1.14.4	LGPLv2+ & LGPLv2.1+	GStreamer plugin for debugutilsbad
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-decklink	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for decklink
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-dtls	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for dtls
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-dvb	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for dvb
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-dvbsuboverlay	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for dvbsuboverlay
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-dvdsdu	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for dvdsdu
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-faac	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for faac
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-faceoverlay	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for faceoverlay
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-fbdevsink	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for fbdevsink
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-festival	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for festival
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-fieldanalysis	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for fieldanalysis
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-freeverb	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for freeverb
gstreamer1.0-plugins-			GPLv2+ & LGPLv2+ &	



Recipe Name	Package Name	Version	License	Description
bad	gstreamer1.0-plugins-bad-frei0r	1.14.4	LGPLv2.1+	GStreamer plugin for frei0r
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-gaudieffects	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for gaudieffects
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-gdp	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for gdp
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-geometrictransform	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for geometrictransform
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-hls	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for hls
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-id3tag	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for id3tag
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-inter	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for inter
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-interlace	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for interlace
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-ipcpipeline	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for ipcpipeline
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-ivfparse	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for ivfparse
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-ivtc	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for ivtc
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-jp2kdecimator	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for jp2kdecimator
gstreamer1	gstreamer1.0-		GPLv2+ &	



Recipe Name	Package Name	Version	License	Description
.0-plugins-bad	plugins-bad-jpegformat	1.14.4	LGPLv2+ & LGPLv2.1+	GStreamer plugin for jpegformat
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-kms	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for kms
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-legacyrawparse	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for legacyrawparse
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-meta	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	Plugins for the GStreamer multimedia framework 1.x
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-midi	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for midi
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-mpegpsdemux	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for mpegpsdemux
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-mpegpsmux	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for mpegpsmux
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-mpegtsdemux	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for mpegtsdemux
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-mpegtsmux	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for mpegtsmux
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-mxf	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for mxf
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-netsim	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for netsim
gststreamer1.0-plugins-bad	gststreamer1.0-plugins-bad-pcapparse	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for pcapparse
gststreamer1.0-plugins-			GPLv2+ & LGPLv2+ &	



Recipe Name	Package Name	Version	License	Description
bad	gstreamer1.0-plugins-bad-pnm	1.14.4	LGPLv2.1+	GStreamer plugin for pnm
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-proxy	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for proxy
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-removesilence	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for removesilence
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-rfbsrc	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for rfbsrc
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-rsvg	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for rsvg
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-rtpnvif	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for rtpnvif
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-sbc	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for sbc
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-sdpelem	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for sdpelem
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-segmentclip	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for segmentclip
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-shm	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for shm
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-siren	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for siren
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-smooth	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for smooth
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-		GPLv2+ & LGPLv2+ &	



Recipe Name	Package Name	Version	License	Description
bad	smoothstreaming	1.14.4	LGPLv2.1+	GStreamer plugin for smoothstreaming
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-sndfile	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for sndfile
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-speed	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for speed
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-stereo	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for stereo
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-subenc	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for subenc
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-timecode	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for timecode
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-ttmlsubs	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for ttmlsubs
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-uvch264	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for uvch264
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-vcsrc	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for vcsrc
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-videofiltersbad	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for videofiltersbad
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-videoframe-audiolevel	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for videoframe-audiolevel
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-videoparsersbad	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for videoparsersbad
gstreamer1	gstreamer1.0-		GPLv2+ &	



Recipe Name	Package Name	Version	License	Description
.0-plugins-bad	plugins-bad-videosignal	1.14.4	LGPLv2+ & LGPLv2.1+	GStreamer plugin for videosignal
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-vmnc	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for vmnc
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-waylandsink	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for waylandsink
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-webp	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for webp
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-y4mdec	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for y4mdec
gstreamer1.0-plugins-bad	gstreamer1.0-plugins-bad-yadif	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	GStreamer plugin for yadif
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base	1.14.4	GPLv2+ & LGPLv2+	Plugins for the GStreamer multimedia framework 1.x
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-adder	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for adder
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-alsa	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for alsa
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-app	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for app
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-apps	1.14.4	GPLv2+ & LGPLv2+	Plugins for the GStreamer multimedia framework 1.x
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-audioconvert	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audioconvert
gstreamer1.0-plugins-	gstreamer1.0-plugins-base-			



Recipe Name	Package Name	Version	License	Description
base	audiomixer	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audiomixer
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-audiorate	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audiorate
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-audioresample	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audioresample
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-audiotestsrc	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audiotestsrc
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-encoding	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for encoding
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-gio	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for gio
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-meta	1.14.4	GPLv2+ & LGPLv2+	Plugins for the GStreamer multimedia framework 1.x
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-ogg	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for ogg
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-opengl	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for opengl
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-pango	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for pango
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-pbtypes	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for pbtypes
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-playback	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for playback
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-			



Recipe Name	Package Name	Version	License	Description
base	rawparse	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for rawparse
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-subparse	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for subparse
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-tcp	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for tcp
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-theora	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for theora
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-typefindfunctions	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for typefindfunctions
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videoconvert	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videoconvert
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videorate	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videorate
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videoscale	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videoscale
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videotestsrc	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videotestsrc
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-volume	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for volume
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-vorbis	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for vorbis
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-ximagesink	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for ximagesink
gstreamer1.0-plugins-	gstreamer1.0-plugins-base-			



Recipe Name	Package Name	Version	License	Description
base	xvimagesink	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for xvimagesink
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-alaw	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for alaw
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-alpha	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for alpha
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-alpha-color	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for alphacolor
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-apetag	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for apetag
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-audiofx	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for audiofx
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-audioparsers	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for audioparsers
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-auparse	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for auparse
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-autodetect	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for autodetect
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-avi	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for avi
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-cairo	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for cairo
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-cutter	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for cutter
gstreamer1.0-plugins-	gstreamer1.0-plugins-good-			



Recipe Name	Package Name	Version	License	Description
good	debug	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for debug
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-deinterlace	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for deinterlace
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-dtmf	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for dtmf
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-effectv	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for effectv
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-equalizer	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for equalizer
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-flac	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for flac
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-flv	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for flv
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-flxdec	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for flxdec
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-gdkpixbuf	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for gdkpixbuf
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-goom	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for goom
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-goom2k1	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for goom2k1
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-gtk	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for gtk
gstreamer1.0-plugins-	gstreamer1.0-plugins-good-			



Recipe Name	Package Name	Version	License	Description
good	icydemux	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for icydemux
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-id3demux	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for id3demux
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-imagefreeze	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for imagefreeze
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-interleave	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for interleave
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-isomp4	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for isomp4
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-jpeg	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for jpeg
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-lame	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for lame
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-level	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for level
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-matroska	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for matroska
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-meta	1.14.4	GPLv2+ & LGPLv2.1+	Plugins for the GStreamer multimedia framework 1.x
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-mpg123	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for mpg123
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-mulaw	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for mulaw
gstreamer1.0-plugins-	gstreamer1.0-plugins-good-			



Recipe Name	Package Name	Version	License	Description
good	multifile	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for multifile
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-multipart	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for multipart
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-navigationtest	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for navigationtest
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-ossaudio	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for ossaudio
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-png	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for png
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-pulseaudio	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for pulseaudio
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-replaygain	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for replaygain
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-rtp	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for rtp
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-rtpmanager	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for rtpmanager
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-rtsp	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for rtsp
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-shapewipe	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for shapewipe
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-smpte	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for smpte
gstreamer1.0-plugins-	gstreamer1.0-plugins-good-			



Recipe Name	Package Name	Version	License	Description
good	soup	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for soup
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-spectrum	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for spectrum
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-speex	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for speex
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-taglib	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for taglib
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-udp	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for udp
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-video4linux2	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for video4linux2
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-videobox	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for videobox
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-videocrop	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for videocrop
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-videofilter	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for videofilter
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-videomixer	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for videomixer
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-wavenc	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for wavenc
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-wavparse	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for wavparse
gstreamer1.0-plugins-	gstreamer1.0-plugins-good-			



Recipe Name	Package Name	Version	License	Description
good	ximagesrc	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for ximagesrc
gstreamer1.0-plugins-good	gstreamer1.0-plugins-good-y4menc	1.14.4	GPLv2+ & LGPLv2.1+	GStreamer plugin for y4menc
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-a52dec	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	GStreamer plugin for a52dec
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-asf	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	GStreamer plugin for asf
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-dvdlpcmdec	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	GStreamer plugin for dvdlpcmdec
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-dvdsb	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	GStreamer plugin for dvdsb
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-meta	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	Plugins for the GStreamer multimedia framework 1.x
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-mpeg2dec	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	GStreamer plugin for mpeg2dec
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-realmedia	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	GStreamer plugin for realmedia
gstreamer1.0-plugins-ugly	gstreamer1.0-plugins-ugly-xingmux	1.14.4	GPLv2+ & LGPLv2.1+ & LGPLv2+	GStreamer plugin for xingmux
gstreamer1.0-rtsp-server	gstreamer1.0-rtsp-server-meta	1.14.4	LGPLv2	A library on top of GStreamer for building an RTSP server
gstreamer1.0-rtsp-server	gstreamer1.0-rtsp-server-rtspclientsink	1.14.4	LGPLv2	GStreamer plugin for rtspclientsink
			LGPLv2 & LGPLv2+ &	



Recipe Name	Package Name	Version	License	Description
gtk+3	gtk+3-demo	3.22.30	LGPLv2.1+	Multi-platform toolkit for creating GUIs
gtk+3	gtk+3-locale-en	3.22.30	LGPLv2 & LGPLv2+ & LGPLv2.1+	Multi-platform toolkit for creating GUIs - en translations
hdparm	hdparm	9.56	BSD	Utility for viewing/manipulating IDE disk drive/driver parameters
hicolor-icon-theme	hicolor-icon-theme	0.17	GPLv2	Default icon theme that all icon themes automatically inherit from
hostapd	hostapd	2.6	BSD-3-Clause	User space daemon for extended IEEE 802.11 management
i2c-tools	i2c-tools	4.1	GPLv2+	Set of i2c tools for linux
iproute2	iproute2	4.19.0	GPLv2+	TCP / IP networking and traffic control utilities
iptables	iptables	1.6.2	GPLv2+	Tools for managing kernel packet filtering capabilities
iptables	iptables-module-ebt-802-3	1.6.2	GPLv2+	iptables module ebt-802-3
iptables	iptables-module-ebt-ip	1.6.2	GPLv2+	iptables module ebt-ip
iptables	iptables-module-ebt-log	1.6.2	GPLv2+	iptables module ebt-log
iptables	iptables-module-ebt-mark-m	1.6.2	GPLv2+	iptables module ebt-mark-m
iptables	iptables-module-ip6t-ah	1.6.2	GPLv2+	iptables module ip6t-ah
iptables	iptables-module-ip6t-dnat	1.6.2	GPLv2+	iptables module ip6t-dnat
iptables	iptables-module-ip6t-dnpt	1.6.2	GPLv2+	iptables module ip6t-dnpt
iptables	iptables-module-ip6t-dst	1.6.2	GPLv2+	iptables module ip6t-dst
iptables	iptables-module-ip6t-eui64	1.6.2	GPLv2+	iptables module ip6t-eui64
	iptables-module-			



Recipe Name	Package Name	Version	License	Description
iptables	ip6t-frag	1.6.2	GPLv2+	iptables module ip6t-frag
iptables	iptables-module-ip6t-hbh	1.6.2	GPLv2+	iptables module ip6t-hbh
iptables	iptables-module-ip6t-hl	1.6.2	GPLv2+	iptables module ip6t-hl
iptables	iptables-module-ip6t-icmp6	1.6.2	GPLv2+	iptables module ip6t-icmp6
iptables	iptables-module-ip6t-ipv6header	1.6.2	GPLv2+	iptables module ip6t-ipv6header
iptables	iptables-module-ip6t-log	1.6.2	GPLv2+	iptables module ip6t-log
iptables	iptables-module-ip6t-masquerade	1.6.2	GPLv2+	iptables module ip6t-masquerade
iptables	iptables-module-ip6t-mh	1.6.2	GPLv2+	iptables module ip6t-mh
iptables	iptables-module-ip6t-netmap	1.6.2	GPLv2+	iptables module ip6t-netmap
iptables	iptables-module-ip6t-redirect	1.6.2	GPLv2+	iptables module ip6t-redirect
iptables	iptables-module-ip6t-reject	1.6.2	GPLv2+	iptables module ip6t-reject
iptables	iptables-module-ip6t-rt	1.6.2	GPLv2+	iptables module ip6t-rt
iptables	iptables-module-ip6t-snat	1.6.2	GPLv2+	iptables module ip6t-snat
iptables	iptables-module-ip6t-snpt	1.6.2	GPLv2+	iptables module ip6t-snpt
iptables	iptables-module-ip6t-srh	1.6.2	GPLv2+	iptables module ip6t-srh
iptables	iptables-module-ipt-ah	1.6.2	GPLv2+	iptables module ipt-ah
iptables	iptables-module-ipt-clusterip	1.6.2	GPLv2+	iptables module ipt-clusterip
iptables	iptables-module-ipt-dnat	1.6.2	GPLv2+	iptables module ipt-dnat
	iptables-module-			



Recipe Name	Package Name	Version	License	Description
iptables	iptables-ecn	1.6.2	GPLv2+	iptables module ipt-ecn
iptables	iptables-module-iptables-icmp	1.6.2	GPLv2+	iptables module ipt-icmp
iptables	iptables-module-iptables-log	1.6.2	GPLv2+	iptables module ipt-log
iptables	iptables-module-iptables-masquerade	1.6.2	GPLv2+	iptables module ipt-masquerade
iptables	iptables-module-iptables-netmap	1.6.2	GPLv2+	iptables module ipt-netmap
iptables	iptables-module-iptables-realm	1.6.2	GPLv2+	iptables module ipt-realm
iptables	iptables-module-iptables-redirect	1.6.2	GPLv2+	iptables module ipt-redirect
iptables	iptables-module-iptables-reject	1.6.2	GPLv2+	iptables module ipt-reject
iptables	iptables-module-iptables-snat	1.6.2	GPLv2+	iptables module ipt-snat
iptables	iptables-module-iptables-ttl	1.6.2	GPLv2+	iptables module ipt-ttl
iptables	iptables-module-iptables-ulog	1.6.2	GPLv2+	iptables module ipt-ulog
iptables	iptables-module-xt-addrtype	1.6.2	GPLv2+	iptables module xt-addrtype
iptables	iptables-module-xt-audit	1.6.2	GPLv2+	iptables module xt-audit
iptables	iptables-module-xt-bpf	1.6.2	GPLv2+	iptables module xt-bpf
iptables	iptables-module-xt-cgroup	1.6.2	GPLv2+	iptables module xt-cgroup
iptables	iptables-module-xt-checksum	1.6.2	GPLv2+	iptables module xt-checksum
iptables	iptables-module-xt-classify	1.6.2	GPLv2+	iptables module xt-classify
iptables	iptables-module-xt-cluster	1.6.2	GPLv2+	iptables module xt-cluster
	iptables-module-			



Recipe Name	Package Name	Version	License	Description
iptables	xt-comment	1.6.2	GPLv2+	iptables module xt-comment
iptables	iptables-module-xt-connbytes	1.6.2	GPLv2+	iptables module xt-connbytes
iptables	iptables-module-xt-connlimit	1.6.2	GPLv2+	iptables module xt-connlimit
iptables	iptables-module-xt-connmark	1.6.2	GPLv2+	iptables module xt-connmark
iptables	iptables-module-xt-connsecmark	1.6.2	GPLv2+	iptables module xt-connsecmark
iptables	iptables-module-xt-conntrack	1.6.2	GPLv2+	iptables module xt-conntrack
iptables	iptables-module-xt-cpu	1.6.2	GPLv2+	iptables module xt-cpu
iptables	iptables-module-xt-ct	1.6.2	GPLv2+	iptables module xt-ct
iptables	iptables-module-xt-dccp	1.6.2	GPLv2+	iptables module xt-dccp
iptables	iptables-module-xt-devgroup	1.6.2	GPLv2+	iptables module xt-devgroup
iptables	iptables-module-xt-dscp	1.6.2	GPLv2+	iptables module xt-dscp
iptables	iptables-module-xt-ecn	1.6.2	GPLv2+	iptables module xt-ecn
iptables	iptables-module-xt-esp	1.6.2	GPLv2+	iptables module xt-esp
iptables	iptables-module-xt-hashlimit	1.6.2	GPLv2+	iptables module xt-hashlimit
iptables	iptables-module-xt-helper	1.6.2	GPLv2+	iptables module xt-helper
iptables	iptables-module-xt-hmark	1.6.2	GPLv2+	iptables module xt-hmark
iptables	iptables-module-xt-idletimer	1.6.2	GPLv2+	iptables module xt-idletimer
iptables	iptables-module-xt-ipcomp	1.6.2	GPLv2+	iptables module xt-ipcomp
	iptables-module-			



Recipe Name	Package Name	Version	License	Description
iptables	xt-iprange	1.6.2	GPLv2+	iptables module xt-iprange
iptables	iptables-module-xt-ipvs	1.6.2	GPLv2+	iptables module xt-ipvs
iptables	iptables-module-xt-led	1.6.2	GPLv2+	iptables module xt-led
iptables	iptables-module-xt-length	1.6.2	GPLv2+	iptables module xt-length
iptables	iptables-module-xt-limit	1.6.2	GPLv2+	iptables module xt-limit
iptables	iptables-module-xt-mac	1.6.2	GPLv2+	iptables module xt-mac
iptables	iptables-module-xt-mangle	1.6.2	GPLv2+	iptables module xt-mangle
iptables	iptables-module-xt-mark	1.6.2	GPLv2+	iptables module xt-mark
iptables	iptables-module-xt-multiport	1.6.2	GPLv2+	iptables module xt-multiport
iptables	iptables-module-xt-nfacct	1.6.2	GPLv2+	iptables module xt-nfacct
iptables	iptables-module-xt-nflog	1.6.2	GPLv2+	iptables module xt-nflog
iptables	iptables-module-xt-nfqueue	1.6.2	GPLv2+	iptables module xt-nfqueue
iptables	iptables-module-xt-notrack	1.6.2	GPLv2+	iptables module xt-notrack
iptables	iptables-module-xt-osf	1.6.2	GPLv2+	iptables module xt-osf
iptables	iptables-module-xt-owner	1.6.2	GPLv2+	iptables module xt-owner
iptables	iptables-module-xt-physdev	1.6.2	GPLv2+	iptables module xt-physdev
iptables	iptables-module-xt-pkttype	1.6.2	GPLv2+	iptables module xt-pkttype
iptables	iptables-module-xt-policy	1.6.2	GPLv2+	iptables module xt-policy
	iptables-module-			



Recipe Name	Package Name	Version	License	Description
iptables	xt-quota	1.6.2	GPLv2+	iptables module xt-quota
iptables	iptables-module-xt-rateest	1.6.2	GPLv2+	iptables module xt-rateest
iptables	iptables-module-xt-recent	1.6.2	GPLv2+	iptables module xt-recent
iptables	iptables-module-xt-rpfilter	1.6.2	GPLv2+	iptables module xt-rpfilter
iptables	iptables-module-xt-sctp	1.6.2	GPLv2+	iptables module xt-sctp
iptables	iptables-module-xt-secmark	1.6.2	GPLv2+	iptables module xt-secmark
iptables	iptables-module-xt-set	1.6.2	GPLv2+	iptables module xt-set
iptables	iptables-module-xt-socket	1.6.2	GPLv2+	iptables module xt-socket
iptables	iptables-module-xt-standard	1.6.2	GPLv2+	iptables module xt-standard
iptables	iptables-module-xt-state	1.6.2	GPLv2+	iptables module xt-state
iptables	iptables-module-xt-statistic	1.6.2	GPLv2+	iptables module xt-statistic
iptables	iptables-module-xt-string	1.6.2	GPLv2+	iptables module xt-string
iptables	iptables-module-xt-synproxy	1.6.2	GPLv2+	iptables module xt-synproxy
iptables	iptables-module-xt-tcp	1.6.2	GPLv2+	iptables module xt-tcp
iptables	iptables-module-xt-tcpmss	1.6.2	GPLv2+	iptables module xt-tcpmss
iptables	iptables-module-xt-tcpoptstrip	1.6.2	GPLv2+	iptables module xt-tcpoptstrip
iptables	iptables-module-xt-tee	1.6.2	GPLv2+	iptables module xt-tee
iptables	iptables-module-xt-time	1.6.2	GPLv2+	iptables module xt-time
	iptables-module-			



Recipe Name	Package Name	Version	License	Description
iptables	xt-tos	1.6.2	GPLv2+	iptables module xt-tos
iptables	iptables-module-xt-tproxy	1.6.2	GPLv2+	iptables module xt-tproxy
iptables	iptables-module-xt-trace	1.6.2	GPLv2+	iptables module xt-trace
iptables	iptables-module-xt-u32	1.6.2	GPLv2+	iptables module xt-u32
iptables	iptables-module-xt-udp	1.6.2	GPLv2+	iptables module xt-udp
iptables	iptables-modules	1.6.2	GPLv2+	Tools for managing kernel packet filtering capabilities
iputils	iputils	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-arping	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-clockdiff	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-ping	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-rarpd	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-rdisc	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-tftpd	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-tracepath	s20180629	BSD & GPLv2+	Network monitoring tools
iputils	iputils-traceroute6	s20180629	BSD & GPLv2+	Network monitoring tools
iw	iw	4.14	BSD	nl80211 based CLI configuration utility for wireless devices
kbd	kbd	2.0.4	GPLv2+	Keytable files and keyboard utilities
kbd	kbd-consolefonts	2.0.4	GPLv2+	Keytable files and keyboard utilities
kbd	kbd-keymaps	2.0.4	GPLv2+	Keytable files and keyboard utilities
linux-				



Recipe Name	Package Name	Version	License	Description
stm32mp	kernel-4.19.94	4.19	GPLv2	Linux STM32MP Kernel
linux-stm32mp	kernel-module-6lowpan-4.19.94	4.19	GPLv2	6lowpan kernel module
linux-stm32mp	kernel-module-8021q-4.19.94	4.19	GPLv2	8021q kernel module
linux-stm32mp	kernel-module-act-bpf-4.19.94	4.19	GPLv2	act-bpf kernel module
linux-stm32mp	kernel-module-act-csum-4.19.94	4.19	GPLv2	act-csum kernel module
linux-stm32mp	kernel-module-act-gact-4.19.94	4.19	GPLv2	act-gact kernel module
linux-stm32mp	kernel-module-act-ife-4.19.94	4.19	GPLv2	act-ife kernel module
linux-stm32mp	kernel-module-act-meta-mark-4.19.94	4.19	GPLv2	act-meta-mark kernel module
linux-stm32mp	kernel-module-act-meta-skbprio-4.19.94	4.19	GPLv2	act-meta-skbprio kernel module
linux-stm32mp	kernel-module-act-meta-skbtcindex-4.19.94	4.19	GPLv2	act-meta-skbtcindex kernel module
linux-stm32mp	kernel-module-act-mirred-4.19.94	4.19	GPLv2	act-mirred kernel module
linux-stm32mp	kernel-module-act-nat-4.19.94	4.19	GPLv2	act-nat kernel module
linux-stm32mp	kernel-module-act-pedit-4.19.94	4.19	GPLv2	act-pedit kernel module
linux-stm32mp	kernel-module-act-police-4.19.94	4.19	GPLv2	act-police kernel module
linux-stm32mp	kernel-module-act-sample-4.19.94	4.19	GPLv2	act-sample kernel module
linux-stm32mp	kernel-module-act-skbmod-4.19.94	4.19	GPLv2	act-skbmod kernel module
	kernel-module-act-tunnel-key-			



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	4.19.94	4.19	GPLv2	act-tunnel-key kernel module
linux-stm32mp	kernel-module-act-vlan-4.19.94	4.19	GPLv2	act-vlan kernel module
linux-stm32mp	kernel-module-adv7180-4.19.94	4.19	GPLv2	adv7180 kernel module
linux-stm32mp	kernel-module-adv7511-4.19.94	4.19	GPLv2	adv7511 kernel module
linux-stm32mp	kernel-module-adxl34x-4.19.94	4.19	GPLv2	adxl34x kernel module
linux-stm32mp	kernel-module-adxl34x-i2c-4.19.94	4.19	GPLv2	adxl34x-i2c kernel module
linux-stm32mp	kernel-module-adxl34x-spi-4.19.94	4.19	GPLv2	adxl34x-spi kernel module
linux-stm32mp	kernel-module-aes-arm-4.19.94	4.19	GPLv2	aes-arm kernel module
linux-stm32mp	kernel-module-aes-arm-bs-4.19.94	4.19	GPLv2	aes-arm-bs kernel module
linux-stm32mp	kernel-module-aes-arm-ce-4.19.94	4.19	GPLv2	aes-arm-ce kernel module
linux-stm32mp	kernel-module-ah4-4.19.94	4.19	GPLv2	ah4 kernel module
linux-stm32mp	kernel-module-ah6-4.19.94	4.19	GPLv2	ah6 kernel module
linux-stm32mp	kernel-module-algif-aead-4.19.94	4.19	GPLv2	algif-aead kernel module
linux-stm32mp	kernel-module-algif-rng-4.19.94	4.19	GPLv2	algif-rng kernel module
linux-stm32mp	kernel-module-algif-skcipher-4.19.94	4.19	GPLv2	algif-skcipher kernel module
	kernel-module-analogix-dp-			



