

# **TeamSCOPE Installation Guide**

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# 1 Introduction

Welcome to TeamSCOPE.

TeamSCOPE is designed to facilitate primarily asynchronous communication among members of geographically distributed teams through a web interface. It provides server-based file management, message boards, calendar management, resource reservation, and other services.

This manual will guide you through installation, configuration, and maintenance of the TeamSCOPE system.

TeamSCOPE and this manual were written by Ben Pfaff [pfaffben@msu.edu](mailto:pfaffben@msu.edu).

## 2 Setting up

You have a few choices for setting up TeamSCOPE:

Compile and install TeamSCOPE yourself.

To compile TeamSCOPE yourself, follow the entire procedure described in the sections below.

Install into a running Debian system from a Debian binary package.

To install this way, use `dpkg` to install the TeamSCOPE package, then continue from Section 2.4 [Configuration], page 4.

Install a fresh Debian system as a dedicated TeamSCOPE server.

A TeamSCOPE CD-ROM image is available. When this image is written to a CD-ROM, it can be used to semi-automatically install a PC for use as a dedicated TeamSCOPE server. See <http://cscw.msu.edu> for more details.

### 2.1 Prerequisites

Before compiling, make sure that you have the following prerequisite programs and libraries installed on your system.

libgd version 1.3

Obtain at `'ftp.debian.org'` in `'/debian/dists/potato/main/source/libs'` as `'libgd-gif_1.3.orig.tar.gz'`. You must not use a version newer than 1.3, as these newer versions support only PNG output, not GIF.

PostgreSQL database server

Available from [postgresql.org](http://www.postgresql.org) (<http://www.postgresql.org>). TeamSCOPE has been tested with versions 6.3.2 and 7.0.2.

Perl

Available from [perl.com](http://www.perl.com) (<http://www.perl.com>). TeamSCOPE has been tested with versions 5.004.04 and 5.005.03.

Java compiler

Jikes (preferred) and Sun's Java compiler are known to properly compile TeamSCOPE's Java code.

Texinfo

GNU Texinfo is used in producing the online and printable versions of the TeamSCOPE manuals.

T<sub>E</sub>X

T<sub>E</sub>X, as well as `dvips` and `pdftex`, are necessary to produce printable versions of the TeamSCOPE manuals.

Apache web server

Available from [apache.org](http://www.apache.org) (<http://www.apache.org>). Versions known to work with TeamSCOPE include 1.3.0 and 1.3.6.

minizip

Available from [ftp.uu.net](ftp://ftp.uu.net) (<ftp://ftp.uu.net/pub/archiving/zip/zlib>).

Exim mail server (optional)

Available from [exim.org](http://www.exim.org) (<http://www.exim.org>).

## 2.2 Compilation

1. Unpack the source distribution into an appropriate directory. Change directory into the source tree root directory.
2. Make a build directory and change directory into it with the commands `mkdir build;` `cd build`.
3. Configure the source distribution with the `configure` program. Autoconf will inspect your system for libraries and include files.

You may pass command-line options to `configure`. For a list of options, use the command `../configure --help`.

**Example 1:** To configure TeamSCOPE to use the default GNU directory structure, use the following command:

```
../configure
```

**Example 2:** To configure TeamSCOPE to use an FSSTND- and FHS-compliant directory structure, use the following command:

```
../configure --prefix=/usr --localstatedir=/var/lib \
--libexecdir=/usr/lib --sysconfdir=/etc
```

4. Edit `scope.conf` to adapt the directory names and filenames to those used by the local system and web server.

**Please note:** Don't skip this step. TeamSCOPE interacts closely with other programs. It must be configured properly. Read and verify each setting in this file **before** compiling TeamSCOPE.

5. Run `make`: `make`. Wait for the compile to complete.

## 2.3 Installation

1. Become root, and install TeamSCOPE: `make install`.
2. Create a user and group, each named `scope`, to own the TeamSCOPE database, for instance using system utilities such as `useradd` and `groupadd`.
3. Create an empty TeamSCOPE password file; for instance, with the command `touch /etc/scope/passwd`. The password file should be owned by root; it only needs read and write permission for root. Future versions of TeamSCOPE may be redesigned to incorporate the password into the database.
4. (Optional) If you plan to use TeamSCOPE's web-based administrative features, you should perform this step; otherwise, it is recommended, but not required. Create a script that causes your web server and mail server to reload their configurations and put it in the TeamSCOPE configuration directory under the name `reload`; for instance, `/etc/scope/reload`. It should be marked executable, for instance using `chmod a+x reload`. Sample contents:

```
#!/bin/sh -e
if test -x /etc/init.d/apache; then /etc/init.d/apache reload; fi
if test -x /etc/init.d/exim; then /etc/init.d/exim reload; fi
```

The `scope-db` configuration tool will automatically run the `reload` script at appropriate times. If no such script exists, `scope-db` will advise you to manually restart these services.

