Newton USB Dongle Licenses

Working in Newton

Any computer that has Newton installed is capable of working with input and playback files, running a simulation, generating plots, or creating animations, provided that the computer can communicate with a USB dongle containing open licenses. There are <u>not</u> different versions of Newton to be used for running simulations or performing pre- or post-processing, everything is controlled through the main Newton application. A computer can open unlimited Newton sessions simultaneously for performing pre- and post-processing on multiple files.

Pre-Processing

Pre-processing refers to creating or modifying a simulation input file (*.NWT). Pre-processing requires 1 UI license.

Solving

Solving refers to running a simulation. Solving a simulation requires 1 Solver license and 1 UI license.

Post-Processing

Post-processing refers to viewing simulation results, generating plots, or creating animations with a playback file (*.UCM or *.PBF). Post-processing requires 1 UI license.
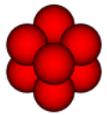
Newton Licenses

All licenses are contained on the USB dongle. When an instance of Newton requests a license, it communicates with the USB dongle. If the USB dongle is located on another computer on the network, the local computer and the remote computer <u>must</u> maintain a continuous network connection in order to use Newton. If the connection is interrupted for more than approximately 5 minutes, any simulations currently running will automatically stop and every open instance of Newton will be forced into Viewer Mode.

Viewer Mode

Running Newton in Viewer Mode is identical running Newton Viewer (the free version of Newton that can be distributed to clients for viewing playback files). While Newton is in Viewer Mode, it can only open and view playback files and save playback frames. It cannot open or modify input files, run simulations, create animations, or generate plots. Once Newton enters Viewer Mode, it cannot return to Normal Mode. The user must close Newton, re-establish communication with the USB dongle, and then re-open Newton.

Solver License

A Solver license is a license to run a simulation. When a user starts a simulation via input file or restart file, Newton connects to the USB dongle and requests to check out a Solver license. If there are no available Solver licenses, Newton will not start the simulation and will notify the user that there are no available Solver licenses.

When a simulation is stopped, the Solver license is checked in to the USB dongle and another instance of Newton can then check out the Solver license to start another simulation. Alternatively, if the USB dongle is unplugged or there is a network connection problem between the computer running the simulation and the computer containing the USB dongle, the simulation will automatically stop, the Solver license will return to the USB dongle, and Newton will be forced into Viewer Mode.

To prevent simulations from automatically stopping, it is best to keep the USB dongle plugged into a "Server PC" which is used to run all simulations. Then network connection problems are irrelevant because Newton will always connect to the USB dongle locally.

Solver License Counting
Solver licenses are counted on a "per-instance" basis. This means that only 1 simulation can be running for each Solver license on the USB dongle.

User Interface License
A User Interface (UI) license is a license to open an instance of Newton. When a user starts Newton, the program connects to the USB dongle and requests to check out a UI license. If there are no available UI licenses, Newton will start in Viewer Mode.

When all instances of Newton on the computer have been closed, the UI license is checked in to the USB dongle. Alternatively, if the USB dongle is unplugged or there is a network connection problem between the computer running Newton and the computer containing the USB dongle, any instances of Newton will be forced into Viewer Mode and the UI license will return to the USB dongle.

A UI license is required whether the user is solving a simulation, performing pre- or post-processing, or viewing a playback file. A UI license is required <u>any time</u> a computer has at least one instance of Newton open.

UI License Counting
UI licenses are counted on a "per-workstation" basis. This means that a single computer is free to open unlimited instances of Newton and still only use 1 UI license.

For example, a user could be editing 10 different input files while simultaneously creating 5 animations from separate playback files and still only use 1 UI license, provided that all instances of Newton are open on the same computer.

However, this also means that a computer running just 1 instance of Newton will also occupy 1 UI license until Newton is closed, even if no input or playback files are open and Newton is idle.

Forcing License Check-In
If a Solver or UI license appears to be missing from the USB dongle, it is likely that there is an instance of Newton open on a computer somewhere. To avoid trying to find the computer and close Newton, the USB dongle can simply be unplugged for 10 minutes. This will force all instances of Newton into Viewer Mode and will return all Solver and UI licenses to the USB dongle.