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	4.19.94	4.19	GPLv2	analogix-dp kernel module
linux-stm32mp	kernel-module-arc4-4.19.94	4.19	GPLv2	arc4 kernel module
linux-stm32mp	kernel-module-arp-tables-4.19.94	4.19	GPLv2	arp-tables kernel module
linux-stm32mp	kernel-module-arpt-mangle-4.19.94	4.19	GPLv2	arpt-mangle kernel module
linux-stm32mp	kernel-module-arptable-filter-4.19.94	4.19	GPLv2	arptable-filter kernel module
linux-stm32mp	kernel-module-atmel-hlcdc-4.19.94	4.19	GPLv2	atmel-hlcdc kernel module
linux-stm32mp	kernel-module-atmel-hlcdc-dc-4.19.94	4.19	GPLv2	atmel-hlcdc-dc kernel module
linux-stm32mp	kernel-module-atmel-mxt-ts-4.19.94	4.19	GPLv2	atmel-mxt-ts kernel module
linux-stm32mp	kernel-module-authenc-4.19.94	4.19	GPLv2	authenc kernel module
linux-stm32mp	kernel-module-authencesn-4.19.94	4.19	GPLv2	authencesn kernel module
linux-stm32mp	kernel-module-axp20x-pek-4.19.94	4.19	GPLv2	axp20x-pek kernel module
linux-stm32mp	kernel-module-b53-common-4.19.94	4.19	GPLv2	b53-common kernel module
linux-stm32mp	kernel-module-b53-mdio-4.19.94	4.19	GPLv2	b53-mdio kernel module
linux-stm32mp	kernel-module-b53-mmap-4.19.94	4.19	GPLv2	b53-mmap kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-b53-spi-4.19.94	4.19	GPLv2	b53-spi kernel module
linux-stm32mp	kernel-module-b53-srab-4.19.94	4.19	GPLv2	b53-srab kernel module
linux-stm32mp	kernel-module-batman-adv-4.19.94	4.19	GPLv2	batman-adv kernel module
linux-stm32mp	kernel-module-bcm-sf2-4.19.94	4.19	GPLv2	bcm-sf2 kernel module
linux-stm32mp	kernel-module-bcm7xxx-4.19.94	4.19	GPLv2	bcm7xxx kernel module
linux-stm32mp	kernel-module-bcmsysport-4.19.94	4.19	GPLv2	bcmsysport kernel module
linux-stm32mp	kernel-module-bluetooth-4.19.94	4.19	GPLv2	bluetooth kernel module
linux-stm32mp	kernel-module-bluetooth-6lowpan-4.19.94	4.19	GPLv2	bluetooth-6lowpan kernel module
linux-stm32mp	kernel-module-br-netfilter-4.19.94	4.19	GPLv2	br-netfilter kernel module
linux-stm32mp	kernel-module-brcmfmac-4.19.94	4.19	GPLv2	brcmfmac kernel module
linux-stm32mp	kernel-module-brcmutil-4.19.94	4.19	GPLv2	brcmutil kernel module
linux-stm32mp	kernel-module-bridge-4.19.94	4.19	GPLv2	bridge kernel module
linux-stm32mp	kernel-module-btbcm-4.19.94	4.19	GPLv2	btbcm kernel module
linux-stm32mp	kernel-module-btintel-4.19.94	4.19	GPLv2	btintel kernel module
linux-stm32mp	kernel-module-btmrvl-4.19.94	4.19	GPLv2	btmrvl kernel module
linux-stm32mp	kernel-module-btmrvl-sdio-4.19.94	4.19	GPLv2	btmrvl-sdio kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-btrtl-4.19.94	4.19	GPLv2	btrtl kernel module
linux-stm32mp	kernel-module-btusb-4.19.94	4.19	GPLv2	btusb kernel module
linux-stm32mp	kernel-module-capsule-loader-4.19.94	4.19	GPLv2	capsule-loader kernel module
linux-stm32mp	kernel-module-cbc-4.19.94	4.19	GPLv2	cbc kernel module
linux-stm32mp	kernel-module-ccm-4.19.94	4.19	GPLv2	ccm kernel module
linux-stm32mp	kernel-module-cec-4.19.94	4.19	GPLv2	cec kernel module
linux-stm32mp	kernel-module-cfg80211-4.19.94	4.19	GPLv2	cfg80211 kernel module
linux-stm32mp	kernel-module-chacha20-generic-4.19.94	4.19	GPLv2	chacha20-generic kernel module
linux-stm32mp	kernel-module-chacha20-neon-4.19.94	4.19	GPLv2	chacha20-neon kernel module
linux-stm32mp	kernel-module-clk-rk808-4.19.94	4.19	GPLv2	clk-rk808 kernel module
linux-stm32mp	kernel-module-clk-s2mps11-4.19.94	4.19	GPLv2	clk-s2mps11 kernel module
linux-stm32mp	kernel-module-cls-basic-4.19.94	4.19	GPLv2	cls-basic kernel module
linux-stm32mp	kernel-module-cls-bpf-4.19.94	4.19	GPLv2	cls-bpf kernel module
linux-stm32mp	kernel-module-cls-cgroup-4.19.94	4.19	GPLv2	cls-cgroup kernel module
linux-stm32mp	kernel-module-cls-flow-4.19.94	4.19	GPLv2	cls-flow kernel module
linux-stm32mp	kernel-module-cls-flower-4.19.94	4.19	GPLv2	cls-flower kernel module
linux-	kernel-module-cls-			



Recipe Name	Package Name	Version	License	Description
stm32mp	fw-4.19.94	4.19	GPLv2	cls-fw kernel module
linux-stm32mp	kernel-module-cls-matchall-4.19.94	4.19	GPLv2	cls-matchall kernel module
linux-stm32mp	kernel-module-cls-route-4.19.94	4.19	GPLv2	cls-route kernel module
linux-stm32mp	kernel-module-cls-rsvp-4.19.94	4.19	GPLv2	cls-rsvp kernel module
linux-stm32mp	kernel-module-cls-rsvp6-4.19.94	4.19	GPLv2	cls-rsvp6 kernel module
linux-stm32mp	kernel-module-cls-tcindex-4.19.94	4.19	GPLv2	cls-tcindex kernel module
linux-stm32mp	kernel-module-cls-u32-4.19.94	4.19	GPLv2	cls-u32 kernel module
linux-stm32mp	kernel-module-cm36651-4.19.94	4.19	GPLv2	cm36651 kernel module
linux-stm32mp	kernel-module-cmac-4.19.94	4.19	GPLv2	cmac kernel module
linux-stm32mp	kernel-module-cpcap-adc-4.19.94	4.19	GPLv2	cpcap-adc kernel module
linux-stm32mp	kernel-module-cpcap-pwrbutton-4.19.94	4.19	GPLv2	cpcap-pwrbutton kernel module
linux-stm32mp	kernel-module-crc-ccitt-4.19.94	4.19	GPLv2	crc-ccitt kernel module
linux-stm32mp	kernel-module-crc-itu-t-4.19.94	4.19	GPLv2	crc-itu-t kernel module
linux-stm32mp	kernel-module-crc32-arm-ce-4.19.94	4.19	GPLv2	crc32-arm-ce kernel module
linux-stm32mp	kernel-module-cros-ec-core-4.19.94	4.19	GPLv2	cros-ec-core kernel module
linux-stm32mp	kernel-module-cros-ec-i2c-4.19.94	4.19	GPLv2	cros-ec-i2c kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-cros-ec-keyb-4.19.94	4.19	GPLv2	cros-ec-keyb kernel module
linux-stm32mp	kernel-module-cros-ec-spi-4.19.94	4.19	GPLv2	cros-ec-spi kernel module
linux-stm32mp	kernel-module-cryptd-4.19.94	4.19	GPLv2	cryptd kernel module
linux-stm32mp	kernel-module-crypto-simd-4.19.94	4.19	GPLv2	crypto-simd kernel module
linux-stm32mp	kernel-module-crypto-user-4.19.94	4.19	GPLv2	crypto-user kernel module
linux-stm32mp	kernel-module-ctr-4.19.94	4.19	GPLv2	ctr kernel module
linux-stm32mp	kernel-module-cyapatp-4.19.94	4.19	GPLv2	cyapatp kernel module
linux-stm32mp	kernel-module-da9063-4.19.94	4.19	GPLv2	da9063 kernel module
linux-stm32mp	kernel-module-da9063-wdt-4.19.94	4.19	GPLv2	da9063-wdt kernel module
linux-stm32mp	kernel-module-drbg-4.19.94	4.19	GPLv2	drbg kernel module
linux-stm32mp	kernel-module-dsa-core-4.19.94	4.19	GPLv2	dsa-core kernel module
linux-stm32mp	kernel-module-dumb-vga-dac-4.19.94	4.19	GPLv2	dumb-vga-dac kernel module
linux-stm32mp	kernel-module-ebt-802-3-4.19.94	4.19	GPLv2	ebt-802-3 kernel module
linux-stm32mp	kernel-module-ebt-among-4.19.94	4.19	GPLv2	ebt-among kernel module
linux-stm32mp	kernel-module-ebt-arp-4.19.94	4.19	GPLv2	ebt-arp kernel module
linux-	kernel-module-ebt-			



Recipe Name	Package Name	Version	License	Description
stm32mp	arpreply-4.19.94	4.19	GPLv2	ebt-arpreply kernel module
linux-stm32mp	kernel-module-ebt-dnat-4.19.94	4.19	GPLv2	ebt-dnat kernel module
linux-stm32mp	kernel-module-ebt-ip-4.19.94	4.19	GPLv2	ebt-ip kernel module
linux-stm32mp	kernel-module-ebt-ip6-4.19.94	4.19	GPLv2	ebt-ip6 kernel module
linux-stm32mp	kernel-module-ebt-limit-4.19.94	4.19	GPLv2	ebt-limit kernel module
linux-stm32mp	kernel-module-ebt-log-4.19.94	4.19	GPLv2	ebt-log kernel module
linux-stm32mp	kernel-module-ebt-mark-4.19.94	4.19	GPLv2	ebt-mark kernel module
linux-stm32mp	kernel-module-ebt-mark-m-4.19.94	4.19	GPLv2	ebt-mark-m kernel module
linux-stm32mp	kernel-module-ebt-nflog-4.19.94	4.19	GPLv2	ebt-nflog kernel module
linux-stm32mp	kernel-module-ebt-pkttype-4.19.94	4.19	GPLv2	ebt-pkttype kernel module
linux-stm32mp	kernel-module-ebt-redirect-4.19.94	4.19	GPLv2	ebt-redirect kernel module
linux-stm32mp	kernel-module-ebt-snat-4.19.94	4.19	GPLv2	ebt-snat kernel module
linux-stm32mp	kernel-module-ebt-stp-4.19.94	4.19	GPLv2	ebt-stp kernel module
linux-stm32mp	kernel-module-ebt-vlan-4.19.94	4.19	GPLv2	ebt-vlan kernel module
linux-stm32mp	kernel-module-ebtable-broute-4.19.94	4.19	GPLv2	ebtable-broute kernel module
linux-stm32mp	kernel-module-ebtable-filter-4.19.94	4.19	GPLv2	ebtable-filter kernel module
linux-stm32mp	kernel-module-ebtable-nat-4.19.94	4.19	GPLv2	ebtable-nat kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-ebtables-4.19.94	4.19	GPLv2	ebtables kernel module
linux-stm32mp	kernel-module-ecb-4.19.94	4.19	GPLv2	ecb kernel module
linux-stm32mp	kernel-module-ecdh-generic-4.19.94	4.19	GPLv2	ecdh-generic kernel module
linux-stm32mp	kernel-module-echainiv-4.19.94	4.19	GPLv2	echainiv kernel module
linux-stm32mp	kernel-module-edt-ft5x06-4.19.94	4.19	GPLv2	edt-ft5x06 kernel module
linux-stm32mp	kernel-module-efi-pstore-4.19.94	4.19	GPLv2	efi-pstore kernel module
linux-stm32mp	kernel-module-efivarfs-4.19.94	4.19	GPLv2	efivarfs kernel module
linux-stm32mp	kernel-module-efivars-4.19.94	4.19	GPLv2	efivars kernel module
linux-stm32mp	kernel-module-em-canid-4.19.94	4.19	GPLv2	em-canid kernel module
linux-stm32mp	kernel-module-em-cmp-4.19.94	4.19	GPLv2	em-cmp kernel module
linux-stm32mp	kernel-module-em-meta-4.19.94	4.19	GPLv2	em-meta kernel module
linux-stm32mp	kernel-module-em-nbyte-4.19.94	4.19	GPLv2	em-nbyte kernel module
linux-stm32mp	kernel-module-em-text-4.19.94	4.19	GPLv2	em-text kernel module
linux-stm32mp	kernel-module-em-u32-4.19.94	4.19	GPLv2	em-u32 kernel module
linux-stm32mp	kernel-module-esp4-4.19.94	4.19	GPLv2	esp4 kernel module
linux-stm32mp	kernel-module-esp4-offload-4.19.94	4.19	GPLv2	esp4-offload kernel module
linux-stm32mp	kernel-module-esp6-4.19.94	4.19	GPLv2	esp6 kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-esp6-offload-4.19.94	4.19	GPLv2	esp6-offload kernel module
linux-stm32mp	kernel-module-exynosdrm-4.19.94	4.19	GPLv2	exynosdrm kernel module
linux-stm32mp	kernel-module-ff-memless-4.19.94	4.19	GPLv2	ff-memless kernel module
linux-stm32mp	kernel-module-flexcan-4.19.94	4.19	GPLv2	flexcan kernel module
linux-stm32mp	kernel-module-fou-4.19.94	4.19	GPLv2	fou kernel module
linux-stm32mp	kernel-module-fou6-4.19.94	4.19	GPLv2	fou6 kernel module
linux-stm32mp	kernel-module-fsl-dcu-drm-4.19.94	4.19	GPLv2	fsl-dcu-drm kernel module
linux-stm32mp	kernel-module-g-ether-4.19.94	4.19	GPLv2	g-ether kernel module
gcnano-driver-stm32mp	kernel-module-galcore-4.19.94	6.2.4.p4	GPLv1 & MIT	galcore kernel module
linux-stm32mp	kernel-module-garp-4.19.94	4.19	GPLv2	garp kernel module
linux-stm32mp	kernel-module-gcm-4.19.94	4.19	GPLv2	gcm kernel module
linux-stm32mp	kernel-module-genet-4.19.94	4.19	GPLv2	genet kernel module
linux-stm32mp	kernel-module-gf128mul-4.19.94	4.19	GPLv2	gf128mul kernel module
linux-stm32mp	kernel-module-ghash-arm-ce-4.19.94	4.19	GPLv2	ghash-arm-ce kernel module
linux-stm32mp	kernel-module-ghash-generic-4.19.94	4.19	GPLv2	ghash-generic kernel module
linux-stm32mp	kernel-module-goodix-4.19.94	4.19	GPLv2	goodix kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-gre-4.19.94	4.19	GPLv2	gre kernel module
linux-stm32mp	kernel-module-gspca-main-4.19.94	4.19	GPLv2	gspca-main kernel module
linux-stm32mp	kernel-module-hci-uart-4.19.94	4.19	GPLv2	hci-uart kernel module
linux-stm32mp	kernel-module-hsr-4.19.94	4.19	GPLv2	hsr kernel module
linux-stm32mp	kernel-module-i2c-arb-gpio-challenge-4.19.94	4.19	GPLv2	i2c-arb-gpio-challenge kernel module
linux-stm32mp	kernel-module-i2c-cros-ec-tunnel-4.19.94	4.19	GPLv2	i2c-cros-ec-tunnel kernel module
linux-stm32mp	kernel-module-ieee802154-4.19.94	4.19	GPLv2	ieee802154 kernel module
linux-stm32mp	kernel-module-ieee802154-socket-4.19.94	4.19	GPLv2	ieee802154-socket kernel module
linux-stm32mp	kernel-module-ife-4.19.94	4.19	GPLv2	ife kernel module
linux-stm32mp	kernel-module-ina2xx-4.19.94	4.19	GPLv2	ina2xx kernel module
linux-stm32mp	kernel-module-inet-diag-4.19.94	4.19	GPLv2	inet-diag kernel module
linux-stm32mp	kernel-module-ip-gre-4.19.94	4.19	GPLv2	ip-gre kernel module
linux-stm32mp	kernel-module-ip-set-4.19.94	4.19	GPLv2	ip-set kernel module
linux-stm32mp	kernel-module-ip-tables-4.19.94	4.19	GPLv2	ip-tables kernel module
linux-stm32mp	kernel-module-ip-tunnel-4.19.94	4.19	GPLv2	ip-tunnel kernel module
linux-stm32mp	kernel-module-ip-vs-4.19.94	4.19	GPLv2	ip-vs kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-ip-vti-4.19.94	4.19	GPLv2	ip-vti kernel module
linux-stm32mp	kernel-module-ip6-gre-4.19.94	4.19	GPLv2	ip6-gre kernel module
linux-stm32mp	kernel-module-ip6-tables-4.19.94	4.19	GPLv2	ip6-tables kernel module
linux-stm32mp	kernel-module-ip6-tunnel-4.19.94	4.19	GPLv2	ip6-tunnel kernel module
linux-stm32mp	kernel-module-ip6-udp-tunnel-4.19.94	4.19	GPLv2	ip6-udp-tunnel kernel module
linux-stm32mp	kernel-module-ip6-vti-4.19.94	4.19	GPLv2	ip6-vti kernel module
linux-stm32mp	kernel-module-ip6t-ah-4.19.94	4.19	GPLv2	ip6t-ah kernel module
linux-stm32mp	kernel-module-ip6t-eui64-4.19.94	4.19	GPLv2	ip6t-eui64 kernel module
linux-stm32mp	kernel-module-ip6t-frag-4.19.94	4.19	GPLv2	ip6t-frag kernel module
linux-stm32mp	kernel-module-ip6t-hbh-4.19.94	4.19	GPLv2	ip6t-hbh kernel module
linux-stm32mp	kernel-module-ip6t-ipv6header-4.19.94	4.19	GPLv2	ip6t-ipv6header kernel module
linux-stm32mp	kernel-module-ip6t-masquerade-4.19.94	4.19	GPLv2	ip6t-masquerade kernel module
linux-stm32mp	kernel-module-ip6t-mh-4.19.94	4.19	GPLv2	ip6t-mh kernel module
linux-stm32mp	kernel-module-ip6t-npt-4.19.94	4.19	GPLv2	ip6t-npt kernel module
linux-stm32mp	kernel-module-ip6t-reject-4.19.94	4.19	GPLv2	ip6t-reject kernel module
linux-stm32mp	kernel-module-ip6t-rpfilter-4.19.94	4.19	GPLv2	ip6t-rpfilter kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-ip6t-rt-4.19.94	4.19	GPLv2	ip6t-rt kernel module
linux-stm32mp	kernel-module-ip6t-synproxy-4.19.94	4.19	GPLv2	ip6t-synproxy kernel module
linux-stm32mp	kernel-module-ip6table-filter-4.19.94	4.19	GPLv2	ip6table-filter kernel module
linux-stm32mp	kernel-module-ip6table-mangle-4.19.94	4.19	GPLv2	ip6table-mangle kernel module
linux-stm32mp	kernel-module-ip6table-nat-4.19.94	4.19	GPLv2	ip6table-nat kernel module
linux-stm32mp	kernel-module-ip6table-raw-4.19.94	4.19	GPLv2	ip6table-raw kernel module
linux-stm32mp	kernel-module-ipcomp-4.19.94	4.19	GPLv2	ipcomp kernel module
linux-stm32mp	kernel-module-ipcomp6-4.19.94	4.19	GPLv2	ipcomp6 kernel module
linux-stm32mp	kernel-module-ipip-4.19.94	4.19	GPLv2	ipip kernel module
linux-stm32mp	kernel-module-ipt-ah-4.19.94	4.19	GPLv2	ipt-ah kernel module
linux-stm32mp	kernel-module-ipt-clusterip-4.19.94	4.19	GPLv2	ipt-clusterip kernel module
linux-stm32mp	kernel-module-ipt-ecn-4.19.94	4.19	GPLv2	ipt-ecn kernel module
linux-stm32mp	kernel-module-ipt-masquerade-4.19.94	4.19	GPLv2	ipt-masquerade kernel module
linux-stm32mp	kernel-module-ipt-reject-4.19.94	4.19	GPLv2	ipt-reject kernel module
linux-stm32mp	kernel-module-ipt-rpfilter-4.19.94	4.19	GPLv2	ipt-rpfilter kernel module
linux-	kernel-module-ipt-			



Recipe Name	Package Name	Version	License	Description
stm32mp	synproxy-4.19.94	4.19	GPLv2	ipt-synproxy kernel module
linux-stm32mp	kernel-module-iptables-filter-4.19.94	4.19	GPLv2	iptables-filter kernel module
linux-stm32mp	kernel-module-iptables-mangle-4.19.94	4.19	GPLv2	iptables-mangle kernel module
linux-stm32mp	kernel-module-iptables-nat-4.19.94	4.19	GPLv2	iptables-nat kernel module
linux-stm32mp	kernel-module-iptables-raw-4.19.94	4.19	GPLv2	iptables-raw kernel module
linux-stm32mp	kernel-module-ipv6-4.19.94	4.19	GPLv2	ipv6 kernel module
linux-stm32mp	kernel-module-jitterentropy-rng-4.19.94	4.19	GPLv2	jitterentropy-rng kernel module
linux-stm32mp	kernel-module-l2tp-core-4.19.94	4.19	GPLv2	l2tp-core kernel module
linux-stm32mp	kernel-module-lan78xx-4.19.94	4.19	GPLv2	lan78xx kernel module
linux-stm32mp	kernel-module-lcd-4.19.94	4.19	GPLv2	lcd kernel module
linux-stm32mp	kernel-module-led-class-flash-4.19.94	4.19	GPLv2	led-class-flash kernel module
linux-stm32mp	kernel-module-leds-cpcap-4.19.94	4.19	GPLv2	leds-cpcap kernel module
linux-stm32mp	kernel-module-leds-max77693-4.19.94	4.19	GPLv2	leds-max77693 kernel module
linux-stm32mp	kernel-module-leds-max8997-4.19.94	4.19	GPLv2	leds-max8997 kernel module
linux-	kernel-module-			



Recipe Name	Package Name	Version	License	Description
stm32mp	libcrc32c-4.19.94	4.19	GPLv2	libcrc32c kernel module
linux-stm32mp	kernel-module-llc-4.19.94	4.19	GPLv2	llc kernel module
linux-stm32mp	kernel-module-llc2-4.19.94	4.19	GPLv2	llc2 kernel module
linux-stm32mp	kernel-module-mac80211-4.19.94	4.19	GPLv2	mac80211 kernel module
linux-stm32mp	kernel-module-macvlan-4.19.94	4.19	GPLv2	macvlan kernel module
linux-stm32mp	kernel-module-macvtap-4.19.94	4.19	GPLv2	macvtap kernel module
linux-stm32mp	kernel-module-max14577-regulator-4.19.94	4.19	GPLv2	max14577-regulator kernel module
linux-stm32mp	kernel-module-max77693-4.19.94	4.19	GPLv2	max77693 kernel module
linux-stm32mp	kernel-module-max77693-haptic-4.19.94	4.19	GPLv2	max77693-haptic kernel module
linux-stm32mp	kernel-module-max77693-regulator-4.19.94	4.19	GPLv2	max77693-regulator kernel module
linux-stm32mp	kernel-module-max77802-regulator-4.19.94	4.19	GPLv2	max77802-regulator kernel module
linux-stm32mp	kernel-module-max8997-haptic-4.19.94	4.19	GPLv2	max8997-haptic kernel module
linux-stm32mp	kernel-module-max8997-regulator-4.19.94	4.19	GPLv2	max8997-regulator kernel module
linux-stm32mp	kernel-module-max8998-4.19.94	4.19	GPLv2	max8998 kernel module
	kernel-module-mdio-bcm-unimac-			



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	4.19.94	4.19	GPLv2	mdio-bcm-unimac kernel module
linux-stm32mp	kernel-module-media-4.19.94	4.19	GPLv2	media kernel module
linux-stm32mp	kernel-module-microchip-4.19.94	4.19	GPLv2	microchip kernel module
linux-stm32mp	kernel-module-mip6-4.19.94	4.19	GPLv2	mip6 kernel module
linux-stm32mp	kernel-module-ml86v7667-4.19.94	4.19	GPLv2	ml86v7667 kernel module
linux-stm32mp	kernel-module-mms114-4.19.94	4.19	GPLv2	mms114 kernel module
linux-stm32mp	kernel-module-mpls-gso-4.19.94	4.19	GPLv2	mpls-gso kernel module
linux-stm32mp	kernel-module-mrp-4.19.94	4.19	GPLv2	mrp kernel module
linux-stm32mp	kernel-module-mwifiex-4.19.94	4.19	GPLv2	mwifiex kernel module
linux-stm32mp	kernel-module-mwifiex-sdio-4.19.94	4.19	GPLv2	mwifiex-sdio kernel module
linux-stm32mp	kernel-module-mxsfb-4.19.94	4.19	GPLv2	mxsfb kernel module
linux-stm32mp	kernel-module-netlink-diag-4.19.94	4.19	GPLv2	netlink-diag kernel module
linux-stm32mp	kernel-module-nf-conncount-4.19.94	4.19	GPLv2	nf-conncount kernel module
linux-stm32mp	kernel-module-nf-contrack-4.19.94	4.19	GPLv2	nf-contrack kernel module
linux-stm32mp	kernel-module-nf-contrack-amanda-4.19.94	4.19	GPLv2	nf-contrack-amanda kernel module
	kernel-module-nf-contrack-			



