

MacVector 18.2.5

for Mac OS X

The online updater for this release is 125 MB in size

If the updater fails, [DOWNLOAD THE FULL INSTALLER HERE!](#)

System Requirements

MacVector 18.2 is a Universal Binary supported on any Intel or Apple Silicon Macintosh running **Mac OS X 10.12** (macOS Sierra) or higher, up to and including macOS Monterey. There are no other specific hardware requirements for MacVector – if your machine can run OS X 10.12 or above, it can run MacVector. A complete installation of MacVector 18.2 uses approximately 496 MB of disk space. Please note this release will NOT run on OS X 10.112 or earlier versions of OS X.

ASSEMBLER NOTE: If you are performing contig assembly using *MacVector with Assembler*, we recommend you have **at least 2 GB of FREE RAM** available on your machine. For any serious NGS work using phrap, velvet, SPAdes, Flye or Bowtie, you should have at least 8 GB and preferably 16 GB or more for satisfactory performance.

Installation and License Activation

You can choose to install MacVector in one of two ways; if you want to install MacVector for all users of the computer, simply drag the MacVector folder onto the Applications folder. You will be prompted for a system administrator account and password during this copy. If you don't have administrative privileges, or if you want to install it for just your own use, you can install MacVector in the /Applications/ folder in your own personal home directory. To do that, double-click on the **OpenUserApplicationsFolder** icon to open the folder in a separate window, then drag the MacVector folder into that window.

When you first run MacVector, you must enter a valid license owner, serial number and activation code if one does not already exist on your computer. This information is usually sent by e-mail but is also printed on the inside of the CD sleeve if you opted to receive MacVector on physical media. If you previously installed an earlier version of MacVector and have a serial number with a maintenance end date of August 1st 2021 or later, MacVector 18.2 will automatically use your existing license and you will not be required to enter the details again. NOTE: you can optionally activate a license for your own use without requiring Administrative privileges.

Changes for MacVector 18.2.5

Bug Fixes

The Multiple Sequence Alignment **Picture** tab now correctly displays the entirety of the virtualAA consensus sequence of nucleic acid alignments.

The Protein Multiple Sequence Alignment **Pairwise** tab now uses the currently selected Color Group to determine similarities. Previously, it always used the ClustalW definition of “similar amino acids”.

An occasional Changes for MacVector 18.2.4

License Changes

This version of MacVector supports multi-copy Standard Licenses. Previously, you had to have a separate serial number for each Standard License you owned. Now you can have a single multi-copy serial number that permits multiple users to use the same serial number. This is very similar to our existing concurrent usage KeyServer license except that there is no need to install KeyAccess or to maintain a functioning KeyServer.

Bug Fixes

An occasional crash when inserting gaps into Nucleic Acid Multiple Sequence Alignments has been fixed.

You can now run Primer Database Searches with mismatches of 0.

Changes for MacVector 18.2.3

Bug Fixes

There have been code changes to work around a bug where SPAdes would fail to assemble sequences on Apple Silicon “M1” computers.

SPAdes has been updated to version 3.15.3.

The *cross_match* and *Qual Trim* algorithms now honor each other’s trimming/clipping values so they don’t override existing values.

Changes for MacVector 18.2.2

Bug Fixes

The default `Primer Database.nsub` file is now correctly copied or created into the `~Library/Application Support/MacVector/` folder.

You can now correctly download hits from the BLAST Description List output even when many thousands of hits are present in the list. The maximum hits to be reported has now been increased to 2 million.

Changes for MacVector 18.2.1

Bug Fixes

With KeyServer (“Network”) licensing, licenses are now correctly checked-out from the KeyServer on Apple Silicon machines.

The default `PrimerDatabase.nsub` file is now copied to and used from the current user’s personal `/Library/Application Support/MacVector/` folder so that it is writable even without Administrator access.

You can now zoom in closer in Protein and NA Toolbox results so that you can narrow the displayed results to a range of as little as 8 residues.

Stop codons in translated DNA multiple sequence alignments are now handled separately

from ambiguities, resulting in much better alignments when in “virtualAA” mode.
Importing of Primer Database .csv data has been improved.

Changes for MacVector 18.2

Align to Reference Enhancements

The *Align to Reference* alignment algorithm has been overhauled to do a much better job handling larger numbers of gaps in the alignment between a reference sequence and a read. Previously, for the standard alignment algorithm, more than 5 or 6 consecutive gaps in either reference or read would be poorly resolved. Now 20-40 consecutive gaps, such as might appear in CRISPR experiments are handled with ease, depending on settings. However, if you are expecting introns when aligning e.g. mRNA sequences versus a genome, you should still use the **cDNA Alignment** option which will also take splice site consensus sequences into account.

The alignment algorithm has been further optimized for speed and is now 2-10 fold faster depending on the sequences being aligned. In addition, the **Sensitivity** setting can now be lower due to the enhanced consecutive gap detection, which also speeds up calculations.

When aligning ABI chromatogram data, or plain sequences, the **Map** tab now graphically displays the “trimmed” regions at either end of the sequences making it far more obvious when there is only partial alignment between two sequences. This does not apply to NGS reads where it is impractical to view potentially millions of reads in the **Map** tab.

There is a new **Remove Gaps** context-sensitive (right-click) menu option that deletes residues in reads that correspond to a gap in the consensus sequence. This can clean up noisy assemblies where a low percentage of reads have extra residues inserted leading to a lot of gaps in the consensus sequence and a very cluttered display.

Context Sensitive Hamburger Menus

Many of the views and windows in MacVector have context-sensitive menus available when you right-click (or <ctrl>-click) in them. To make the availability of these options more obvious, these views now contain a “hamburger” button (three parallel horizontal lines) that displays the same context sensitive menu when clicked on. So, if you see the button on the toolbar, click on it to see what additional options are available.

Importing of Primer Databases in TSV or CSV Format

You can now directly import primer data into a MacVector Primer Database (.nsub) file. First, prepare your data in an *Excel* or *Numbers* spreadsheet with three columns – “Name”, “Sequence”, “Comment”. Then export the data (or **Save As...**) in *Tab Separated Values* format or *Comma Separated Values* format. Open the file with *TextEdit*, select all the rows of text, **Edit | Copy**, switch to MacVector and select **File | New From Clipboard**. This functionality replaces the old *Primer Converter* utility which no longer runs on modern macOS systems.

Miscellaneous Enhancements

To reduce clutter in the *Assembly Project* window toolbar, all of the assembly algorithms have been consolidated into a single **Assemble** toolbar button with a dropdown menu.

Support information

For assistance with MacVector, please contact your local MacVector, Inc office. You will need a current MacVector maintenance contract to be eligible for technical support other than for basic installation or licensing problems. New sales of MacVector include 12 months of support that also entitles you to any upgrades to MacVector released during the maintenance period.

USA

Toll Free: (866) 338 0222

Telephone: (919) 303 7450

Fax: (919) 303 7449

E-mail: support@macvector.com

Europe

Telephone: + 44 (0)1223 410552

Fax: +44 (0)1223 709429

E-mail: support@macvector.com

Worldwide

Telephone: + 1 919 303 7450

E-mail: support@macvector.com

When contacting Customer Support with a technical problem, please be prepared to give your product serial number as well as a detailed description of your problem and any error messages you encounter. Visit the MacVector Web site for details of any available updates, and any relevant information that could not be added to these release notes in time for publication:

<http://www.macvector.com>

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