

# Installing PhazeComp 2 on a Mac

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Welcome to PhazeComp 2, the most powerful, flexible, and robust PVT (pressure-volume-temperature) program available in the petroleum industry, for compositional phase behavior modeling and fluid characterization.

## Installation

If you are reading this, it is assumed that you have successfully downloaded and installed the PhazeComp package for macOS. If you have never run PhazeComp 2 on your computer, and everything goes as planned, it will automatically install a 30-day trial license.

The installer should have created or updated the following folders:

- “/Applications/PhazeComp”
- “/Library/Application Support/Reprise”
- “/Library/Application Support/ZickTech/License Server”
- “/Users/Shared/PhazeComp Documentation”
- “/Users/Shared/PhazeComp Examples”

The PhazeComp application will be in the “/Applications/PhazeComp” folder. It is suggested that each user drag and drop PhazeComp’s icon onto their Dock for convenience. It is suggested that each user copy the “PhazeComp Examples” folder to one of their own local folders, where they can run the examples themselves. They might also want a local copy of the “PhazeComp Documentation” folder.

To complete the installation, the primary user of the computer should now:

1. Launch PhazeComp, either from the Dock or from the “/Applications/PhazeComp” folder. On first execution, macOS might ask permission to run PhazeComp (which should be allowed).
2. PhazeComp will then launch the Terminal application. On first execution, macOS will ask permission for PhazeComp to control the Terminal (which should be allowed).
3. At the ensuing “Primary Input File” dialog, click Cancel.
4. At the ensuing “Standard Output File” dialog, click Cancel. On first execution, macOS might first ask permission for PhazeComp to write to whatever folder comes up in the dialog box (which should be allowed).
5. At the ensuing “next line” prompt in the Terminal window, enter “eof” (without quotes) and allow PhazeComp to complete its execution.

At this point, examine the banner that was written. It will either show an expiration date, or else the words “Demonstration Copy.” If it shows an expiration date 30 days hence, you have successfully installed PhazeComp’s 30-day trial license. If it shows a different expiration date, then you already had a valid PhazeComp license on your computer. If it says “Demonstration

Copy,” you do not yet have a valid license, for one of the following reasons (which should be indicated in a warning message):

- You already had a PhazeComp 2 license on your computer but it has expired. Please contact Zick Technologies about acquiring a new license.
- You might already have a PhazeComp 2 license but it could not be accessed, for reasons the warning might explain.
- You could not connect to the Internet to install the trial license.
- If you cannot resolve the problem(s) on your own, please email a copy of the warning message(s) to [zick@zicktech.com](mailto:zick@zicktech.com) for assistance.

Hopefully, at this point, you will have at least a trial license and can begin using PhazeComp. Before you do, however, please read the rest of this document.

## Auxiliary Programs

To take full advantage of PhazeComp, you will also need to install a few auxiliary programs, if you haven’t already. These include:

- A good text editor for creating input files and viewing output files. BBEdit (<https://www.barebones.com/products/bbedit>) is a highly recommended commercial product. CotEditor (<https://coteditor.com>) seems to be a good open-source alternative.
- A good spreadsheet program for formatting tabular input and post-processing output files. Microsoft Excel works very well, but there are some open-source alternatives.
- Gnuplot (<http://www.gnuplot.info>). PhazeComp can generate gnuplot input files, which gnuplot can turn into publication-quality plots in PDF format. To simplify installation, look for a link to macOS binaries. The installer package you download might not be code signed, so macOS might not allow you to open it without first changing the Security setting for that package to “Open Anyway.” As long as you obtain the package from a reputable organization, however, it can probably be trusted. For example, Zick Technologies encountered no problems with a package for gnuplot 6.0.4 downloaded recently from a Northwestern University website.
- An installation of LaTeX for publication-quality document layout (<https://www.latex-project.org>). The installation package for macOS is called MacTeX.
- A good PDF viewer. Apple’s Preview application seems to be the best choice. Adobe Acrobat Reader and Adobe Acrobat Pro are commonly used alternatives, but they both have drawbacks for use with PhazeComp. When using PhazeComp, the PDF plot files and report files will be updated frequently, and neither of the Adobe products will automatically update their views of these files, whereas Preview will.

## File Extensions

It is also recommended that you change your default handling of file extensions. If you use .phz for PhazeComp input files and make PhazeComp the default application for opening those files, then you can simply double-click on an input file and have it launch PhazeComp. You will then need to right-click a .phz file’s icon to edit it with your text editor, but you’ll typically need to do that only once during each PhazeComp session, as you can keep the file open within the editor and just Save it whenever you’re ready to run it through PhazeComp again.

While running, PhazeComp can also “include” other files. The examples use .inc for those files, but they’re just plain text files, so you can use any extension you’d prefer. Whatever extension you use, you should make your text editor the default application for opening those files.

PhazeComp always suggests .out for its output file's extension. You can choose a different extension within each Standard Output File dialog box, but that would be tedious and easy to forget, so it’s best to keep the .out suggestions and to make your text editor the default application for opening those files.

PhazeComp also creates files with .bot, .ecl, .ssr, .plt, and .tex extensions. All are plain text files, but they have different purposes. The .bot files are tab-delimited files containing information for generating black oil tables. It is recommended to make your spreadsheet program (Microsoft Excel, for example) the default application for opening those files. The .ecl and .ssr files contain black oil tables for Eclipse 100 and Sensor, respectively. It’s best if you open those files with your text editor. The .plt files are input files for gnuplot, so it is recommended that you make gnuplot the default application for opening them. The .tex files are LaTeX input files. TeXShop is the LaTeX file editor included with MacTeX, so TeXShop is the logical default application for opening .tex files.

You can easily end up with multiple PhazeComp input and output files having the same leaf name but different extensions (Test.phz, Test.inc, Test.out, and Test.bot, for example). To avoid confusing these different files, it is strongly recommend that you don’t hide the file name extensions in the Finder.

## **Next Steps**

If you have successfully installed a license, you are ready to start using PhazeComp. If not, consult the “Licensing PhazeComp on a Mac” file in the “PhazeComp Documentation” folder. Once PhazeComp is licensed, it is recommended that you read some of the other files in the “PhazeComp Documentation” folder, beginning with “Getting Started with PhazeComp” and proceeding according to its recommendations.