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	broadcast-4.19.94	4.19	GPLv2	nf-contrack-broadcast kernel module
linux-stm32mp	kernel-module-nf-contrack-ftp-4.19.94	4.19	GPLv2	nf-contrack-ftp kernel module
linux-stm32mp	kernel-module-nf-contrack-h323-4.19.94	4.19	GPLv2	nf-contrack-h323 kernel module
linux-stm32mp	kernel-module-nf-contrack-irc-4.19.94	4.19	GPLv2	nf-contrack-irc kernel module
linux-stm32mp	kernel-module-nf-contrack-netbios-ns-4.19.94	4.19	GPLv2	nf-contrack-netbios-ns kernel module
linux-stm32mp	kernel-module-nf-contrack-netlink-4.19.94	4.19	GPLv2	nf-contrack-netlink kernel module
linux-stm32mp	kernel-module-nf-contrack-pptp-4.19.94	4.19	GPLv2	nf-contrack-pptp kernel module
linux-stm32mp	kernel-module-nf-contrack-proto-gre-4.19.94	4.19	GPLv2	nf-contrack-proto-gre kernel module
linux-stm32mp	kernel-module-nf-contrack-sip-4.19.94	4.19	GPLv2	nf-contrack-sip kernel module
linux-stm32mp	kernel-module-nf-contrack-snmp-4.19.94	4.19	GPLv2	nf-contrack-snmp kernel module
linux-stm32mp	kernel-module-nf-contrack-tftp-4.19.94	4.19	GPLv2	nf-contrack-tftp kernel module
linux-stm32mp	kernel-module-nf-defrag-ipv4-4.19.94	4.19	GPLv2	nf-defrag-ipv4 kernel module
	kernel-module-nf-defrag-ipv6-			



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	4.19.94	4.19	GPLv2	nf-defrag-ipv6 kernel module
linux-stm32mp	kernel-module-nf-dup-ipv4-4.19.94	4.19	GPLv2	nf-dup-ipv4 kernel module
linux-stm32mp	kernel-module-nf-dup-ipv6-4.19.94	4.19	GPLv2	nf-dup-ipv6 kernel module
linux-stm32mp	kernel-module-nf-log-arp-4.19.94	4.19	GPLv2	nf-log-arp kernel module
linux-stm32mp	kernel-module-nf-log-common-4.19.94	4.19	GPLv2	nf-log-common kernel module
linux-stm32mp	kernel-module-nf-log-ipv4-4.19.94	4.19	GPLv2	nf-log-ipv4 kernel module
linux-stm32mp	kernel-module-nf-log-ipv6-4.19.94	4.19	GPLv2	nf-log-ipv6 kernel module
linux-stm32mp	kernel-module-nf-log-netdev-4.19.94	4.19	GPLv2	nf-log-netdev kernel module
linux-stm32mp	kernel-module-nf-nat-4.19.94	4.19	GPLv2	nf-nat kernel module
linux-stm32mp	kernel-module-nf-nat-amanda-4.19.94	4.19	GPLv2	nf-nat-amanda kernel module
linux-stm32mp	kernel-module-nf-nat-ftp-4.19.94	4.19	GPLv2	nf-nat-ftp kernel module
linux-stm32mp	kernel-module-nf-nat-h323-4.19.94	4.19	GPLv2	nf-nat-h323 kernel module
linux-stm32mp	kernel-module-nf-nat-ipv4-4.19.94	4.19	GPLv2	nf-nat-ipv4 kernel module
linux-stm32mp	kernel-module-nf-nat-ipv6-4.19.94	4.19	GPLv2	nf-nat-ipv6 kernel module
linux-stm32mp	kernel-module-nf-nat-irc-4.19.94	4.19	GPLv2	nf-nat-irc kernel module
linux-stm32mp	kernel-module-nf-nat-pptp-4.19.94	4.19	GPLv2	nf-nat-pptp kernel module
linux-	kernel-module-nf-			



Recipe Name	Package Name	Version	License	Description
stm32mp	nat-proto-gre-4.19.94	4.19	GPLv2	nf-nat-proto-gre kernel module
linux-stm32mp	kernel-module-nf-nat-sip-4.19.94	4.19	GPLv2	nf-nat-sip kernel module
linux-stm32mp	kernel-module-nf-nat-snmpp-basic-4.19.94	4.19	GPLv2	nf-nat-snmpp-basic kernel module
linux-stm32mp	kernel-module-nf-nat-tftp-4.19.94	4.19	GPLv2	nf-nat-tftp kernel module
linux-stm32mp	kernel-module-nf-reject-ipv4-4.19.94	4.19	GPLv2	nf-reject-ipv4 kernel module
linux-stm32mp	kernel-module-nf-reject-ipv6-4.19.94	4.19	GPLv2	nf-reject-ipv6 kernel module
linux-stm32mp	kernel-module-nf-socket-ipv4-4.19.94	4.19	GPLv2	nf-socket-ipv4 kernel module
linux-stm32mp	kernel-module-nf-socket-ipv6-4.19.94	4.19	GPLv2	nf-socket-ipv6 kernel module
linux-stm32mp	kernel-module-nf-synproxy-core-4.19.94	4.19	GPLv2	nf-synproxy-core kernel module
linux-stm32mp	kernel-module-nf-tables-4.19.94	4.19	GPLv2	nf-tables kernel module
linux-stm32mp	kernel-module-nfnetworklink-4.19.94	4.19	GPLv2	nfnetworklink kernel module
linux-stm32mp	kernel-module-nfnetworklink-acct-4.19.94	4.19	GPLv2	nfnetworklink-acct kernel module
linux-stm32mp	kernel-module-nfnetworklink-cthelper-4.19.94	4.19	GPLv2	nfnetworklink-cthelper kernel module
linux-stm32mp	kernel-module-nfnetworklink-cttimeout-4.19.94	4.19	GPLv2	nfnetworklink-cttimeout kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-nfnetlink-log-4.19.94	4.19	GPLv2	nfnetlink-log kernel module
linux-stm32mp	kernel-module-nfnetlink-osf-4.19.94	4.19	GPLv2	nfnetlink-osf kernel module
linux-stm32mp	kernel-module-nfnetlink-queue-4.19.94	4.19	GPLv2	nfnetlink-queue kernel module
linux-stm32mp	kernel-module-nft-counter-4.19.94	4.19	GPLv2	nft-counter kernel module
linux-stm32mp	kernel-module-nft-ct-4.19.94	4.19	GPLv2	nft-ct kernel module
linux-stm32mp	kernel-module-nft-hash-4.19.94	4.19	GPLv2	nft-hash kernel module
linux-stm32mp	kernel-module-nft-limit-4.19.94	4.19	GPLv2	nft-limit kernel module
linux-stm32mp	kernel-module-nft-log-4.19.94	4.19	GPLv2	nft-log kernel module
linux-stm32mp	kernel-module-nft-masq-4.19.94	4.19	GPLv2	nft-masq kernel module
linux-stm32mp	kernel-module-nft-nat-4.19.94	4.19	GPLv2	nft-nat kernel module
linux-stm32mp	kernel-module-nft-numgen-4.19.94	4.19	GPLv2	nft-numgen kernel module
linux-stm32mp	kernel-module-nft-objref-4.19.94	4.19	GPLv2	nft-objref kernel module
linux-stm32mp	kernel-module-nft-queue-4.19.94	4.19	GPLv2	nft-queue kernel module
linux-stm32mp	kernel-module-nft-quota-4.19.94	4.19	GPLv2	nft-quota kernel module
linux-stm32mp	kernel-module-nft-redir-4.19.94	4.19	GPLv2	nft-redir kernel module
linux-stm32mp	kernel-module-nft-reject-4.19.94	4.19	GPLv2	nft-reject kernel module
linux-	kernel-module-			



Recipe Name	Package Name	Version	License	Description
stm32mp	nhc-dest-4.19.94	4.19	GPLv2	nhc-dest kernel module
linux-stm32mp	kernel-module-nhc-fragment-4.19.94	4.19	GPLv2	nhc-fragment kernel module
linux-stm32mp	kernel-module-nhc-hop-4.19.94	4.19	GPLv2	nhc-hop kernel module
linux-stm32mp	kernel-module-nhc-ipv6-4.19.94	4.19	GPLv2	nhc-ipv6 kernel module
linux-stm32mp	kernel-module-nhc-mobility-4.19.94	4.19	GPLv2	nhc-mobility kernel module
linux-stm32mp	kernel-module-nhc-routing-4.19.94	4.19	GPLv2	nhc-routing kernel module
linux-stm32mp	kernel-module-nhc-udp-4.19.94	4.19	GPLv2	nhc-udp kernel module
linux-stm32mp	kernel-module-nsh-4.19.94	4.19	GPLv2	nsh kernel module
linux-stm32mp	kernel-module-ntc-thermistor-4.19.94	4.19	GPLv2	ntc-thermistor kernel module
linux-stm32mp	kernel-module-nxp-ptn3460-4.19.94	4.19	GPLv2	nxp-ptn3460 kernel module
linux-stm32mp	kernel-module-openvswitch-4.19.94	4.19	GPLv2	openvswitch kernel module
linux-stm32mp	kernel-module-ov5640-4.19.94	4.19	GPLv2	ov5640 kernel module
linux-stm32mp	kernel-module-p8022-4.19.94	4.19	GPLv2	p8022 kernel module
linux-stm32mp	kernel-module-panel-samsung-ld9040-4.19.94	4.19	GPLv2	panel-samsung-ld9040 kernel module
linux-stm32mp	kernel-module-panel-samsung-s6e63j0x03-4.19.94	4.19	GPLv2	panel-samsung-s6e63j0x03 kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-panel-samsung-s6e8aa0-4.19.94	4.19	GPLv2	panel-samsung-s6e8aa0 kernel module
linux-stm32mp	kernel-module-parade-ps8622-4.19.94	4.19	GPLv2	parade-ps8622 kernel module
linux-stm32mp	kernel-module-pci-epf-test-4.19.94	4.19	GPLv2	pci-epf-test kernel module
linux-stm32mp	kernel-module-phy-am335x-4.19.94	4.19	GPLv2	phy-am335x kernel module
linux-stm32mp	kernel-module-phy-am335x-control-4.19.94	4.19	GPLv2	phy-am335x-control kernel module
linux-stm32mp	kernel-module-phy-cpcap-usb-4.19.94	4.19	GPLv2	phy-cpcap-usb kernel module
linux-stm32mp	kernel-module-phy-exynos-usb2-4.19.94	4.19	GPLv2	phy-exynos-usb2 kernel module
linux-stm32mp	kernel-module-phy-generic-4.19.94	4.19	GPLv2	phy-generic kernel module
linux-stm32mp	kernel-module-phylink-4.19.94	4.19	GPLv2	phylink kernel module
linux-stm32mp	kernel-module-platform-lcd-4.19.94	4.19	GPLv2	platform-lcd kernel module
linux-stm32mp	kernel-module-psample-4.19.94	4.19	GPLv2	psample kernel module
linux-stm32mp	kernel-module-psnap-4.19.94	4.19	GPLv2	psnap kernel module
linux-stm32mp	kernel-module-pwm-atmel-hlcdc-4.19.94	4.19	GPLv2	pwm-atmel-hlcdc kernel module
linux-stm32mp	kernel-module-pwm-fan-4.19.94	4.19	GPLv2	pwm-fan kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-pwm-fsl-ftm-4.19.94	4.19	GPLv2	pwm-fsl-ftm kernel module
linux-stm32mp	kernel-module-qt1070-4.19.94	4.19	GPLv2	qt1070 kernel module
linux-stm32mp	kernel-module-r8152-4.19.94	4.19	GPLv2	r8152 kernel module
linux-stm32mp	kernel-module-r8a66597-hcd-4.19.94	4.19	GPLv2	r8a66597-hcd kernel module
linux-stm32mp	kernel-module-raw-diag-4.19.94	4.19	GPLv2	raw-diag kernel module
linux-stm32mp	kernel-module-rpmsg-client-sample-4.19.94	4.19	GPLv2	rpmsg-client-sample kernel module
linux-stm32mp	kernel-module-rt2800lib-4.19.94	4.19	GPLv2	rt2800lib kernel module
linux-stm32mp	kernel-module-rt2800usb-4.19.94	4.19	GPLv2	rt2800usb kernel module
linux-stm32mp	kernel-module-rt2x00lib-4.19.94	4.19	GPLv2	rt2x00lib kernel module
linux-stm32mp	kernel-module-rt2x00usb-4.19.94	4.19	GPLv2	rt2x00usb kernel module
linux-stm32mp	kernel-module-rtc-bq32k-4.19.94	4.19	GPLv2	rtc-bq32k kernel module
linux-stm32mp	kernel-module-rtc-cpcap-4.19.94	4.19	GPLv2	rtc-cpcap kernel module
linux-stm32mp	kernel-module-rtc-da9063-4.19.94	4.19	GPLv2	rtc-da9063 kernel module
linux-stm32mp	kernel-module-rtc-efi-4.19.94	4.19	GPLv2	rtc-efi kernel module
linux-stm32mp	kernel-module-rtc-hym8563-4.19.94	4.19	GPLv2	rtc-hym8563 kernel module
linux-stm32mp	kernel-module-rtc-max8997-4.19.94	4.19	GPLv2	rtc-max8997 kernel module
linux-	kernel-module-rtc-			



Recipe Name	Package Name	Version	License	Description
stm32mp	max8998-4.19.94	4.19	GPLv2	rtc-max8998 kernel module
linux-stm32mp	kernel-module-rtc-rk808-4.19.94	4.19	GPLv2	rtc-rk808 kernel module
linux-stm32mp	kernel-module-rtc-rs5c372-4.19.94	4.19	GPLv2	rtc-rs5c372 kernel module
linux-stm32mp	kernel-module-rtc-rx8581-4.19.94	4.19	GPLv2	rtc-rx8581 kernel module
linux-stm32mp	kernel-module-rtc-s35390a-4.19.94	4.19	GPLv2	rtc-s35390a kernel module
linux-stm32mp	kernel-module-rtc-s5m-4.19.94	4.19	GPLv2	rtc-s5m kernel module
linux-stm32mp	kernel-module-rtl-usb-4.19.94	4.19	GPLv2	rtl-usb kernel module
linux-stm32mp	kernel-module-rtl8192c-common-4.19.94	4.19	GPLv2	rtl8192c-common kernel module
linux-stm32mp	kernel-module-rtl8192cu-4.19.94	4.19	GPLv2	rtl8192cu kernel module
linux-stm32mp	kernel-module-rtlwifi-4.19.94	4.19	GPLv2	rtlwifi kernel module
linux-stm32mp	kernel-module-samsung-keypad-4.19.94	4.19	GPLv2	samsung-keypad kernel module
linux-stm32mp	kernel-module-sch-cbq-4.19.94	4.19	GPLv2	sch-cbq kernel module
linux-stm32mp	kernel-module-sch-choke-4.19.94	4.19	GPLv2	sch-choke kernel module
linux-stm32mp	kernel-module-sch-codel-4.19.94	4.19	GPLv2	sch-codel kernel module
linux-stm32mp	kernel-module-sch-drr-4.19.94	4.19	GPLv2	sch-drr kernel module
linux-stm32mp	kernel-module-sch-dsmark-4.19.94	4.19	GPLv2	sch-dsmark kernel module
linux-	kernel-module-			



Recipe Name	Package Name	Version	License	Description
stm32mp	sch-fq-4.19.94	4.19	GPLv2	sch-fq kernel module
linux-stm32mp	kernel-module-sch-fq-codel-4.19.94	4.19	GPLv2	sch-fq-codel kernel module
linux-stm32mp	kernel-module-sch-gred-4.19.94	4.19	GPLv2	sch-gred kernel module
linux-stm32mp	kernel-module-sch-hfsc-4.19.94	4.19	GPLv2	sch-hfsc kernel module
linux-stm32mp	kernel-module-sch-hhf-4.19.94	4.19	GPLv2	sch-hhf kernel module
linux-stm32mp	kernel-module-sch-htb-4.19.94	4.19	GPLv2	sch-htb kernel module
linux-stm32mp	kernel-module-sch-mqprio-4.19.94	4.19	GPLv2	sch-mqprio kernel module
linux-stm32mp	kernel-module-sch-multiq-4.19.94	4.19	GPLv2	sch-multiq kernel module
linux-stm32mp	kernel-module-sch-netem-4.19.94	4.19	GPLv2	sch-netem kernel module
linux-stm32mp	kernel-module-sch-pie-4.19.94	4.19	GPLv2	sch-pie kernel module
linux-stm32mp	kernel-module-sch-plug-4.19.94	4.19	GPLv2	sch-plug kernel module
linux-stm32mp	kernel-module-sch-prio-4.19.94	4.19	GPLv2	sch-prio kernel module
linux-stm32mp	kernel-module-sch-qlq-4.19.94	4.19	GPLv2	sch-qlq kernel module
linux-stm32mp	kernel-module-sch-red-4.19.94	4.19	GPLv2	sch-red kernel module
linux-stm32mp	kernel-module-sch-sfb-4.19.94	4.19	GPLv2	sch-sfb kernel module
linux-stm32mp	kernel-module-sch-sfq-4.19.94	4.19	GPLv2	sch-sfq kernel module
linux-	kernel-module-			



Recipe Name	Package Name	Version	License	Description
stm32mp	sch-tbf-4.19.94	4.19	GPLv2	sch-tbf kernel module
linux-stm32mp	kernel-module-sch-teql-4.19.94	4.19	GPLv2	sch-teql kernel module
linux-stm32mp	kernel-module-seqiv-4.19.94	4.19	GPLv2	seqiv kernel module
linux-stm32mp	kernel-module-sha1-arm-4.19.94	4.19	GPLv2	sha1-arm kernel module
linux-stm32mp	kernel-module-sha1-arm-ce-4.19.94	4.19	GPLv2	sha1-arm-ce kernel module
linux-stm32mp	kernel-module-sha1-arm-neon-4.19.94	4.19	GPLv2	sha1-arm-neon kernel module
linux-stm32mp	kernel-module-sha2-arm-ce-4.19.94	4.19	GPLv2	sha2-arm-ce kernel module
linux-stm32mp	kernel-module-sha256-arm-4.19.94	4.19	GPLv2	sha256-arm kernel module
linux-stm32mp	kernel-module-sha512-arm-4.19.94	4.19	GPLv2	sha512-arm kernel module
linux-stm32mp	kernel-module-sha512-generic-4.19.94	4.19	GPLv2	sha512-generic kernel module
linux-stm32mp	kernel-module-sii9234-4.19.94	4.19	GPLv2	sii9234 kernel module
linux-stm32mp	kernel-module-sit-4.19.94	4.19	GPLv2	sit kernel module
linux-stm32mp	kernel-module-snd-hwdep-4.19.94	4.19	GPLv2	snd-hwdep kernel module
linux-stm32mp	kernel-module-snd-soc-ak4642-4.19.94	4.19	GPLv2	snd-soc-ak4642 kernel module
	kernel-module-snd-soc-cpcap-			



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	4.19.94	4.19	GPLv2	snd-soc-cpcap kernel module
linux-stm32mp	kernel-module-snd-soc-fsl-sai-4.19.94	4.19	GPLv2	snd-soc-fsl-sai kernel module
linux-stm32mp	kernel-module-snd-soc-sgtl5000-4.19.94	4.19	GPLv2	snd-soc-sgtl5000 kernel module
linux-stm32mp	kernel-module-snd-soc-simple-card-4.19.94	4.19	GPLv2	snd-soc-simple-card kernel module
linux-stm32mp	kernel-module-snd-soc-simple-scu-card-4.19.94	4.19	GPLv2	snd-soc-simple-scu-card kernel module
linux-stm32mp	kernel-module-snd-soc-sti-sas-4.19.94	4.19	GPLv2	snd-soc-sti-sas kernel module
linux-stm32mp	kernel-module-snd-soc-tlv320aic23-4.19.94	4.19	GPLv2	snd-soc-tlv320aic23 kernel module
linux-stm32mp	kernel-module-snd-soc-tlv320aic23-i2c-4.19.94	4.19	GPLv2	snd-soc-tlv320aic23-i2c kernel module
linux-stm32mp	kernel-module-snd-soc-ts3a227e-4.19.94	4.19	GPLv2	snd-soc-ts3a227e kernel module
linux-stm32mp	kernel-module-snd-soc-wm8753-4.19.94	4.19	GPLv2	snd-soc-wm8753 kernel module
linux-stm32mp	kernel-module-snd-soc-wm8903-4.19.94	4.19	GPLv2	snd-soc-wm8903 kernel module
linux-stm32mp	kernel-module-snd-soc-wm8978-4.19.94	4.19	GPLv2	snd-soc-wm8978 kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-snd-usb-audio-4.19.94	4.19	GPLv2	snd-usb-audio kernel module
linux-stm32mp	kernel-module-snd-usbmidi-lib-4.19.94	4.19	GPLv2	snd-usbmidi-lib kernel module
linux-stm32mp	kernel-module-soc-camera-4.19.94	4.19	GPLv2	soc-camera kernel module
linux-stm32mp	kernel-module-soc-camera-platform-4.19.94	4.19	GPLv2	soc-camera-platform kernel module
linux-stm32mp	kernel-module-soc-mediabus-4.19.94	4.19	GPLv2	soc-mediabus kernel module
linux-stm32mp	kernel-module-spi-gpio-4.19.94	4.19	GPLv2	spi-gpio kernel module
linux-stm32mp	kernel-module-spi-rockchip-4.19.94	4.19	GPLv2	spi-rockchip kernel module
linux-stm32mp	kernel-module-st-lsm6dsx-4.19.94	4.19	GPLv2	st-lsm6dsx kernel module
linux-stm32mp	kernel-module-st-lsm6dsx-i2c-4.19.94	4.19	GPLv2	st-lsm6dsx-i2c kernel module
linux-stm32mp	kernel-module-st-lsm6dsx-spi-4.19.94	4.19	GPLv2	st-lsm6dsx-spi kernel module
linux-stm32mp	kernel-module-st-pressure-4.19.94	4.19	GPLv2	st-pressure kernel module
linux-stm32mp	kernel-module-st-pressure-i2c-4.19.94	4.19	GPLv2	st-pressure-i2c kernel module
linux-stm32mp	kernel-module-st-pressure-spi-4.19.94	4.19	GPLv2	st-pressure-spi kernel module
linux-stm32mp	kernel-module-st-sensors-4.19.94	4.19	GPLv2	st-sensors kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-st-sensors-i2c-4.19.94	4.19	GPLv2	st-sensors-i2c kernel module
linux-stm32mp	kernel-module-st-sensors-spi-4.19.94	4.19	GPLv2	st-sensors-spi kernel module
linux-stm32mp	kernel-module-st1232-4.19.94	4.19	GPLv2	st1232 kernel module
linux-stm32mp	kernel-module-sti-drm-4.19.94	4.19	GPLv2	sti-drm kernel module
linux-stm32mp	kernel-module-stm32-cec-4.19.94	4.19	GPLv2	stm32-cec kernel module
linux-stm32mp	kernel-module-stm32-dcmi-4.19.94	4.19	GPLv2	stm32-dcmi kernel module
linux-stm32mp	kernel-module-stp-4.19.94	4.19	GPLv2	stp kernel module
linux-stm32mp	kernel-module-strparser-4.19.94	4.19	GPLv2	strparser kernel module
linux-stm32mp	kernel-module-tap-4.19.94	4.19	GPLv2	tap kernel module
linux-stm32mp	kernel-module-tcp-bic-4.19.94	4.19	GPLv2	tcp-bic kernel module
linux-stm32mp	kernel-module-tcp-diag-4.19.94	4.19	GPLv2	tcp-diag kernel module
linux-stm32mp	kernel-module-tcp-htcp-4.19.94	4.19	GPLv2	tcp-htcp kernel module
linux-stm32mp	kernel-module-tcp-westwood-4.19.94	4.19	GPLv2	tcp-westwood kernel module
linux-stm32mp	kernel-module-tls-4.19.94	4.19	GPLv2	tls kernel module
linux-stm32mp	kernel-module-ts-bm-4.19.94	4.19	GPLv2	ts-bm kernel module
linux-stm32mp	kernel-module-ts-fsm-4.19.94	4.19	GPLv2	ts-fsm kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-ts-kmp-4.19.94	4.19	GPLv2	ts-kmp kernel module
linux-stm32mp	kernel-module-tun-4.19.94	4.19	GPLv2	tun kernel module
linux-stm32mp	kernel-module-tunnel4-4.19.94	4.19	GPLv2	tunnel4 kernel module
linux-stm32mp	kernel-module-tunnel6-4.19.94	4.19	GPLv2	tunnel6 kernel module
linux-stm32mp	kernel-module-uas-4.19.94	4.19	GPLv2	uas kernel module
linux-stm32mp	kernel-module-udp-diag-4.19.94	4.19	GPLv2	udp-diag kernel module
linux-stm32mp	kernel-module-udp-tunnel-4.19.94	4.19	GPLv2	udp-tunnel kernel module
linux-stm32mp	kernel-module-unix-diag-4.19.94	4.19	GPLv2	unix-diag kernel module
linux-stm32mp	kernel-module-usb-f-uvic-4.19.94	4.19	GPLv2	usb-f-uvic kernel module
linux-stm32mp	kernel-module-uvicvideo-4.19.94	4.19	GPLv2	uvicvideo kernel module
linux-stm32mp	kernel-module-v4l2-common-4.19.94	4.19	GPLv2	v4l2-common kernel module
linux-stm32mp	kernel-module-v4l2-dv-timings-4.19.94	4.19	GPLv2	v4l2-dv-timings kernel module
linux-stm32mp	kernel-module-v4l2-fwnode-4.19.94	4.19	GPLv2	v4l2-fwnode kernel module
linux-stm32mp	kernel-module-v4l2-tpg-4.19.94	4.19	GPLv2	v4l2-tpg kernel module
linux-stm32mp	kernel-module-veth-4.19.94	4.19	GPLv2	veth kernel module
linux-stm32mp	kernel-module-vf610-adc-4.19.94	4.19	GPLv2	vf610-adc kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module- videobuf2- common-4.19.94	4.19	GPLv2	videobuf2-common kernel module
linux-stm32mp	kernel-module- videobuf2-dma- contig-4.19.94	4.19	GPLv2	videobuf2-dma-contig kernel module
linux-stm32mp	kernel-module- videobuf2- memops-4.19.94	4.19	GPLv2	videobuf2-memops kernel module
linux-stm32mp	kernel-module- videobuf2-v4l2- 4.19.94	4.19	GPLv2	videobuf2-v4l2 kernel module
linux-stm32mp	kernel-module- videobuf2-vmalloc- 4.19.94	4.19	GPLv2	videobuf2-vmalloc kernel module
linux-stm32mp	kernel-module- videodev-4.19.94	4.19	GPLv2	videodev kernel module
linux-stm32mp	kernel-module- virtio-crypto- 4.19.94	4.19	GPLv2	virtio-crypto kernel module
linux-stm32mp	kernel-module- vivid-4.19.94	4.19	GPLv2	vivid kernel module
linux-stm32mp	kernel-module- vmw-vsock-virtio- transport-4.19.94	4.19	GPLv2	vmw-vsock-virtio-transport kernel module
linux-stm32mp	kernel-module- vmw-vsock-virtio- transport-common- 4.19.94	4.19	GPLv2	vmw-vsock-virtio-transport-common kernel module
linux-stm32mp	kernel-module- vport-gre-4.19.94	4.19	GPLv2	vport-gre kernel module
linux-stm32mp	kernel-module- vsock-4.19.94	4.19	GPLv2	vsock kernel module
linux-stm32mp	kernel-module- vsock-diag- 4.19.94	4.19	GPLv2	vsock-diag kernel module
linux-	kernel-module-x-			



