

**Licensing Information User Manual**  
**Oracle® ZFS Storage Appliance Software,**  
**Release OS8.8.0**

Last Updated: July 2020

**ORACLE®**

**Part No: E91273-02**  
July 2020



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# ◆◆◆ CHAPTER 1

## Introduction

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# ◆◆◆ CHAPTER 2

## Licensing Information

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This section provides license information about certain Oracle ZFS Storage Appliance features, other Oracle technologies, and third party technologies:

- [“Separately Licensed Oracle ZFS Storage Appliance Features” on page 11](#)
- [“Oracle Technology Notices and Licenses” on page 11](#)
- [“Third Party Notices and/or Licenses” on page 12](#)

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The following features are included at no additional cost with Oracle ZFS Storage Appliance Racked System products. For Oracle ZFS Storage Appliance products that are not racked system products, these features require separate Integrated Software Option licenses:

- Replication
- Cloning
- Encryption

Refer to the Oracle Software License Agreement and Entitlement provided with each Oracle ZFS Storage Appliance product for more information about Integrated Software Options.

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- "[Open Source Software or Other Separately Licensed Software, Oracle Solaris](#)" on page 12
- "[Commercial Software, Storage Appliance](#)" on page 23
- "[Open Source Software or Other Separately Licensed Software, Storage Appliance](#)" on page 23

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Technology Name	Technology Version	Packages and Link to License Text
Babel	2.3.4	<a href="#">library/python/babel-27</a>
Backbone.js	0.9.2	<a href="#">system/install/auto-install/auto-install-common</a>
CherryPy	5.1.0	<a href="#">library/python/cherrypy-27</a>
Cracklib	2.7	<a href="#">system/library</a>
Csh		<a href="#">system/core-os</a>
DTraceToolkit	0.99	<a href="#">system/dtrace/dtrace-toolkit</a>
Django	1.11.1	<a href="#">library/python/django-27</a>
FormEncode	1.3.0	<a href="#">library/python/formencode-27</a>

Technology Name	Technology Version	Packages and Link to License Text
GMP		<a href="#">library/gmp</a>
GRUB 2	2.00	<a href="#">system/boot/grub</a>
HAL (Hardware Abstraction Layer)	0.5.4	<a href="#">system/hal</a>
ICU	3.6	<a href="#">system/library/iconv</a>
Imaging	1.1.7	<a href="#">library/python/python-imaging-27</a>
Jinja2	2.8	<a href="#">library/python/jinja2-27</a>
Kerberos	1.16.0	<a href="#">security/kerberos-5</a>
LZMA SDK	4.62	<a href="#">system/library</a>
M2Crypto	0.24.0	<a href="#">library/python/m2crypto-27</a>
MPFR		<a href="#">library/mpfr</a>
Mako	1.0.4	<a href="#">library/python/mako-27</a>
MarkupSafe	0.23	<a href="#">library/python/markupsafe-27</a>
MiniSAT	1.14.1	<a href="#">package/pkg</a>
MySQL-python	1.2.5	<a href="#">library/python/python-mysql-27</a>
NDMP SDK		<a href="#">service/storage/ndmp</a>
Netscape Communications		<a href="#">system/kernel/crypto</a>
Open Fabrics kernel components	1.5.3	<a href="#">system/io/infiniband/open-fabrics</a>
PAPI	3.5	<a href="#">diagnostic/cpu-counters</a>
Paste	2.0.3	<a href="#">library/python/paste-27</a>
PasteDeploy	1.5.2	<a href="#">library/python/paste.deploy-27</a>
PrettyTable	0.7.2	<a href="#">library/python/prettytable-27</a>
PyYAML	3.11	<a href="#">library/python/pyyaml-27</a>
Pygments	2.1.3	<a href="#">library/python/pygments-27</a>
Python	2.7.14	<a href="#">library/python/tkinter-27</a>
Python	3.4.8	<a href="#">library/python/tkinter-34</a>
RSA	4	<a href="#">system/kernel/crypto</a>
Reliable Datagram Sockets (RDSv3)	1.3	<a href="#">system/io/infiniband/reliable-datagram-sockets-v3</a>
RequireJS	2.0.5	<a href="#">system/install/auto-install/auto-install-common</a>
RequireJS i18n plugin	2.0.1	<a href="#">system/install/auto-install/auto-install-common</a>
RequireJS text plugin	2.0.3	<a href="#">system/install/auto-install/auto-install-common</a>
Routes	2.3.1	<a href="#">library/python/routes-27</a>
SQLAlchemy	1.0.12	<a href="#">library/python/sqlalchemy-27</a>
SQLite	2.8.15	<a href="#">system/core-os</a>
Twisted	10.1.0	<a href="#">library/python/python-twisted-27</a>
Underscore.js	1.3.3	<a href="#">system/install/auto-install/auto-install-common</a>
Unicode	8.0	<a href="#">system/library/iconv</a>