5. Generate TeamSCOPE's timezones file with `'scope-db init timezones'`.
6. Create the TeamSCOPE database with the command `'scope-db create'`.
7. TeamSCOPE requires some commands to be run periodically. These are the following:

`scope-db --sync-mail`

This command operates the TeamSCOPE message board to email gateway. It is optimized to use little CPU time. It should be run often; for instance, every 6 minutes. See Section 3.4 [Scheduled maintenance], page 11, for more details.

`scope-db --hourly-mail`

This command sends TeamSCOPE activity update emails to users who have requested them. It should be run once an hour. See Section 3.4 [Scheduled maintenance], page 11, for more information.

`scope-db --daily-maint`

This command performs TeamSCOPE daily maintenance chores, including backing up the TeamSCOPE database and cleaning up old session data files. It should be run once a day. See Section 3.4 [Scheduled maintenance], page 11, for more information.

Here are sample lines for `'crontab'` that implement the above, assuming that `scope-db` is installed in `'/usr/sbin'`:

```
0,8,16,24,32,40,48,54 * * * * root /usr/sbin/scope-db --sync-mail
5 * * * * root /usr/sbin/scope-db --hourly-mail
7 4 * * * root /usr/sbin/scope-db --daily-maint
```

8. Install `scope-chat`, the TeamSCOPE chat server. For more information, see Section 3.7 [scope-chat], page 12.

## 2.4 Configuration

After TeamSCOPE is installed, it must be configured. The steps below are the same whether TeamSCOPE is installed from a binary package or by hand.

1. Configure Apache for use with TeamSCOPE. You can do this with `scope-db` or by hand:

with `scope-db`

Run the command `'scope-db init apache'`. This will edit a Apache configuration file, typically `'/etc/apache/httpd.conf'`, adding the line `'Include /etc/scope/apache.conf'`, or similar, to it.

by hand

Add the line `'Include /etc/scope/apache.conf'`, replacing the given filename with the one specified at compilation time.

If you wish to use TeamSCOPE's "team site" feature, then you should also enable server-parsed HTML documents by making sure that Apache is set up as follows:

- `'AddType text/html .shtml'` and `'AddHandler server-parsed .shtml'` appear in an Apache configuration file, typically `'/etc/apache/srm.conf'`.
- Module `mod_include` is loaded from an Apache configuration file with a statement such as this:

```
LoadModule includes_module /usr/lib/apache/1.3/mod_include.so
```

Depending on your Apache setup, you may also need to add a line to `httpd.conf` something like this:

```
DirectoryIndex index.shtml index.html
```

2. In order to enable TeamSCOPE's email to message board gateway, your mail server must be configured to pass messages to `scope-gw@mail.domain` to `scope-db --received-mail` on standard input.

If you are using Exim as your mail server, you can use the command `scope-db init exim` to automatically set this up. (This also allows TeamSCOPE's email recording features to be usefully enabled.) Otherwise, configure your mail server for this by hand.

3. TeamSCOPE can automatically edit your email `/etc/aliases` file when users and groups are added and deleted. To enable this feature, use the command `scope-db init aliases`.
4. At this point, TeamSCOPE setup is almost complete. Before proceeding, create some teams and users. See Section 3.3 [User administration], page 8, for more details.
5. After you've created some teams and users belonging to them, synchronize the TeamSCOPE configuration files with `scope-db update`.
6. If you didn't create a `reload` script as recommended above (see Section 2.3 [Installation], page 3), restart Apache. If you're using TeamSCOPE's email recording features, restart Exim as well.

**For example:** Under Debian GNU/Linux, use the following command to restart Apache: `/etc/init.d/apache reload`

7. If you want to record FTP activity as well as web activity in TeamSCOPE's database, install a TeamSCOPE-enabled version of ProFTPd. Patches for ProFTPd are included in the TeamSCOPE source distribution.

## 3 Administration

TeamSCOPE administration and maintenance is performed with the `scope-db` utility. You can get a summary of `scope-db`'s functionality by typing the command '`scope-db help`'.