Recipe Name	Package Name	Version	License	Description
stm32mp	tables-4.19.94	4.19	GPLv2	x-tables kernel module
linux-stm32mp	kernel-module-xfrm-algo-4.19.94	4.19	GPLv2	xfrm-algo kernel module
linux-stm32mp	kernel-module-xfrm-ipcomp-4.19.94	4.19	GPLv2	xfrm-ipcomp kernel module
linux-stm32mp	kernel-module-xfrm4-mode-beet-4.19.94	4.19	GPLv2	xfrm4-mode-beet kernel module
linux-stm32mp	kernel-module-xfrm4-mode-transport-4.19.94	4.19	GPLv2	xfrm4-mode-transport kernel module
linux-stm32mp	kernel-module-xfrm4-mode-tunnel-4.19.94	4.19	GPLv2	xfrm4-mode-tunnel kernel module
linux-stm32mp	kernel-module-xfrm4-tunnel-4.19.94	4.19	GPLv2	xfrm4-tunnel kernel module
linux-stm32mp	kernel-module-xfrm6-mode-beet-4.19.94	4.19	GPLv2	xfrm6-mode-beet kernel module
linux-stm32mp	kernel-module-xfrm6-mode-ro-4.19.94	4.19	GPLv2	xfrm6-mode-ro kernel module
linux-stm32mp	kernel-module-xfrm6-mode-transport-4.19.94	4.19	GPLv2	xfrm6-mode-transport kernel module
linux-stm32mp	kernel-module-xfrm6-mode-tunnel-4.19.94	4.19	GPLv2	xfrm6-mode-tunnel kernel module
linux-stm32mp	kernel-module-xfrm6-tunnel-4.19.94	4.19	GPLv2	xfrm6-tunnel kernel module
linux-stm32mp	kernel-module-xt-addrtype-4.19.94	4.19	GPLv2	xt-addrtype kernel module
linux-stm32mp	kernel-module-xt-bpf-4.19.94	4.19	GPLv2	xt-bpf kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-xt-cgroup-4.19.94	4.19	GPLv2	xt-cgroup kernel module
linux-stm32mp	kernel-module-xt-classify-4.19.94	4.19	GPLv2	xt-classify kernel module
linux-stm32mp	kernel-module-xt-cluster-4.19.94	4.19	GPLv2	xt-cluster kernel module
linux-stm32mp	kernel-module-xt-comment-4.19.94	4.19	GPLv2	xt-comment kernel module
linux-stm32mp	kernel-module-xt-connbytes-4.19.94	4.19	GPLv2	xt-connbytes kernel module
linux-stm32mp	kernel-module-xt-connlabel-4.19.94	4.19	GPLv2	xt-connlabel kernel module
linux-stm32mp	kernel-module-xt-connlimit-4.19.94	4.19	GPLv2	xt-connlimit kernel module
linux-stm32mp	kernel-module-xt-connmark-4.19.94	4.19	GPLv2	xt-connmark kernel module
linux-stm32mp	kernel-module-xt-connsecmark-4.19.94	4.19	GPLv2	xt-connsecmark kernel module
linux-stm32mp	kernel-module-xt-conntrack-4.19.94	4.19	GPLv2	xt-conntrack kernel module
linux-stm32mp	kernel-module-xt-cpu-4.19.94	4.19	GPLv2	xt-cpu kernel module
linux-stm32mp	kernel-module-xt-dccp-4.19.94	4.19	GPLv2	xt-dccp kernel module
linux-stm32mp	kernel-module-xt-devgroup-4.19.94	4.19	GPLv2	xt-devgroup kernel module
linux-stm32mp	kernel-module-xt-dscp-4.19.94	4.19	GPLv2	xt-dscp kernel module
linux-stm32mp	kernel-module-xt-ecn-4.19.94	4.19	GPLv2	xt-ecn kernel module
linux-stm32mp	kernel-module-xt-esp-4.19.94	4.19	GPLv2	xt-esp kernel module
linux-stm32mp	kernel-module-xt-hashlimit-4.19.94	4.19	GPLv2	xt-hashlimit kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-xt-helper-4.19.94	4.19	GPLv2	xt-helper kernel module
linux-stm32mp	kernel-module-xt-hl-4.19.94	4.19	GPLv2	xt-hl kernel module
linux-stm32mp	kernel-module-xt-hmark-4.19.94	4.19	GPLv2	xt-hmark kernel module
linux-stm32mp	kernel-module-xt-idletimer-4.19.94	4.19	GPLv2	xt-idletimer kernel module
linux-stm32mp	kernel-module-xt-ipcomp-4.19.94	4.19	GPLv2	xt-ipcomp kernel module
linux-stm32mp	kernel-module-xt-iprange-4.19.94	4.19	GPLv2	xt-iprange kernel module
linux-stm32mp	kernel-module-xt-l2tp-4.19.94	4.19	GPLv2	xt-l2tp kernel module
linux-stm32mp	kernel-module-xt-led-4.19.94	4.19	GPLv2	xt-led kernel module
linux-stm32mp	kernel-module-xt-length-4.19.94	4.19	GPLv2	xt-length kernel module
linux-stm32mp	kernel-module-xt-limit-4.19.94	4.19	GPLv2	xt-limit kernel module
linux-stm32mp	kernel-module-xt-log-4.19.94	4.19	GPLv2	xt-log kernel module
linux-stm32mp	kernel-module-xt-mac-4.19.94	4.19	GPLv2	xt-mac kernel module
linux-stm32mp	kernel-module-xt-mark-4.19.94	4.19	GPLv2	xt-mark kernel module
linux-stm32mp	kernel-module-xt-multiport-4.19.94	4.19	GPLv2	xt-multiport kernel module
linux-stm32mp	kernel-module-xt-nat-4.19.94	4.19	GPLv2	xt-nat kernel module
linux-stm32mp	kernel-module-xt-netmap-4.19.94	4.19	GPLv2	xt-netmap kernel module
linux-stm32mp	kernel-module-xt-nfacct-4.19.94	4.19	GPLv2	xt-nfacct kernel module
linux-stm32mp	kernel-module-xt-nflog-4.19.94	4.19	GPLv2	xt-nflog kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-xt-nfqueue-4.19.94	4.19	GPLv2	xt-nfqueue kernel module
linux-stm32mp	kernel-module-xt-osf-4.19.94	4.19	GPLv2	xt-osf kernel module
linux-stm32mp	kernel-module-xt-owner-4.19.94	4.19	GPLv2	xt-owner kernel module
linux-stm32mp	kernel-module-xt-physdev-4.19.94	4.19	GPLv2	xt-physdev kernel module
linux-stm32mp	kernel-module-xt-pkttype-4.19.94	4.19	GPLv2	xt-pkttype kernel module
linux-stm32mp	kernel-module-xt-policy-4.19.94	4.19	GPLv2	xt-policy kernel module
linux-stm32mp	kernel-module-xt-quota-4.19.94	4.19	GPLv2	xt-quota kernel module
linux-stm32mp	kernel-module-xt-rateest-4.19.94	4.19	GPLv2	xt-rateest kernel module
linux-stm32mp	kernel-module-xt-realm-4.19.94	4.19	GPLv2	xt-realm kernel module
linux-stm32mp	kernel-module-xt-recent-4.19.94	4.19	GPLv2	xt-recent kernel module
linux-stm32mp	kernel-module-xt-redirect-4.19.94	4.19	GPLv2	xt-redirect kernel module
linux-stm32mp	kernel-module-xt-sctp-4.19.94	4.19	GPLv2	xt-sctp kernel module
linux-stm32mp	kernel-module-xt-secmark-4.19.94	4.19	GPLv2	xt-secmark kernel module
linux-stm32mp	kernel-module-xt-state-4.19.94	4.19	GPLv2	xt-state kernel module
linux-stm32mp	kernel-module-xt-statistic-4.19.94	4.19	GPLv2	xt-statistic kernel module
linux-stm32mp	kernel-module-xt-string-4.19.94	4.19	GPLv2	xt-string kernel module
linux-stm32mp	kernel-module-xt-tcpmss-4.19.94	4.19	GPLv2	xt-tcpmss kernel module
linux-stm32mp	kernel-module-xt-tcpudp-4.19.94	4.19	GPLv2	xt-tcpudp kernel module



Recipe Name	Package Name	Version	License	Description
linux-stm32mp	kernel-module-xt-tee-4.19.94	4.19	GPLv2	xt-tee kernel module
linux-stm32mp	kernel-module-xt-time-4.19.94	4.19	GPLv2	xt-time kernel module
linux-stm32mp	kernel-module-xt-u32-4.19.94	4.19	GPLv2	xt-u32 kernel module
linux-stm32mp	kernel-modules	4.19	GPLv2	Linux STM32MP Kernel
kmod	kmod	25+gitAUTOINC+aca4eca103	GPL-2.0+ & LGPL-2.1+	Tools for managing Linux kernel modules
kmscube	kmscube	git	MIT	kmscube version git-r0
liba52	liba52-0	0.7.4	GPLv2+	ATSC A/52 surround sound stream decoder
acl	libacl1	2.2.52	LGPLv2.1+	Utilities for managing POSIX Access Control Lists
libaio	libaio1	0.3.111	LGPLv2.1+	Asynchronous I/O library
alsa-plugins	libasound-module-conf-pulse	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for conf-pulse
alsa-plugins	libasound-module-ctl-arcam-av	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for ctl-arcam-av
alsa-plugins	libasound-module-ctl-oss	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for ctl-oss
alsa-plugins	libasound-module-ctl-pulse	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for ctl-pulse
alsa-plugins	libasound-module-pcm-oss	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for pcm-oss
alsa-plugins	libasound-module-pcm-pulse	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for pcm-pulse
alsa-plugins	libasound-module-pcm-speex	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for pcm-speex
alsa-plugins	libasound-module-pcm-upmix	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for pcm-upmix
alsa-plugins	libasound-module-pcm-usb-stream	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for pcm-usb-stream
alsa-	libasound-module-		LGPLv2.1 &	



Recipe Name	Package Name	Version	License	Description
plugins	pcm-vdownmix	1.1.6	GPLv2+	Alsa plugin for pcm-vdownmix
alsa-plugins	libasound-module-rate-samplerate	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for rate-samplerate
alsa-plugins	libasound-module-rate-speexrate	1.1.6	LGPLv2.1 & GPLv2+	Alsa plugin for rate-speexrate
alsa-lib	libasound2	1.1.6	LGPLv2.1 & GPLv2+	ALSA sound library
libassuan	libassuan0	2.5.1	LGPLv2.1+	IPC library used by GnuPG and GPGME
atk	libatk-1.0-0	2.28.1	GPLv2+ & LGPLv2+	Accessibility toolkit for GNOME
at-spi2-atk	libatk-bridge-2.0-0	2.26.2	LGPLv2	AT-SPI 2 Toolkit Bridge
at-spi2-core	libatspi0	2.28.0	LGPLv2	Assistive Technology Service Provider Interface (dbus core)
attr	libattr1	2.4.47	LGPLv2.1+	Utilities for manipulating filesystem extended attributes
avahi	libavahi-client3	0.7	GPLv2+ & LGPLv2.1+	Avahi IPv4LL network address configuration daemon
avahi	libavahi-common3	0.7	GPLv2+ & LGPLv2.1+	Avahi IPv4LL network address configuration daemon
avahi	libavahi-core7	0.7	GPLv2+ & LGPLv2.1+	Avahi IPv4LL network address configuration daemon
binutils	libbfd	2.31.1	GPLv3	GNU binary utilities
util-linux	libblkid1	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	util-linux libblkid
bzip2	libbz2-1	1.0.6	bzip2	Very high-quality data compression program
glibc	libc6	2.28	GPLv2 & LGPLv2.1	GLIBC (GNU C Library)
glibc	libc6-dbg	2.28	GPLv2 & LGPLv2.1	GLIBC (GNU C Library) - Debugging files
glibc	libc6-thread-db	2.28	GPLv2 & LGPLv2.1	GLIBC (GNU C Library)
cairo	libcairo-gobject2	1.14.12	MPL-1 & LGPLv2.1	The Cairo library GObject wrapper library



Recipe Name	Package Name	Version	License	Description
cairo	libcairo2	1.14.12	MPL-1 & LGPLv2.1	The Cairo 2D vector graphics library
libcap	libcap2	2.25	GPLv2	Library for getting/setting POSIX.1e capabilities
e2fsprogs	libcom-err2	1.44.3	GPLv2 & LGPLv2 & BSD & MIT	Ext2 Filesystem Utilities
libcroco	libcroco	0.6.12	LGPLv2 & LGPLv2.1	Cascading Style Sheet (CSS) parsing and manipulation toolkit
libxcrypt	libcrypt1	4.1.1	LGPLv2.1	Extended cryptographic library (from glibc)
openssl	libcrypto1.1	1.1.1b	openssl	Secure Socket Layer
curl	libcurl4	7.61.0	MIT	Command line tool and library for client-side URL transfers
libdaemon	libdaemon0	0.14	LGPLv2.1+	Lightweight C library which eases the writing of UNIX daemons
dbus	libdbus-1-3	1.12.10	GPLv2+	D-Bus message bus
dbus-glib	libdbus-glib-1-2	0.110	GPLv2+	High level language (GLib) binding for D-Bus
libdrm	libdrm-etnaviv1	2.4.94	MIT	Userspace interface to the kernel DRM services
libdrm	libdrm-freedreno1	2.4.94	MIT	Userspace interface to the kernel DRM services
libdrm	libdrm-intel1	2.4.94	MIT	Userspace interface to the kernel DRM services
libdrm	libdrm-tests	2.4.94	MIT	Userspace interface to the kernel DRM services
libdrm	libdrm2	2.4.94	MIT	Userspace interface to the kernel DRM services
elfutils	libdw1	0.175	(GPLv3 & Elfutils-Exception)	Utilities and libraries for handling compiled object files
e2fsprogs	libe2p2	1.44.3	GPLv2 & LGPLv2 & BSD & MIT	Ext2 Filesystem Utilities
			(GPLv3 &	



Recipe Name	Package Name	Version	License	Description
elfutils	libelf1	0.175	Elfutils-Exception)	Utilities and libraries for handling compiled object files
libepoxy	libepoxy0	1.5.2	MIT	OpenGL function pointer management library
liberation-fonts	liberation-fonts	2.00.1	OFL-1.1	Liberation(tm) Fonts
libevdev	libevdev	1.5.9	MIT-X	Wrapper library for evdev devices
expat	libexpat1	2.2.6	MIT	A stream-oriented XML parser library
e2fsprogs	libext2fs2	1.44.3	GPLv2 & LGPLv2 & BSD & MIT	Ext2 Filesystem Utilities
faac	libfaac	1.29	LGPLv2+	Freeware Advanced Audio Coder (MPEG2-AAC, MPEG4-AAC)
util-linux	libfdisk1	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	util-linux libfdisk
libffi	libffi6	3.2.1	MIT	A portable foreign function interface library
fftw	libfftwf	3.3.8	GPLv2	fftw version 3.3.8-r0
flac	libflac8	1.3.2	GFDL-1.2 & GPLv2+ & LGPLv2.1+ & BSD	Free Lossless Audio Codec
fontconfig	libfontconfig1	2.12.6	MIT-style & MIT & PD	Generic font configuration library
libfontenc	libfontenc1	1.1.3	MIT	X font encoding library
ncurses	libformw5	6.1 +20180630	MIT	ncurses formw library
freetype	libfreetype6	2.9.1	GPLv2+	Freetype font rendering library
fribidi	libfribidi0	1.0.5	LGPLv2.1+	Free Implementation of the Unicode Bidirectional Algorithm
libgcc	libgcc1	8.2.0	GPL-3.0-with-GCC-exception	GNU cc and gcc C compilers
				General purpose cryptographic



Recipe Name	Package Name	Version	License	Description
libgcrypt	libgcrypt	1.8.4	LGPLv2.1+	library based on the code from GnuPG
gdk-pixbuf	libgdk-pixbuf-2.0-0	2.36.11	LGPLv2	Image loading library for GTK+
gdk-pixbuf	libgdk-pixbuf-2.0-loader-gif	2.36.11	LGPLv2	GDK pixbuf loader for gif
gdk-pixbuf	libgdk-pixbuf-2.0-loader-jpeg	2.36.11	LGPLv2	GDK pixbuf loader for jpeg
gdk-pixbuf	libgdk-pixbuf-2.0-loader-png	2.36.11	LGPLv2	GDK pixbuf loader for png
gdk-pixbuf	libgdk-pixbuf-2.0-loader-xpm	2.36.11	LGPLv2	GDK pixbuf loader for xpm
mesa-gl	libgl-mesa	18.1.9	MIT	A free implementation of the OpenGL API (OpenGL only, no EGL/GLES)
mesa-gl	libglapi0	18.1.9	MIT	A free implementation of the OpenGL API (OpenGL only, no EGL/GLES)
glib-2.0	libglib-2.0-0	2.58.0	LGPLv2.1+ & BSD & PD	A general-purpose utility library
glib-2.0	libglib-2.0-utils	2.58.0	LGPLv2.1+ & BSD & PD	A general-purpose utility library
gmp	libgmp10	6.1.2	LGPLv3+	GNU multiprecision arithmetic library
gnutls	libgnutls30	3.6.4	LGPLv2.1+	GNU Transport Layer Security Library
libgpg-error	libgpg-error	1.32	GPLv2+ & LGPLv2.1+	Small library that defines common error values for all GnuPG components
libgpiod	libgpiod-tools	1.2	LGPLv2.1+	C library and tools for interacting with the linux GPIO character device
libgpiod	libgpiod2	1.2	LGPLv2.1+	C library and tools for interacting with the linux GPIO character device
gststreamer1.0-plugins-bad	libgstadaptivedemux-1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstadaptivedemux-1.0 library



Recipe Name	Package Name	Version	License	Description
gststreamer1 .0-plugins- base	libgstallocators- 1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstallocators-1.0 library
gststreamer1 .0-plugins- base	libgstapp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstapp-1.0 library
gststreamer1 .0-plugins- base	libgstaudio-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstaudio-1.0 library
gststreamer1 .0-plugins- bad	libgstbadaudio- 1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstbadaudio-1.0 library
gststreamer1 .0-plugins- bad	libgstbadvideo-1.0- 0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstbadvideo-1.0 library
gststreamer1 .0-plugins- bad	libgstbasecamerab insrc-1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstbasecamerabinsrc- 1.0 library
gststreamer1 .0-plugins- bad	libgstcodecparsers -1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstcodecparsers-1.0 library
gststreamer1 .0-plugins- base	libgstfft-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstfft-1.0 library
gststreamer1 .0-plugins- base	libgstgl-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstgl-1.0 library
gststreamer1 .0-plugins- bad	libgstinsertbin-1.0- 0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstinsertbin-1.0 library
gststreamer1 .0-plugins- bad	libgstisoff-1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstisoff-1.0 library
gststreamer1 .0-plugins- bad	libgstmpegts-1.0- 0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstmpegts-1.0 library
gststreamer1			GPLv2+ &	



Recipe Name	Package Name	Version	License	Description
.0-plugins-base	libgstpbutils-1.0-0	1.14.4	LGPLv2+	gststreamer gstpbutils-1.0 library
gststreamer1.0-plugins-bad	libgstphotography-1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstphotography-1.0 library
gststreamer1.0-plugins-bad	libgstplayer-1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstplayer-1.0 library
gststreamer1.0-plugins-base	libgsttriff-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gsttriff-1.0 library
gststreamer1.0-plugins-base	libgststrtp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gststrtp-1.0 library
gststreamer1.0-plugins-base	libgststrtsp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gststrtsp-1.0 library
gststreamer1.0-rtsp-server	libgststrtspserver-1.0-0	1.14.4	LGPLv2	gststreamer gststrtspserver-1.0 library
gststreamer1.0-plugins-base	libgstsdp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstsdp-1.0 library
gststreamer1.0-plugins-base	libgsttag-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gsttag-1.0 library
gststreamer1.0-plugins-bad	libgsturidownloader-1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gsturidownloader-1.0 library
gststreamer1.0-plugins-base	libgstvideo-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstvideo-1.0 library
gststreamer1.0-plugins-bad	libgstwayland-1.0-0	1.14.4	GPLv2+ & LGPLv2+ & LGPLv2.1+	gststreamer gstwayland-1.0 library
gststreamer1.0-plugins-			GPLv2+ & LGPLv2+ &	



Recipe Name	Package Name	Version	License	Description
bad	libgstwebrtc-1.0-0	1.14.4	LGPLv2.1+	gstreamer gstwebrtc-1.0 library
gtk+3	libgtk-3.0	3.22.30	LGPLv2 & LGPLv2+ & LGPLv2.1+	Multi-platform toolkit for creating GUIs
libgudev	libgudev-1.0-0	232	LGPLv2.1	GObject wrapper for libudev
harfbuzz	libharfbuzz0	1.8.8	MIT	Text shaping library
libice	libice6	1.0.9	MIT-style	ICE: Inter-Client Exchange library
libidn2	libidn2-0	2.0.5	LGPLv3)	Internationalized Domain Name support library
libiio	libiio-iiod	0.15 +gitAUTOINC +6ecff5d46e	LGPLv2.1+	Library for interfacing with IIO devices
libiio	libiio-tests	0.15 +gitAUTOINC +6ecff5d46e	LGPLv2.1+	Library for interfacing with IIO devices
libiio	libiio0	0.15 +gitAUTOINC +6ecff5d46e	LGPLv2.1+	Library for interfacing with IIO devices
libinput	libinput10	1.11.3	MIT	Library to handle input devices in Wayland compositors
libjpeg-turbo	libjpeg62	2.0.0	BSD-3-Clause	Hardware accelerated JPEG compression/decompression library
json-c	libjson-c4	0.13.1	MIT	C bindings for apps which will manipulate JSON data
kmod	libkmod2	25+gitAUTOINC +aca4eca103	LGPL-2.1+	Tools for managing Linux kernel modules
libdrm	libksba8	2.4.94	MIT	Userspace interface to the kernel DRM services
libksba	libkms1	GPLv2+ or LGPLv3+ or GPLv3+	MIT	Userspace interface to the kernel DRM services
libtool	libltdl7	2.4.6	GPLv2 & LGPLv2.1	Generic library support script
xz	liblzma5	5.2.4	PD	Utilities for managing LZMA compressed files



