Loci-Stream License Manager Guide

Christopher Neal, Jeffrey Wright

1   Basics of Floating Licenses

The Loci-Stream license manager is a floating license manager that runs independently of the Loci-Stream code and verifies that a user has valid Loci-Stream floating licenses. The license manager is designed to run continuously on a user's system. A floating license is a license to use Loci-Stream that is not attached to any single person, but rather it is a finite resource that can be accessed by any user who requests it. Other users may not use that license until the user that is currently using the license has finished using it and returns the license to the license pool. A pool of floating licenses is a collection of licenses that are available for use by any number of users. With the license manager running, a user can start up an instance of Loci-Stream and Loci-Stream will communicate with the license manager to request one or more floating licenses based on the contents of the run control file. If the requested licenses are available from the pool, Loci-Stream will execute, otherwise it will fail. Failure to obtain requested licenses could occur if other instances of Loci-Stream are running and have already checked-out licenses from the pool.

Consider the case where the pool of the licenses contains two base licenses and one flamelet module license. These licenses will be independently tracked in the pool of licenses by the license manager. In this scenario, two instances of Loci-Stream can run concurrently if they are both running the base code alone. However, both users cannot run Loci-Stream using the flamelet module concurrently because there is only a single flamelet module license in the pool. If both users need to use the flamelet module, then one will have to wait until the other's instance of Loci-Stream is finished running. When this occurs, the flamelet module license will be returned to the pool and the second user can initiate an instance of Loci-Stream that uses the flamelet module. In summary, the base code license and the module licenses are tracked separately and can be shared between all users who are accessing the license pool.

2   Setting Up and Running the License Manager

For the license manager to run properly, the following will be needed:
- A signed license manager license file (provided by Streamline Numerics)
- An initial license manager log file (provided by Streamline Numerics)
- An open port on the machine that the license manager will run on
- The MAC address of the machine that will run the license manager

A signed file is a file that has been marked by Streamline Numerics as being a valid file, and any tampering with the file will cause it to be invalidated. The MAC address is a unique number that

identifies a machine. It can be determined via simple Linux terminal commands. In order to create a signed license file (this file will be named `server_license.lic`) for the license manager, Streamline Numerics will require that you provide the MAC address of the machine that will be running the license manager. A MAC address is a unique 12-charcter alphanumeric attribute that is assigned to electronic devices, which for example might appear in the following form: `00:1b:63:84:45:e6`. Typing `ifconfig` on a Linux machine should display the MAC address beside the label `HWaddr.` The license file for the license manager must be placed in the same directory as the Loci-Stream licenses. License files can be placed in sub-directories under the main license directory if you want to keep the license files organized.

In addition to the license manager license file, Streamline Numerics will also send you an initial license manager log file named `sni_log.txt`. This log file must be placed in the directory where the license manager executable is located. The license manager must be started within 10 days of receiving this log file. After that, the license manager can be started and stopped as needed, but it is designed to run continuously without using any significant computer resources, so we suggest leaving it running.

Once the configuration steps above have been taken, the license manager can be started using the following Linux command. This command can also be added to system start-up scripts to ensure continuous operation of the license manager.

```
license_server <port> <license_directory>
```

For the <port> argument you must provide an open port on the machine that is running the license manager. This port is used for communication between the license manager and Loci-Stream. The license manager must be able to communicate with all instances of Loci-Stream that are executed, as Loci-Stream will need to check-in and check-out floating licenses during execution. If you do not have information about available/unused ports on your machine, specifying a large number will work, such as 9000. The `<license_directory>` argument is the path to the location where the Loci-Stream licenses and the license manager license have been placed.