SeisComP3 - Introduction to scconfig

Release Seattle

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Outline

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scconfig is a graphical user interface which allows to configure all SeisComP3 modules for which descriptions are provided.
The modules are usually programs part of the SeisComP3 system and have two distinct types of configuration:

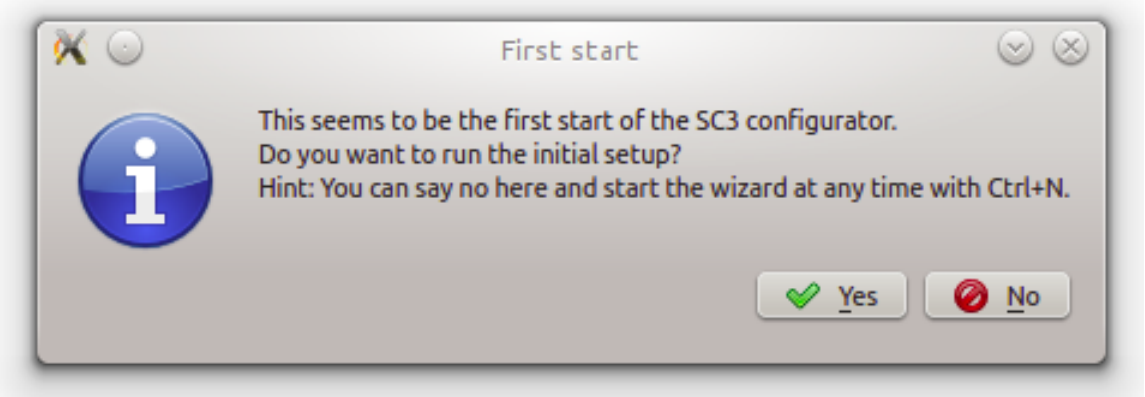
- Global configuration, or just program configuration (like the scautopick.cfg file).
- Station bindings, that are set of parameters to configure how the module will treat a certain station.

The bindings configuration can be done using profiles, or directly per station. A profile is a named set of parameters for a certain module that can be attributed for more than one station.
Using profiles makes it easiear to maintain large number of station configuration. When two stations are configured by the same profile, both will have the same parameter set for a certain module.

scconfig does not know anything about the SeisComP3 database, the only thing it can do is actually read and write the content of files from *etc/* and */.seiscomp3* folder and allow you to manage this information in organized and friendly manner.
It relies on other application (like the proper *seiscomp* command) to complete the system configuration. The main tasks that it can handle are:

- start/stop/check all registered modules
- import station metadata from various sources
- configure modules
- configure module bindings

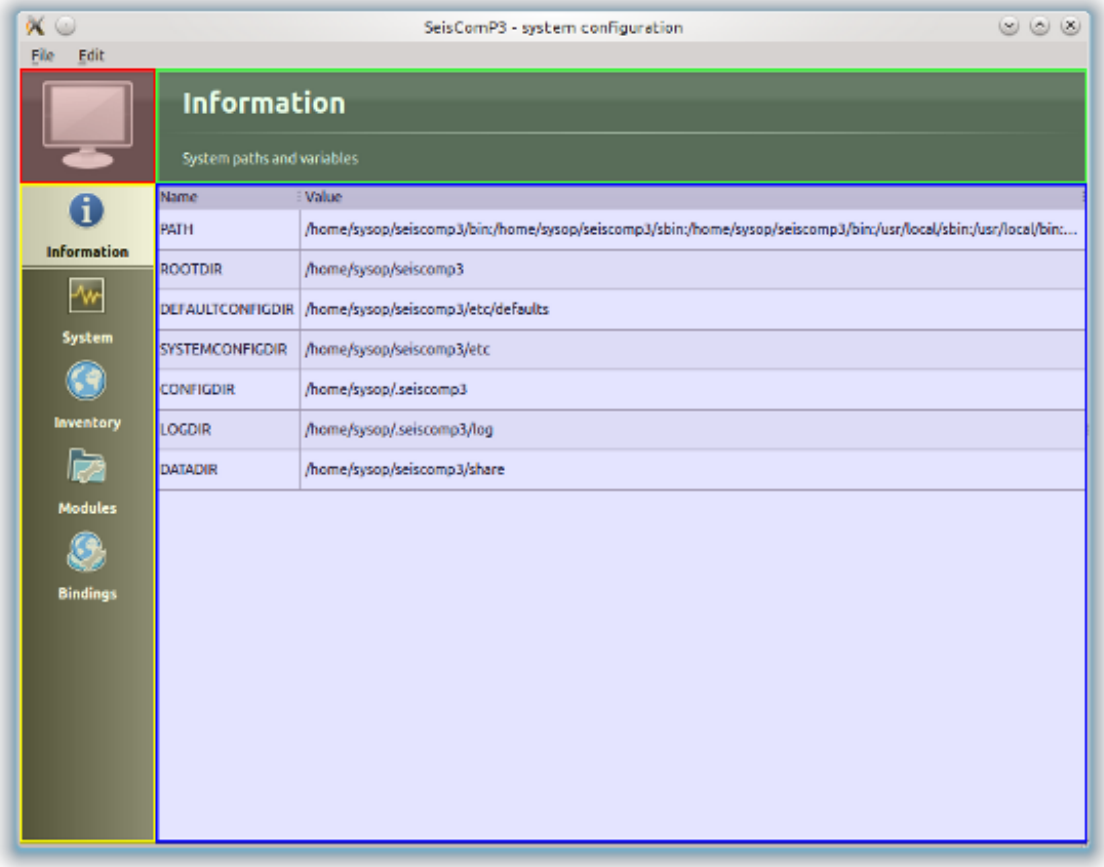
If scconfig is started for the first time it will ask the user to setup its new installation.



If done already with the command line interface this step can be skipped. If pressing yes, the setup wizard will be started.

Main Window

The layout of the main window is always the same regardless of what panel is selected.



It is divided into 4 areas:

- red: the mode switch (user vs. system)
- yellow: panel switch
- green: title and description of current panel
- blue: the content and interactive screen of the current panel

Main Menue

The main menu contains two entries: File and Edit.

The file menu allows

- to run the setup wizard (Wizard)
- to reload the configuration (Reload)
- to save the configuration (Save)
- to close the configuration (Quit)

The edit menu allows to switch the current configuration mode.

Pressing the switch button in the upper left corner (red box) is a shortcut for this operation.

Information Panel

This panel shows information about the SeisComP3 environment (see figure main window).
All variables (except PATH) can be used as placeholders in most of the configuration parameters which define directories or files, e.g.:
autoloc.grid = @CONFIGDIR@/autoloc/local.grid

System panel

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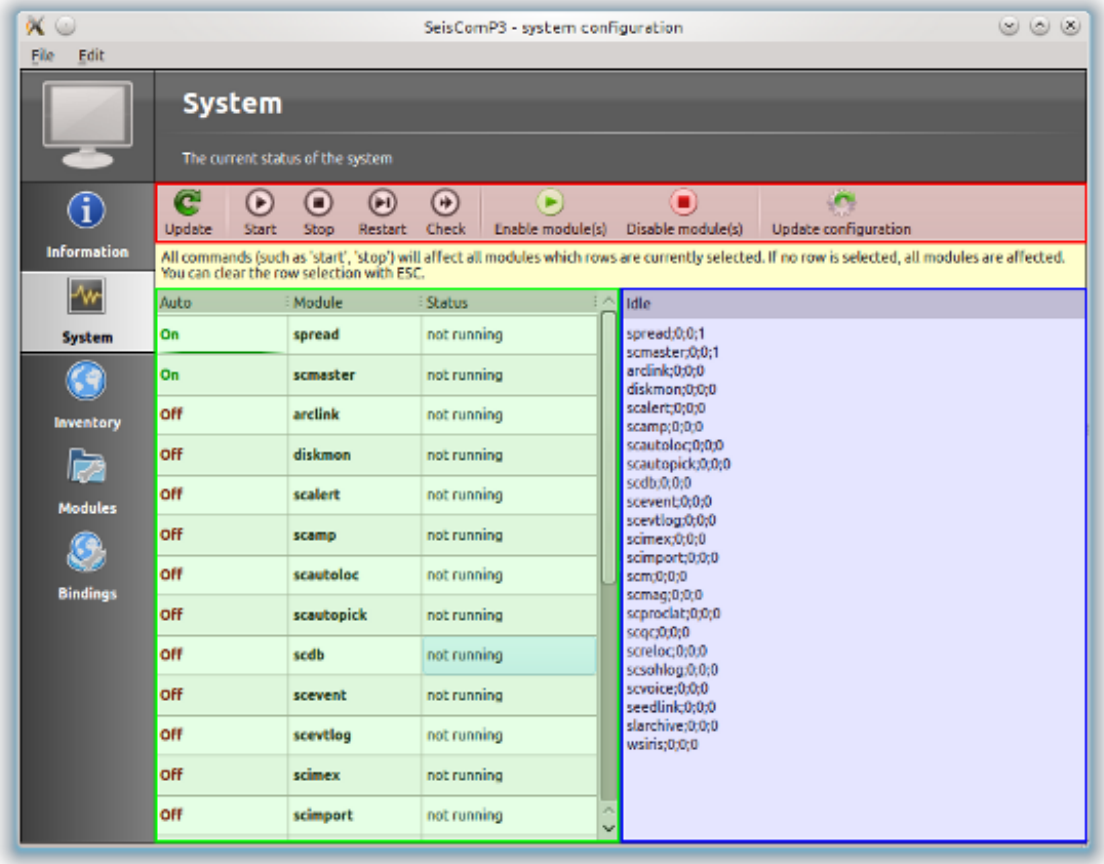
The system panel is a graphical frontend for the seiscomp script.



