

INDI Servers

- All INDI servers have a corresponding config file located in /opt/local/LBTI_INDI/config
- These config files have information relating to the server themselves (More information can be found under the INDI_Config file)
- Each server will have a corresponding sym link associated with it (More information can be found under the INDI_Symlinks file)
- These symlinks tie to an executable that will run the command to activate the server.
 - This will run the corresponding Config file along with it and uses it to properly run the INDI server
- Again, there are many INDI Servers used by the LBTI, including:
 - Cryo
 - Warm
 - Ubcs
 - Auxiliary
 - Lmir
- As shown in the INDI_Symlink document, all point to the indi_maxnet key name
- When the telescope system is first started, will run command to start all of the corresponding INDI servers:
 - Runs: "indiserver [-options] Cryo Warm Ubcs Auxiliary Lmir ...

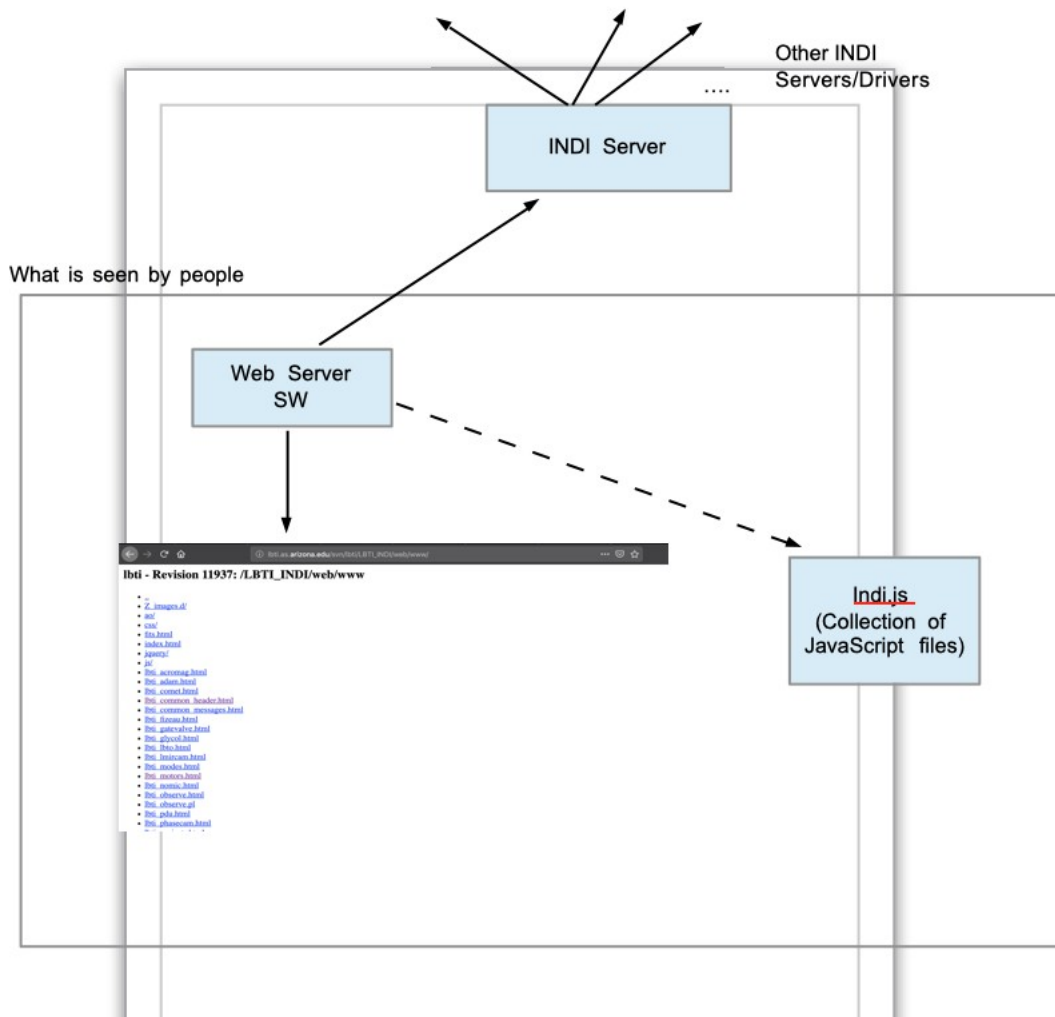
INDI Server Logs

- INDI drivers have the ability to log all relevant information regarding the subsystem
- The drivers are able to use stdin and stdout for INDI prompts
- So, these driver can be prompted to use a stdout function to write to a local file for the logs.
- However, there is already a pre-built functionality utilized by the LBT site for logging data. There is a stderr that is also supported by INDI drivers, and this is what is utilized for writing INDI logs.
 - These are stored in /opt/local/LBTI_INDI/logs/{INDI Server Name}
- Benefit of this storage system is that each separate INDI server will have it's own specified directory to find all it's log files, instead of every log file from all the INDI server being stored in a single directory.
- Each day, the log files will roll over to the next log file. This is documented by the day, month, and year, and can be found in more detail in the INDI_log file.
- These log files can also be accessed by using the Symlink set with the server name.
 - E.g. If you type in: {INDI Server Name}.log, it will call the corresponding functionality by invoking the indi_maxnet with the symbolic link, and direct you to the /opt/local/LBTI_INDI/log/{INDI Server Name} directory.

Oher LBTI Specific INDI properties

- Has a very similar system for generating outputs from these servers
- Essentially, the only difference is it is stored in /opt/local/LBTI_INDI/data/{INDI Server Name}. And when using a terminal command such as {INDI Server Name}.data, it will direct you to the directory specified in the previous sentence.

- The web socket interface is another LBTI specific INDI implementation.
- It is actually INDI client.
- The system is similar to the diagram below:



- As seen in the diagram, the web interface is governed by the software of the written Web Server HTML/CGI
- Many of these pages use various INDI Javascript files, that are all housed in a Indi.js file
- The Web Server SW connects to a 'central' INDI server, which then interacts with all relevant INDI servers in the LBTI
- Finally, since the INDI protocol is language agnostic, it can be configured to read and interpret files in any programming language.
- Therefore, using the INDI client "pyindi", any files can be written in Python and interpreted in this protocol.
- There are also several other frameworks that can be used, such as C framework, etc.