'`scope-db`' must be run as root for most actions.

The general syntax for '`scope-db`' usage is

`scope-db command argument...`

Only one command may be used with each invocation of '`scope-db`', although commands may have multiple arguments.

In the descriptions below, the following typographical conventions are used:

`foo`

Invariant text such as command and option names.

*variable*

Text that varies. The command description should say what should be supplied.

[...]

Square brackets denote optional arguments.

The following sections go into detail on usage of '`scope-db`' options.

### 3.1 Database maintenance

These commands are used to maintain the TeamSCOPE database. Some of these commands have simple equivalents in terms of database operations, but they are provided as part of '`scope-db`' for convenience.

`create`

Creates the TeamSCOPE database if it does not already exist. This should be performed as part of the TeamSCOPE installation procedure.

`remove`

Deletes the TeamSCOPE database. **Please note:** This will cause all data to be lost! Be sure to have a backup copy of the database before running this operation.

`dump dump`

Writes a snapshot of the TeamSCOPE database contents to file *dump*. Any existing file by that name will be truncated. **Please note:** Ordinary users should not be allowed to view database backups, since they may contain private information.

`restore dump`

Restore the state of the TeamSCOPE database from snapshot file *dump*. You must first remove the database with '`scope-db remove`'.

**upgrade**

Upgrades the TeamSCOPE database in place to a newer version. This should be performed each time a new TeamSCOPE version is installed. (Packaged versions of TeamSCOPE perform this upgrade automatically.)

**3.2 Configuration management**

These commands are used to maintain the TeamSCOPE configuration files and configuration files belonging to other programs that TeamSCOPE updates.

There is a simple rule that TeamSCOPE uses for updating configuration files that belong to other programs: if you have not told ‘**scope-db**’ to modify a configuration file, it won’t. (Packaged versions of TeamSCOPE enable some of these features automatically.)

**init function**

Enable or initialize the specified *function*. The following values for *function* are currently defined:

**apache**

Enables generation of the TeamSCOPE Apache configuration file. Also edits Apache’s `httpd.conf`, idempotently adding an `Include` command referring to the TeamSCOPE Apache configuration file. Does not actually generate the TeamSCOPE Apache configuration file. To do so, see **update** below.

**exim**

Enables modification of Exim’s main configuration file and modifies that file idempotently to add comment markers indicating that fact. Does not fill in the Exim configuration commands between the comment markers. To do so, see **update** below.

**aliases**

Enables modification of the mailer aliases file and modifies the aliases file idempotently, adding comment markers indicating that the aliases file may be modified by TeamSCOPE. Does not fill in the aliases between the comment markers. To do so, see **update** below.

**timezones**

Generates the TeamSCOPE timezones file from a collection of system files and directories. This command should be executed once at installation time.

‘**scope-db update**’ should normally be run after any **init** command.

**uninit function**

Disable or uninitialized the specified *function*, where *function* is one of the values listed above for **init**.

‘**scope-db update**’ should normally be run after any **uninit** command.

**update**

Updates configuration files that have been enabled with the corresponding `init` command. After this command is executed, typically the system web server and mail server should be instructed to reload their configuration files. If a `'reload'` script exists, `'scope-db'` runs it automatically (see Section 2.3 [Installation], page 3). Otherwise, the system administrator should do the same things by hand:

- If updating of Apache configuration files is enabled, then Apache should be restarted (or made to reload its configuration) to make changes take effect.  
**For example:** Under Debian GNU/Linux, use the following command to cause Apache to reload its configuration:  
`/etc/init.d/apache reload`
- If updating of Exim configuration files is enabled, then Exim should be restarted (or made to reload its configuration) to make changes take effect.  
**For example:** Under Debian GNU/Linux, use the following command to cause Exim to reload its configuration:  
`/etc/init.d/exim reload`
- If updating of the mail aliases file is enabled and the system mail transfer agent (MTA) will not automatically notice this fact, then it should be notified of changes in an MTA-specific manner.  
**For example:** Using the `'sendmail'` MTA, the appropriate command is `newaliases`.

### 3.3 User administration

These commands are used to add and remove users and workgroups (teams). These commands can also be performed through the TeamSCOPE web interface; for more information, see the documentation for `addgroup` below.