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V4L2 API definition header files	V4L2 in Linux 3.14	<a href="#">system/header</a>
WebOb	1.5.1	<a href="#">library/python/webob-27</a>
XML-Parser	2.44	<a href="#">library/perl-5/xml-parser-522</a>
Xen PV Drivers	Xen 3.0.4-1	<a href="#">driver/xvm/pv</a>
aac	2.2.3	<a href="#">driver/storage/aac</a>
acpica	20140325	<a href="#">system/kernel</a>
amqp	1.4.9	<a href="#">library/python/amqp-27</a>
anyjson	0.3.3	<a href="#">library/python/anyjson-27</a>
apache2	2.4.34	<a href="#">web/server/apache-24</a>
apr	1.6.3	<a href="#">library/apr-16</a>
apr-util	1.6.1	<a href="#">library/apr-util-16</a>
arn	1.0	<a href="#">driver/network/wlan/arn</a>
arp		<a href="#">system/network</a>
asn1crypto	0.24.0	<a href="#">library/python/asn1crypto-27</a>
atu	1.92	<a href="#">driver/network/wlan/atu</a>
backup		<a href="#">system/core-os</a>
bash	4.4.19.19	<a href="#">shell/bash</a>
bge	1.91.2.32.2.1	<a href="#">driver/network/ethernet/bge</a>
bib		<a href="#">text/doctools</a>
bind	9.10.6-P1	<a href="#">network/dns/bind</a>
binutils	2.30-1	<a href="#">developer/gnu-binutils</a>
boto	2.40.0	<a href="#">library/python/boto-27</a>
bpf	4.3BSD	<a href="#">system/network/bpf</a>
bzip2	1.0.6	<a href="#">compress/bzip2</a>
cdrtools	3.01	<a href="#">media/cdrtools</a>
cfffi	1.11.4	<a href="#">library/python/cffi-27</a>
checkeq		<a href="#">text/doctools</a>
cmd2	0.6.8	<a href="#">library/python/cmd2-27</a>
compress		<a href="#">system/core-os</a>
contextlib2	0.5.1	<a href="#">library/python/contextlib2-27</a>
coreutils	8.27	<a href="#">file/gnu-coreutils</a>
coverage	4.0.3	<a href="#">library/python/coverage-27</a>
cron		<a href="#">system/core-os</a>
cryptography	2.1.4	<a href="#">library/python/cryptography-27</a>
curl	7.61.0	<a href="#">web/curl</a>
cyrus-sasl	2.1.26	<a href="#">legacy/system/library/security/libsasl-links</a>