It is divided into 3 parts:

- red: toolbar
- green: module list
- blue: log window

The log window shows the output of all external programs called such as *seiscomp*.
The standard output is colored black and standard error is colored brown.

Due to the buffering of the GUI it can happen that standard output and standard error logs are not in perfect order.

System panel

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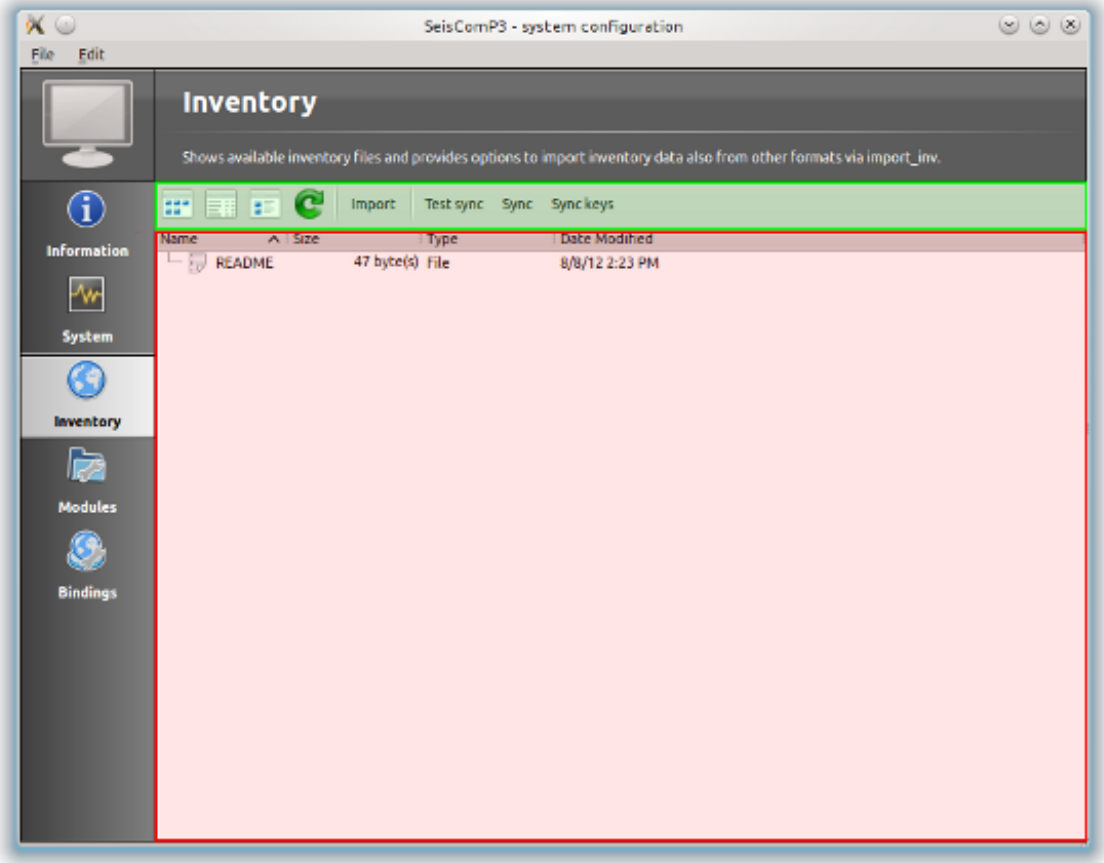
The toolbar gives access to the available operations. All operations will affect the currently selected modules (rows).
If no row is selected, all modules are affected and the corresponding call to seiscomp <arg> is done without any module.

- Update - Updates the current module state by calling seiscomp –csv status
- Start - Calls *seiscomp start*
- Stop - Calls *seiscomp stop*
- Restart - Calls *seiscomp restart*
- Check - Calls *seiscomp check*
- Enable module(s) - Enables all selected modules for autostart.
- Disable module(s) - Disables all selected modules for autostart.
- Update configuration - Calls *seiscomp update-config*. This is important after the module configuration or bindings have changed and before restarting the affected modules.

Inventory panel

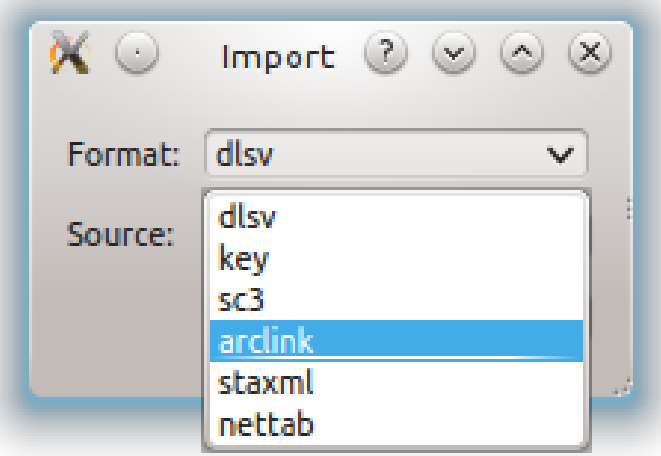


The inventory panel allows to import and synchronize inventory files. It shows a list of inventory XML files located in folder etc/inventory.

Only SeisComP3 XML files be used as source for inventory data but various importers exist to integrate inventory data from other formats. After the first start the list is empty and contains only a README file.

Inventory panel

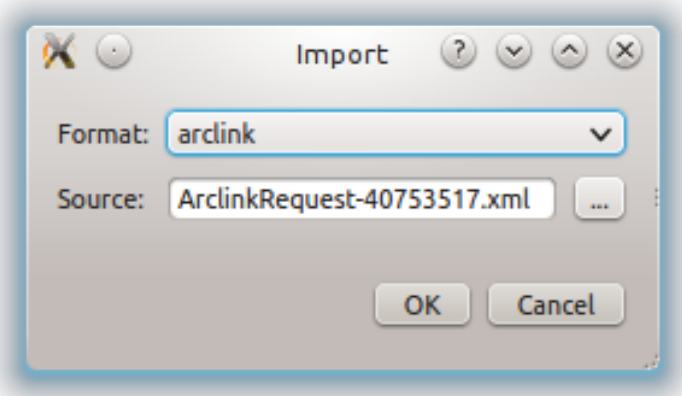
To import inventory information into *scconfig* press 'Import' button in the toolbar on the top. It will open a popup which allows to select for input format.



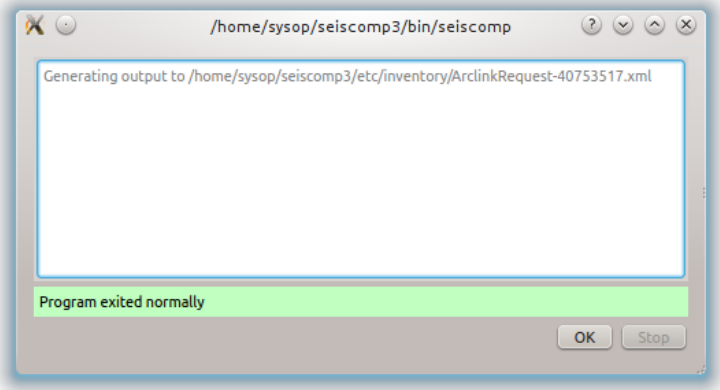
One source of importing inventory information is ArcLink as run at http://www.webdc.eu.

After downloading the inventory XML file from ArcLink it can be imported by choosing the arclink format.