Recipe Name	Package Name	Version	License	Description
lzo	liblzo2-2	2.10	GPLv2+	Lossless data compression library
ncurses	libmenuw5	6.1 +20180630	MIT	ncurses menuw library
libmnl	libmnl0	1.0.4	LGPLv2.1+	Minimalistic user-space Netlink utility library
util-linux	libmount1	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	util-linux libmount
lame	libmp3lame0	3.100	LGPLv2+	High quality MP3 audio encoder
mpeg2dec	libmpeg2-0	0.5.1	GPLv2+	Library and test program for decoding MPEG-2 and MPEG-1 video streams
ncurses	libncurses5	6.1 +20180630	MIT	ncurses ncurses library
ncurses	libncursesw5	6.1 +20180630	MIT	ncurses ncursesw library
libnl	libnl-3-200	3.4.0	LGPLv2.1	A library for applications dealing with netlink sockets
npth	libnpth0	1.6	LGPLv2+	New GNU Portable Threads library
libnl	libnl-genl-3-200	3.4.0	LGPLv2.1	A library for applications dealing with netlink sockets
libnss-mdns	libnss-mdns	0.10	LGPLv2.1+	Name Service Switch module for Multicast DNS (zeroconf) name resolution
libogg	libogg0	1.3.3	BSD	Ogg bitstream and framing library
orc	liborc-0.4-0	0.4.28	BSD-2- Clause & BSD-3- Clause	ORC orc-0.4 library
libpam	libpam	1.3.0	BSD	Linux-PAM (Pluggable Authentication Modules)
libpam	libpam-runtime	1.3.0	BSD	Linux-PAM (Pluggable Authentication Modules)
ncurses	libpanel5	6.1 +20180630	MIT	ncurses panel library
		6.1		



Recipe Name	Package Name	Version	License	Description
ncurses	libpanelw5	+20180630	MIT	ncurses panelw library
libpcap	libpcap1	1.8.1	BSD	Interface for user-level network packet capture
pciutils	libpci3	3.6.2	GPLv2+	PCI utilities
libpciaccess	libpciaccess0	0.14	MIT & MIT-style	Generic PCI access library for X
libpcre	libpcre1	8.42	BSD	Perl Compatible Regular Expressions
perl	libperl5	5.24.4	GPL-1.0+	Perl scripting language
pixman	libpixman-1-0	0.34.0	MIT & MIT-style & PD	Pixman: Pixel Manipulation library
libpng	libpng16-16	1.6.36	Libpng	PNG image format decoding library
popt	libpopt0	1.16	MIT	Library for parsing command line options
pulseaudio	libpulse-simple0	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	Sound server for Linux and Unix-like operating systems
pulseaudio	libpulse0	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	Sound server for Linux and Unix-like operating systems
pulseaudio	libpulsecommon	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	Sound server for Linux and Unix-like operating systems
pulseaudio	libpulsecore	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	Sound server for Linux and Unix-like operating systems
python3	libpython3.5m1.0	3.5.6	PSFv2	The Python Programming Language
qrencode	libqrencode4	4.0.0 +gitAUTOINC +07f3c5d4bf	LGPLv2.1	C library for encoding data in a QR Code symbol
readline	libreadline7	7.0	GPLv3+	Library for editing typed command lines



Recipe Name	Package Name	Version	License	Description
librsvg	librsvg-2-2	2.40.20	LGPLv2+	Library for rendering SVG files
libsamplerate0	libsamplerate0	0.1.9	BSD-2-Clause	Audio Sample Rate Conversion library
sbc	libsbc1	1.3	LGPLv2.1+	SBC Audio Codec
lmsensors	lmsensors4	3.4.0	GPLv2+ & LGPLv2.1+	lm_sensors
libsm	libsm6	1.2.2	MIT-style	SM: Session Management library
util-linux	libsmartcols1	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	util-linux libsmartcols
libsndfile1	libsndfile1	1.0.28	LGPLv2.1	Audio format Conversion library
libsoup-2.4	libsoup-2.4	2.62.3	LGPLv2	An HTTP library implementation in C
speex	libspeex1	1.2.0	BSD	Speech Audio Codec
speexdsp	libspeexdsp1	1.2rc3	BSD	A patent-free DSP library
sqlite3	libsqlite3-0	3.23.1	PD	Embeddable SQL database engine
e2fsprogs	libss2	1.44.3	GPLv2 & LGPLv2 & BSD & MIT	Ext2 Filesystem Utilities
openssl	libssl1.1	1.1.1b	openssl	Secure Socket Layer
gcc-runtime	libstdc++6	8.2.0	GPL-3.0-with-GCC-exception	GNU standard C++ library
sysfsutils	libsysfs2	2.1.0	LGPLv2.1	Tools for working with sysfs
systemd	libsystemd0	239	GPLv2 & LGPLv2.1	Systemd systemd library
taglib	libtag1	1.11.1	MPL-1	Library for reading and editing the meta-data of popular audio formats
libtheora	libtheora	1.1.1	BSD	Theora Video Codec
tiff	libtiff5	4.0.9	BSD-2-Clause	Provides support for the Tag Image File Format (TIFF)
ncurses	libtinfo5	6.1+20180630	MIT	ncurses tinfo library
libtirpc	libtirpc3	1.0.3	BSD	Transport-Independent RPC library
			GPLv2 &	



Recipe Name	Package Name	Version	License	Description
systemd	libudev1	239	LGPLv2.1	Systemd udev library
libunistring	libunistring2	0.9.10	GPLv2	Library for manipulating C and Unicode strings
libunwind	libunwind	1.2.1	MIT	Library for obtaining the call-chain of a program
liburcu	liburcu	0.10.1	LGPLv2.1+ & MIT-style	Userspace RCU (read-copy-update) library
libusb1	libusb-1.0-0	1.0.22	LGPLv2.1+	Userspace library to access USB (version 1.0)
util-linux	libuuid1	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	util-linux libuuid
v4l-utils	libv4l	1.16.0	GPLv2 & LGPLv2.1	v4l2 and IR applications
libvorbis	libvorbis	1.3.6	BSD	Ogg Vorbis Audio Codec
libwebp	libwebp	1.0.0	BSD	WebP is an image format designed for the Web
weston	libweston-5	5.0.0	MIT	Helper library for implementing 'wayland window managers'.
libx11	libx11-6	1.6.6	MIT & MIT-style & BSD	Xlib: C Language X Interface library
libx11	libx11-locale	1.6.6	MIT & MIT-style & BSD	Xlib: C Language X Interface library
libx11	libx11-xcb1	1.6.6	MIT & MIT-style & BSD	Xlib: C Language X Interface library
libxau	libxau6	1.0.8	MIT-style	Xau: X Authority Database library
libxaw	libxaw7-7	1.0.13	MIT-X	X Athena Widget Set
libxcb	libxcb-composite0	1.13	MIT	XCB library module for composite
libxcb	libxcb-dri2-0	1.13	MIT	XCB library module for dri2
libxcb	libxcb-glx0	1.13	MIT	XCB library module for glx
libxcb	libxcb-render0	1.13	MIT	XCB library module for render
libxcb	libxcb-shape0	1.13	MIT	XCB library module for shape
libxcb	libxcb-shm0	1.13	MIT	XCB library module for shm
libxcb	libxcb-xfixes0	1.13	MIT	XCB library module for xfixes



Recipe Name	Package Name	Version	License	Description
libxcb	libxcb-xkb1	1.13	MIT	XCB library module for xkb
libxcb	libxcb1	1.13	MIT	XCB: The X protocol C binding library
libxcomposite	libxcomposite1	0.4.4	MIT-style	Xcomposite: X Composite extension library
libxcursor	libxcursor1	1.1.15	MIT-style	Xcursor: X Cursor management library
libxdamage	libxdamage1	1.1.4	MIT	Xdamage: X Damage extension library
libxdmcp	libxdmcp6	1.1.2	MIT-style	XDMCP: X Display Manager Control Protocol library
libxext	libxext6	1.3.3	MIT-style	XExt: X Extension library
libxfixes	libxfixes3	5.0.3	MIT-style	XFixes: X Fixes extension library
libxfont2	libxfont2-2	2.0.3	MIT & MIT-style & BSD	XFont2: X Font rasterisation library
libxft	libxft2	2.3.2	MIT	Xft: X FreeType library
libxi	libxi6	1.7.9	MIT & MIT-style	XI: X Input extension library
libxinerama	libxinerama1	1.1.4	MIT	Xinerama: Xinerama extension library
libxkbcommon	libxkbcommon	0.8.2	MIT & MIT-style	Generic XKB keymap library
libxkbfile	libxkbfile1	1.0.9	MIT-style	XKB: X Keyboard File manipulation library
libxml2	libxml2	2.9.8	MIT	XML C Parser Library and Toolkit
libxmu	libxmu6	1.1.2	MIT & MIT-style	Xmu and Xmuu: X Miscellaneous Utility libraries
libxpm	libxpm4	3.5.12	BSD	Xpm: X Pixmap extension library
libxrandr	libxrandr2	1.5.1	MIT-style	XRandR: X Resize, Rotate and Reflect extension library
libxrender	libxrender1	0.9.10	MIT-style	XRender: X Rendering Extension library
libxshmfence	libxshmfence1	1.3	MIT-style	Shared memory 'SyncFence' synchronization primitive
			MIT & MIT-	



Recipe Name	Package Name	Version	License	Description
libxt	libxt6	1.1.5	style	Xt: X Toolkit Intrinsic library
libxtst	libxtst6	1.2.3	MIT-style	XTest: X Test extension library
libxv	libxv1	1.0.11	MIT-style	Xv: X Video extension library
libxxf86vm	libxxf86vm1	1.1.4	MIT	XFree86-VM: XFree86 video mode extension library
libyaml	libyaml-0-2	0.2.1	MIT	LibYAML is a YAML 1.1 parser and emitter written in C.
zlib	libz1	1.2.11	Zlib	Zlib Compression Library
linux-firmware	linux-firmware-bcm43430	0.0 +gitAUTOINC +linux-firmware-8d87950bfa	Firmware-cypress	Firmware files for use with Linux kernel
linux-firmware-bluetooth-bcm4343	linux-firmware-bluetooth-bcm4343	1.0	Firmware-cypress-bcm4343	linux-firmware-bluetooth-bcm4343 version 1.0-r0
linux-firmware-bluetooth-bcm4343	linux-firmware-bluetooth-bcm4343-cypress-license	1.0	Firmware-cypress-bcm4343	linux-firmware-bluetooth-bcm4343 version 1.0-r0
lmsensors-config	lmsensors-config-lbsensors	1.0	MIT-X	lm_sensors configuration files
lmsensors	lmsensors-sensors	3.4.0	GPLv2+ & LGPLv2.1+	lm_sensors
glibc-locale	locale-base-en-us	2.28	GPLv2 & LGPLv2.1	Locale data from glibc
lrzsz	lrzsz	0.12.20	GPLv2+	Tools for zmodem/xmodem /ymodem file transfer
lsb	lsb	5.0	GPLv2+	LSB support for OpenEmbedded
lsb-openstlinux	lsb-openstlinux	1.0	GPLv2+	LSB support to check gpu provider
lsbinitscripts	lsbinitscripts	9.79	GPLv2	SysV init scripts which are only used in an LSB image
lttng-tools	lttng-tools	2.9.11	GPLv2 & LGPLv2.1	Linux Trace Toolkit Control



Recipe Name	Package Name	Version	License	Description
ltnng-ust	ltnng-ust	2.10.3	LGPLv2.1+ & MIT & GPLv2	Linux Trace Toolkit Userspace Tracer 2.x
m4fwcoredump	m4fwcoredump	1.0	MIT	m4fwcoredump version 1.0-r0
m4projects - stm32mp1	m4projects-stm32mp1	1.2.0	Apache-2.0 & MIT & BSD-3-Clause	STM32MP1 Firmware examples for CM4
v4l-utils	media-ctl	1.16.0	GPLv2 & LGPLv2.1	v4l2 and IR applications
memtester	memtester	4.3.0	GPLv2	Utility to test for faulty memory subsystem
mesa-gl	mesa-megadriver	18.1.9	MIT	A free implementation of the OpenGL API (OpenGL only, no EGL/GLES)
minicom	minicom	2.7.1	GPLv2+	Text-based modem control and terminal emulation program
mkfontdir	mkfontdir	1.0.7	MIT-X	A program to create an index of X font files in a directory
mkfontscale	mkfontscale	1.1.3	MIT-X	A program to create an index of scalable font files for X
mmc-utils	mmc-utils	0.1	GPLv2	Userspace tools for MMC/SD devices
mpg123	mpg123	1.25.10	LGPLv2.1	Audio decoder for MPEG-1 Layer 1 /2/3
mtd-utils	mtd-utils	2.0.2 +AUTOINC+bc63d36e39	GPLv2+	Tools for managing memory technology devices
mtd-utils	mtd-utils-ubifs	2.0.2 +AUTOINC+bc63d36e39	GPLv2+	Tools for managing memory technology devices
mtdev	mtdev	1.1.5	MIT	Multitouch Protocol Translation Library
ncurses	ncurses-terminfo-base	6.1 +20180630	MIT	The New Curses library
netbase	netbase	5.4	GPLv2	Basic TCP/IP networking support



Recipe Name	Package Name	Version	License	Description
netdata	netdata	1.8.0 +gitAUTOINC +89ed309252	GPLv3	Real-time performance monitoring
nettle	nettle	3.4	GPLv2+	A low level cryptographic library
ntp	ntp	4.2.8p13	NTP	Network Time Protocol daemon and utilities
ntp	ntp-tickadj	4.2.8p13	NTP	Network Time Protocol daemon and utilities
openssh	openssh-sftp	7.8p1+git	BSD	A suite of security-related network utilities based on the SSH protocol including the ssh client and sshd server
openssh	openssh-sftp-server	7.8p1+git	BSD	A suite of security-related network utilities based on the SSH protocol including the ssh client and sshd server
openssl	openssl	1.1.1b	openssl	Secure Socket Layer
openssl	openssl-conf	1.1.1b	openssl	Secure Socket Layer
optee-client	optee-client	3.3.0 +gitAUTOINC +c48bc3be9f	BSD-2- Clause	OPTEE Client
optee-os-stm32mp	optee-os-stm32mp	3.3.0	BSD-2- Clause & BSD-3- Clause	OPTEE TA development kit for stm32mp
optee-test	optee-test	3.3.0 +gitAUTOINC +5659bceaa0	BSD-2- Clause & GPLv2	OP-TEE sanity testsuite
os-release	os-release	1.0	MIT	Operating system identification
packagegroup-base	packagegroup-base	1.0	MIT	Merge machine and distro options to create a basic machine task /package
packagegroup-base	packagegroup-base-alsa	1.0	MIT	ALSA sound support
packagegroup-base	packagegroup-base-bluetooth	1.0	MIT	Bluetooth support
packagegroup-	packagegroup-			



Recipe Name	Package Name	Version	License	Description
oup-base	base-ext2	1.0	MIT	ext2 filesystem support
packagegroup-oup-base	packagegroup-base-extended	1.0	MIT	Merge machine and distro options to create a basic machine task /package
packagegroup-oup-base	packagegroup-base-ipv6	1.0	MIT	IPv6 support
packagegroup-oup-base	packagegroup-base-nfs	1.0	MIT	NFS network filesystem support
packagegroup-oup-base	packagegroup-base-usb-gadget	1.0	MIT	USB gadget support
packagegroup-oup-base	packagegroup-base-usb-host	1.0	MIT	USB host support
packagegroup-oup-base	packagegroup-base-wifi	1.0	MIT	WiFi support
packagegroup-oup-base	packagegroup-base-zeroconf	1.0	MIT	Zeroconf support
packagegroup-oup-core-boot	packagegroup-core-boot	1.0	MIT	Minimal boot requirements
packagegroup-oup-core-eclipse-debug	packagegroup-core-eclipse-debug	1.0	MIT	Remote debugging tools for Eclipse integration
packagegroup-oup-core-full-cmdline	packagegroup-core-full-cmdline-extended	1.0	MIT	Standard full-featured Linux system
packagegroup-oup-core-ssh-dropbear	packagegroup-core-ssh-dropbear	1.0	MIT	Dropbear SSH client/server
packagegroup-oup-core-tools-profile	packagegroup-core-tools-profile	1.0	MIT	Profiling tools
packagegroup-oup-base	packagegroup-dist-base	1.0	MIT	openstlinux-weston extras



Recipe Name	Package Name	Version	License	Description
packagegroup-framework-core	packagegroup-framework-core	1.0	MIT	Framework core components for display and mutlimedia
packagegroup-framework-core-base	packagegroup-framework-core-base	1.0	MIT	Framework core base components for display and mutlimedia
packagegroup-framework-core-base	packagegroup-framework-core-base-display	1.0	MIT	Framework core base components for display
packagegroup-framework-core-base	packagegroup-framework-core-base-mm	1.0	MIT	Framework core base components for multimedia
packagegroup-framework-core	packagegroup-framework-core-display	1.0	MIT	Framework core components for display
packagegroup-framework-core-extra	packagegroup-framework-core-extra	1.0	MIT	Framework core extra components for display and mutlimedia
packagegroup-framework-core-extra	packagegroup-framework-core-extra-display	1.0	MIT	Framework core extra components for display
packagegroup-framework-core-extra	packagegroup-framework-core-extra-mm	1.0	MIT	Framework core extra components for multimedia
packagegroup-framework-core	packagegroup-framework-core-mm	1.0	MIT	Framework core components for multimedia
packagegroup-				Framework tools components (core, kernel,network,audio,ui,python2,



Recipe Name	Package Name	Version	License	Description
framework-tools	packagegroup-framework-tools	1.0	MIT	python3)
packagegroup-framework-tools	packagegroup-framework-tools-audio	1.0	MIT	Framework tools components for audio
packagegroup-framework-tools-base	packagegroup-framework-tools-base	1.0	MIT	Framework tools base components (core, kernel, network, audio, ui, python2, python3)
packagegroup-framework-tools-base	packagegroup-framework-tools-base-audio	1.0	MIT	Framework tools base components for audio
packagegroup-framework-tools-base	packagegroup-framework-tools-base-core	1.0	MIT	Framework tools base components for core
packagegroup-framework-tools-base	packagegroup-framework-tools-base-kernel	1.0	MIT	Framework tools base components for kernel
packagegroup-framework-tools-base	packagegroup-framework-tools-base-network	1.0	MIT	Framework tools base components for network
packagegroup-framework-tools-base	packagegroup-framework-tools-base-python2	1.0	MIT	Framework tools base components for python2
packagegroup-framework-tools-base	packagegroup-framework-tools-base-python3	1.0	MIT	Framework tools base components for python3
packagegroup-framework-tools-base	packagegroup-framework-tools-base-ui	1.0	MIT	Framework tools base components for ui



Recipe Name	Package Name	Version	License	Description
packagegroup-framework-tools	packagegroup-framework-tools-core	1.0	MIT	Framework tools components for core
packagegroup-framework-tools	packagegroup-framework-tools-kernel	1.0	MIT	Framework tools components for kernel
packagegroup-framework-tools	packagegroup-framework-tools-network	1.0	MIT	Framework tools components for network
packagegroup-framework-tools	packagegroup-framework-tools-python2	1.0	MIT	Framework tools components for python2
packagegroup-framework-tools	packagegroup-framework-tools-python3	1.0	MIT	Framework tools components for python3
packagegroup-framework-tools	packagegroup-framework-tools-ui	1.0	MIT	Framework tools components for ui
packagegroup-gstreamer1-0	packagegroup-gstreamer1-0	1.0	LGPLv2+	packagegroup-gstreamer1-0 version 1.0-r0
packagegroup-base	packagegroup-machine-base	1.0	MIT	Extra packages required to fully support stm32mp1 hardware
packagegroup-optee-core	packagegroup-optee-core	1.0	LGPLv2+	OPTEE core packagegroup
packagegroup-optee-test	packagegroup-optee-test	1.0	LGPLv2+	OPTEE test packagegroup
libpam	pam-plugin-deny	1.3.0	BSD	PAM plugin for -deny
libpam	pam-plugin-env	1.3.0	BSD	PAM plugin for -env



Recipe Name	Package Name	Version	License	Description
libpam	pam-plugin-faildelay	1.3.0	BSD	PAM plugin for -faildelay
libpam	pam-plugin-group	1.3.0	BSD	PAM plugin for -group
libpam	pam-plugin-keyinit	1.3.0	BSD	PAM plugin for -keyinit
libpam	pam-plugin-lastlog	1.3.0	BSD	PAM plugin for -lastlog
libpam	pam-plugin-limits	1.3.0	BSD	PAM plugin for -limits
libpam	pam-plugin-loginuid	1.3.0	BSD	PAM plugin for -loginuid
libpam	pam-plugin-mail	1.3.0	BSD	PAM plugin for -mail
libpam	pam-plugin-motd	1.3.0	BSD	PAM plugin for -motd
libpam	pam-plugin-nologin	1.3.0	BSD	PAM plugin for -nologin
libpam	pam-plugin-permit	1.3.0	BSD	PAM plugin for -permit
libpam	pam-plugin-rootok	1.3.0	BSD	PAM plugin for -rootok
libpam	pam-plugin-securetty	1.3.0	BSD	PAM plugin for -securetty
libpam	pam-plugin-shells	1.3.0	BSD	PAM plugin for -shells
libpam	pam-plugin-unix	1.3.0	BSD	PAM plugin for -unix
libpam	pam-plugin-warn	1.3.0	BSD	PAM plugin for -warn
pango	pango	1.42.4	LGPLv2.0+	Framework for layout and rendering of internationalized text
pciutils	pciutils	3.6.2	GPLv2+	PCI utilities
pciutils	pciutils-ids	3.6.2	GPLv2+	PCI utilities - device ID database
perf	perf	1.0	GPLv2	Performance analysis tools for Linux
perl	perl	5.24.4	GPL-1.0+	Perl scripting language
pinentry	pinentry	1.1.0	GPLv2	Collection of simple PIN or passphrase entry dialogs
powertop	powertop	2.9	GPLv2	Power usage tool
powertop	powertop-locale-en-us	2.9	GPLv2	Power usage tool - en_US translations
procps	procps	3.3.15	GPLv2+ & LGPLv2+	System and process monitoring utilities
psplash-				



Recipe Name	Package Name	Version	License	Description
drm	psplash-drm	1.0	MIT	psplash-drm version 1.0-r0
pulseaudio	pulseaudio	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	Sound server for Linux and Unix-like operating systems
pulseaudio	pulseaudio-lib-alsa-util	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio library for alsa-util
pulseaudio	pulseaudio-lib-bluez5-util	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio library for bluez5-util
pulseaudio	pulseaudio-lib-cli	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio library for cli
pulseaudio	pulseaudio-lib-protocol-cli	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio library for protocol-cli
pulseaudio	pulseaudio-lib-protocol-native	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio library for protocol-native
pulseaudio	pulseaudio-misc	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	Sound server for Linux and Unix-like operating systems
pulseaudio	pulseaudio-module-alsa-card	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for alsa-card
pulseaudio	pulseaudio-module-alsa-sink	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for alsa-sink
	pulseaudio-		LGPLv2.1+	



Recipe Name	Package Name	Version	License	Description
pulseaudio	module-alsa-source	12.2	& MIT & BSD-3-Clause	PulseAudio module for alsa-source
pulseaudio	pulseaudio-module-always-sink	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for always-sink
pulseaudio	pulseaudio-module-augment-properties	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for augment-properties
pulseaudio	pulseaudio-module-bluetooth-discover	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for bluetooth-discover
pulseaudio	pulseaudio-module-bluetooth-policy	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for bluetooth-policy
pulseaudio	pulseaudio-module-bluez5-device	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for bluez5-device
pulseaudio	pulseaudio-module-bluez5-discover	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for bluez5-discover
pulseaudio	pulseaudio-module-card-restore	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for card-restore
pulseaudio	pulseaudio-module-cli-protocol-unix	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for cli-protocol-unix
	pulseaudio-		LGPLv2.1+ & MIT & BSD-3-	PulseAudio module for combine-



Recipe Name	Package Name	Version	License	Description
pulseaudio	module-combine-sink	12.2	Clause	sink
pulseaudio	pulseaudio-module-console-kit	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for console-kit
pulseaudio	pulseaudio-module-default-device-restore	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for default-device-restore
pulseaudio	pulseaudio-module-detect	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for detect
pulseaudio	pulseaudio-module-device-manager	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for device-manager
pulseaudio	pulseaudio-module-device-restore	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for device-restore
pulseaudio	pulseaudio-module-filter-apply	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for filter-apply
pulseaudio	pulseaudio-module-filter-heuristics	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for filter-heuristics
pulseaudio	pulseaudio-module-intended-roles	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for intended-roles
pulseaudio	pulseaudio-module-native-protocol-unix	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for native-protocol-unix