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dbus	1.10.22	<a href="#">system/library/dbus</a>
dbus-glib	0.102	<a href="#">system/library/libdbus-glib</a>
debtcollector	1.3.0	<a href="#">library/python/debtcollector-27</a>
desktop-file-utils	0.23	<a href="#">desktop/xdg/desktop-file-utils</a>
diffutils	3.6	<a href="#">text/gnu-diffutils</a>
dnspython	1.12.0	<a href="#">library/python/dnspython-27</a>
EEPROM		<a href="#">system/core-os</a>
emlxs		<a href="#">driver/fc/emlxs</a>
enum34	1.1.6	<a href="#">library/python/enum-27</a>
eventlet	0.18.4	<a href="#">library/python/eventlet-27</a>
fasteners	0.14.1	<a href="#">library/python/fasteners-27</a>
filechunkio	1.6	<a href="#">library/python/filechunkio-27</a>
fontconfig	2.12.1	<a href="#">system/library/fontconfig</a>
freetype	2.9.1	<a href="#">system/library/freetype-2</a>
ftp		<a href="#">network/ftp</a>
ftp-proxy	5.5	<a href="#">network/firewall/firewall-ftp-proxy</a>
fts	1.22	<a href="#">system/library</a>
funcsigs	0.4	<a href="#">library/python/funcsigs-27</a>
futures	3.0.5	<a href="#">library/python/futures-27</a>
futurist	0.13.0	<a href="#">library/python/futurist-27</a>
gSOAP	2.7.17	<a href="#">system/library/security/pkcs11_kms</a>
gamin	0.1.10	<a href="#">library/file-monitor/gamin</a>
gawk	4.1.4	<a href="#">text/gawk</a>
gcc	5.5.0	<a href="#">developer/gcc/gcc-c++-5</a>
gcc	7.3.0	<a href="#">developer/gcc/gcc-c++-7</a>
gdbm	1.8.3	<a href="#">library/database/gdbm</a>
getopt_long		<a href="#">system/library</a>
gettext	0.19.8	<a href="#">text/gnu-gettext</a>
gladman	04-03-08	<a href="#">system/kernel/crypto</a>
glib	2.52.0	<a href="#">library/glib2</a>
gmime	2.6.23	<a href="#">library/gmime</a>
gnutls	3.5.16	<a href="#">library/gnutls-3</a>
gpgme	1.6.0	<a href="#">library/security/gpgme</a>
greenlet	0.4.9	<a href="#">library/python/greenlet-27</a>
groff	1.22.3	<a href="#">text/groff</a>
gsskex	5.7p1	<a href="#">network/ssh</a>

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gsskrbkernel	1.8	<a href="#">system/kernel/security/gss</a>
gzip	1.8	<a href="#">compress/gzip</a>
httplib2	0.9.2	<a href="#">library/python/httplib2-27</a>
hwa1480_fw	RC1.3PA2-2	<a href="#">system/io/usb</a>
ibutils	1.5.7	<a href="#">network/open-fabrics</a>
icu	3.6	<a href="#">system/kernel</a>
idna	2.0	<a href="#">library/python/idna-27</a>
ifconfig		<a href="#">system/network</a>
ifparse		<a href="#">system/network</a>
infiniband-diags	1.6.5	<a href="#">network/open-fabrics</a>
iniparse	0.4	<a href="#">library/python/iniparse</a>
intel		<a href="#">system/kernel/platform</a>
ipaddress	1.0.16	<a href="#">library/python/ipaddress-27</a>
ipfilter	4.1.9	<a href="#">network/ipf2pf</a>
ipmi	8.0,8.1	<a href="#">driver/management/ipmi</a>
ipmitool	1.8.15.0	<a href="#">system/management/ipmitool</a>
ipython	0.10	<a href="#">library/python/ipython-27</a>
isl	0.18	<a href="#">library/isl</a>
iso8601	0.1.11	<a href="#">library/python/iso8601-27</a>
iwh	1.0	<a href="#">driver/network/wlan/iwh</a>
iwk	1.16	<a href="#">driver/network/wlan/iwk</a>
iwp	1.0	<a href="#">driver/network/wlan/iwp</a>
jQuery	1.8.0	<a href="#">system/install/auto-install/auto-install-common</a>
jansson	2.10	<a href="#">library/jansson</a>
jpeg	6.0.2	<a href="#">image/library/libjpeg</a>
json-c	0.12	<a href="#">library/json-c</a>
jsonrplib	0.2.6	<a href="#">library/python/jsonrplib-27</a>
jsonschema	2.0.0	<a href="#">library/python/jsonschema-27</a>
kcmbd		<a href="#">network/legacy-remote-utilities</a>
keymaster.js	1.0.2	<a href="#">system/install/auto-install/auto-install-common</a>
keystoneauth1	2.4.0	<a href="#">library/python/keystoneauth1-27</a>
keystonemiddleware	4.4.0	<a href="#">library/python/keystonemiddleware-27</a>
kombu	3.0.35	<a href="#">library/python/kombu-27</a>
ksh93	93u+ 2012-08-01	<a href="#">developer/astdev93</a>
lastcomm		<a href="#">system/core-os</a>
less	530	<a href="#">text/less</a>



