Cool Stack

Optimized Open Source Software Stack (Cool Stack) for the Sun Solaris(TM) Operating System & UltraSPARC(R) Processors

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for the Sun Solaris(TM) Operating System & UltraSPARC(R) Processors

Cool Stack is a collection of some of the most commonly used open source applications optimized for the Sun Solaris OS / UltraSPARC platform. By using these binaries you will enjoy the best levels of performance from your system, while also reducing your time-to-service.

Cool Stack includes several packages in the Solaris *pkgadd* format, so you can install just the ones you need. Some of the applications in Cool Stack already ship with Sun Solaris OS 10, but these are either older versions and/or not built with full optimization. Cool Stack is built using Sun Studio (TM) 11 Compiler with high levels of optimization. This results in anywhere between 30-200% performance improvement (depending on workload/application) over standard compilations performed using gcc. Further, Cool Stack has been pre-configured to have the most popular applications (Apache, PHP, MySQL) to work seamlessly out of the box.

Cool Stack Installation

Cool Stack 1.1 includes the following packages :

- CSKamp , CSKampSrc : Apache2 HTTP Server, MySQL5 32bit client, PHP5
- CSKmysql, CSKmysqlSrc : MySQL5 64bit database server
- CSKperl, CSKperlSrc : Perl5 language interpreter
- CSKtds, CSKncurses, CSKphplibs : Optional libraries for PHP5 extensions. These are FreeTDS, ncurses and many smaller libraries in phpblibs which include curl, freetype, gd, gdbm, gettext, gmp, imap, readline, unixODBC, tidy
- CSKphpblibsSrc, CSKtdsSrc, CSKncursesSrc : Source code for libraries (in a single download)
- CSKmemcached, CSKmemcachedSrc : Memcached distributed memory object system
- CSKruby, CSKrubySrc : Ruby, Rubygems and Rails
- CSKsquid, CSKsquidSrc : Squid Web Proxy Cache
- CSKtomcat : Apache Tomcat Servlet Container

You must be 'root' to install the packages. Download your target packages into any directory. For each of the downloaded packages, run the following commands:
bunzip2 <package>.pkg.bz2
pkgadd -d <package>.pkg
Note: where <package>.pkg.bz2 is the name of the downloaded file containing the package.

This process will install the package in /opt/coolstack, along with all dependent libraries. Since the CSKamp package is quite large, the additional libraries required by PHP have been packaged separately in CSKphblibs, CSKtds, CSKncurses (all 3 packages form a single donwload).

After installation, please refer to the README file included in each of the application's directories. The

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README includes detailed information on the following:

- how the application was built
- Solaris-specific configuration and tuning notes.

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Following is a sample installation of CSKamp, assuming it has been downloaded to /tmp :

```
# bunzip2 /tmp/CSKamp.pkg.bz2
# pkgadd -d /tmp/CSKamp.pkg

The following packages are available:
  1  CSKamp     Apache httpd, PHP and MySQL
                (sparc) Apache 2.2.3, PHP 5.2.0, MySQL 5.0.33

Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]:

Processing package instance <CSKamp> from </tmp/CSKamp_sparc.pkg>

Apache httpd, PHP and MySQL(sparc) Apache 2.2.3, PHP 5.2.0, MySQL 5.0.33
Apache
## Executing checkinstall script.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

The following files are being installed with setuid and/or setgid
permissions:
  /opt/coolstack/apache2/bin/suexec <setuid root>

Do you want to install these as setuid/setgid files [y,n,?,q] y
/opt/coolstack/bin
/opt/coolstack/bin/xmllint
/opt/coolstack/bin/xmlcatalog
/opt/coolstack/bin/xml2-config
/opt/coolstack/include
/opt/coolstack/include/libxml2
...
/opt/coolstack/mysql_32bit/README
[ verifying class <none> ]

Installation of <CSKamp> was successful.
```

After the installation, you should see the following in /opt/coolstack :

```
# ls /opt/coolstack
apache2      etc          info         man          php5         share
bin          include      lib          mysql_32bit  sbin
#
```

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Cool Stack Contents

The following sections provide more details on each of these packages.

CSKamp

This package includes Apache HTTP Server 2.2.3, MySQL 5.0.33 and PHP 5.2.0 along with core libraries (libiconv, libxml2, openldap, cyrus-sasl). All the applications in the package are built and pre-configured to work together out of the box. Apache httpd is built with MPM pre-fork and modules for LDAP, Cache, , PHP, SSL, mod-deflate and Perl.