Recipe Name	Package Name	Version	License	Description
pulseaudio	pulseaudio-module-null-sink	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for null-sink
pulseaudio	pulseaudio-module-position-event-sounds	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for position-event-sounds
pulseaudio	pulseaudio-module-rescue-streams	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for rescue-streams
pulseaudio	pulseaudio-module-role-cork	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for role-cork
pulseaudio	pulseaudio-module-stream-restore	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for stream-restore
pulseaudio	pulseaudio-module-suspend-on-idle	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for suspend-on-idle
pulseaudio	pulseaudio-module-switch-on-port-available	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for switch-on-port-available
pulseaudio	pulseaudio-module-udev-detect	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for udev-detect
pulseaudio	pulseaudio-module-x11-cork-request	12.2	LGPLv2.1+ & MIT & BSD-3-Clause	PulseAudio module for x11-cork-request
	pulseaudio-module-x11-		LGPLv2.1+ & MIT &	



Recipe Name	Package Name	Version	License	Description
pulseaudio	publish	12.2	BSD-3- Clause	PulseAudio module for x11-publish
pulseaudio	pulseaudio- module-x11-xsmp	12.2	LGPLv2.1+ & MIT & BSD-3- Clause	PulseAudio module for x11-xsmp
pulseaudio	pulseaudio-server	12.2	LGPLv2.1+ & MIT & BSD-3- Clause	Sound server for Linux and Unix- like operating systems
python3	python3-asyncio	3.5.6	PSFv2	Python Asynchronous I/
python3	python3-codecs	3.5.6	PSFv2	Python codec
python3	python3-compile	3.5.6	PSFv2	Python bytecode compilation support
python3	python3- compression	3.5.6	PSFv2	Python high-level compression support
python3	python3-core	3.5.6	PSFv2	Python interpreter and core modules
python3	python3-crypt	3.5.6	PSFv2	Python basic cryptographic and hashing support
python3	python3-ctypes	3.5.6	PSFv2	Python C types support
python3	python3-datetime	3.5.6	PSFv2	Python calendar and time support
python3- dateutil	python3-dateutil	2.7.3	BSD-3- Clause & Apache-2.0	Extensions to the standard Python datetime module
python3	python3-debugger	3.5.6	PSFv2	Python debugger
python3	python3-difflib	3.5.6	PSFv2	Python helpers for computing deltas between objects
python3	python3-distutils	3.5.6	PSFv2	Python Distribution Utilities
python3	python3-email	3.5.6	PSFv2	Python email support
python3- evdev	python3-evdev	0.7.0	BSD	Python evdev lib
python3	python3-fcntl	3.5.6	PSFv2	Python's fcntl interface
python3	python3-html	3.5.6	PSFv2	Python HTML processing support
python3	python3-io	3.5.6	PSFv2	Python low-level I/O



Recipe Name	Package Name	Version	License	Description
python3	python3-json	3.5.6	PSFv2	Python JSON support
python3	python3-logging	3.5.6	PSFv2	Python logging support
python3	python3-math	3.5.6	PSFv2	Python math support
python3	python3-mime	3.5.6	PSFv2	Python MIME handling APIs
python3	python3-misc	3.5.6	PSFv2	The Python Programming Language
python3	python3-multiprocessing	3.5.6	PSFv2	Python multiprocessing support
python3	python3-netclient	3.5.6	PSFv2	Python Internet Protocol clients
python3	python3-netserver	3.5.6	PSFv2	Python Internet Protocol servers
python3	python3-numbers	3.5.6	PSFv2	Python number APIs
python3-pexpect	python3-pexpect	4.6.0	ISC	A Pure Python Expect like Module for Python
python3	python3-pickle	3.5.6	PSFv2	Python serialisation/persistence support
python3	python3-pkgutil	3.5.6	PSFv2	Python package extension utility support
python3	python3-plistlib	3.5.6	PSFv2	Generate and parse Mac OS X .plist files
python3	python3-pprint	3.5.6	PSFv2	Python pretty-print support
python3-pyprocess	python3-pyprocess	0.6.0	ISC	Run a subprocess in a pseudo terminal
python3-pycairo	python3-pycairo	1.15.6	LGPLv2.1 & MPLv1.1	Python bindings for the Cairo canvas library
python3-pyobject	python3-pyobject	3.28.3	LGPLv2.1	Python GObject bindings
python3-pyparsing	python3-pyparsing	2.2.0	MIT	Python parsing module
python3-pyyaml	python3-pyyaml	3.13	MIT	Python support for YAML
python3	python3-resource	3.5.6	PSFv2	Python resource control interface
python3-setuptools	python3-setuptools	40.0.0	MIT	Download, build, install, upgrade, and uninstall Python packages
python3	python3-shell	3.5.6	PSFv2	Python shell-like functionality



Recipe Name	Package Name	Version	License	Description
python3-six	python3-six	1.11.0	MIT	Python 2 and 3 compatibility library
python3	python3-stringold	3.5.6	PSFv2	Python string APIs [deprecated]
python3	python3-terminal	3.5.6	PSFv2	Python terminal controlling support
python3	python3-threading	3.5.6	PSFv2	Python threading & synchronization support
python3	python3-unittest	3.5.6	PSFv2	Python unit testing framework
python3	python3-unixadmin	3.5.6	PSFv2	Python Unix administration support
python3	python3-xml	3.5.6	PSFv2	Python basic XML support
qrenc	qrenc	1.0	LGPLv2.1	qrenc which uses libqrencode to generate QR-code
v4l-utils	rc-keymaps	1.16.0	GPLv2 & LGPLv2.1	v4l2 and IR applications
resize-helper	resize-helper	1.0	GPLv2+	resize-helper version 1.0-r0
rgb	rgb	1.0.6	MIT-X	X11 color name database
rng-tools	rng-tools	5	GPLv2	Random number generator daemon
rpcbind	rpcbind	0.2.4	BSD	Universal Addresses to RPC Program Number Mapper
run-postinsts	run-postinsts	1.0	MIT	Runs postinstall scripts on first boot of the target device
shadow	shadow	4.6	Artistic-1.0	Tools to change and administer password and group data
shadow	shadow-base	4.6	Artistic-1.0	Tools to change and administer password and group data
shadow-securetty	shadow-securetty	4.6	MIT	Provider of the machine specific securetty file
shared-mime-info	shared-mime-info	1.10	GPLv2	Shared MIME type database and specification
slang	slang	2.3.2	GPLv2	The shared library for the S-Lang extension language
strace	strace	4.24	BSD	System call tracing tool
sysfsutils	sysfsutils	2.1.0	GPLv2	Tools for working with sysfs
				System-wide Performance Profiler



Recipe Name	Package Name	Version	License	Description
sysprof	sysprof	3.30.0	GPLv3+	for Linux
sysstat	sysstat	11.7.4	GPLv2+	System performance tools
systemd	systemd	239	GPLv2 & LGPLv2.1	A System and service manager
systemd	systemd-analyze	239	GPLv2 & LGPLv2.1	A System and service manager
systemd-compat-units	systemd-compat-units	1.0	MIT	Enhances systemd compatibility with existing SysVinit scripts
systemd-conf	systemd-conf	1.0	GPLv2 & LGPLv2.1	Systemd system configuration
systemd	systemd-container	239	GPLv2 & LGPLv2.1	Tools for containers and VMs
systemd	systemd-extra-utils	239	GPLv2 & LGPLv2.1	A System and service manager
systemd-mount-partitions	systemd-mount-partitions	1.0	MIT	Mount partitions
systemd-networkd-configuration	systemd-networkd-configuration	1.0	MIT	systemd-networkd-configuration version 1.0-r0
systemd-serialgetty	systemd-serialgetty	1.0	GPLv2+	Serial terminal support for systemd
systemd	systemd-vconsole-setup	239	GPLv2 & LGPLv2.1	A System and service manager
systemtap	systemtap	4.0	GPLv2	Script-directed dynamic tracing and performance analysis tool for Linux
systemtap	systemtap-locales-en	4.0	GPLv2	Script-directed dynamic tracing and performance analysis tool for Linux - en translations
tcf-agent	tcf-agent	1.7.0 +gitAUTOINC +a022ef2f1a	EDL-1.0	Target Communication Framework for the Eclipse IDE
tcpdump	tcpdump	4.9.2	BSD	A sophisticated network protocol analyzer



Recipe Name	Package Name	Version	License	Description
systemd	udev	239	GPLv2 & LGPLv2.1	A System and service manager
systemd	udev-hwdb	239	GPLv2 & LGPLv2.1	A System and service manager
opkg-utils	update-alternatives-opkg	0.3.6	GPLv2+	Utility for managing the alternatives system
update-rc.d	update-rc.d	0.8	GPLv2+	manage symlinks in /etc/rcN.d
usbotg-gadget-config	usbotg-gadget-config	1.0	MIT	usbotg-gadget-config version 1.0-r0
usbutils	usbutils	010	GPLv2+	Host side USB console utilities
userfs-cleanup-package	userfs-cleanup-package	1.0	BSD-3-Clause	userfs-cleanup-package version 1.0-r0
util-linux	util-linux	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-agetty	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-cfdisk	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-fdisk	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-fsck	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-getopt	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-ionice	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
			GPLv2+ &	



Recipe Name	Package Name	Version	License	Description
util-linux	util-linux-losetup	2.32.1	LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-lsblk	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-lscpu	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-mkfs	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-mount	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-mountpoint	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-prlimit	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-readprofile	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-runuser	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-sfdisk	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-su	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-sulogin	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
			GPLv2+ & LGPLv2.1+	



Recipe Name	Package Name	Version	License	Description
util-linux	util-linux-swaponoff	2.32.1	& BSD	A suite of basic system administration utilities
util-linux	util-linux-switch-root	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
util-linux	util-linux-umount	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities
v4l-utils	v4l-utils	1.16.0	GPLv2 & LGPLv2.1	v4l2 and IR applications
valgrind	valgrind	3.14.0	GPLv2 & GPLv2+ & BSD	Valgrind memory debugger and instrumentation framework
volatile-binds	volatile-binds	1.0	MIT	Volatile bind mount setup and configuration for read-only-roots
wayland	wayland	1.16.0	MIT	Wayland, a protocol between a compositor and clients
weston	weston	5.0.0	MIT	Weston, a Wayland compositor
weston	weston-examples	5.0.0	MIT	Weston, a Wayland compositor
weston-init	weston-init	1.0	MIT	Startup script and systemd unit file for the Weston Wayland compositor
weston	weston-xwayland	5.0.0	MIT	Weston, a Wayland compositor
wifi-suspend	wifi-suspend	1.0	MIT	wifi-suspend version 1.0-r0
wireless-regdb	wireless-regdb-static	2018.10.24	ISC	Wireless Central Regulatory Domain Database
wpa-supPLICANT	wpa-supPLICANT	2.6	BSD	Client for Wi-Fi Protected Access (WPA)
wpa-supPLICANT	wpa-supPLICANT-cli	2.6	BSD	Client for Wi-Fi Protected Access (WPA)
wpa-supPLICANT	wpa-supPLICANT-passphrase	2.6	BSD	Client for Wi-Fi Protected Access (WPA)
xclock	xclock	1.0.5	MIT	analog / digital clock for X
xeyes	xeyes	1.1.2	MIT-X	X11 eyes that follow the mouse cursor demo
xf86-input-				X.Org X server -- event devices



Recipe Name	Package Name	Version	License	Description
evdev	xf86-input-evdev	2.10.6	MIT-X	(evdev) input driver
xf86-input-keyboard	xf86-input-keyboard	1.9.0	MIT-X	X.Org X server -- keyboard input driver
xf86-input-libinput	xf86-input-libinput	0.28.0	MIT-X	Generic input driver for the X.Org server based on libinput
xf86-input-mouse	xf86-input-mouse	1.9.3	MIT-X	X.Org X server -- mouse input driver
xserver-xorg	xf86-video-modesetting	1.20.1	MIT-X	X.Org X server -- modesetting display driver
xinput	xinput	1.6.2	MIT-X	Runtime configuration and test of XInput devices
xkbcomp	xkbcomp	1.4.2	MIT-X	A program to compile XKB keyboard description
xkeyboard-config	xkeyboard-config	2.24	MIT & MIT-style	Keyboard configuration database for X Window
xorg-minimal-fonts	xorg-minimal-fonts	1.0	PD	Xorg minimal fonts data
xserver-xf86-config	xserver-xf86-config	0.1	MIT-X	X.Org X server configuration file
xserver-xorg	xserver-xorg	1.20.1	MIT-X	The X.Org X server
xserver-xorg	xserver-xorg-xwayland	1.20.1	MIT-X	The X.Org X server
xterm	xterm	330	MIT-X	xterm is the standard terminal emulator for the X Window System
xvinfo	xvinfo	1.1.3	MIT-X	Print out X-Video extension adaptor information

3.3 userfs partition:

Image	st-image-userfs-openstlinux-weston-stm32mp1
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Recipe Name	Package Name	Version	License	Description
adwaita-icon-theme	adwaita-icon-theme-symbolic	3.28.0	LGPL-3.0	GTK+ icon theme
ai-hand-char-reco-launcher	ai-hand-char-reco-launcher	1.0	GPLv2 & BSD-3-Clause	ai-hand-char-reco-launcher version 1.0-r0
alsa-lib	alsa-conf	1.1.6	LGPLv2.1 & GPLv2+	ALSA sound library
base-files	base-files	3.0.14	GPLv2	Miscellaneous files for the base system
base-passwd	base-passwd	3.5.29	GPLv2+	Base system master password/group files
busybox	busybox	1.29.3	GPLv2 & bzip2	Tiny versions of many common UNIX utilities in a single small executable
busybox	busybox-udhcpc	1.29.3	GPLv2 & bzip2	Tiny versions of many common UNIX utilities in a single small executable
ca-certificates	ca-certificates	20190110	GPL-2.0+ & MPL-2.0	Common CA certificates
dbus	dbus-1	1.12.10	GPLv2+	D-Bus message bus
demo-hotspot-wifi	demo-hotspot-wifi	1.0	MIT	demo-hotspot-wifi version 1.0-r0
demo-launcher	demo-launcher	1.0	BSD-3-Clause	Python script which launch several use-cases
event-gtk-player	event-gtk-player	1.0 +gitAUTO INC+5ff2 ec74da	GPL-2.0+	GTK player with touch screen management
fontconfig	fontconfig-utils	2.12.6	MIT-style & MIT & PD	Generic font configuration library
glibc-locale	glibc-gconv	2.28	GPLv2 & LGPLv2.1	Locale data from glibc
glibc-	glibc-gconv-		GPLv2 &	



Recipe Name	Package Name	Version	License	Description
locale	iso8859-1	2.28	LGPLv2.1	gconv module for character set iso8859-1
gobject-introspection	gobject-introspection	1.58.0	LGPLv2+ & GPLv2+	Middleware layer between GObject-using C libraries and language bindings
gststreamer1.0	gststreamer1.0	1.14.4	LGPLv2+	GStreamer 1.0 multimedia framework
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base	1.14.4	GPLv2+ & LGPLv2+	Plugins for the GStreamer multimedia framework 1.x
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-adder	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for adder
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-alsa	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for alsa
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-app	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for app
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-apps	1.14.4	GPLv2+ & LGPLv2+	Plugins for the GStreamer multimedia framework 1.x
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-audioconvert	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audioconvert
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-audiomixer	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audiomixer
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-audiorate	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audiorate



Recipe Name	Package Name	Version	License	Description
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-audioresample	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audioresample
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-audiotestsrc	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for audiotestsrc
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-encoding	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for encoding
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-gio	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for gio
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-meta	1.14.4	GPLv2+ & LGPLv2+	Plugins for the GStreamer multimedia framework 1.x
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-ogg	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for ogg
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-opengl	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for opengl
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-pango	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for pango
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-pbtypes	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for pbtypes
gststreamer1.0-	gststreamer1.0-plugins-base-			



Recipe Name	Package Name	Version	License	Description
plugins-base	playback	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for playback
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-rawparse	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for rawparse
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-subparse	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for subparse
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-tcp	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for tcp
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-theora	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for theora
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-typefindfunctions	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for typefindfunctions
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videoconvert	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videoconvert
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videorate	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videorate
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videoscale	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videoscale
gstreamer1.0-plugins-base	gstreamer1.0-plugins-base-videotestsrc	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for videotestsrc



Recipe Name	Package Name	Version	License	Description
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-volume	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for volume
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-vorbis	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for vorbis
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-ximagesink	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for ximagesink
gststreamer1.0-plugins-base	gststreamer1.0-plugins-base-xvimagesink	1.14.4	GPLv2+ & LGPLv2+	GStreamer plugin for xvimagesink
hicolor-icon-theme	hicolor-icon-theme	0.17	GPLv2	Default icon theme that all icon themes automatically inherit from
alsa-lib	libasound2	1.1.6	LGPLv2.1 & GPLv2+	ALSA sound library
atk	libatk-1.0-0	2.28.1	GPLv2+ & LGPLv2+	Accessibility toolkit for GNOME
at-spi2-atk	libatk-bridge-2.0-0	2.26.2	LGPLv2	AT-SPI 2 Toolkit Bridge
at-spi2-core	libatspi0	2.28.0	LGPLv2	Assistive Technology Service Provider Interface (dbus core)
attr	libattr1	2.4.47	LGPLv2.1+	Utilities for manipulating filesystem extended attributes
util-linux	libblkid1	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	util-linux libblkid
bzip2	libbz2-1	1.0.6	bzip2	Very high-quality data compression program
glibc	libc6	2.28	GPLv2 & LGPLv2.1	GLIBC (GNU C Library)
cairo	libcairo-gobject2	1.14.12	MPL-1 & LGPLv2.1	The Cairo library GObject wrapper library



Recipe Name	Package Name	Version	License	Description
cairo	libcairo2	1.14.12	MPL-1 & LGPLv2.1	The Cairo 2D vector graphics library
libcap	libcap2	2.25	GPLv2	Library for getting/setting POSIX.1e capabilities
libxcrypt	libcrypt1	4.1.1	LGPLv2.1	Extended cryptographic library (from glibc)
openssl	libcrypto1.1	1.1.1b	openssl	Secure Socket Layer
dbus	libdbus-1-3	1.12.10	GPLv2+	D-Bus message bus
libdrm	libdrm2	2.4.94	MIT	Userspace interface to the kernel DRM services
libepoxy	libepoxy0	1.5.2	MIT	OpenGL function pointer management library
liberation-fonts	liberation-fonts	2.00.1	OFL-1.1	Liberation(tm) Fonts
expat	libexpat1	2.2.6	MIT	A stream-oriented XML parser library
libffi	libffi6	3.2.1	MIT	A portable foreign function interface library
fontconfig	libfontconfig1	2.12.6	MIT-style & MIT & PD	Generic font configuration library
freetype	libfreetype6	2.9.1	GPLv2+	Freetype font rendering library
fribidi	libfribidi0	1.0.5	LGPLv2.1+	Free Implementation of the Unicode Bidirectional Algorithm
libgcc	libgcc1	8.2.0	GPL-3.0-with-GCC-exception	GNU cc and gcc C compilers
gdbm	libgdbm-compat4	1.18	GPLv3	Key/value database library with extensible hashing
gdbm	libgdbm6	1.18	GPLv3	Key/value database library with extensible hashing
gdk-pixbuf	libgdk-pixbuf-2.0-0	2.36.11	LGPLv2	Image loading library for GTK+
gdk-pixbuf	libgdk-pixbuf-2.0-loader-gif	2.36.11	LGPLv2	GDK pixbuf loader for gif
gdk-pixbuf	libgdk-pixbuf-2.0-loader-jpeg	2.36.11	LGPLv2	GDK pixbuf loader for jpeg
gdk-pixbuf	libgdk-pixbuf-2.0-loader-png	2.36.11	LGPLv2	GDK pixbuf loader for png



Recipe Name	Package Name	Version	License	Description
gdk-pixbuf	libgdk-pixbuf-2.0-loader-xpm	2.36.11	LGPLv2	GDK pixbuf loader for xpm
mesa-gl	libgl-mesa	18.1.9	MIT	A free implementation of the OpenGL API (OpenGL only, no EGL/GLES)
mesa-gl	libglapi0	18.1.9	MIT	A free implementation of the OpenGL API (OpenGL only, no EGL/GLES)
glib-2.0	libglib-2.0-0	2.58.0	LGPLv2.1+ & BSD & PD	A general-purpose utility library
glib-2.0	libglib-2.0-utils	2.58.0	LGPLv2.1+ & BSD & PD	A general-purpose utility library
gststreamer1.0-plugins-base	libgstallocators-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstallocators-1.0 library
gststreamer1.0-plugins-base	libgstapp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstapp-1.0 library
gststreamer1.0-plugins-base	libgstaudio-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstaudio-1.0 library
gststreamer1.0-plugins-base	libgstfft-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstfft-1.0 library
gststreamer1.0-plugins-base	libgstgl-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstgl-1.0 library
gststreamer1.0-plugins-base	libgstpbutils-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gststreamer gstpbutils-1.0 library
gststream				



Recipe Name	Package Name	Version	License	Description
er1.0-plugins-base	libgstriff-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gstreamer gstriff-1.0 library
gstreamer1.0-plugins-base	libgstrtp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gstreamer gstrtp-1.0 library
gstreamer1.0-plugins-base	libgstrtsp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gstreamer gstrtsp-1.0 library
gstreamer1.0-plugins-base	libgstsdp-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gstreamer gstdp-1.0 library
gstreamer1.0-plugins-base	libgsttag-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gstreamer gsttag-1.0 library
gstreamer1.0-plugins-base	libgstvideo-1.0-0	1.14.4	GPLv2+ & LGPLv2+	gstreamer gstvideo-1.0 library
gstreamer1.0-plugins-bad	libgstwayland-1.0-0	1.14.4	GPLv2+ & LGPLv2.1+	gstreamer gstwayland-1.0 library
gtk+3	libgtk-3.0	3.22.30	LGPLv2 & LGPLv2+ & LGPLv2.1+	Multi-platform toolkit for creating GUIs
harfbuzz	libharfbuzz0	1.8.8	MIT	Text shaping library
libjpeg-turbo	libjpeg62	2.0.0	BSD-3-Clause	Hardware accelerated JPEG compression /decompression library
xz	liblzma5	5.2.4	PD	Utilities for managing LZMA compressed files
util-linux	libmount1	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	util-linux libmount



Recipe Name	Package Name	Version	License	Description
ncurses	libncurses5	6.1 +201806 30	MIT	ncurses ncurses library
libogg	libogg0	1.3.3	BSD	Ogg bitstream and framing library
orc	liborc-0.4-0	0.4.28	BSD-2- Clause & BSD-3- Clause	ORC orc-0.4 library
libpam	libpam	1.3.0	BSD	Linux-PAM (Pluggable Authentication Modules)
libpam	libpam- runtime	1.3.0	BSD	Linux-PAM (Pluggable Authentication Modules)
ncurses	libpanel5	6.1 +201806 30	MIT	ncurses panel library
libpcre	libpcre1	8.42	BSD	Perl Compatible Regular Expressions
pixman	libpixman-1-0	0.34.0	MIT & MIT- style & PD	Pixman: Pixel Manipulation library
libpng	libpng16-16	1.6.36	Libpng	PNG image format decoding library
python3	libpython3. 5m1.0	3.5.6	PSFv2	The Python Programming Language
readline	libreadline7	7.0	GPLv3+	Library for editing typed command lines
sqlite3	libsqlite3-0	3.23.1	PD	Embeddable SQL database engine
openssl	libssl1.1	1.1.1b	openssl	Secure Socket Layer
gcc- runtime	libstdc++6	8.2.0	GPL-3.0- with-GCC- exception	GNU standard C++ library
systemd	libsystemd0	239	GPLv2 & LGPLv2.1	Systemd systemd library
libtheora	libtheora	1.1.1	BSD	Theora Video Codec
ncurses	libtinfo5	6.1 +201806 30	MIT	ncurses tinfo library
util- linux	libuuid1	2.32.1	GPLv2+ & LGPLv2. 1+ & BSD	util-linux libuuid
libvorbis	libvorbis	1.3.6	BSD	Ogg Vorbis Audio Codec



Recipe Name	Package Name	Version	License	Description
libx11	libx11-6	1.6.6	MIT & MIT-style & BSD	Xlib: C Language X Interface library
libx11	libx11-xcb1	1.6.6	MIT & MIT-style & BSD	Xlib: C Language X Interface library
libxau	libxau6	1.0.8	MIT-style	Xau: X Authority Database library
libxcb	libxcb-dri2-0	1.13	MIT	XCB library module for dri2
libxcb	libxcb-glx0	1.13	MIT	XCB library module for glx
libxcb	libxcb-render0	1.13	MIT	XCB library module for render
libxcb	libxcb-shm0	1.13	MIT	XCB library module for shm
libxcb	libxcb-xkb1	1.13	MIT	XCB library module for xkb
libxcb	libxcb1	1.13	MIT	XCB: The X protocol C binding library
libxcomposite	libxcomposite1	0.4.4	MIT-style	Xcomposite: X Composite extension library
libxcursor	libxcursor1	1.1.15	MIT-style	Xcursor: X Cursor management library
libxdamage	libxdamage1	1.1.4	MIT	Xdamage: X Damage extension library
libxdmcp	libxdmcp6	1.1.2	MIT-style	XDMCP: X Display Manager Control Protocol library
libxext	libxext6	1.3.3	MIT-style	XExt: X Extension library
libxfixed	libxfixed3	5.0.3	MIT-style	XFixes: X Fixes extension library
libxft	libxft2	2.3.2	MIT	XFt: X FreeType library
libxi	libxi6	1.7.9	MIT & MIT-style	XI: X Input extension library
libxkbcommon	libxkbcommon	0.8.2	MIT & MIT-style	Generic XKB keymap library
libxml2	libxml2	2.9.8	MIT	XML C Parser Library and Toolkit
libxrandr	libxrandr2	1.5.1	MIT-style	XRandR: X Resize, Rotate and Reflect extension library
libxrender	libxrender1	0.9.10	MIT-style	XRender: X Rendering Extension library
libxtst	libxtst6	1.2.3	MIT-style	XTest: X Test extension library