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libX11	1.6.5	<a href="#">x11/library/libx11</a>
libXScrnSaver	1.2.2	<a href="#">x11/library/libxscnsaver</a>
libXau	1.0.8	<a href="#">x11/library/libxau</a>
libXdmpc	1.1.2	<a href="#">x11/library/libxdmpc</a>
libXevie	1.0.3	<a href="#">x11/library/libxevie</a>
libXext	1.3.3	<a href="#">x11/library/libxext</a>
libXft	2.3.2	<a href="#">x11/library/libxft</a>
libXmu	1.1.2	<a href="#">x11/library/libxmu</a>
libXrender	0.9.10	<a href="#">x11/library/libxrender</a>
libassuan	2.4.3	<a href="#">library/security/libassuan</a>
libbsdmalloc		<a href="#">system/library</a>
libcroco	0.6.12	<a href="#">library/libcroco</a>
libedit	20150325-3.1	<a href="#">library/libedit</a>
libestr	0.1.10	<a href="#">library/libestr</a>
libevent	2.0.22	<a href="#">library/libevent</a>
libexpat	2.2.5	<a href="#">library/expat</a>
libffi	3.2.1	<a href="#">library/libffi</a>
libgcrypt	1.8.1	<a href="#">system/library/security/libgrypt</a>
libgpg-error	1.27	<a href="#">library/security/libgpg-error</a>
libibmad	1.3.12	<a href="#">network/open-fabrics</a>
libibumad	1.3.10.2	<a href="#">network/open-fabrics</a>
libibverbs	1.1.4	<a href="#">network/open-fabrics</a>
libidn	1.34	<a href="#">library/libidn</a>
libidn2	2.0.4	<a href="#">library/libidn2</a>
libinetutil		<a href="#">system/library</a>
libipt	1.5.0	<a href="#">developer/debug/mdb</a>
libkmf		<a href="#">system/library</a>
liblogging	1.0.5	<a href="#">library/liblogging</a>
libmicrohttpd	0.9.52	<a href="#">library/libmicrohttpd</a>
libmlx4	1.0.1	<a href="#">network/open-fabrics</a>
libmp		<a href="#">system/library</a>
libpcap	1.8.1	<a href="#">system/library/libpcap</a>
libpng	1.0.67	<a href="#">image/library/libpng10</a>
libpng	1.2.57	<a href="#">image/library/libpng12</a>
libpng	1.4.20	<a href="#">image/library/libpng14</a>
libpthread-stubs	0.3	<a href="#">x11/library/libpthread-stubs</a>