Inventory panel

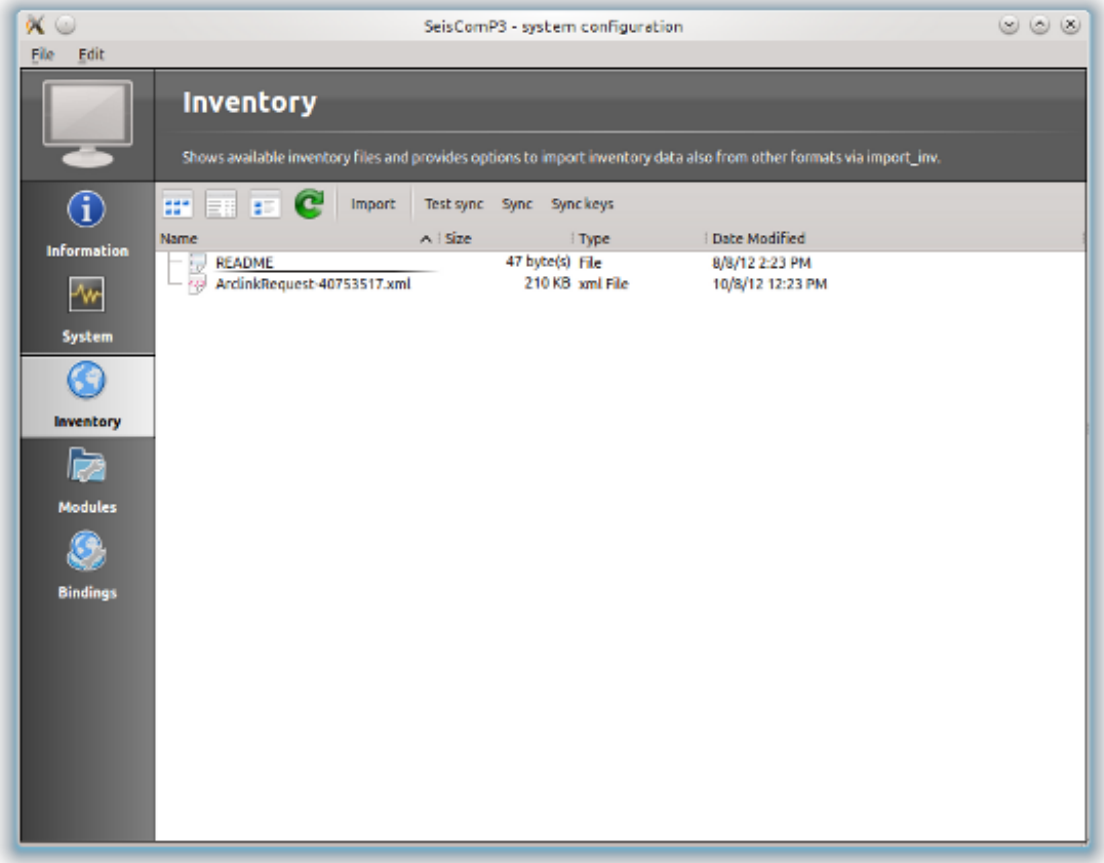


If ArcLink is selected, the source location should then point to the ArcLink XML file downloaded before.



If successfully imported a window will popup with the execution result and the import output.

Inventory panel



After closing the popup the new file will show up in the list.

Inventory panel

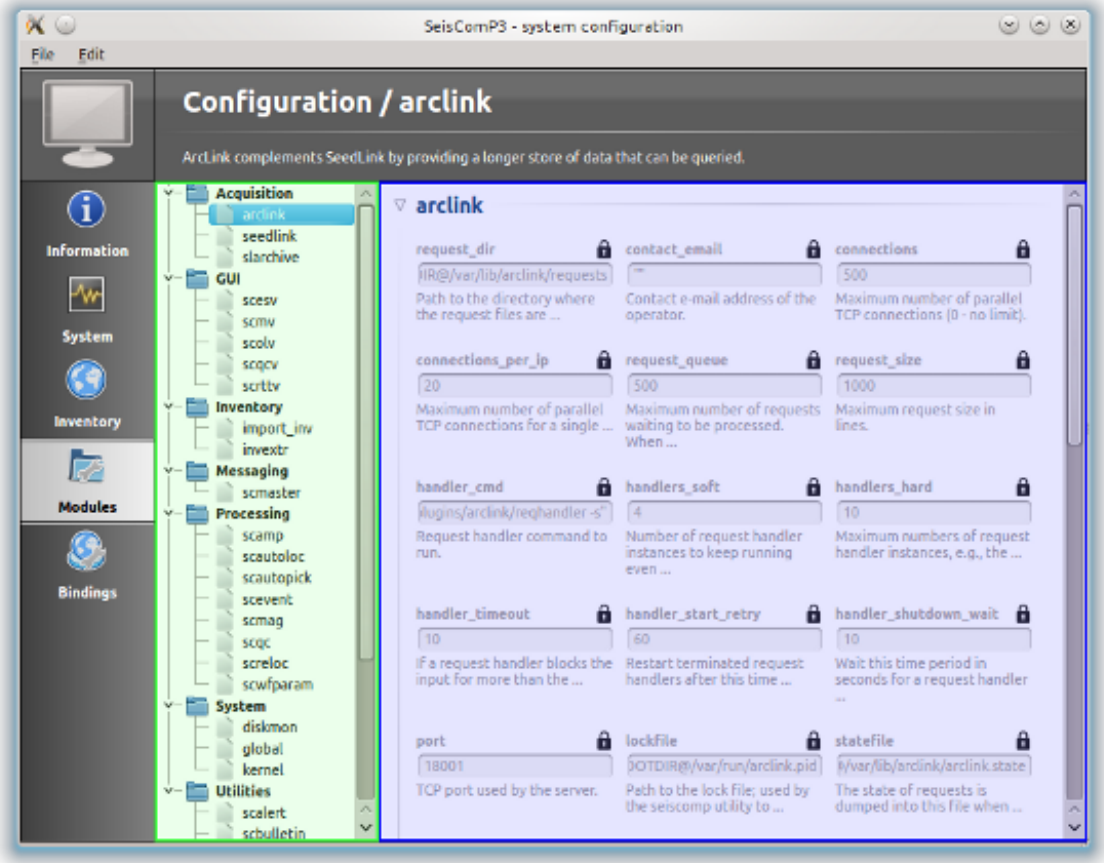
The inventory XML files are not used directly with SeisComP3. They need to be synchronized with the database first. The toolbar support 3 additional actions:

- Test sync - This action is a dry-run of the actual synchronisation. It performs merging and creates differences but does not send any update. This actions is useful to test all your existing inventory files before actually modifying the database.
- Sync - Almost identical to Test sync but it does send updates to the database and additionally synchronizes key files and resource files.
- Sync keys - This action is part of sync but can be called also standalone. It merges all inventory XML files and creates key files in etc/key/station_* if a key file does not yet exist. Existing key files are not touched unless the station is not part of the inventory anymore.

Sync and Sync keys will cause a reload of the configuration to refresh the current binding tree (see Bindings panel).

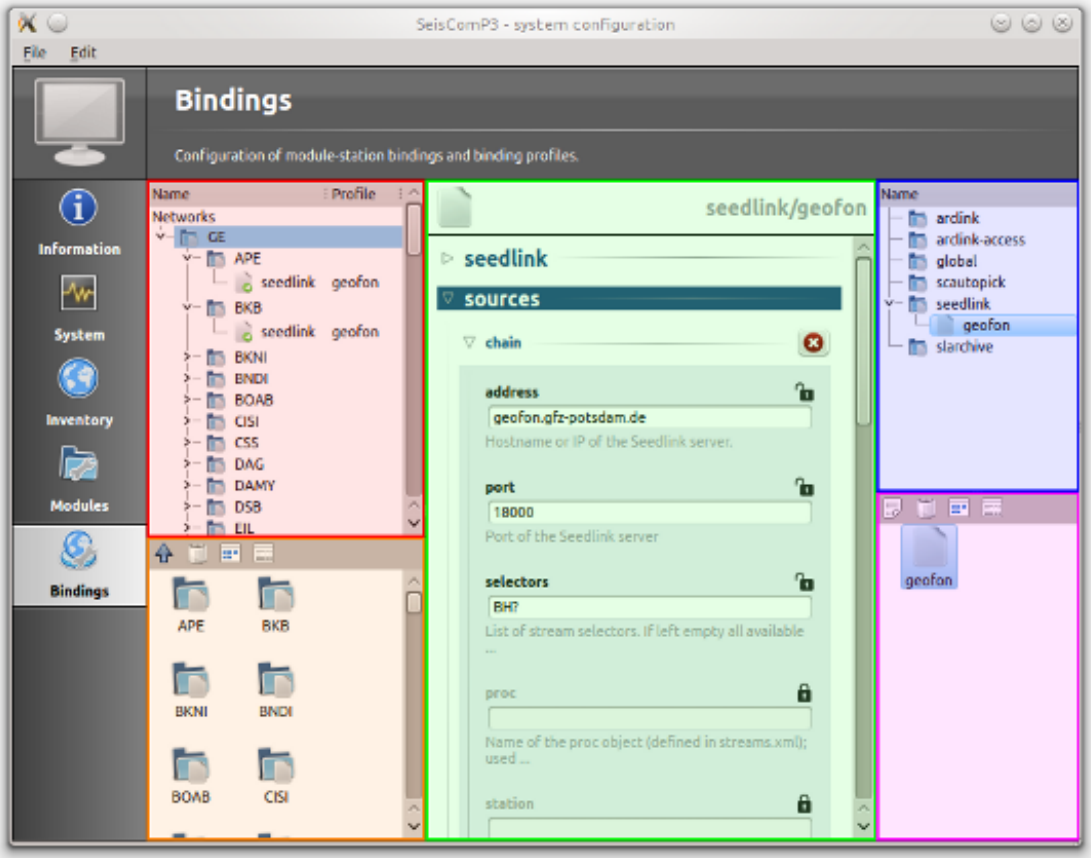
Modules panel

The modules panel allows configuration of all registered modules.