Recipe Name	Package Name	Version	License	Description
libxv	libxv1	1.0.11	MIT-style	Xv: X Video extension library
libxxf86vm	libxxf86vm1	1.1.4	MIT	XFree86-VM: XFree86 video mode extension library
zlib	libz1	1.2.11	Zlib	Zlib Compression Library
linux-examples-stm32mp1	linux-examples-stm32mp1-userfs	4.19 +AUTOIN C+bcfba4 7fb4	MIT	ST STM32MP1 projects for Linux examples
m4projects-stm32mp1	m4projects-stm32mp1-userfs	1.2.0	Apache-2.0 & MIT & BSD-3-Clause	STM32MP1 Firmware examples for CM4
mesa-gl	mesa-megadriver	18.1.9	MIT	A free implementation of the OpenGL API (OpenGL only, no EGL/GLES)
ncurses	ncurses-terminfo-base	6.1 +201806 30	MIT	The New Curses library
openssl	openssl	1.1.1b	openssl	Secure Socket Layer
openssl	openssl-conf	1.1.1b	openssl	Secure Socket Layer
libpam	pam-plugin-deny	1.3.0	BSD	PAM plugin for -deny
libpam	pam-plugin-env	1.3.0	BSD	PAM plugin for -env
libpam	pam-plugin-faildelay	1.3.0	BSD	PAM plugin for -faildelay
libpam	pam-plugin-group	1.3.0	BSD	PAM plugin for -group
libpam	pam-plugin-lastlog	1.3.0	BSD	PAM plugin for -lastlog
libpam	pam-plugin-limits	1.3.0	BSD	PAM plugin for -limits
libpam	pam-plugin-mail	1.3.0	BSD	PAM plugin for -mail
libpam	pam-plugin-motd	1.3.0	BSD	PAM plugin for -motd



Recipe Name	Package Name	Version	License	Description
libpam	pam-plugin-nologin	1.3.0	BSD	PAM plugin for -nologin
libpam	pam-plugin-permit	1.3.0	BSD	PAM plugin for -permit
libpam	pam-plugin-rootok	1.3.0	BSD	PAM plugin for -rootok
libpam	pam-plugin-securetty	1.3.0	BSD	PAM plugin for -securetty
libpam	pam-plugin-shells	1.3.0	BSD	PAM plugin for -shells
libpam	pam-plugin-unix	1.3.0	BSD	PAM plugin for -unix
libpam	pam-plugin-warn	1.3.0	BSD	PAM plugin for -warn
pango	pango	1.42.4	LGPLv2.0+	Framework for layout and rendering of internationalized text
python3	python3-2to3	3.5.6	PSFv2	Python automated Python 2 to 3 code translator
python3	python3-asyncio	3.5.6	PSFv2	Python Asynchronous I/
python3	python3-audio	3.5.6	PSFv2	Python Audio Handling
python3	python3-codecs	3.5.6	PSFv2	Python codec
python3	python3-compile	3.5.6	PSFv2	Python bytecode compilation support
python3	python3-compression	3.5.6	PSFv2	Python high-level compression support
python3	python3-core	3.5.6	PSFv2	Python interpreter and core modules
python3	python3-crypt	3.5.6	PSFv2	Python basic cryptographic and hashing support
python3	python3-ctypes	3.5.6	PSFv2	Python C types support
python3	python3-curses	3.5.6	PSFv2	Python curses support
python3	python3-datetime	3.5.6	PSFv2	Python calendar and time support
python3	python3-db	3.5.6	PSFv2	Python file-based database support



Recipe Name	Package Name	Version	License	Description
python3	python3-debugger	3.5.6	PSFv2	Python debugger
python3	python3-difflib	3.5.6	PSFv2	Python helpers for computing deltas between objects
python3	python3-distutils	3.5.6	PSFv2	Python Distribution Utilities
python3	python3-doctest	3.5.6	PSFv2	Python framework for running examples in docstrings
python3	python3-email	3.5.6	PSFv2	Python email support
python3	python3-fcntl	3.5.6	PSFv2	Python's fcntl interface
python3	python3-html	3.5.6	PSFv2	Python HTML processing support
python3	python3-idle	3.5.6	PSFv2	Python Integrated Development Environment
python3	python3-image	3.5.6	PSFv2	Python graphical image handling
python3	python3-io	3.5.6	PSFv2	Python low-level I/O
python3	python3-json	3.5.6	PSFv2	Python JSON support
python3	python3-logging	3.5.6	PSFv2	Python logging support
python3	python3-mailbox	3.5.6	PSFv2	Python mailbox format support
python3	python3-math	3.5.6	PSFv2	Python math support
python3	python3-mime	3.5.6	PSFv2	Python MIME handling APIs
python3	python3-misc	3.5.6	PSFv2	The Python Programming Language
python3	python3-mmap	3.5.6	PSFv2	Python memory-mapped file support
python3	python3-modules	3.5.6	PSFv2	All Python modules
python3	python3-multiprocessing	3.5.6	PSFv2	Python multiprocessing support
python3	python3-netclient	3.5.6	PSFv2	Python Internet Protocol clients
python3	python3-netserver	3.5.6	PSFv2	Python Internet Protocol servers
	python3-			



Recipe Name	Package Name	Version	License	Description
python3	numbers	3.5.6	PSFv2	Python number APIs
python3-pexpect	python3-pexpect	4.6.0	ISC	A Pure Python Expect like Module for Python
python3	python3-pickle	3.5.6	PSFv2	Python serialisation/persistence support
python3	python3-pkgutil	3.5.6	PSFv2	Python package extension utility support
python3	python3-plistlib	3.5.6	PSFv2	Generate and parse Mac OS X .plist files
python3	python3-pprint	3.5.6	PSFv2	Python pretty-print support
python3	python3-profile	3.5.6	PSFv2	Python basic performance profiling support
python3-pyprocess	python3-pyprocess	0.6.0	ISC	Run a subprocess in a pseudo terminal
python3-pycairo	python3-pycairo	1.15.6	LGPLv2.1 & MPLv1.1	Python bindings for the Cairo canvas library
python3	python3-pydoc	3.5.6	PSFv2	Python interactive help support
python3-pygobject	python3-pygobject	3.28.3	LGPLv2.1	Python GObject bindings
python3	python3-resource	3.5.6	PSFv2	Python resource control interface
python3	python3-runpy	3.5.6	PSFv2	Python helper for locating/executing scripts in module namespace
python3-setuptools	python3-setuptools	40.0.0	MIT	Download, build, install, upgrade, and uninstall Python packages
python3	python3-shell	3.5.6	PSFv2	Python shell-like functionality
python3	python3-smtpd	3.5.6	PSFv2	Python Simple Mail Transport Daemon
python3	python3-sqlite3	3.5.6	PSFv2	Python Sqlite3 database support
python3	python3-stringold	3.5.6	PSFv2	Python string APIs [deprecated]



Recipe Name	Package Name	Version	License	Description
python3	python3-syslog	3.5.6	PSFv2	Python syslog interface
python3	python3-terminal	3.5.6	PSFv2	Python terminal controlling support
python3	python3-threading	3.5.6	PSFv2	Python threading & synchronization support
python3	python3-tkinter	3.5.6	PSFv2	Python Tcl/Tk bindings
python3	python3-typing	3.5.6	PSFv2	Python typing support
python3	python3-unittest	3.5.6	PSFv2	Python unit testing framework
python3	python3-unixadmin	3.5.6	PSFv2	Python Unix administration support
python3	python3-venv	3.5.6	PSFv2	Provides support for creating lightweight virtual environments with their own site directories, optionally isolated from system site directories.
python3	python3-xml	3.5.6	PSFv2	Python basic XML support
python3	python3-xmlrpc	3.5.6	PSFv2	Python XML-RPC support
shadow	shadow	4.6	Artistic-1.0	Tools to change and administer password and group data
shadow	shadow-base	4.6	Artistic-1.0	Tools to change and administer password and group data
shadow-securetty	shadow-securetty	4.6	MIT	Provider of the machine specific securetty file
shared-mime-info	shared-mime-info	1.10	GPLv2	Shared MIME type database and specification
opkg-utils	update-alternatives-opkg	0.3.6	GPLv2+	Utility for managing the alternatives system
util-linux	util-linux-sulogin	2.32.1	GPLv2+ & LGPLv2.1+ & BSD	A suite of basic system administration utilities



Recipe Name	Package Name	Version	License	Description
wayland	wayland	1.16.0	MIT	Wayland, a protocol between a compositor and clients
weston-cube	weston-cube	1.0 +gitAUTO INC+28e b6cabde	MIT	3D cube for wayland/weston windows



4 vendorfs partition:

Image	st-image-vendorfs-openstlinux-weston-stm32mp1
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Recipe Name	Package Name	Version	License	Description
gcnano-userland-multi-binary-stm32mp	gcnano-userland-multi-binary-stm32mp	6.2.4.p4	Proprietary	Vivante libraries OpenGL ES, OpenVG and EGL (multi backend)
libdrm	libdrm2	2.4.94	MIT	Userspace interface to the kernel DRM services
libffi	libffi6	3.2.1	MIT	A portable foreign function interface library
wayland	wayland	1.16.0	MIT	Wayland, a protocol between a compositor and clients



5 Full license list including packages from ST package repository

This list not only includes the licenses from OpenSTLinux distribution but also the licenses of the packages that could be installed from this distribution thanks to [package repository for OpenSTLinux distribution](#): [Full license list](#)



6 OE SPDX LICENSE

How Openembedded validate a License indicated on a package:

Official licenses used by Openembedded	Link to text of license
AAL	[AAL]
Adobe	[Adobe]
AFL-1.2	[AFL-1.2]
AFL-2.0	[AFL-2.0]
AFL-2.1	[AFL-2.1]
AFL-3.0	[AFL-3.0]
AGPL-3.0	[AGPL-3.0]
ANTLR-PD	[ANTLR-PD]
Apache-1.0	[Apache-1.0]
Apache-1.1	[Apache-1.1]
Apache-2.0	[Apache-2.0]
APL-1.0	[APL-1.0]
APSL-1.0	[APSL-1.0]
APSL-1.1	[APSL-1.1]
APSL-1.2	[APSL-1.2]
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Artistic-2.0	[Artistic-2.0]
BitstreamVera	[BitstreamVera]
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BSD-2-Clause	[BSD-2-Clause]
BSD-3-Clause	[BSD-3-Clause]
BSD-4-Clause	[BSD-4-Clause]
BSL-1.0	[BSL-1.0]
CATOSL-1.1	[CATOSL-1.1]
CC0-1.0	[CC0-1.0]
CC-BY-1.0	[CC-BY-1.0]



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CC-BY-2.5	[CC-BY-2.5]
CC-BY-3.0	[CC-BY-3.0]
CC-BY-NC-1.0	[CC-BY-NC-1.0]
CC-BY-NC-2.0	[CC-BY-NC-2.0]
CC-BY-NC-2.5	[CC-BY-NC-2.5]
CC-BY-NC-3.0	[CC-BY-NC-3.0]
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CC-BY-NC-ND-2.0	[CC-BY-NC-ND-2.0]
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GPL-2.0-with-classpath-exception	[GPL-2.0-with-classpath-exception]
GPL-2.0-with-font-exception	[GPL-2.0-with-font-exception]
GPL-2.0-with-GCC-exception	[GPL-2.0-with-GCC-exception]
GPL-2-with-bison-exception	[GPL-2-with-bison-exception]
GPL-3.0	[GPL-3.0]
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gSOAP-1.3b	[gSOAP-1.3b]



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OFL-1.1	[OFL-1.1]



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PostgreSQL	[PostgreSQL]
Proprietary	[Proprietary]
Python-2.0	[Python-2.0]
QPL-1.0	[QPL-1.0]
RHeCos-1	[RHeCos-1]
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RPL-1.5	[RPL-1.5]
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RSCPL	[RSCPL]
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SAX-PD	[SAX-PD]
SGI-1	[SGI-1]
Simple-2.0	[Simple-2.0]
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Watcom-1.0	[Watcom-1.0]
WXwindows	[WXwindows]
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XFree86-1.1	[XFree86-1.1]



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XSL	[XSL]
YPL-1.1	[YPL-1.1]
Zimbra-1.3	[Zimbra-1.3]
Zlib	[Zlib]
ZPL-1.1	[ZPL-1.1]
ZPL-2.0	[ZPL-2.0]
ZPL-2.1	[ZPL-2.1]

License name	Authorized variations names			
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AGPLv3				
AGPLv3.0				
GPL-1.0	<table border="1"> <tr><td>GPL-1</td></tr> <tr><td>GPLv1</td></tr> <tr><td>GPLv1.0</td></tr> </table>	GPL-1	GPLv1	GPLv1.0
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GPLv1				
GPLv1.0				
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LGPLv2				
LGPLv2.0				
LGPL-2.1	<table border="1"> <tr><td>LGPL2.1</td></tr> <tr><td>LGPLv2.1</td></tr> </table>	LGPL2.1	LGPLv2.1	
LGPL2.1				
LGPLv2.1				



License name	Authorized variations names
LGPL-3.0	LGPLv3
MPL-1.0	MPL-1 MPLv1
MPL-1.1	MPLv1.1
MPL-2.0	MPLv2
MIT	MIT-X MIT-style
OpenSSL	openssl
Python-2.0	PSF PSFv2 Python-2
Apache-2.0	Apachev2 Apache-2
Artistic-1.0	Artisticv1 Artistic-1
AFL-2.0	AFL-2 AFLv2
AFL-1.2	AFL-1 AFLv1
EPL-1.0	EPLv1.0
SGL-1	SGLv1



Information extracted from:

<http://git.openembedded.org/openembedded-core/tree/meta/conf/licenses.conf>

All Text of License are available:

<http://git.openembedded.org/openembedded-core/tree/meta/files/common-licenses>

Das U-Boot -- the Universal Boot Loader (see [U-Boot_overview](#))

Advanced Linux sound architecture

Sony/Philips Digital Interface Format (Protocol (IEC-60958))

Controller Area Network (robust bus mainly used for automotive applications)

Dynamic Host Configuration Protocol (See https://en.wikipedia.org/wiki/Dynamic_Host_Configuration_Protocol for more details)

Open Graphics Library (See <http://www.opengl.org/> for more details)

GUID Partition Table

(Software)Integrated development/design/debugging environment

Read Only

Portable Operating System Interface based on uniX (https://en.wikipedia.org/wiki/POSIX_terminal_interface for more details)

Inter-Processor Communication

Serial Peripheral Interface

Cascading Style Sheets (web standard)

Direct Rendering Manager (kernel module that gives direct hardware access to DRI clients, find more information on official DRI web site <http://dri.freedesktop.org/wiki/DRM>)

Application programming interface

Khronos Native Platform Graphics Interface (See <http://www.khronos.org/egl/> for more details)

General-Purpose Input/Output (A realization of open ended transmission between devices on an embedded level. These pins available on a processor can be programmed to be used to either accept input or provide output to external devices depending on user desires and applications requirements.)

Industrial I/O Linux subsystem

System File System (See <https://en.wikipedia.org/wiki/Sysfs> for more details)

MultimediaCard

Trusted Application

Open Portable Trusted Execution Environment

Network File System (https://en.wikipedia.org/wiki/Network_File_System)

Operating System

technology for wireless local area networking with devices based on the IEEE 802.11 standards

Open Vector Graphics (See <http://www.khronos.org/opencv/> for more details)



Common Public License

Software Generated Interrupt

Secondary Program Loader. Also known as **U-Boot SPL**

Stable: 28.04.2020 - 10:36 / Revision: 17.04.2020 - 07:44

A quality version of this page, approved on 28 April 2020, was based off this revision.

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1 Disclaimers

STMicroelectronics packages repository service is provided for evaluation purpose only, and therefore not approved for use in production.

The package licenses hosted in these repositories can be found here: [OpenSTLinux licenses](#).

Command outputs described in this document may slightly vary depending on tools version.

1.1 Description

OpenSTLinux provides a package repository service hosted at the non-browsable URL <http://packages.openstlinux.st.com>.

The package repository service is designed for *STM32MP157C-DK2* boards and is enabled by default in the *Starter Package*.

1.2 Organization

Within each repository, packages are organized in two groups (a.k.a *components* in the APT terminology):

- the **main** group contains a wide selection of packages whose installation is automatically tested by STMicroelectronics
- the **untested** group contains all the other packages that can be built using the `bitbake world` command. However their installation is not guaranteed.

A third group named **updates** is reserved for future use.

1.3 Limitations

Packages repository service doesn't include the packages that are shipped in the *rootfs* image, nor the BSP components (TF-A, U-Boot, Linux and OP-TEE). They can be installed only from the *Starter Package* using the *STM32CubeProgrammer*.

rootfs available space is about 60MB by default. For a better experience it is recommended to flash the *Starter Package* using the "extensible" flashlayout (**-extensible.tsv*).

Extensible flashlayout does not flash *userfs* partition to extend the *rootfs* partition to the size of the *sdcard*.



2 Usage

2.1 Prerequisite

We assume your board has an internet connection either through the network cable or through a WiFi connection.

2.2 Apt

OpenSTLinux packages can be handled using `apt -*` utilities, which are the same utilities used on a Debian system. The first `apt -*` command that must be run before any other is:

```
Board $> apt-get update
The software package is provided AS IS, and by downloading it, you agree to be
bound to the terms of the software license agreement (SLA).
The detailed content licenses can be found at
https://wiki.st.com/stm32mpu/wiki/OpenSTLinux_licenses.

Get:1 http://packages.openstlinux.st.com/1.2 thud InRelease [2691 B]
Get:2 http://packages.openstlinux.st.com/1.2 thud/main armhf Packages [1012 kB]
Get:3 http://packages.openstlinux.st.com/1.2 thud/untested armhf Packages [1438]
Fetched 2453 kB in 3s (652 kB/s)
Reading package lists... Done
```

This command synchronizes the local packages index from the repositories enumerated in `/etc/apt/sources.list{,.d}`. Once it is updated, `apt-cache` can be used to get the list of all available packages:

```
Board $> apt-cache search .
a52dec - ATSC A/52 surround sound stream decoder
a52dec-doc - ATSC A/52 surround sound stream decoder
acl - Utilities for managing POSIX Access Control Lists
...
libglapi0 - A free implementation of the OpenGL API (OpenGL only, no EGL/GLES)
libxcb-xkb1 - XCB library module for xkb
libavahi-core7 - Avahi IPv4LL network address configuration daemon
```

It is possible to list only packages that match a given pattern, for example:

```
Board $> apt-cache search emacs
libreadline-doc - Library for editing typed command lines - Documentation files
gpm - gpm version 1.99.7+git1fd19417b8a4dd9945347e98dfa97e4cfd798d77-r2
zile - Zile is lossy Emacs
zile-doc - Zile is lossy Emacs - Documentation files
libreadline7 - Library for editing typed command lines
```

The desired package(s) can then be easily installed:

```
Board $> apt-get install zile
Reading package lists... Done
Building dependency tree
Reading state information... Done
```




```
The following additional packages will be installed:
  bdwgc
The following NEW packages will be installed:
  bdwgc zile
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 141 kB of archives.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n]
Get:1 http://packages.openstlinux.st.com/1.2 thud/untested armhf bdwgc armhf 7.6.0-r0
[60.3 kB]
Get:2 http://packages.openstlinux.st.com/1.2 thud/untested armhf zile armhf 2.4.14-r0
[80.2 kB]
Fetched 141 kB in 5s (25.2 kB/s)

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bound to the terms of the software license agreement (SLA).
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https://wiki.st.com/stm32mpu/wiki/OpenSTLinux\_licenses.

Selecting previously unselected package bdwgc.
(Reading database ... 16257 files and directories currently installed.)
Preparing to unpack .../bdwgc_7.6.0-r0_armhf.deb ...
Unpacking bdwgc (7.6.0-r0) ...
Selecting previously unselected package zile.
Preparing to unpack .../zile_2.4.14-r0_armhf.deb ...
Unpacking zile (2.4.14-r0) ...
Setting up bdwgc (7.6.0-r0) ...
Setting up zile (2.4.14-r0) ...
```

... or removed:

```
Board $> apt-get remove zile
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  bdwgc
Use 'apt autoremove' to remove it.
The following packages will be REMOVED:
  zile
0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n]

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(Reading database ... 16262 files and directories currently installed.)
Removing zile (2.4.14-r0) ...
```

This command only removes the files that were installed from this package. It does not remove the package from the apt download cache. If there is not enough space available on the system, it is recommended to clean the cache:

```
Board $> apt-get clean
```

Likewise, some packages may have been automatically installed to respect dependencies with other packages. If they are no longer required, they can be removed to free space:



```
Board $> apt-get autoremove
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be REMOVED:
  bdwgc
0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n]

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https://wiki.st.com/stm32mpu/wiki/OpenSTLinux\_licenses.

(Reading database ... 16261 files and directories currently installed.)
Removing bdwgc (7.6.0-r0) ...
```



3 How to activate a local package repository

3.1 Prerequisite

Even if *Package repository for OpenSTLinux* offers lots of and various packages, you may need to use a local and personal package repository. To use a local and personal package repository is a 'smart' and 'quick' way to update the *STM32MP15_Discovery_kits_-_Starter_Package* with your developments.

A local package repository is a collection of *.deb organized such apt needs it. The local repository should provide *Packages* metafiles.

Natively OpenEmbedded/Yocto build system is able to generate a valid package repository (by using `bitbake package-index` command listed below). So first Install the *STM32MP1 OpenSTLinux* distribution.

3.2 Update the repo package indexes

Execute the `bitbake package-index` command:

```
PC $> cd [your STM32MP1 Distribution path]/build-<DISTR0>-<MACHINE>
PC $> bitbake package-index
```

3.3 HTTP server execution on the computer

SimpleHTTPserver python application is already installed on the board with the OpenSTLinux distribution. You just need to launch this application on your host computer, in the "[your STM32MP1 Distribution path]/build-<DISTR0>-<MACHINE>/tmp-glibc/deploy/deb" folder:

```
PC $> cd [your STM32MP1 Distribution path]/build-<DISTR0>-<MACHINE>/tmp-glibc/deploy/deb
PC $> python -m SimpleHTTPServer&
```

3.4 How to use the local OpenSTLinux Distribution

We use the physical IP address of the HTTP server we launched above to configure APT. That means this `{{<IP>}}` address should be defined as static on the host computer.

You can now configure the APT tool directly on the target via a Linux console:

```
Board $> echo "deb [trusted=yes] http://<IP>:8000/stm32mp1 /" > /etc/apt/sources.list.d/my_custom.list
Board $> echo "deb [trusted=yes] http://<IP>:8000/all /" >> /etc/apt/sources.list.d/my_custom.list
Board $> echo "deb [trusted=yes] http://<IP>:8000/cortexa7t2hf-neon-vfpv4 /" >> /etc/apt/sources.list.d/my_custom.list
```

In the above example, `[trusted=yes]` has been specified because the package manifest **Release** is not signed.

Then you can run the command to synchronize the local packages index:



```
Board $> apt-get update
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bound to the terms of the software license agreement (SLA).
The detailed content licenses can be found at
https://wiki.st.com/stm32mpu/wiki/OpenSTLinux\_licenses.
Ign:1 http://<IP>:8000/all
InRelease

Ign:2 http://<IP>:8000/stm32mp1
InRelease

Ign:3 http://<IP>:8000/cortexa7t2hf-neon-vfpv4
InRelease

Get:4 http://<IP>:8000/all Release [1213
B]

Get:5 http://<IP>:8000/stm32mp1 Release [1218
B]

Get:6 http://<IP>:8000/cortexa7t2hf-neon-vfpv4 Release [1233
B]

Ign:7 http://<IP>:8000/all Release.
gpg

Ign:8 http://<IP>:8000/stm32mp1 Release.
gpg

Ign:9 http://<IP>:8000/cortexa7t2hf-neon-vfpv4 Release.
gpg

Get:10 http://<IP>:8000/all Packages [82.8
kB]

Get:11 http://<IP>:8000/stm32mp1 Packages [173
kB]

Get:12 http://<IP>:8000/cortexa7t2hf-neon-vfpv4 Packages [1734
kB]

Fetched 1994 kB in 3s (662 kB
/s)

Reading package lists... Done
```

The other apt - * commands are now available as described above.



4 Support

Bug reports, request for new packages, or any other kind of support requests can be submitted through <https://community.st.com>.



