



SEISCOMP Installation

Ubuntu MySQL

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August 14, 2015



1 Requirements

- Hardware
- Software

2 Installation

- Preparation
- Dependencies
- Setup

3 Operation



- Dual Core CPU 1.8 GHz
- 2 GB RAM
- 20 GB free disk space
- Running network, access to seismic stations
- Recommendation regarding GUI
 - ▶ 4 monitor setup with single screen resolution of 1280x1024, 1680x1050 or 1920x1080
 - ▶ NVidia graphics card with 4 digital outputs (DVI, HDMI or DP)
 - ▶ Alternatively a NVidia graphics card with 2 DVI outputs can be used in combination with a MatroxTripleHead2Go Digital Edition [▶ Matrox product page](#)
 - ★ Check graphics card compatibility [▶ Matrox compatibility matrix](#)



- Official supported Linux distributions (32/64bit):
 - ▶ CentOS \geq 5.3
 - ▶ Debian \geq 5
 - ▶ Fedora \geq 10
 - ▶ OpenSUSE \geq 11.1, SuSE Linux Enterprise \geq 11
 - ▶ Ubuntu/Kubuntu \geq 8.04
- SHOULD also run under any other recent Linux distributions.
- OS and database used in this trainings course: Ubuntu MySQL



- Choose a system user for running SEISCOMP3
- It is **not** recommended to run SEISCOMP3 under root
- This trainings course uses the user sysop, any other user will be fine
- If the user of your choice does not exist yet then create the user now, logout and login with new user account

Create new user on the command line

```
sysop@host:~$ sudo adduser sysop
```

```
sysop@host:~$ sudo usermod -a -G adm,audio sysop
```



- Although SEISCOMP3 is public available at <http://seiscomp3.org> a license must be requested for the GUI applications via [e-mail](#)
- The e-mail should include
 - ▶ Name and address of your institute
 - ▶ Name and contact information of responsible person
 - ▶ Intended use
- You will receive the following file set
 - ▶ License – License (text form)
 - ▶ License.key – Computer readable license key
 - ▶ License.signed – Computer readable signature

Copy license files to `.seiscomp/key` folder

```
sysop@host:~$ mkdir -p .seiscomp3/key
```

```
sysop@host:~$ cp Download/License* .seiscomp3/key/
```



- The SEISCOMP3 installation consists of 2 independent file sets
 - ▶ `seiscomp3-VERSION-OS-ARCHITECTURE.tar.gz` – Application files, for a specific operating system and CPU architecture
 - ▶ `seiscomp3-maps.tar.gz` – Map data of the whole world used in GUI applications
- Download these files from the [SEISCOMP webpage](#) or use the files provided on the installation media
- The following installation instructions will assume that these files are located under `~/software`

Change to your home directory and extract the installation files

```
sysop@host:~$ cd
sysop@host:~$ tar xf software/seiscomp3-*
```

Add SEISCOMP3 environment variables

```
sysop@host:~$ seiscomp3/bin/seiscomp print env >> ~/.bashrc
```



Example 1: Base system with MySQL database

```
sysop@host:~$ seiscomp install-deps base mysql-server
```

Example 2: GUI system without database

```
sysop@host:~$ seiscomp install-deps base gui
```

If the installation fails, e.g. because your OS is not supported or `lsb_release` is not installed, then install scripts in `~/seiscomp3/share/deps/<OS>` must be adopted and/or manually invoked.

If you choose to install a database management system you will be prompted to enter a password for the database root user. The password you enter here will be needed during the SEISCOMP3 configuration. The DBMS server will be started automatically. Also it is added to the system's startup routine for automatically startup on next boot.



- By default the MySQL service only listens to connections originating from the same machine. If you plan to distribute the SEISCOMP3 modules and/or GUIs on different machines you need to allow remote network connections.

Change bind-address in /etc/mysql/my.cnf

```
[mysqld]
bind-address = 0.0.0.0
```

- The performance of the database server can be improved significantly by
 - ▶ Increasing the memory pool size (default 8 MB)
 - ▶ Reducing the database hard drive synchronization. Note: This configuration may result in the loss of up to 1s of data in case of hard machine crash. Nevertheless, if SEISCOMP3 is the only application using the database, this setting is considered a justifiable tradeoff between reliability and performance.