The left/green part shows the list of available modules grouped by defined categories and the right/blue part shows the current active module configuration. The active configuration corresponds to the selected item in the list.

Bindings panel



The binding panel configures a station for a module.

It is separated into 3 main areas:

- the station tree (red + orange)
- the binding content (green)
- the module tree (blue + magenta)

Bindings panel

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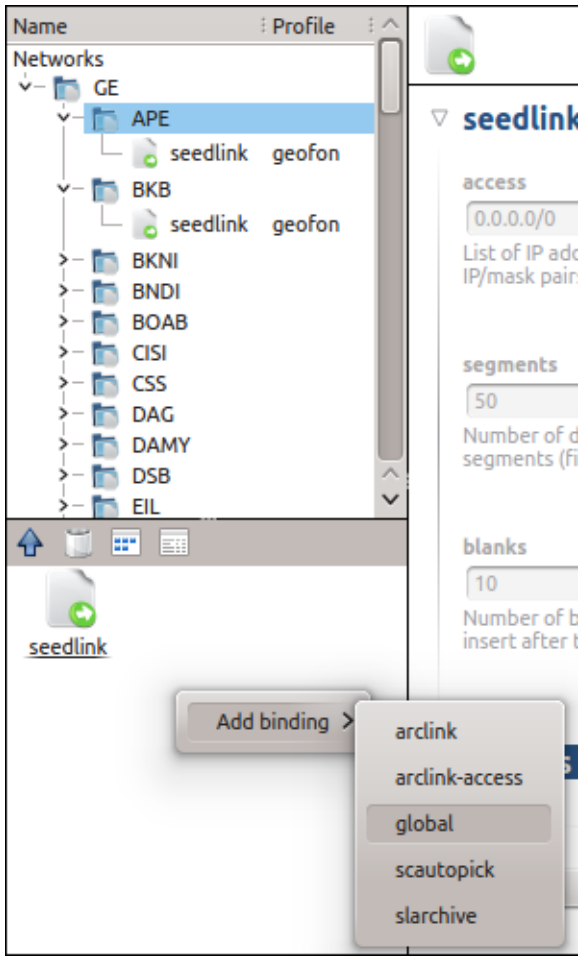
The **station tree (red/orange)** shows a tree of all available networks and their stations. Each stations contains nodes of its configured bindings. The lower view (orange) represents the content of the currently selected item in the station tree.

The **binding content (green)** shows the content of a binding and is similar to the module configuration content.

The **module tree (blue/magenta)** contains all modules which can be used along with bindings. The upper/blue window contains the modules and all available binding profiles for each module and the lower/magenta part shows all binding profiles of the currently selected module. This view is used to add new profiles and delete existing profiles.

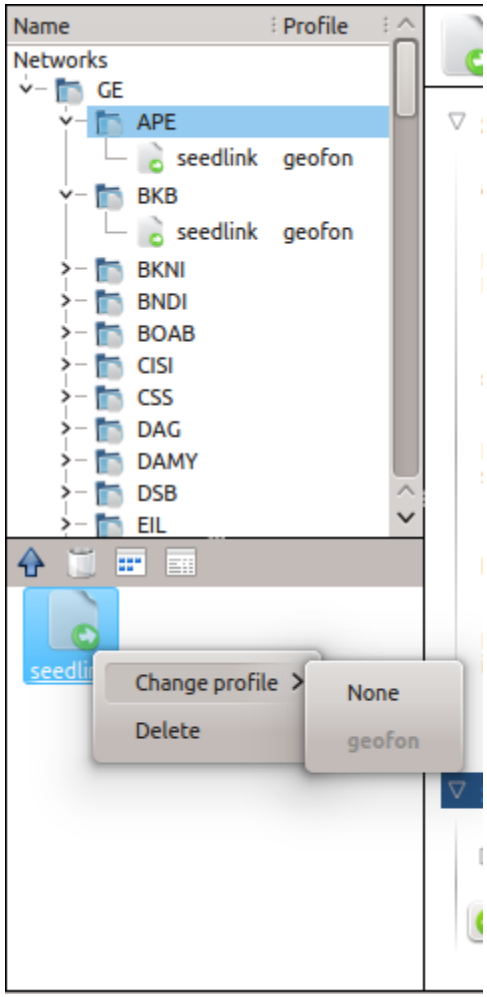
Station bindings



To create an exclusive station binding for a module, it must be opened in the binding view (orange box) by either selecting a station in the station tree (red) or opening/clicking that station in the binding view (orange).

The binding view will then contain all currently configured bindings. Clicking with the right mouse button into the free area will open a menu which allows to add a binding for a module which has not yet been added. Adding a binding will activate it and bring its content into the content panel.

Station bindings



To convert an existing profile into a station binding, right click on the binding icon and select Change profile => None. The existing profile will be converted into a station binding and activated for editing.

Binding profiles

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To assign a binding profile to a station, a network or a set of stations/networks, drag a profile from the right part (blue or magenta) to the left part (red or orange). It is also possible to drag and drop multiple profiles with one action.

General configuration workflow

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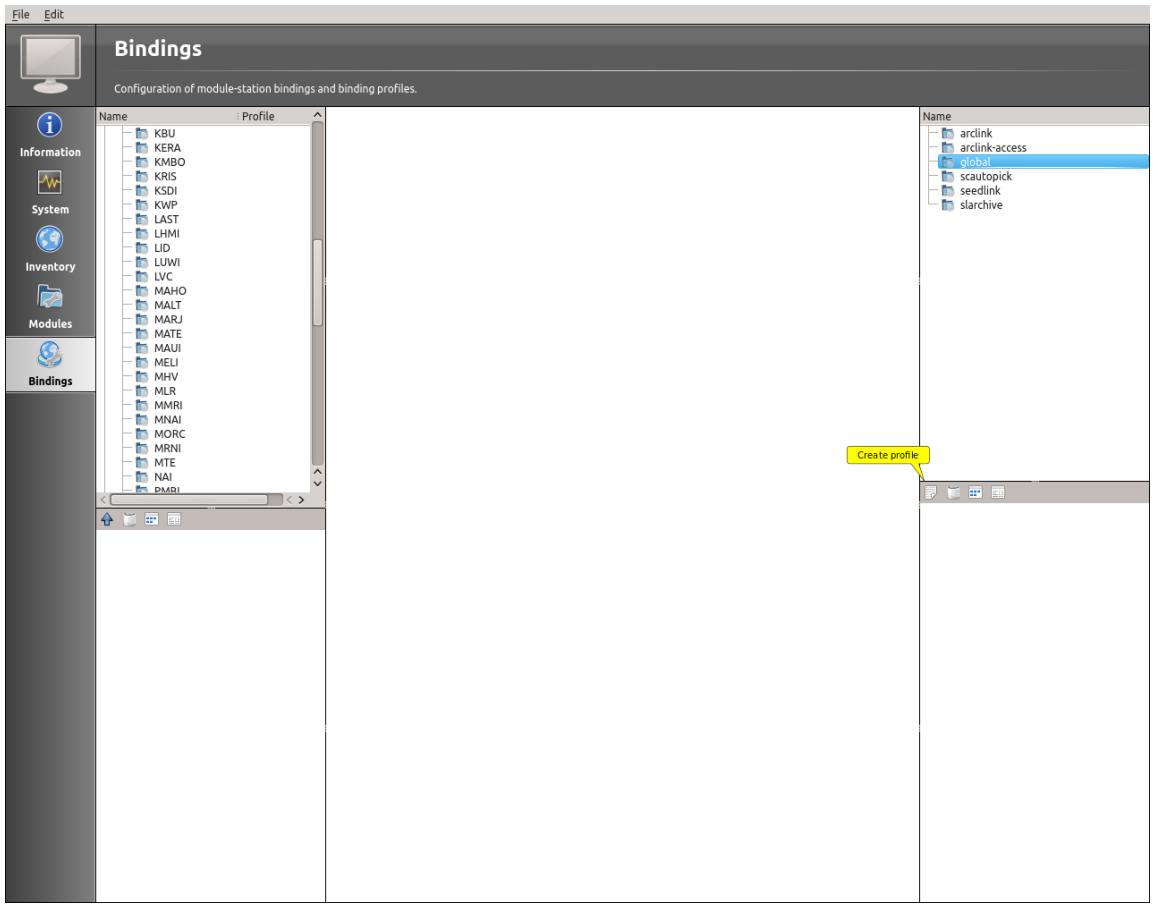
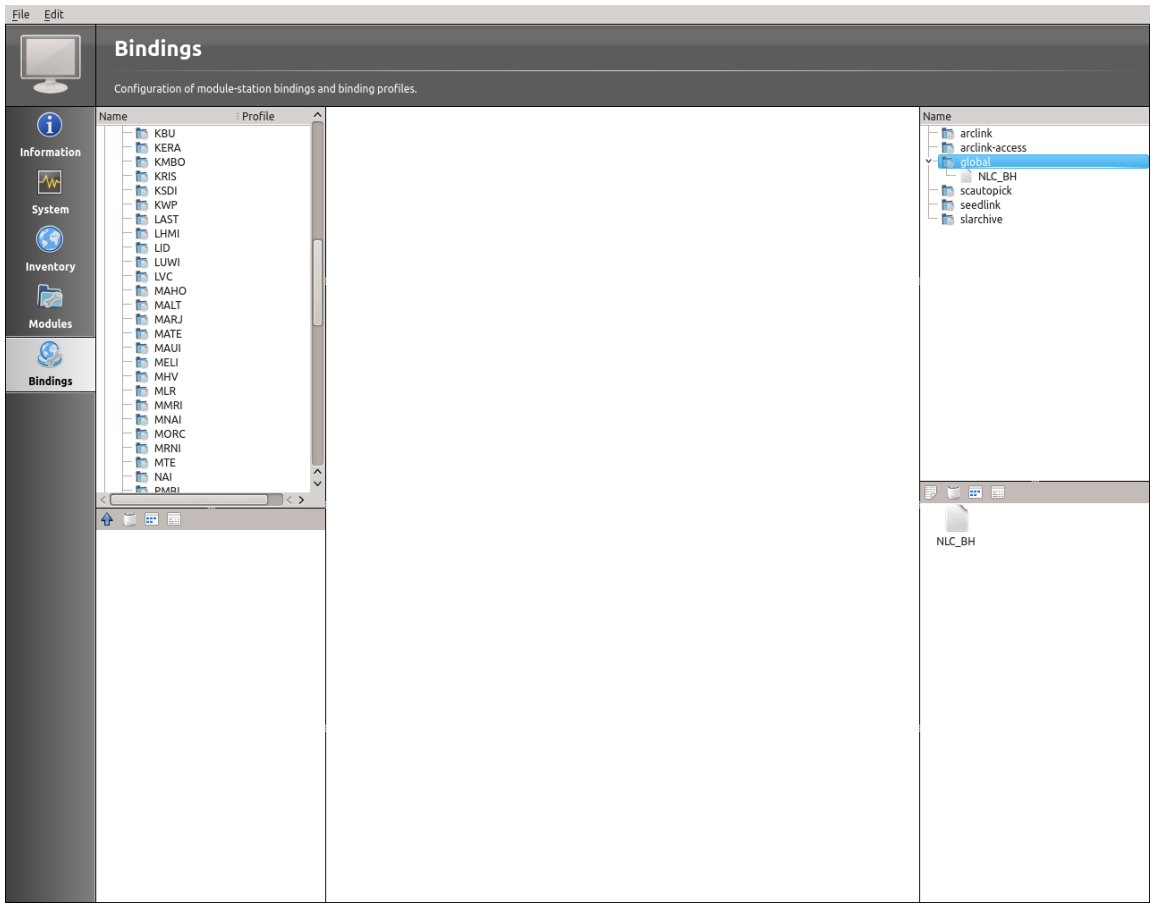
- Follow the instructions of initial setup
- Import your inventory in the "Inventory" tab (import station information)
- Press "sync keys" in the inventory tab
- Create Bindings in the "Bindings" tab (station configuration)
- Start with a profile for the "global" bindings (definition of primary stream)
- Create profiles for SeedLink bindings (acquisition)
- Create profiles for slarchive bindings (archiving)
- Create profiles for scautopick bindings (processing)
- Drag and drop the profiles to the corresponding networks/stations
- Save your configuration
- Update the configuration in the "System" tab
- Set the "enabled" modules, which should be started by default
- Press "Start"