Many of the following commands require Apache or Exim to be restarted after they are executed. If you have written a `'reload'` script, this will be done automatically (see Section 2.3 [Installation], page 3). Otherwise, it must be done by hand. Under Debian GNU/Linux, use the command `/etc/init.d/apache reload` to restart Apache and `/etc/init.d/exim reload` to restart Exim.

**addgroup** [*group* [*fullname*]]

Creates a new system group and TeamSCOPE workgroup. *group* is the short name of the group and *fullname* is the full name of the group. *group* is limited to at most 8 characters drawn from the set of uppercase and lowercase letters, digits, hyphen ('-'), and underscore ('\_'). *fullname* may be any length and it may contain spaces and special characters, but depending on your shell you may have to enclose in quotes a full name that contain spaces or special characters. Note that TeamSCOPE has one special group, `admin`. If you create a group by this name and add users to it, those users can perform most TeamSCOPE administrative tasks from the TeamSCOPE web interface. As a result, you should only add users you trust to this group, if you create it. For more information on how to administer TeamSCOPE through the web interface, see the TeamSCOPE Tutorial and Reference manual.

After adding a group, run ‘`scope-db update`’ to update TeamSCOPE and related configuration files, then restart Apache and Exim as appropriate. See Section 3.2 [Configuration management], page 7, for more information.

`adduser` [*group* [*user* [*fullname* [*email*]]]]

Creates a new system user and TeamSCOPE account within an existing workgroup. The variables have the following meanings:

<i>group</i>	Workgroup name. Users may belong to multiple groups but only one group may be specified on the <code>adduser</code> command.
<i>user</i>	Username. Same restrictions as group name. <i>user</i> may omitted; if it is, ‘ <code>scope-db</code> ’ will generate an available, valid username based on <i>fullname</i> .
<i>fullname</i>	User’s full name, first name before last name. Same qualifications as group full name above.
<i>email</i>	User’s upstream email address, for forwarding of email received by this server on the user’s behalf. If email should be retained without forwarding, omit this field.

Note that *user* and *email* may be omitted. You must still supply an empty argument. Under most UNIX shells this can be done with a pair of single quotes (‘’’’). Arguments containing spaces must also be quoted. For instance, the command ‘`scope-db adduser admin ’’ ’John Q. Smith’ ’’`’ supplies `admin` for *group*, `John Q. Smith` for *fullname*, and omits *user* and *email*. New user accounts are disabled by default. Use the `mail` command to enable new accounts.

After adding a user account, run ‘`scope-db update`’ to update TeamSCOPE and related configuration files, then restart Apache and Exim as appropriate. See Section 3.2 [Configuration management], page 7, for more information.

`mail` [--no-reset] *user*

When a new account is added to the system, it is disabled by default. This command performs the following actions for the specified account:

- Sets the account password randomly. If `--no-reset` is specified and the account already has a password, then this step is skipped.
- Sends an email to the user informing him or her of its existence and, if it was set in the step above, the account’s password.
- Enables the account, unless the account is locked (see `lock` below).

Besides enabling new users’ accounts, this command may also be used to reset the accounts of users who have forgotten their passwords.

`mail --pending`

Equivalent to `mail --no-reset user` executed for each user on the system whose account has not yet been enabled.

`deluser` *users...*

Removes the TeamSCOPE and system accounts of *users*. Any number of users may be specified. Does not delete *users*’ home directories or their contents; this must be done by hand.

After removing a user account, run ‘`scope-db update`’ to update TeamSCOPE and related configuration files, then restart Apache and Exim as appropriate. See Section 3.2 [Configuration management], page 7, for more information.

`delgroup groups...`

Removes the TeamSCOPE and system accounts for *groups*. Any number of groups may be specified. Does not delete the group’s shared directory or its contents; this must be done by hand.

After removing a group, run ‘`scope-db update`’ to update TeamSCOPE and related configuration files, then restart Apache and Exim as appropriate. See Section 3.2 [Configuration management], page 7, for more information.

`lock users...`

`unlock users...`

Locks (or unlocks) the TeamSCOPE and UNIX user account for *users*. A user whose account is locked cannot log in to TeamSCOPE or use the server’s other network services such as FTP or Telnet sessions.

`addusertogroup [user [group]]`

`deluserfromgroup [user [group]]`

Adds or removes *user* to/from TeamSCOPE and Unix system groups named *group*.

Use the `mail` command to notify the user of additional group membership status.

After adding a user to or removing a user from a group, run ‘`scope-db update`’ to update TeamSCOPE and related configuration files, then restart Apache and Exim as appropriate. See Section 3.2 [Configuration management], page 7, for more information.