Add database optimizations in /etc/mysql/my.cnf

```
[mysqld]
innodb_buffer_pool_size = 64M
innodb_flush_log_at_trx_commit = 2
```

Restart MySQL database server

```
sysop@host:~$ sudo service mysql restart
```



Initial SEISCOMP3 setup (1/3)

```
sysop@host:~$ seiscomp setup
```

```
=====
```

```
SeisComP setup
```

```
=====
```

This initializes the configuration of your installation.
If you already made adjustments to the configuration files
be warned that this setup will overwrite existing parameters
with default values. This is not a wizard for all
options of your setup but helps to setup initial standard values.

```
⋮
```

```
Agency ID []: gempa
```

```
Datacenter ID []: gempa
```

```
Organization name []: gempa
```

```
Enable database storage [yes]:
```



Initial SEISCOMP3 setup (2/3)

0) mysql

MySQL server.

1) postgresql

Postgresql server. There is currently no support in setup to create the database for you. You have to setup the database and user accounts on your own. The database schema is installed under share/db/postgresql.sql. Note that the database encoding should be UTF8 and that you need to set the encoding to 'escape' for PostgreSQL >= 9, e.g. "ALTER DATABASE seiscomp3 SET bytea_output TO 'escape';"

Database backend [0]:

Create database [yes]:

MYSQL root password (input not echoed) []:

Drop existing database [no]:

Database name [seiscomp3]:

Database hostname [localhost]:



Initial SEISCOMP3 setup (3/3)

```
Database read-write user [sysop]:  
Database read-write password [sysop]:  
Database public hostname [localhost]:  
Database read-only user [sysop]:  
Database read-only password [sysop]:
```

Finished setup

P) Proceed to apply configuration

B) Back to last parameter

Q) Quit without changes

Command? [P]:

Alternatively the initial setup can be also done through the setup wizard of sconfig.



- To get the list of all available modules issue
`seiscomp list modules`
- Also it is possible to show only enabled or disabled modules
`seiscomp list enabled`
`seiscomp list disabled`
- Modules may be enabled via
`seiscomp enable <module>`
- ... and disabled by
`seiscomp disable <module>`
- By default the following modules should be enabled using
`seiscomp enable seedlink slarchive arclink scautopick scautoloc scamp
scmag scevent scevtlog scqc`
- **Note: Enabling a module only sets the autostart flag and does not start a module automatically.**



Start/Stop SEISCOMP3

```
sysop@host:~$ seiscomp start
starting spread
starting scmaster
starting scevent
starting scmag
starting scamp
starting scautopick
starting scautoloc
starting scqc
starting scevtlog
starting seedlink
starting client slarchive 127.0.0.1:18000
starting arclink
enabling diskspace monitoring
sysop@host:~$ seiscomp stop
disabling diskspace monitoring
shutting down arclink
shutting down client slarchive 127.0.0.1:18000
shutting down seedlink
shutting down scevent
shutting down scmag
scamp is not running
scautopick is not running
shutting down scautoloc
scqc is not running
shutting down scevtlog
shutting down scmaster
shutting down spread
```

- SEISCOMP3 can be started/stopped with the command
`seiscomp <start/stop>`
- Individual modules may be started/stopped by passing their names to the start/stop command
`seiscomp <start/stop> [module1] [module2] [...]`
- If no modules are specified the start command triggers all enabled modules, while the stop command terminates all running modules



- The status of all modules may be retrieved by
`seiscomp status`
This command does not alter the system state.
- A related command exists:
`seiscomp check`
In contrast to the first command this command
 - ▶ Validates status of each enabled and manually started package
 - ▶ Restarts non running packages



Create and register SEISCOMP3 init script for automatic startup

```
sysop@host:~$ sudo echo su sysop -c "/home/sysop/seiscomp3/bin/seiscomp $@" >
/etc/init.d/seiscomp
sysop@host:~$ sudo update-rc.d seiscomp defaults
```

Register crontab entries for automatic failure recovery

```
sysop@host:~$ (crontab -l;seiscomp print crontab) | crontab -
```

Show current crontab settings

```
sysop@host:~$ crontab -l
```

Edit crontab settings manually

```
sysop@host:~$ crontab -e
```