PHP has been built with high-levels of optimization including profile feedback-based optimization. This should result in increased performance for almost all applications. Support for the following extensions is incldued: apc, bz2, curl, dba, gd, gettext, gmp, iconv, imap, ldap, mssql, mysql, mysqli, ncurses, odbc, openssl, pdo_dblib, pdo_mysql, pdo_odbc, pdo_pgsql, pgsql, pspell, readline, snmp, suhosin, tidy, xsl, zlib

The suhosin extension from the hardened-php project (http://hardened-php.net) has been included for enhanced security of PHP applications. To enable this extension, uncomment the *suhosin.so* line in *php.ini*. (CSKamp ships with a php.ini with an entry for suhosin that is commented out).

Package Dependencies

Several of the extensions require additional packages installed. These are listed below.

PHP Extension(s)	*Cool Stack Package Required*
Curl, dba, gd, gettext, gmp, imap, odbc, tidy, pdo_odbc	CSKphplibs
Ncurses	CSKncurses
pdo_dblib, mssql	CSKtds

pdo_pgsql and pgsql require Solaris 10 11/06 or above which includes Postgres.

MySQL Versions

To work with PHP, MySQL included in this package is a 32-bit version. For the database server, we recommend you install the CSKmysql package which is a 64-bit version, allowing the use of larger caches to deliver improved performance for large databases.
Note that the 32-bit CSKamp package will work with the 64-bit CSKmysql database server.

CSKperl

This package includes Perl 5.8.8. Note that Solaris 10 ships with the same version of Perl. However, CSKperl is compiled with higher levels of optimization using the Sun Studio 11 compiler and will provide better performance. Further, CSKperl includes the following extensions required by twiki:

Bundle-CPAN-1.855, HTML-Parser-3.56, Convert-ASN1-0.20, Digest-HMAC-1.01, DB_File-1.814, Digest-MD5-2.36, URI-1.35, Authen-SASL-2.10, IO-Socket-SSL-1.02, Jcode-2.06, Unicode-String-2.09, Unicode-Map-0.112, Unicode-Map8-0.12, XML-SAX-0.14, XML-Parser-2.34, CGI-Session-4.20, Digest-SHA1-2.11, libwww-perl-5.805, perl-ldap-0.33, Unicode-MapUTF8-1.11

To use this version of perl, include /opt/coolstack/bin in your PATH before /usr/bin.

CSKmemcached

This package includes memcached 1.2.0, a distributed memory object cache system. The package also includes libevent 1.2a which is a required library for memcached.

CSKruby

This package includes ruby 1.8.5, rubygems 0.9.0 and rails 1.1.6. Although rubygems and rails are platform-independent, they are packaged with ruby for easy installation using a single download.

CSKsquid

This package includes Squid 2.5.STABLE14 Web Proxy Cache. Squid is a single-threaded application and as such does not scale well on SMP platforms. You may need to run multiple instances to achieve scalability.

CSKtomcat

This package includes Apache Tomcat 5.5.17 which is a pure Java application. It is provided for convenience as it is no different from the one on tomcat.apache.org.

Source Packages

For every binary package, there is a corresponding package that contains the source code and build scripts used to generate the package. In most cases, a script called *make_solaris.sh* was used to build the package – this script resides in the top-level directory of each library/application. For perl, read the instructions in *README.coolstack*. Many of the other source directories, also include a *README.coolstack* file that gives additional information.

Important Notes

Please be aware of the following notes related to the source files made available with this release as a compressed tar file.

- To retain optimal performance, any re-compilation of these packages should be carried out with the Sun Studio compiler. The latest Sun Studio compiler is available as a free download at: http://www.opensolaris.org/os/community/tools/sun_studio_tools/sun_studio_11_tools/.
- The Apache release includes the `apxs` utility to help build modules for Apache. Note that the version of `apxs` shipping with this release generates CFLAGS settings that are only compatible with the Sun Studio compiler. If you use a different compiler, it may be necessary to modify CFLAGS manually to achieve a clean compile.

Additional Help

The Cool Stack Tools Community can assist with questions about Cool Stack open source software within the Discussions area: forum.sun.com > Open Source Technologies > Cool Stack

Note: Support for Cool Stack software is not covered by Sun's support agreements associated with Solaris or Sun Fire servers.

If you wish to send feedback to the developers of Cool Stack, please send an email to coolstack-feedback@sun.com . We would love to hear whether you find Cool Stack useful, what additional functionality would help etc.

Please also ensure all the latest product updates have been applied to your system. Please refer to the product notes for your system.