Global Bindings



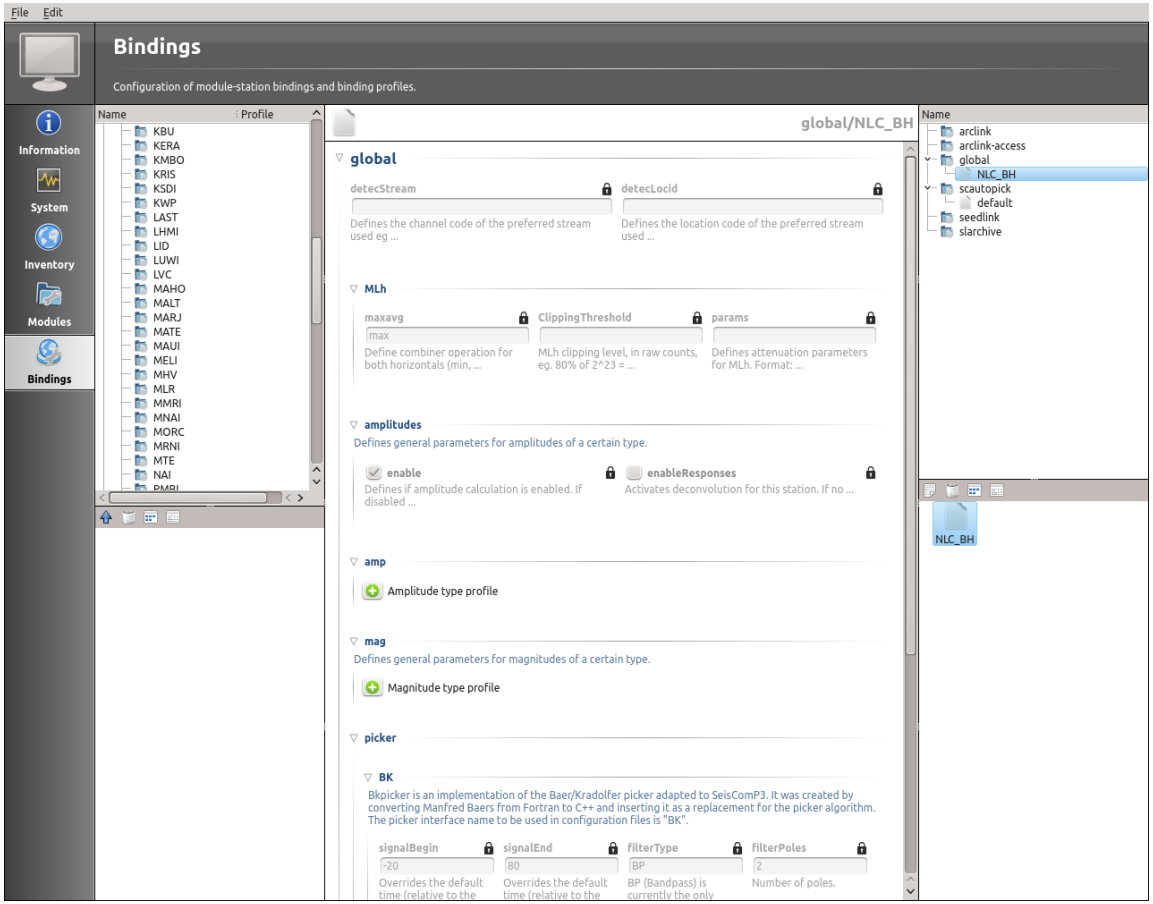
Create a global configuration profile and name it "NLC_BH".

Global Bindings



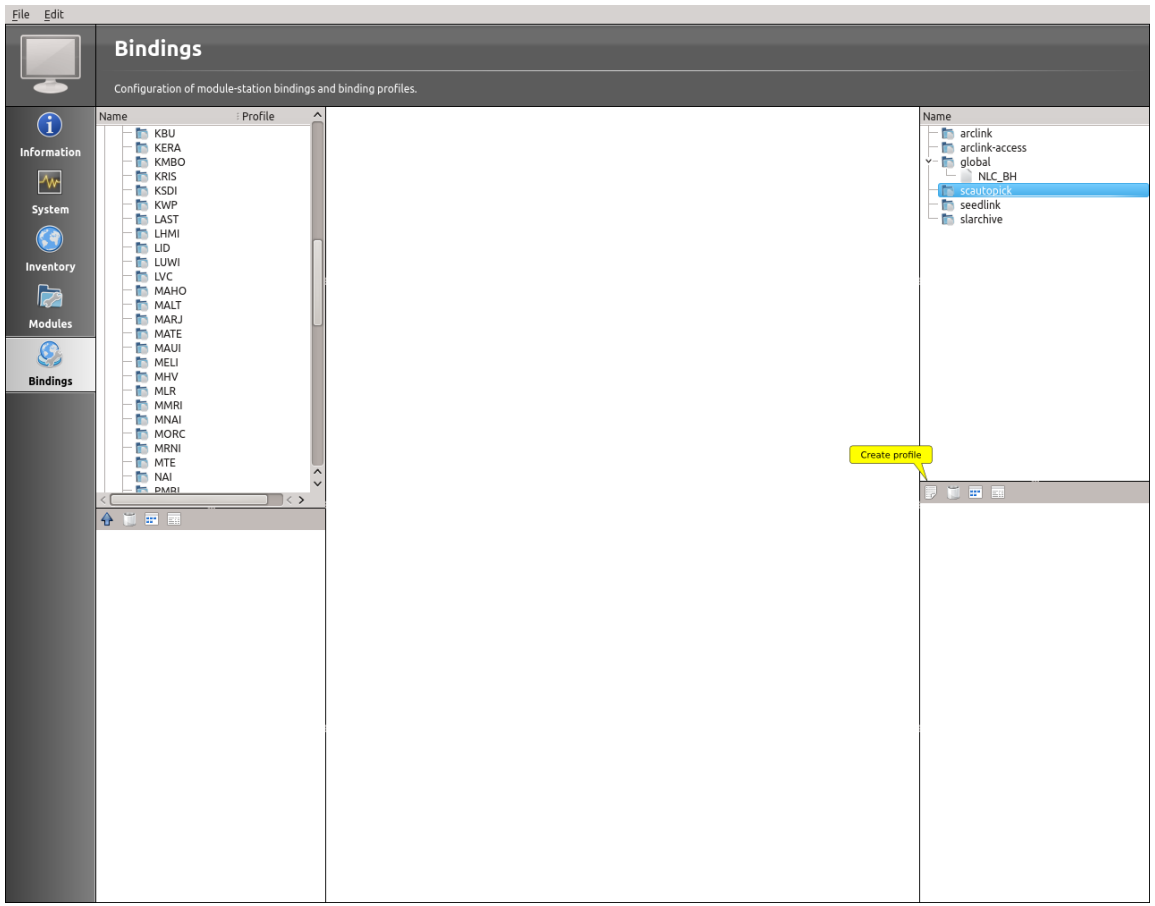
Profile NLC_BH is created.