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librabbitmq	1.6.1	<a href="#">library/python/librabbitmq-27</a>
librdmacm	1.0.14.1	<a href="#">network/open-fabrics</a>
libresolv2		<a href="#">system/library</a>
librstp	1.1.02	<a href="#">network/bridging</a>
libsdp	1.1.108	<a href="#">network/open-fabrics</a>
libsigsegv	2.10	<a href="#">library/libsigsegv</a>
libssh2	1.7.0	<a href="#">library/libssh2</a>
libtecla	1.6.1	<a href="#">library/libtecla</a>
libtool	2.4.6	<a href="#">developer/build/libtool</a>
libuuid	1.0	<a href="#">system/library</a>
libxcb	1.12	<a href="#">x11/library/libxcb</a>
libxml2	2.9.5	<a href="#">library/libxml2</a>
libxslt	1.1.28	<a href="#">library/libxslt</a>
look		<a href="#">text/spelling-utilities</a>
lxml	3.6.4	<a href="#">library/python/lxml-27</a>
lz4		<a href="#">system/file-system/zfs</a>
mdb		<a href="#">system/kernel</a>
mdns	1.0	<a href="#">service/network/dns/mdns</a>
mega_sas		<a href="#">driver/storage/mega_sas</a>
memcached	1.4.35	<a href="#">service/memcached</a>
mock	1.3.0	<a href="#">library/python/mock-27</a>
mod_gss	1.3.8	<a href="#">service/network/ftp</a>
mod_wsgi	4.5.1	<a href="#">web/server/apache-24/module/apache-wsgi-27</a>
monotonic	0.6	<a href="#">library/python/monotonic-27</a>
mpathd		<a href="#">system/network</a>
mpc	0.9	<a href="#">library/mpc</a>
mpc	1.0.3	<a href="#">library/mpc</a>
mr_sas		<a href="#">driver/storage/mr_sas</a>
msgpack-python	0.4.7	<a href="#">library/python/msgpack-27</a>
mt		<a href="#">system/core-os</a>
ncurses	6.0.0.20170708	<a href="#">library/ncurses</a>
net-snmp	5.7.3	<a href="#">library/python/net-snmp-27</a>
net80211	1.43	<a href="#">system/kernel</a>
netaddr	0.7.18	<a href="#">library/python/netaddr-27</a>
netcat	1.89	<a href="#">network/netcat</a>
netifaces	0.10.4	<a href="#">library/python/netifaces-27</a>

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netlink		<a href="#">system/kernel</a>
netlink	67a7848	<a href="#">system/header</a>
nettle	3.2	<a href="#">library/security/nettle</a>
nghttp2	1.27.0	<a href="#">library/nghttp2</a>
nose	1.3.7	<a href="#">library/python/nose</a>
nspr	4.19	<a href="#">library/nspr</a>
nss	3.36.1	<a href="#">library/security/nss</a>
ntp	4.2.8p11	<a href="#">service/network/ntp</a>
oauthlib	1.0.3	<a href="#">library/python/oauthlib-27</a>
openldap	2.4.45	<a href="#">service/network/ldap/openldap</a>
opensm	3.3.19	<a href="#">network/open-fabrics</a>
openssh	7.5p1	<a href="#">network/ssh</a>
openssl	1.0.0	<a href="#">system/kernel/crypto</a>
openssl	1.0.2o	<a href="#">library/security/openssl</a>
openssl-fips-140	1.0.2o	<a href="#">library/security/openssl/openssl-fips-140</a>
oslo.concurrency	3.7.1	<a href="#">library/python/oslo.concurrency-27</a>
oslo.config	3.9.0	<a href="#">library/python/oslo.config-27</a>
oslo.context	2.2.0	<a href="#">library/python/oslo.context-27</a>
oslo.i18n	3.5.0	<a href="#">library/python/oslo.i18n-27</a>
oslo.log	3.3.0	<a href="#">library/python/oslo.log-27</a>
oslo.messaging	4.6.1	<a href="#">library/python/oslo.messaging-27</a>
oslo.middleware	3.8.0	<a href="#">library/python/oslo.middleware-27</a>
oslo.serialization	2.4.0	<a href="#">library/python/oslo.serialization-27</a>
oslo.service	1.8.0	<a href="#">library/python/oslo.service-27</a>
oslo.utils	3.8.0	<a href="#">library/python/oslo.utils-27</a>
osprofiler	1.2.0	<a href="#">library/python/osprofiler-27</a>
ovs		<a href="#">system/kernel</a>
ovs	2.6.1	<a href="#">system/header</a>
p7zip	16.02-3	<a href="#">compress/p7zip</a>
paramiko	2.0.8	<a href="#">library/python/paramiko-27</a>
patricia		<a href="#">system/kernel</a>
pbr	1.8.1	<a href="#">library/python/pbr-27</a>
pcfs		<a href="#">system/file-system/pcfs</a>
pci.ids	2018.06.18	<a href="#">system/data/hardware-registry</a>
pcre	8.41	<a href="#">library/pcre</a>
perftest	1.3.0	<a href="#">network/open-fabrics</a>

