



Release Version 4.4

Release Note

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A) Enhancements in CDH/OPTRAN Version 4.4

1) Enhanced OUTPUT request for more control of format options

Changes have been made to the output request line to give the user more control. In general, it is backwards compatible except in one instance. The request “**output gnuplot mag+phase**” *has been removed*. It has been ported to the new enhanced output request line as specified in the examples below.

Options for png/emf output:

Previous to V4.4, if the user requested png output the command was:

output png

This enforces to generate all available plots to be output in png format (x-y and argand plots).

As of V4.4, the png output can be **selectively turned off** using optional arguments of the **output png** command. For example,

output png(disp=no,velo=no)

suppresses the displacement and velocity plots but still generates pressure and acceleration plots.

By default, once png is mentioned, all available plots marked for output in png format will output with default settings. However, the output settings can be modified, for example,

output png(acce=mag+phase,disp=no,press=mag+phase)

which suppresses displacement output and allows acceleration, velocity, and pressure output. Acceleration and pressure will be in the form of magnitude and phase (two plots with the phase graphed above the magnitude).

Adding the option **critical**,

output critical emf(acce=mag+phase,disp=no,velo=no,pressure=no)

generates acceleration plots (here as an example in emf format) for acceleration responses that exceed their target in magnitude/phase format. The output of all other responses will be suppressed.

Note that for all output requests, the generic **resp=mag+phase** and **resp=no** will cover all response types.

output png(resp=mag+phase)

exports all responses (displacement, velocity, acceleration, and pressure) in the magnitude/phase format.

Options for punch output:

In case punch output is requested then

output punch

sends all data that has been programmed to be exported in punch format. The default for panel participation factor output to punch is of type **response** (mag/phase) and the default for structure and fluid mode participation factor output to punch is of type **modedisp** (real/imag). The **moderesp** format of output is also available. The user can now control these formats in the following manner,

output punch(panel=modedisp,fmpf=moderesp,smpf=response)

which creates punch output of type **item=modedisp** for panel participation factors, **item=moderesp** for fluid mode participation factors and of type **item=response** for structure mode participation factors.

The statement

output punch(panel=no,smpf=moderesp)

suppresses panel participation output in the punch format. The smpf output will be of type **item=moderesp**. And the **fmpf** output will be of default type which is **item=modedisp**.

The default for **sgppf** and **fgppf** output to punch is “no” as it typically results in a substantial amount of data. Therefore, the user must specifically request **sgppf** and **fgppf** in below format to get punch output for this type of data:

output punch(sgppf=yes,fgppf=yes)

Options for csv output:

In case of csv output, the following statement

output csv

outputs all available data to the csv file format.

The format of the output can be controlled in the following manner:

output csv(acce=real,velo=mag,disp=no)

outputs the real/imag values of acceleration in csv format, the **mag/phase** values of velocity in csv format and suppresses displacement output. However, pressure data will be output in csv format as **mag/phase** by default.

2) **Octave Band Averaging**

A new qualifier has been added on the response (DISP, VELO, ACCE, and PRES) and ERP request line: **octave=n**, where n can be 1 or 3.

For example:

ERP panel=all 100.0 dload=2001 octave=3

requests octave-band averaging of the results (**octave=1** means 1/1 band and **octave=3** means 1/3 band). Note that the type of interpolation done on the graph is simple linear interpolation and that the averaging is rms-averaging. When a reference dB is given, the plot is first octave-averaged

and then converted to dB. dBA and other corrections use the center frequency to determine the correction value.

The output can be sent to csv, png, or emf. In case of ERP request and csv-type output, both the regular (non-averaged) output as well as the octave band-averaged output are generated.

- 3) Gnuplot performance enhanced by parallelizing the gnuplot commands.
- 4) ERP computation performance enhancements. Particularly relevant for cases of engine run-up where different load cases have different forcing frequencies.
- 5) Performance of fastfrs=no is improved. This is relevant in the case of frequency dependent fluid elements as these cannot be handled by fastfrs=yes.
- 6) Reduction of disk space usage: files used by FastFRS are deleted directly once FastFRS has completed.
- 7) The command line keyword, OUTDIR=, has been enhanced to allow the output results to be placed in the same directory from which Optran is launched. The command is to use OUTDIR=SAME. Alternatively, the CDHoptran.defaults file can be modified to make this the default.
- 8) PARAM,OPA6D,YES instructs Autorequest to create response requests at all 6 dofs

B) Bug-Fixes

- 1) Checking of disk usage during the Optran run is corrected and re-instated. It was uninstalled in 4.3 due to an update error. This has now been fixed and the user can get an estimate of Optran disk usage (including AMLS and FastFRS files) measured at certain critical times during the Optran exe run.

- 2) Nastran “statsub” worked in Optran v4.1 but is broken for v4.3 – this was a regression error that has been fixed in v4.4
- 3) In case of large models with requests for many mode shapes and their energies, the op2 created by Optran was not readable by Animator4 beyond a certain number of modes. This error has been fixed.
- 4) In case of different frequency sets in subsequent subcases, the same dload id can be used twice in two separate subcases. This leads to an error in numbering the subcases in the punch and op2 files. This numbering issue has been fixed.
- 5) In case of OMODES specification, the ODS option would produce a FATAL error. This error is fixed.

C) Supported Nastran Versions and CDH software

MSC.Nastran™

MSC.Nastran Version 2014.1 (i4/i8); 2016.1 (i4/i8), 2016.1.1 (i4/i8); 2017.1 (i8); 2017.1.2 (i8), 2018, 2018.1, 2018.2, 2019.0

CDH Software:

CDH/AMLS Version 5.1 r235+ & CDH/FastFRS Version 2.1+

D) Contact Information

For any technical problems associated with CDH/OPTRAN program, please contact local CDH office or send e-mail to support@cdh-ag.com.