`email [user [email]]`

Sets the upstream email address for *user* to *email*. If *email* is an empty string then mail for *user* is queued locally on the server.

`fullname [user [fullname]]`

Sets the full name for *user* to *fullname*.

`batch file`

Adds a number of users and groups at once. *file* is the name of a text file. Lines in the file are of two forms:

‘*group:*’     Adds a new group with the specified name.

‘*user, fullname, email*’

Must follow a line of the previous type. Adds a new user *user* in *group* with full name *fullname* and email address *email*.

The file may also contain blank lines. Comments are introduced by an octothorpe (‘#’).

This command is not yet implemented as of TeamSCOPE 0.9.13.

**info** [*user*]

Displays on stdout information about the specified *user*, or about all users if no username is given.

This command is not yet implemented as of TeamSCOPE 0.9.13.

### 3.4 Scheduled maintenance

The following commands are normally invoked on a daily basis from a system crontab, but they may also be run by hand.

**daily-backup**

Dumps a snapshot of the TeamSCOPE database into the backup directory set at compilation time. The old snapshot is renamed with a numeric extension.

The snapshot is in the format used by the **restore** command (see Section 3.1 [Database maintenance], page 6, for more information).

TeamSCOPE keeps a limited number of old backups; by default, 30. Backups older than this are removed automatically.

**daily-cleanup**

Removes stale session-data files.

**daily-maint**

Runs the above maintenance procedures in sequence.

**hourly-mail**

Users can request period email updates on changes to their team workspace. This command causes these mails to be sent. It should be run by a cron job on an hourly basis.

**sync-mail**

Users can request individual emails for each message board post. This command causes these emails to be sent. It should be run by a cron job often; for instance, every 5 minutes. This command is designed to cause as little CPU and disk load as possible, so it should be possible to run it often even on a relatively busy system.

### 3.5 Miscellaneous

These commands are informational in nature. Root privilege is not required to run these commands.

**help**

Displays a summary of commands and their meanings.

**version**

Displays the TeamSCOPE version, copyright, and warranty disclaimer.

### 3.6 Disabling TeamSCOPE

To temporarily disable access to TeamSCOPE (for instance, during upgrades or maintenance), create a file named ‘shut’ in the TeamSCOPE configuration directory. You can put a message in the file, which will be sent to users who attempt to use TeamSCOPE while it is disabled.

To re-enable access to TeamSCOPE, delete ‘shut’.

### 3.7 Chat server

TeamSCOPE needs to run a chat server process in order to allow the Java-based chat client to work. The chat server is named ‘scope-chat’. It supports the following options:

-d

--no-detach

Normally, `scope-chat` runs in the background, as a daemon. Use this option to disable that behavior.

-l [*log-file*]

--log[=*log-file*]

By default, `scope-chat` logs chat activity to a file whose name is specified in ‘`scope.conf`’ at TeamSCOPE compile time. If ‘`scope.conf`’ is not modified before compilation, a suitable name is guessed by the TeamSCOPE configuration script. To see the default log file for your TeamSCOPE installation, use `scope-chat --help`.

Use this option to specify a different log file or disable logging. To use a different log file, specify its name. If no name is given, logging is disabled.

-p *lo*[-*hi*]

--port=*lo*[-*hi*]

By default, `scope-chat` listens on the lowest-numbered available TCP port in the range 6555–6560. This option can be used to specify an alternate port or port range. If only *lo* is specified, that is the only port that will be used. If both *lo* and *hi* are specified, the lowest-numbered available port in the specified range will be used.

-P [*pidfile*]

--pidfile[=*pidfile*]

Enables the use of a “pidfile” and optionally sets the pidfile’s name. A pidfile is simply a file that `scope-chat` creates and to which it writes its program id or PID, as shown by the UNIX `ps` utility, among other tools.

The default directory for the pidfile is specified in ‘`scope.conf`’ at TeamSCOPE compile time. To see the default pidfile for your TeamSCOPE installation, use `scope-chat --help`.

-h

--help

Displays a summary of `scope-chat` options and their meanings.

-v

--version

Displays the `scope-chat` version, copyright, and warranty disclaimer.

You should set up `scope-chat` so that it is started when entering a multiuser runlevel and stopped in other runlevels. A sample script for `/etc/init.d` in a System V system is included in the TeamSCOPE source tree as `debian/init`.