Global Bindings



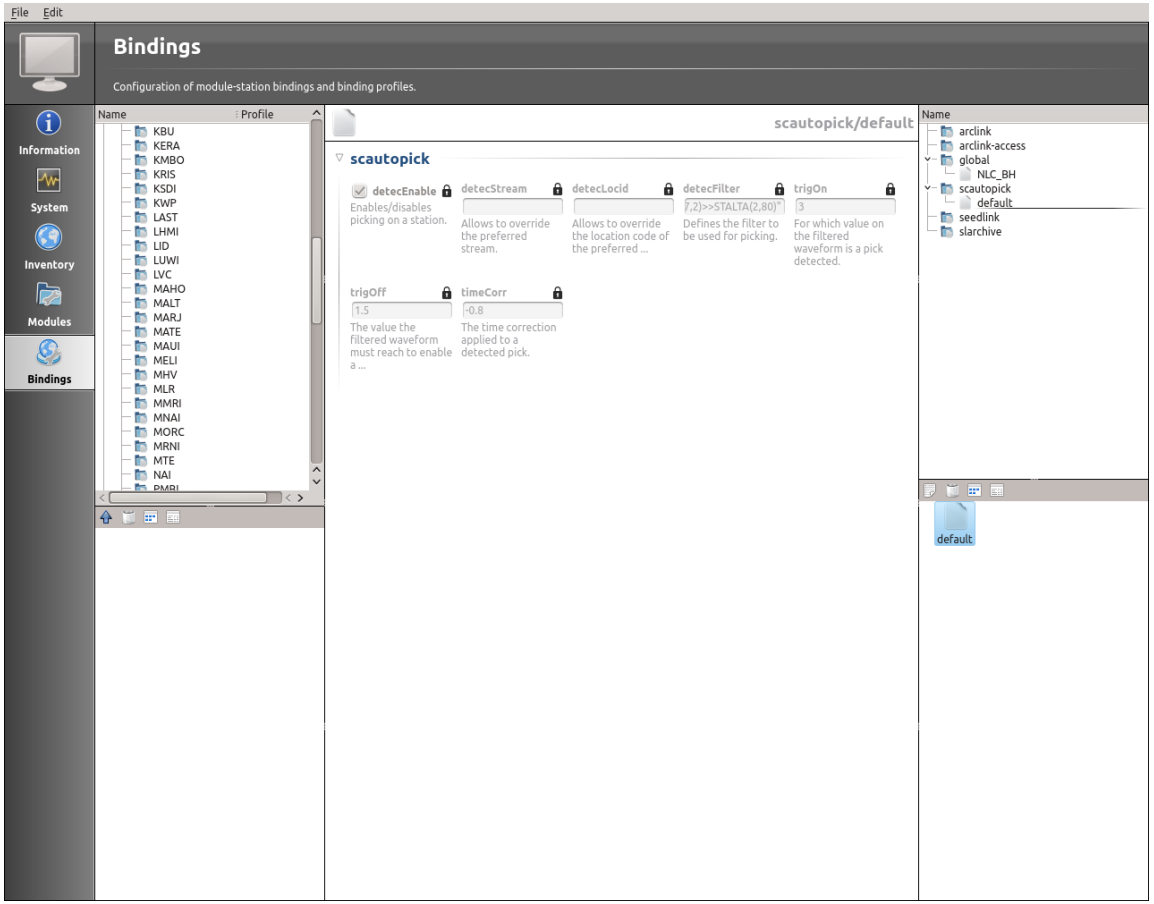
Doubleclick on profile "NLC_BH". Click on the "lock" next to the detecStream box and add "BH".

scautopick Bindings



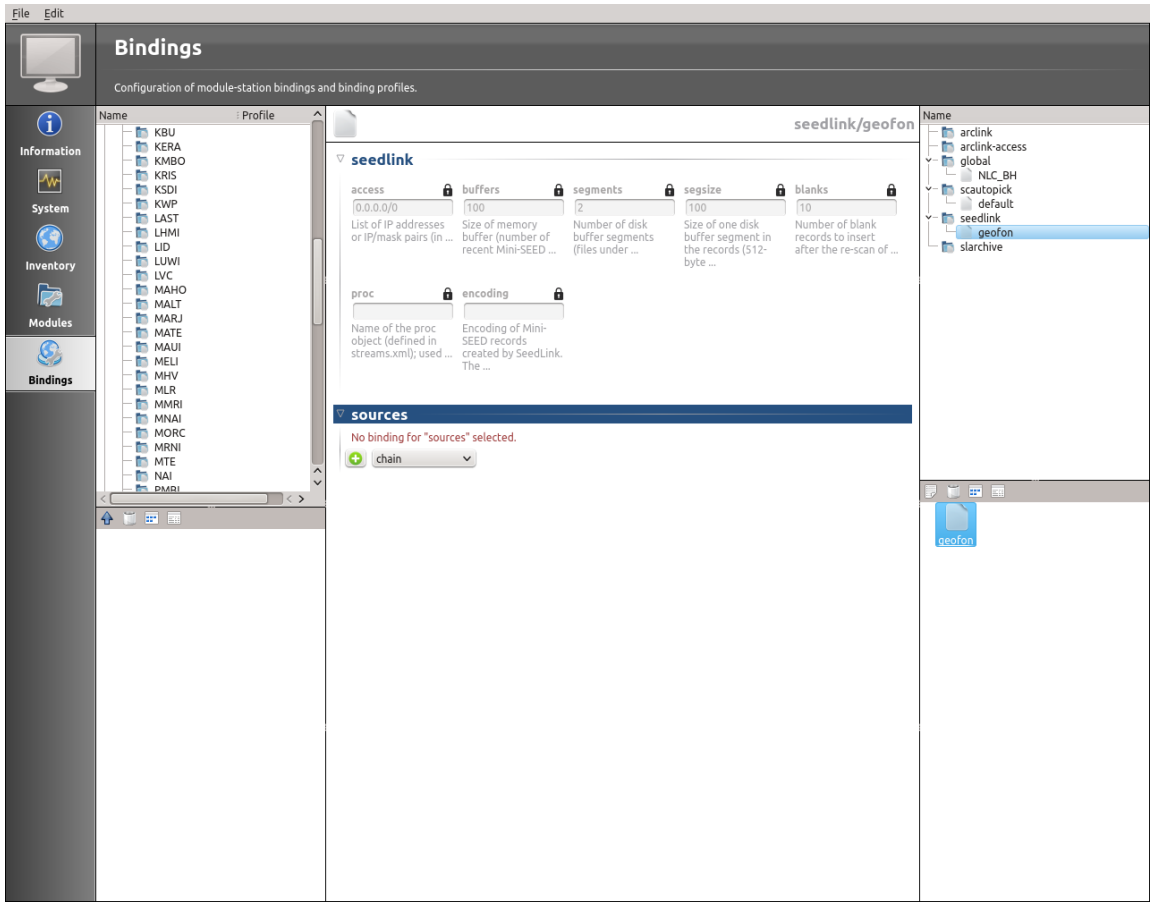
Create a scautopick configuration profile and name it ”default”.