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perl	5.22.1.1	<a href="#">runtime/perl-522</a>
pf	5.5	<a href="#">network/firewall</a>
pflogd	5.5	<a href="#">network/firewall/firewall-pflog</a>
pigz	2.3.4	<a href="#">compress/pigz</a>
pika	0.10.0	<a href="#">library/python/pika-27</a>
pika-pool	0.1.3	<a href="#">library/python/pika-pool-27</a>
pip	8.1.1	<a href="#">library/python/pip-27</a>
pkcs11	2.40	<a href="#">system/header</a>
ply	3.8	<a href="#">library/python/ply-27</a>
policykit		<a href="#">system/library/policykit</a>
popt	1.16	<a href="#">library/popt</a>
portfp		<a href="#">system/library</a>
portgen		<a href="#">system/library</a>
positional	1.0.1	<a href="#">library/python/positional-27</a>
proftpd	1.3.6	<a href="#">service/network/ftp</a>
py	1.4.31	<a href="#">library/python/py-27</a>
pyOpenSSL	16.2.0	<a href="#">library/python/pyopenssl-27</a>
pyasn1	0.4.2	<a href="#">library/python/pyasn1-27</a>
pyasn1-modules	0.2.1	<a href="#">library/python/pyasn1-modules-27</a>
pybonjour	1.1.1	<a href="#">library/python/pybonjour-27</a>
pycadf	2.2.0	<a href="#">library/python/pycadf</a>
pycparser	2.14	<a href="#">library/python/pycparser-27</a>
pycurl	7.43.0	<a href="#">library/python/pycurl</a>
pyparsing	2.1.4	<a href="#">library/python/pyparsing-27</a>
pyrabbit	1.1.0	<a href="#">library/python/pyrabbit-27</a>
pytest	2.9.1	<a href="#">library/python/pytest-27</a>
python-ceilometerclient	2.4.0	<a href="#">library/python/ceilometerclient-27</a>
python-dateutil	2.5.3	<a href="#">library/python/dateutil-27</a>
python-keystoneclient	2.3.1	<a href="#">library/python/keystoneclient-27</a>
python-ldap	2.4.25	<a href="#">library/python/python-ldap-27</a>
python-memcached	1.57	<a href="#">library/python/python-memcached-27</a>
python-swiftclient	3.0.0	<a href="#">library/python/swiftclient</a>
pytz	2016.4	<a href="#">library/python/pytz-27</a>
qlc		<a href="#">driver/fc/qlc</a>
qperf	0.4.9	<a href="#">network/open-fabrics</a>
quagga	0.99.19	<a href="#">system/network/routing/quagga</a>

