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Licensed Application Software

Licensed Application Software: Overview

A few licensed applications from different vendors are installed on NAS HECC systems under the `/nasa` directory. They are either purchased by NAS (with justification that many users need it) or by users themselves. If you would like to use a licensed application which is not yet available on NAS HECC systems, you may have to purchase the license yourself.

Tecplot

Two Tecplot products are available on the HECC systems: Tecplot 360 and Tecplot Chorus.

Tecplot 360

Tecplot 360 is a CFD and Numerical Simulation Visualization Software used in post-processing simulation results. Common tasks associated with post-processing analysis of flow solver (for example, Fluent, STAR-CD, OpenFOAM) can include such tasks as:

- Calculating grid quantities (for example, aspect ratios, skewness, orthogonality, and stretch factors)
- Normalizing data; Deriving flow field functions like pressure coefficient or vorticity magnitude
- Verifying solution convergence
- Estimating the order of accuracy of solutions
- Interactively exploring data through cut planes (a slice through a region), iso-surfaces (3-D maps of concentrations), particle paths (dropping an object in the "fluid" and watching where it goes).

As of Dec. 2008, the Tecplot 360 license at NAS no longer has restrictions on the number of copies of Tecplot 360 that can be run concurrently.

Note: If you have set the stacksize with a command like `limit stacksize unlimited`, you will have to reduce the stacksize for Tecplot to run. For example:

```
%limit stacksize 2000000
```

Tecplot Chorus

Tecplot Chorus is a new simulation analytics framework that unites physics visualization with data management and analytics in a single environment.

Currently, one Tecplot Chorus license is available to use on Pleiades or NAS supported desktop systems.

For more information on these versions of Tecplot, please visit [Tecplot's documentation page](#).

See also: <http://en.wikipedia.org/wiki/Tecplot>

IDL

IDL is a software for data analysis, visualization, and cross-platform application development. IDL combines tools for any type of project, from "quick-look," interactive analysis and display to large-scale commercial programming projects.

For more information, please visit the [IDL home page](#).

Current licenses of IDL at NAS allow 10 users to use it at the same time. If you are not able to use IDL because the licenses are being used, try using it at a later time, or load an IDL module and issue the command `lmstat -a` to find out how many licenses are in use.

See also: [http://en.wikipedia.org/wiki/IDL_\(programming_language\)](http://en.wikipedia.org/wiki/IDL_(programming_language))

Matlab

Matlab is a numerical computing environment and programming language. Created by The MathWorks, Matlab allows easy matrix manipulation, plotting of functions and data, implementation of algorithms, creation of user interfaces, and interfacing with programs in other languages. Although it specializes in numerical computing, an optional toolbox interfaces with the Maple symbolic engine, allowing it to be part of a full computer algebra system.

A total of 8 licenses are available to use on either Pleiades or Columbia or NAS supported desktop systems. To find out how many licenses are currently in use, use:

```
%module load matlab/2010b  
%matstat
```

For more information, please visit the [Matlab web site](#) at MathWorks.

Note: Our version of **glibc** has not been tested with Matlab 2010. Please proceed with this in mind.

See also: <http://en.wikipedia.org/wiki/Matlab>

Gaussian

Gaussian 03 is a suite of electronic structure programs. It is used by chemists, chemical engineers, biochemists, physicists and others for research in established and emerging areas of chemical interest.

Starting from the basic laws of quantum mechanics, Gaussian predicts the energies, molecular structures, and vibrational frequencies of molecular systems, along with numerous molecular properties derived from these basic computation types. It can be used to study molecules and reactions under a wide range of conditions, including both stable species and compounds which are difficult or impossible to observe experimentally such as short-lived intermediates and transition structures.

For more information, please see the [Gaussian manual](#) or the [Gaussian web site](#).

Two versions (c.02 and e.01) of Gaussian 03 have been installed on Columbia systems. To use the older c.02 version, do the following in your PBS script:

```
module load gaussian.03.c02
source $g03root/g03/bsd/g03.login
```

```
g03 input output
```

To use the newer e.01 version (built with **intel-comp.10.0.023** and **intel-mkl.9.1.023**), do:

```
module load gaussian.03.e.01
source $g03root/g03/bsd/g03.login
```

```
g03 input output
```

If you are a bash user, then do:

```
. /usr/share/modules/init/bash
module load gaussian.03.e.01
. $g03root/g03/bsd/g03.profile
```

```
g03 input output
```

See also: <http://en.wikipedia.org/wiki/GAUSSIAN>

FieldView

FieldView is Intelligent Light's CFD post-processing software to quickly identify important flow features and characteristics in simulations. It allows interactive exploration for thorough understanding of results. You can use it to examine and compare cases, extract critical values, and make presentations.

Current license allows up to 4 concurrent uses.

For more information, see Intelligent Light's [FieldView home page](#).

Gridgen

Gridgen is Pointwise's meshing software used by engineers and scientists to generate high quality grids for engineering analysis.

For more information, please visit the [Gridgen home page](#) at the Pointwise web site.