scautopick Bindings



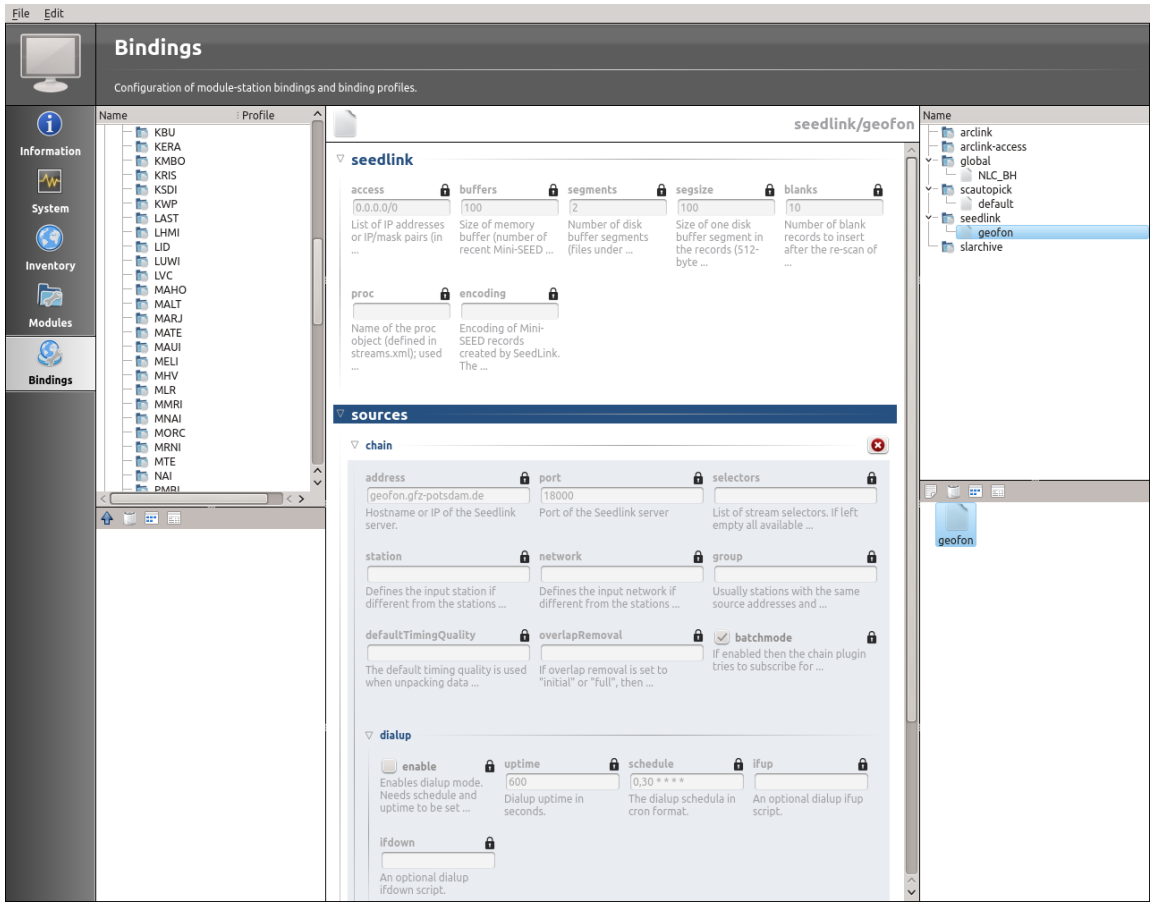
- Doubleclick on ”default” to see the parameters
- By clicking on the ”lock” you can change the parameters.
- We stay with the predefined parameters for now.

SeedLink Bindings



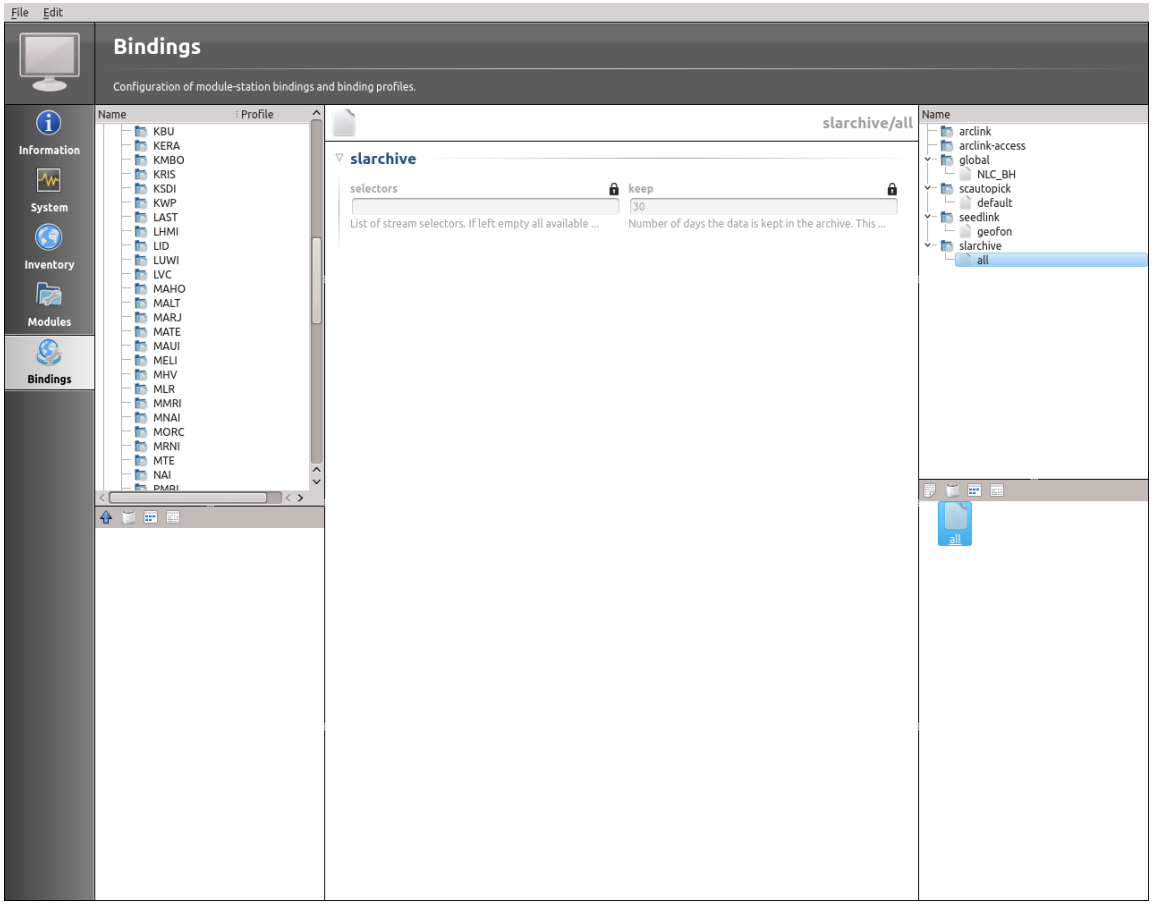
- Click on SeedLink
- Create profile "geofon"
- Doubleclick on "geofon"
- Now the SeedLink settings are shown.
- Click on the green button with the "+". The chain name can be empty.

SeedLink Bindings



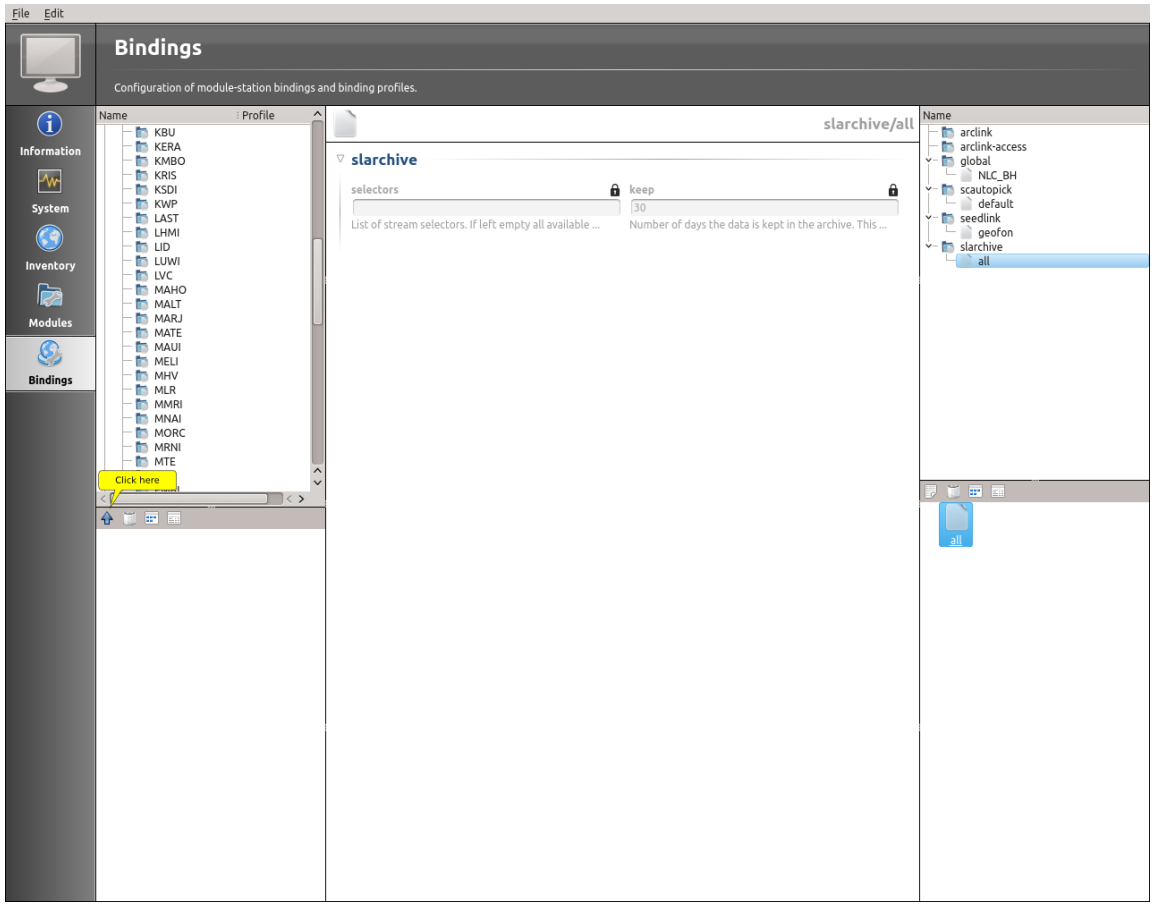
- Click on the small triangle next to the chain to see the settings.
- We stay with the predefined parameters for now.