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raccoon2	1.38	<a href="#">system/network/ike</a>
rcp		<a href="#">network/legacy-remote-utilities</a>
rds-tools	2.0.4	<a href="#">network/open-fabrics</a>
readline	5.2	<a href="#">library/readline</a>
readline	6.3	<a href="#">library/readline</a>
repoze.lru	0.6	<a href="#">library/python/repoze.lru-27</a>
requests	2.9.1	<a href="#">library/python/requests-27</a>
retrying	1.3.3	<a href="#">library/python/retrying-27</a>
route		<a href="#">system/network</a>
routed.bsd		<a href="#">system/network/routing</a>
rsh		<a href="#">network/legacy-remote-utilities</a>
rsync	3.1.2	<a href="#">network/rsync</a>
rsyslog	8.15.0	<a href="#">system/rsyslog</a>
rts		<a href="#">system/kernel</a>
rum	1.13.2.1	<a href="#">driver/network/wlan/rum</a>
script		<a href="#">system/core-os</a>
sendmail	8.14.9	<a href="#">mail/mail.local</a>
sendmail	8.15.2	<a href="#">library/libmilter</a>
setuptools	19.2	<a href="#">library/python/setuptools-27</a>
sg3_utils	1.42	<a href="#">system/storage/sg3_utils</a>
shared-mime-info	1.8	<a href="#">data/shared-mime-info</a>
shim	0.9	<a href="#">boot/shim</a>
simplejson	3.6.5	<a href="#">library/python/simplejson-27</a>
six	1.10.0	<a href="#">library/python/six-27</a>
smbfs	1.4.5	<a href="#">system/file-system/smb</a>
smp_utils	0.98	<a href="#">system/storage/smp_utils</a>
snappy	1.1.3	<a href="#">library/snappy</a>
snia-hbaapi	2.0	<a href="#">system/library/storage/snia-hbaapi</a>
snia-ima	1.0	<a href="#">system/library/storage/snia-ima</a>
snia-mpapi	1.1	<a href="#">system/library/storage/snia-mpapi</a>
sqlite	3.24.0	<a href="#">database/sqlite-3</a>
sqlparse	0.1.19	<a href="#">library/python/sqlparse-27</a>
sscanf		<a href="#">system/kernel</a>
stevedore	1.12.0	<a href="#">library/python/stevedore-27</a>
swift	Mitaka 2.7.0	<a href="#">cloud/openstack/swift</a>
t11-sm-hba	1.0	<a href="#">system/library/storage/t11-sm-hba</a>

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tarfile	2.4	<a href="#">package/pkg</a>
tcl	8.6.7	<a href="#">runtime/tcl-8</a>
tcp-wrapper	7.6	<a href="#">security/tcp-wrapper</a>
tcpdump	4.9.2	<a href="#">diagnostic/tcpdump</a>
tcsch	6.20.0	<a href="#">shell/tcsch</a>
telnet		<a href="#">network/telnet</a>
terminfo		<a href="#">system/data/terminfo</a>
termio		<a href="#">system/kernel</a>
timers		<a href="#">system/kernel</a>
tip		<a href="#">system/core-os</a>
tk	8.6.7	<a href="#">runtime/tk-8</a>
traceroute	1.3.2	<a href="#">system/network</a>
trousers	0.3.13	<a href="#">library/security/trousers</a>
uath	1.3	<a href="#">driver/network/wlan/uath</a>
ufs		<a href="#">system/file-system/ufs</a>
ul		<a href="#">text/doctools</a>
unicode	5.0	<a href="#">system/kernel</a>
units		<a href="#">system/core-os</a>
ural	1.70	<a href="#">driver/network/wlan/ural</a>
urtw	1.23	<a href="#">driver/network/wlan/urtw</a>
usb.ids	2018.05.04	<a href="#">system/data/hardware-registry</a>
vgaarb	1.0.0	<a href="#">driver/x11/xsvc</a>
vgrind		<a href="#">text/doctools</a>
vi		<a href="#">developer/base-developer-utilities</a>
vim	8.0.711	<a href="#">editor/gvim</a>
vmstat		<a href="#">system/core-os</a>
wget	1.19.5	<a href="#">web/wget</a>
which		<a href="#">system/core-os</a>
which	2.21	<a href="#">shell/which</a>
wireshark	2.6.3	<a href="#">diagnostic/wireshark</a>
wrapt	1.10.6	<a href="#">library/python/wrapt-27</a>
xattr	0.9.3	<a href="#">library/python/xattr-27</a>
xauth	1.0.10	<a href="#">x11/session/xauth</a>
xorriso	1.4.8	<a href="#">media/xorriso</a>
xproto	7.7	<a href="#">x11/header/x11-protocols</a>
xstr		<a href="#">system/core-os</a>

Technology Name	Technology Version	Packages and Link to License Text
xz	5.2.3	<a href="#">compress/xz</a>
zlib	1.2.11	<a href="#">library/zlib</a>
zope.interface	4.3.2	<a href="#">library/python/python-zope-interface-27</a>
zsh	5.3.1	<a href="#">shell/zsh</a>
zyd	0.1.3.1	<a href="#">driver/network/wlan/zyd</a>

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