5 Further readings

- Dpkg
- <https://manpages.debian.org/stable/apt/apt-get.8.en.html>
- <https://manpages.debian.org/stable/apt/sources.list.5.en.html>
- <https://manpages.debian.org/stable/apt/apt-cache.8.en.html>
- <https://wiki.debian.org/DebianRepository/Setup>
- <https://wiki.debian.org/DebianRepository/SetupWithReprepro>
- <https://wiki.debian.org/SecureApt>
- https://wiki.st.com/stm32mpu/wiki/STM32MP15_Discovery_kits_-_Starter_Package
- https://wiki.st.com/stm32mpu/wiki/STM32MP15_Evaluation_boards_-_Starter_Package
- https://wiki.st.com/stm32mpu/wiki/STM32MP1_Developer_Package

Advanced Package Tool (see <https://wiki.debian.org/Apt>)

Board support package

Trusted Firmware for Arm Cortex-A

Das U-Boot -- the Universal Boot Loader (see [U-Boot_overview](#))

Open Portable Trusted Execution Environment

Portable Operating System Interface based on uniX (https://en.wikipedia.org/wiki/POSIX_terminal_interface for more details)

Open Graphics Library (See <http://www.opengl.org/> for more details)

Application programming interface

Khronos Native Platform Graphics Interface (See <http://www.khronos.org/egl/> for more details)

Stable: 23.10.2020 - 16:19 / Revision: 23.10.2020 - 16:16

A quality version of this page, approved on 23 October 2020, was based off this revision.

Das U-Boot ("the Universal Boot Loader" or U-Boot) is an open-source bootloader that can be used to initialize the platform and load the Linux[®] kernel.

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1 Das U-Boot

- Official website: <https://www.denx.de/wiki/U-Boot>
- Official manual: project documentation and <https://www.denx.de/wiki/DULG/Manual>
- Official **source code** is available under git repository at [1]

```
PC $> git clone https://gitlab.denx.de/u-boot/u-boot.git
```

Read the [README](#) file before starting using U-Boot. It covers the following topics:

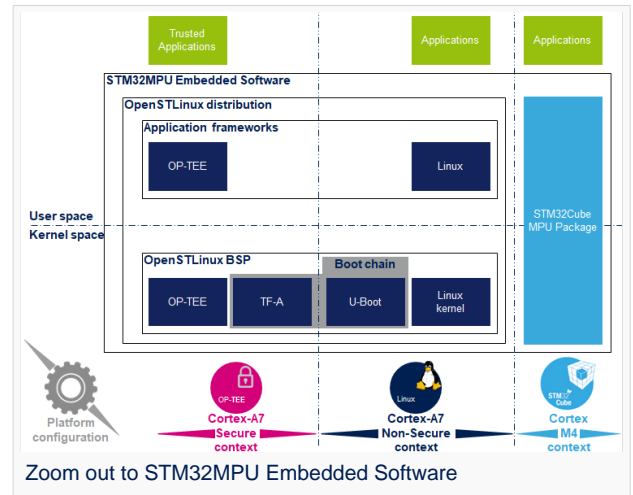
- source file tree structure
- description of CONFIG defines
- instructions for building U-Boot
- brief description of the Hush shell
- list of common environment variables



2 U-Boot overview

The same U-Boot source can generate two pieces of firmware used in SPL and U-Boot STM32 MPU boot chain:

- Trusted boot chain: TF-A as FSBL and U-Boot as SSBL
- Basic boot chain: SPL as FSBL and U-Boot as SSBL



Warning

The basic boot chain cannot be used for product development (see [Boot chains overview](#) for details).

It is provided only as an example of the simplest SSBL and to support upstream U-Boot development. However, several known limitations have been identified when SPL is used in conjunction with the minimal secure monitor provided within U-Boot for basic boot chain. They apply to:

- power
- secure access to registers
- limited features (STM32CubeProgrammer / boot from NAND Flash memory).

No fix is planned for these limitations.

2.1 SPL: FSBL for basic boot

The **U-Boot SPL** or **SPL** is the first stage bootloader (FSBL) for the basic boot chain.

It is a small binary (bootstrap utility) generated from the U-Boot source and stored in the internal limited-size embedded RAM.

SPL main features are the following:

- It is loaded by the ROM code.
- It performs the initial CPU and board configuration (clocks and DDR memory).
- It loads the SSBL (U-Boot) into the DDR memory.

2.2 U-Boot: SSBL

U-Boot is the default second-stage bootloader (SSBL) for STM32 MPU platforms. It is used both for trusted and basic boot chains. SSBL main features are the following:

- It is configurable and expendable.
- It features a simple command line interface (CLI), allowing users to interact over a serial port console.
- It provides scripting capabilities



- It loads the kernel into RAM and gives control to the kernel
- It manages several internal and external devices such as NAND and NOR Flash memories, Ethernet and USB.
- It supports the following features and commands:
 - File systems: FAT, UBI/UBIFS, JFFS
 - IP stack: FTP
 - Display: LCD, HDMI, BMP for splashscreen
 - USB: host (mass storage) or device (DFU stack)

2.3 SPL phases

SPL executes the following main phases in SYSRAM:

- **board_init_f()**: driver initialization including DDR initialization (minimal stack and heap: CONFIG_SPL_STACK_R_MALLOC_SIMPLE_LEN)
- configuration of heap in DDR memory (CONFIG_SPL_SYS_MALLOC_F_LEN)
- **board_init_r()**: initialization of the other drivers activated in the SPL device tree
- loading and execution of U-Boot (or Kernel in Falcon mode^[1]: README.falcon).

2.4 U-Boot phases

U-Boot executes the following main phases in DDR memory:

- **Pre-relocation** initialization (common/board_f.c): minimal initialization (such as CPU, clock, reset, DDR and console) running at the CONFIG_SYS_TEXT_BASE load address.
- **Relocation**: copy of the code to the end of DDR memory.
- **Post-relocation initialization**: (common/board_r.c): initialization of all the drivers.
- **Command execution** through autoboot (CONFIG_AUTOBOOT) or console shell
 - Execution of the boot command (by default bootcmd=CONFIG_BOOTCOMMAND):
for example, execution of the command bootm to:
 - load and check images (such as kernel, device tree and ramdisk)
 - fixup the kernel device tree
 - install the secure monitor (optional) or
 - pass the control to the Linux kernel (or to another target application)



3 U-Boot configuration

The U-Boot binary configuration is based on

- **Kbuild infrastructure** (as in Linux Kernel, you can use `make menuconfig` in U-Boot)

The configurations are based on:

- options defined in Kconfig files (CONFIG_ compilation flags)
- the selected configuration file: `configs/stm32mp*_defconfig`
- **other compilation flags** defined in `include/configs/stm32mp*.h` (these flags are progressively migrated to Kconfig)

The file name is configured through `CONFIG_SYS_CONFIG_NAME`.

For STM32MP15x lines , the `include/configs/stm32mp1.h` file is used.

- **DeviceTree**: U-Boot and SPL binaries include a device tree blob that is parsed at runtime

All the configuration flags (prefixed by CONFIG_) are described in the source code, either in the `README` file or in the `documentation` directory .

For example, `CONFIG_SPL` activates the SPL compilation.

Hence to compile U-Boot, select the `<target>` and the device tree for the board in order to choose a predefined configuration.

Refer to `#U-Boot_build` for examples.

3.1 Kbuild

Like the kernel, the U-Boot build system is based on `configuration symbols` (defined in Kconfig files). The selected values are stored in a `.config` file in the build directory, with the same makefile target .

Proceed as follows:

- Select a pre-defined configuration (defconfig file in `configs` directory) and generate the first `.config`:

```
PC $> make <config>_defconfig.
```

- Change the U-Boot compile configuration (modify `.config`) by using one of the following five `make` commands:

```
PC $> make menuconfig --> menu based program
PC $> make config --> line-oriented configuration
PC $> make xconfig --> QT program[2]
PC $> make gconfig --> GTK program
PC $> make nconfig --> ncurses menu based program
```

You can then compile U-Boot with the updated `.config`.

Warning: the modification is performed locally in the build directory. It will be lost after a `make distclean`.

Save your configuration to be able to use it as a defconfig file:

```
PC $> make savedefconfig
```

This target saves the current config as a defconfig file in the build directory. It can then be compared with the predefined configuration (`configs/stm32mp*_defconfig`).

The other makefile targets are the following:



```

PC $> make help
....
Configuration targets:
  config      - Update current config utilising a line-oriented program
  nconfig     - Update current config utilising a ncurses menu based
                program
  menuconfig  - Update current config utilising a menu based program
  xconfig     - Update current config utilising a Qt based front-end
  gconfig     - Update current config utilising a GTK+ based front-end
  oldconfig   - Update current config utilising a provided .config as base
  localmodconfig - Update current config disabling modules not loaded
  localyesconfig - Update current config converting local mods to core
  defconfig   - New config with default from ARCH supplied defconfig
  savedefconfig - Save current config as ./defconfig (minimal config)
  allnoconfig - New config where all options are answered with no
  allyesconfig - New config where all options are accepted with yes
  allmodconfig - New config selecting modules when possible
  alldefconfig - New config with all symbols set to default
  randconfig  - New config with random answer to all options
  listnewconfig - List new options
  olddefconfig - Same as oldconfig but sets new symbols to their
                default value without prompting

```

3.2 Device tree

Refer to [doc/README.fdt-control](#) for details.

The board device tree has the same binding as the kernel. It is integrated within the SPL and U-Boot binaries:

- By default, it is appended at the end of the code (CONFIG_OF_SEPARATE).
- It is embedded in the U-Boot binary (CONFIG_OF_EMBED). This is useful for debugging since it enables easy .elf file loading.

A default device tree is available in the defconfig file (by setting CONFIG_DEFAULT_DEVICE_TREE).

You can either select another supported device tree using the DEVICE_TREE make flag. For stm32mp boards, the corresponding file is: `arch/arm/dts/stm32mp*.dts` .

```
PC $> make DEVICE_TREE=<dts-file-name>
```

or provide a precompiled device tree blob (using EXT_DTB option):

```
PC $> make EXT_DTB=boot/<dts-file-name>.dtb
```

The SPL device tree is also generated from this device tree. However to reduce its size, the U-Boot makefile uses the `fdtgrep` tool to parse the full U-Boot DTB and identify all the drivers required by SPL.

To do this, U-Boot uses specific device-tree flags to define if the associated driver is initialized prior to U-Boot relocation and/or if the associated node is present in SPL :

- `u-boot,dm-pre-reloc` => present in SPL, initialized before relocation in U-Boot
- `u-boot,dm-pre-proper` => initialized before relocation in U-Boot
- `u-boot,dm-spl` => present in SPL

In the device tree used by U-Boot, these flags **need to be added in each node** used in SPL or in U-Boot before relocation and for each used handle (clock, reset, pincontrol).



4 U-Boot command line interface (CLI)

Refer to [U-Boot Command Line Interface](#).

If CONFIG_AUTOBOOT is activated, you have CONFIG_BOOTDELAY seconds (2s by default) to enter the console by pressing any key, after the line below is displayed and bootcmd is executed (CONFIG_BOOTCOMMAND):

```
Hit any key to stop autoboot:  2
```

4.1 Commands

The commands are defined in `cmd/*.c`. They are activated through the corresponding `CONFIG_CMD_*` configuration flag.

Use the `help` command in the U-Boot shell to list the commands available on your device:

```
Board $> help
```

Below the list of all commands extracted from [U-Boot Manual](#) (**not-exhaustive**):

- Information Commands
 - `bdinfo` - prints Board Info structure
 - `coninfo` - prints console devices and information
 - `flinfo` - prints Flash memory information
 - `imininfo` - prints header information for application image
 - `help` - prints online help
- Memory Commands
 - `base` - prints or sets the address offset
 - `crc32` - checksum calculation
 - `cmp` - memory compare
 - `cp` - memory copy
 - `md` - memory display
 - `mm` - memory modify (auto-incrementing)
 - `mtest` - simple RAM test
 - `mw` - memory write (fill)
 - `nm` - memory modify (constant address)
 - `loop` - infinite loop on address range
- Flash Memory Commands
 - `cp` - memory copy
 - `flinfo` - prints Flash memory information
 - `erase` - erases Flash memory
 - `protect` - enables or disables Flash memory write protection
 - `mtdparts` - defines a Linux compatible MTD partition scheme
- Execution Control Commands
 - `source` - runs a script from memory
 - `bootm` - boots application image from memory



- go - starts application at address 'addr'
- Download Commands
 - bootp - boots image via network using BOOTP/TFTP protocol
 - dhcp - invokes DHCP client to obtain IP/boot params
 - loadb - loads binary file over serial line (kermit mode)
 - loads - loads S-Record file over serial line
 - rarpboot - boots image via network using RARP/TFTP protocol
 - tftpboot - boots image via network using TFTP protocol
- Environment Variables Commands
 - printenv - prints environment variables
 - saveenv - saves environment variables to persistent storage
 - setenv - sets environment variables
 - run - runs commands in an environment variable
 - bootd - boots default, i.e., run 'bootcmd'
- Flattened Device Tree support
 - fdt addr - selects the FDT to work on
 - fdt list - prints one level
 - fdt print - recursive printing
 - fdt mknod - creates new nodes
 - fdt set - sets node properties
 - fdt rm - removes nodes or properties
 - fdt move - moves FDT blob to new address
 - fdt chosen - fixup dynamic information
- Special Commands
 - i2c - I2C sub-system
- Storage devices
- Miscellaneous Commands
 - echo - echoes args to console
 - reset - Performs a CPU reset
 - sleep - delays the execution for a predefined time
 - version - prints the monitor version

To add a new command, refer to [doc/README.commands](#) .

4.2 U-Boot environment variables

The U-Boot behavior is configured through environment variables.

Refer to [Manual](#) and [README / Environment Variables](#).

On the first boot, U-Boot uses a default environment embedded in the U-Boot binary. You can modify it by changing the content of CONFIG_EXTRA_ENV_SETTINGS in your configuration file (for example `./include/configs/stm32mp1.h`) (see [README / - Default Environment](#)).

This environment can be modified and saved in the boot device. When it is present, it is loaded during U-Boot initialization:

- for eMMC/SD card boot (CONFIG_ENV_IS_IN_EXT4), in the bootable ext4 partition "bootfs" in file CONFIG_ENV_EXT4_FILE="uboot.env".
- for NAND boot (CONFIG_ENV_IS_IN_UBI), in the two UBI volumes "config" (CONFIG_ENV_UBI_VOLUME) and "config_r" (CONFIG_ENV_UBI_VOLUME_REDUND).



- for NOR boot (CONFIG_ENV_IS_IN_SPI_FLASH), in the u-boot_env mtd partition (at offset CONFIG_ENV_OFFSET).

4.2.1 env command

The env command allows displaying, modifying and saving the environment in U-Boot console.

```
Board $> help env
env - environment handling commands

Usage:
env default [-f] -a - [forcibly] reset default environment
env default [-f] var [...] - [forcibly] reset variable(s) to their default values
env delete [-f] var [...] - [forcibly] delete variable(s)
env edit name - edit environment variable
env exists name - tests for existence of variable
env print [-a | name ...] - print environment
env print -e [name ...] - print UEFI environment
env run var [...] - run commands in an environment variable
env save - save environment
env set -e name [arg ...] - set UEFI variable; unset if 'arg' not specified
env set [-f] name [arg ...]
```

Example: proceed as follows to restore the default environment and save it. This is useful after a U-Boot upgrade:

```
Board $> env default -a
Board $> env save
```

4.2.2 bootcmd

"bootcmd" variable is the autoboot command. It defines the command executed when U-Boot starts (CONFIG_BOOTCOMMAND).

For stm32mp, CONFIG_BOOTCOMMAND="run bootcmd_stm32mp":

```
Board $> env print bootcmd
bootcmd=run bootcmd_stm32mp
```

"bootcmd_stm32mp" is a script that selects the command to be executed for each boot device (see ./include/configs/stm32mp1.h), based on generic distro scripts:

- for serial/usb: execute the stm32prog command.
- for mmc boot (eMMC, SD card), boot only on the same device (bootcmd_mmc...).
- for nand boot, boot with on ubifs partition on nand (bootcmd_ubi0).
- for nor boot, use the default order eMMC (SDMMC 1)/ NAND / SD card (SDMMC 0) / SDMMC2 (the default bootcmd: distro_bootcmd).

```
Board $> env print bootcmd_stm32mp
```

You can then change this configuration:

- either permanently in your board file (default environment by CONFIG_EXTRA_ENV_SETTINGS or change CONFIG_BOOTCOMMAND value) or
- temporarily in the saved environment:



```
Board $> env set bootcmd run bootcmd_mmc0
Board $> env save
```

Note: To reset the environment to its default value:

```
Board $> env default bootcmd
Board $> env save
```

4.3 Generic Distro configuration

Refer to `doc/README.distro` for details.

This feature is activated by default on ST boards (`CONFIG_DISTRO_DEFAULTS`):

- one boot command (`bootcmd_xxx`) exists for each bootable device.
- U-Boot is independent of the Linux distribution used.
- `bootcmd` is defined in `./include/config_distro_bootcmd.h`

When DISTRO is enabled, the command that is executed by default is `include/config_distro_bootcmd.h` :

```
bootcmd=run distro_bootcmd
```

This script tries any device found in the 'boot_targets' variable and executes the associated `bootcmd`.

Example for `mmc0`, `mmc1`, `mmc2`, `pxe` and `ubifs` devices:

```
bootcmd_mmc0=setenv devnum 0; run mmc_boot
bootcmd_mmc1=setenv devnum 1; run mmc_boot
bootcmd_mmc2=setenv devnum 2; run mmc_boot
bootcmd_pxe=run boot_net_usb_start; dhcp; if pxe get; then pxe boot; fi
bootcmd_ubifs0=setenv devnum 0; run ubifs_boot
```

U-Boot searches for a `extlinux.conf` configuration file for each bootable device. This file defines the kernel configuration to be used:

- `bootargs`
- kernel + device tree + ramdisk files (optional)
- FIT image

4.4 U-Boot scripting capabilities

"Script files" are command sequences that are executed by the U-Boot command interpreter. This feature is particularly useful to configure U-Boot to use a real shell (`hush`) as command interpreter.

See [U-Boot script manual](#) for an example.



5 U-Boot build

5.1 Prerequisites

- a PC with Linux and tools:
 - see [PC_prerequisites](#)
 - #ARM cross compiler
- U-Boot source code
 - the latest STMicroelectronics U-Boot version
 - tar.xz file from Developer Package (for example STM32MP1)
 - from GITHUB^[3], with git command

```
PC $> git clone https://github.com/STMicroelectronics/u-boot
```

- from the Mainline U-Boot in official GIT repository ^[4]

```
PC $> git clone https://gitlab.denx.de/u-boot/u-boot.git
```

5.1.1 ARM cross compiler

A cross compiler ^[5] must be installed on your Host (X86_64, i686, ...) for the ARM targeted Device architecture. In addition, the \$PATH and \$CROSS_COMPILE environment variables must be configured in your shell.

You can use gcc for ARM, available in:

- the SDK toolchain (see [Cross-compile with OpenSTLinux SDK](#))
PATH and CROSS_COMPILE are automatically updated.

- an existing package

For example, install gcc-arm-linux-gnueabi on Ubuntu/Debian: (PC \$> sudo apt-get.

- an existing toolchain:
 - latest gcc toolchain provided by arm (<https://developer.arm.com/open-source/gnu-toolchain/gnu-a/downloads/>)
 - gcc v7 toolchain provided by linaro: (<https://www.linaro.org/downloads/>)

For example, to use *gcc-arm-9.2-2019.12-x86_64-arm-none-linux-gnueabi.tar.xz* from arm, extract the toolchain in \$HOME and update your environment with:

```
PC $> export PATH=$HOME/gcc-arm-9.2-2019.12-x86_64-arm-none-linux-gnueabi/bin:$PATH
PC $> export CROSS_COMPILE=arm-none-linux-gnueabi-
```

For example, to use *gcc-linaro-7.2.1-2017.11-x86_64_arm-linux-gnueabi.tar.xz*

from <https://releases.linaro.org/components/toolchain/binaries/7.2-2017.11/arm-linux-gnueabi/>

Unzip the toolchain in \$HOME and update your environment with:

```
PC $> export PATH=$HOME/gcc-linaro-7.2.1-2017.11-x86_64_arm-linux-gnueabi/bin:$PATH
PC $> export CROSS_COMPILE=arm-linux-gnueabi-
```



5.2 Compilation

In the U-Boot source directory, select the <target> and the <device tree> for your configuration and then execute the `make all` command:

```
PC $> make <target>_defconfig
PC $> make DEVICE_TREE=<device-tree> all
```

Optionally `KBUILD_OUTPUT` can be used to change the output directory to compile several targets or not to compile in the source directory. For example:

```
PC $> export KBUILD_OUTPUT=./build/basic
```

`DEVICE_TREE` can also be exported to your environment when only one board is supported. For example:

```
PC $> export DEVICE_TREE=stm32mp157c-ev1
```

Examples from STM32MP15 U-Boot:

Three configurations are supported for STM32MP15x lines :

- **stm32mp15_trusted_defconfig**: trusted boot chain, U-Boot (without SPL) is unsecure and uses Secure monitor from TF-A
- **stm32mp15_optee_defconfig**: trusted boot chain, U-Boot (without SPL) is unsecure and uses Secure monitor from SecureOS = OP-TEE
- **stm32mp15_basic_defconfig**: basic boot chain, with an SPL as FSBL, U-BOOT is secure and installs monitor with PSCI

The board diversity is only managed with the device tree.

```
PC $> export KBUILD_OUTPUT=./build/trusted
PC $> make stm32mp15_trusted_defconfig
PC $> make DEVICE_TREE=stm32mp157c-<board> all
```

```
PC $> export KBUILD_OUTPUT=./build/optee
PC $> export DEVICE_TREE=stm32mp157c-<board>
PC $> make stm32mp15_optee_defconfig
PC $> make all
```

```
PC $> make stm32mp15_basic_defconfig
PC $> make DEVICE_TREE=stm32mp157c-<board> all
```

Use help to list other targets:

```
PC $> make help
```

5.3 Output files

The resulting U-Boot files are located in your build directory (U-Boot or `KBUILD_OUTPUT`).



Two binary formats are used for stm32mp devices:

- STM32 image format (*.stm32), managed by mkimage U-Boot tools and [Signing_tool](#). It is requested by ROM code and TF-A (see [STM32 header for binary files](#) for details).
- ulmage (*.img) format, file including a U-Boot header, managed by SPL and U-Boot (for kernel load)

The U-Boot generated files are the following

- For **Trusted boot chain** (TF-A is used as FSBL, with or without OP-TEE)
 - **u-boot.stm32** : U-Boot binary with STM32 image header, loaded by TF-A
- For **Basic boot chain** (SPL is used as FSBL)
 - **u-boot-spl.stm32** : SPL binary with STM32 image header, loaded by ROM code
 - **u-boot.img** : U-Boot binary with ulmage header, loaded by SPL

The files used to debug with gdb are

- u-boot : elf file for U-Boot
- spl/u-boot-spl : elf file for SPL



6 References

- <https://www.denx.de/wiki/pub/U-Boot/MiniSummitELCE2013/2013-ELCE-U-Boot-Falcon-Boot.pdf>
- <https://en.wikipedia.org/wiki/Xconfig>
- <https://github.com/STMicroelectronics/u-boot>
- <https://gitlab.denx.de/u-boot/u-boot.git> or <https://github.com/u-boot/u-boot>
- https://en.wikipedia.org/wiki/Cross_compiler

Das U-Boot -- the Universal Boot Loader (see [U-Boot_overview](#))

Secondary Program Loader, *Also known as **U-Boot SPL***

Trusted Firmware for Arm Cortex-A

First Stage Boot Loader

Second Stage Boot Loader

Flash memories combine high density and cost effectiveness of EPROMs with the electrical erasability of EEPROMs. For this reason, the Flash memory market is one of the most exciting areas of the semiconductor industry today and new applications requiring in system reprogramming, such as cellular telephones, automotive engine management systems, hard disk drives, PC BIOS software for Plug & Play, digital TV, set top boxes, fax and other modems, PC cards and multimedia CD-ROMs, offer the prospect of very high volume demand.

Random Access Memory (Early computer memories generally had serial access. Memories where any given address can be accessed when desired were then called "random access" to distinguish them from the memories where contents can only be accessed in a fixed order. The term is used today for volatile random-access semiconductor memories.)

Read Only Memory

Central processing unit

Doubled data rate (memory domain)

Microprocessor Unit

High-Definition Multimedia Interface (HDMI standard)

Device Firmware Upgrade

Device Tree Binary (or Blob)

Memory Technology Device

Trivial File Transfer Protocol (https://en.wikipedia.org/wiki/Trivial_File_Transfer_Protocol)

Dynamic Host Configuration Protocol (See https://en.wikipedia.org/wiki/Dynamic_Host_Configuration_Protocol for more details)

Inter-Integrated Circuit (Bi-directional 2-wire bus standard for efficient inter-IC control.)

MultimediaCard

SD memory card (<https://www.sdcard.org>)

Serial Peripheral Interface

Software development kit (A programming package that enables a programmer to develop applications for a specific platform.)

Power State Coordination Interface



Open Portable Trusted Execution Environment