SLarchive Bindings



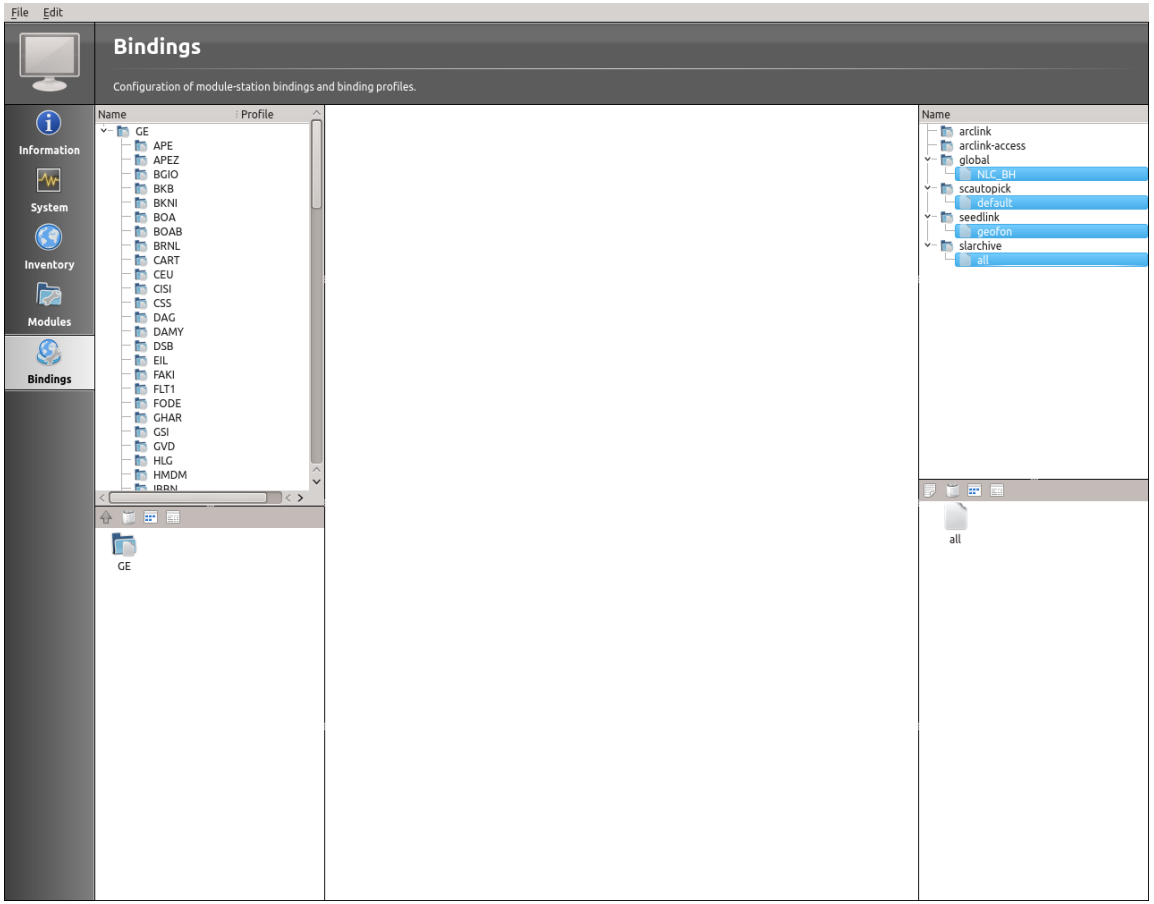
- Click on SLarchive
- Create a profile "all"
- Doubleclick on "all"
- Now the SLarchive settings are shown.
- We stay with the predefined parameters for now.

Assign Bindings



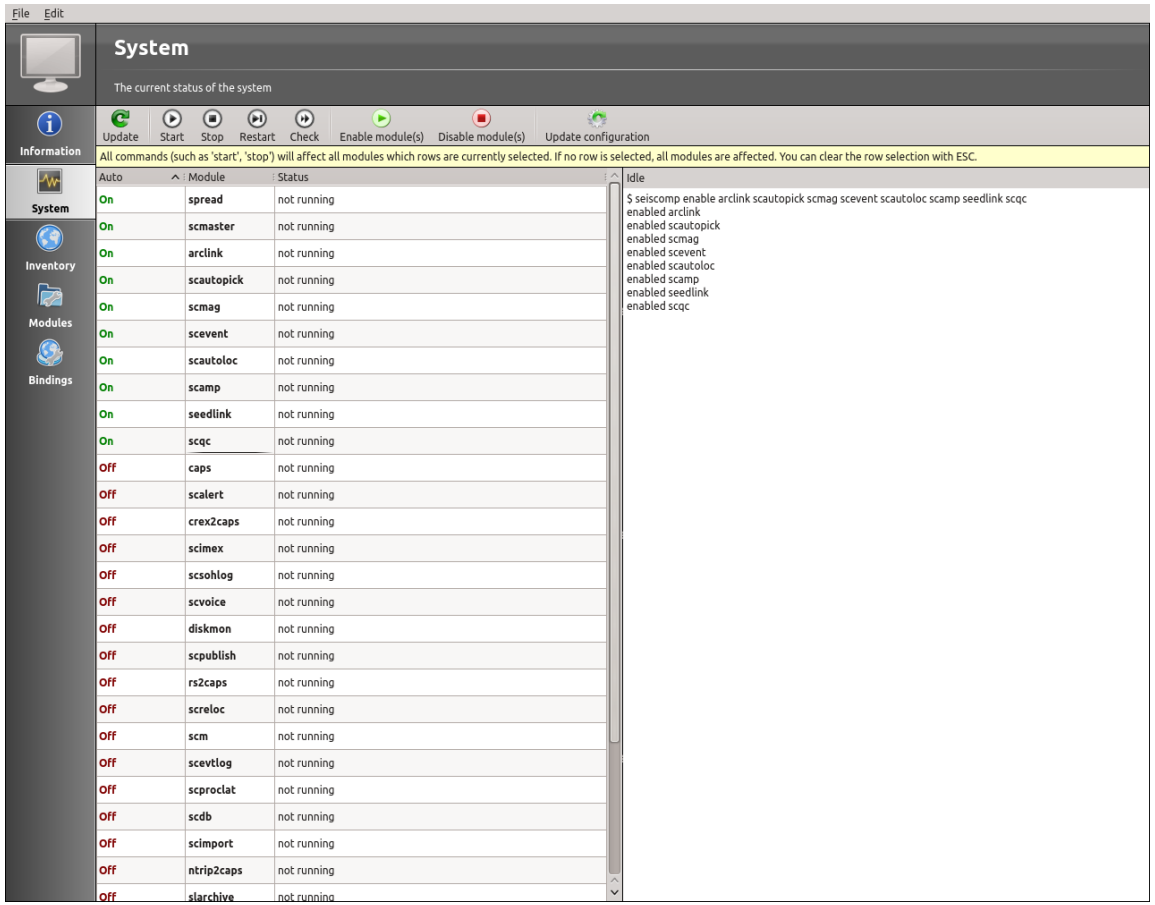
- Press the "up" error on the lower left side until you see "GE".

Assign Bindings



- Drag and drop the profiles (global, seedlink, scautopick, slarchive) one by one on "GE" on the lower left side.
- The profiles are now assigned to all "GE" stations.

Save config and write to database



- Goto File and press "Save".
- Switch to the "System" tab.
- Press "Update Configuration"
- Multiselect SeedLink, SLarchive, ArcLink, scautopick, scautoloc, scamp, scmag, scevent, scqc.
- Press "Enable Modules"
- Press "Start"

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Questions?