

Metadata Generation with Nexus in a Nutshell

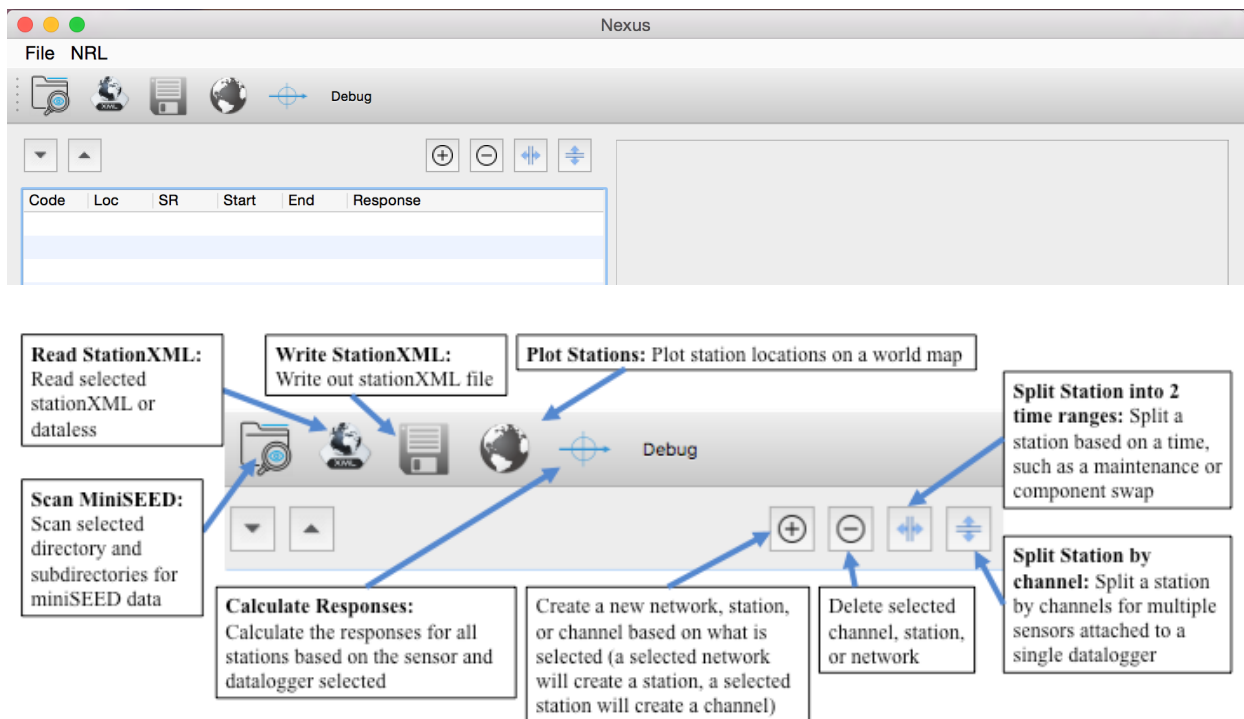
You have miniSEED format data for your EarthScope experiment. Now you need to create the metadata in stationXML format. The stationXML file is the history of your entire experiment. It records any and all of the changes, additions, or removals of dataloggers, sensors, channels, sample rates etc. for all the stations within the network and thus MUST cover the entire duration of the experiment.

For information on generating properly named miniSEED data from your specific datalogger, go to: <https://epic.earthscope.org/content/passive-source-seed-archiving-documentation>

If you do not have Nexus installed, go to:

<https://epic.earthscope.org/content/software-resources>

1. Start by typing **nexus** in a terminal window. This will bring up the Nexus GUI:

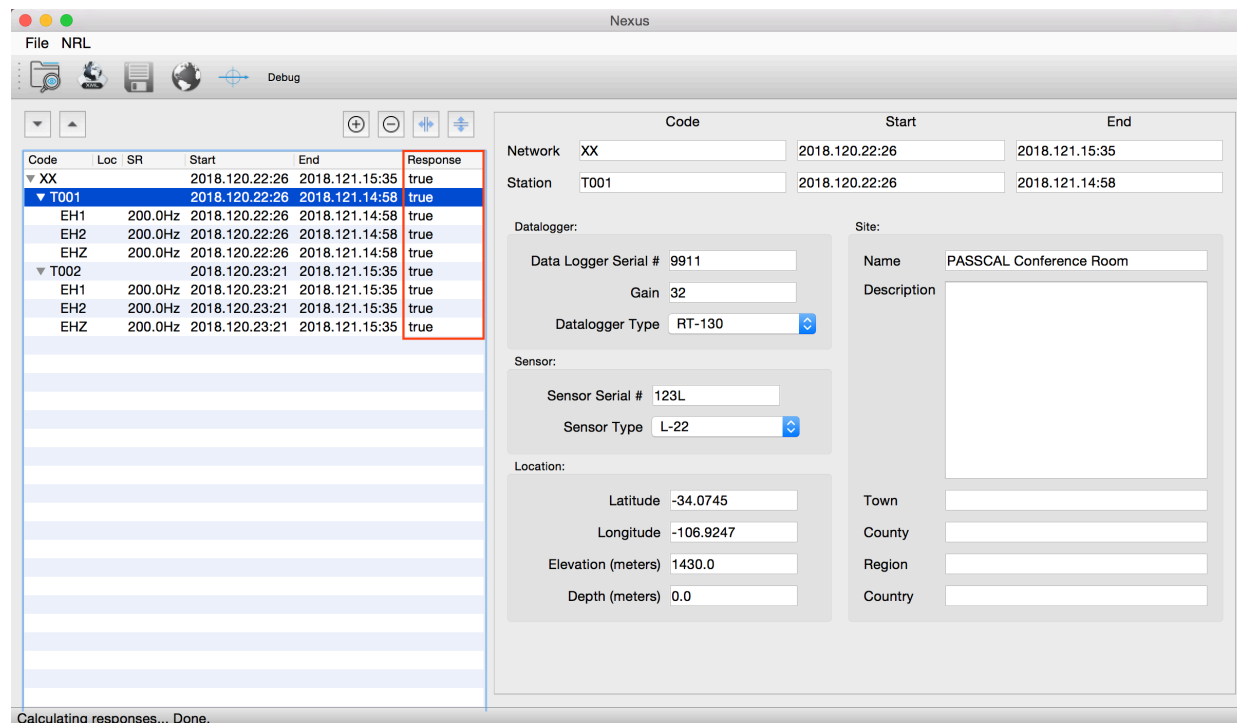


2. After opening Nexus, scan the miniseed day volumes by either selecting the **Scan MiniSEED** button or going to **File > Scan MiniSEED**. Navigate to the DAYS folder created by **dataselect** and select **Open**. Nexus will create a tree structure listing all of your stations in the left panel. Confirm that all stations listed are named correctly and have the correct channel names. If not, this can be fixed in **fixhdr**. After you make any needed changes, reopen Nexus and scan the miniSEED again.

3. Select each station block and specify station location, datalogger and sensor type and serial numbers, datalogger gain, and station long name. For datalogger and sensor type, the EarthScope

instrument pool is pre-populated in the dropdown. For any instruments not listed, select the ... option to access the instrument selection wizard.

4. Once you have finished inputting all station level information including the datalogger and sensor types, select the **Calculate Responses** button. **This step requires an internet connection to access the DMC Nominal Response Library.** If the instrument information has been correctly populated for all stations, the values in the Response column will all change to “true”.



5. Verify the station locations by selecting the **Plot Stations** button to bring up a map of the station locations.

6. After all values in the Response column are true and you have verified your station locations, select the **Write StationXML** button to save your stationXML file. Name the stationXML file with the network code, experiment name, and today's Julian date. For example:
PI.PasscalTestNetwork.2018172.xml

7. Please drop a note, with your EPIC project name in the subject, to epic.data.group@earthscope.org before sending the data to EPIC so that we can set up a receiving area. Attach the stationXML to this email unless it is larger than 5Mb. You can use our tool **data2passcal** to automatically send the data: **data2passcal <directory containing day volumes>**

A few tips...

- To update your stationXML after a service run, open your existing stationXML file in Nexus, then scan the miniseed files in your new service run directory
- If you are using industry-standard sensors (L22, L28), you may need to manually change the Z-channel dip to +90
- If you change any datalogger or sensor information after calculating responses, you may need to calculate responses again