

# MacVector with Assembler 12.0.1 for Mac OS X

## System Requirements

MacVector with Assembler 12 runs on any PowerPC or Intel Macintosh running Mac OS X 10.4 or higher. It is a Universal Binary, meaning that it runs natively on both PowerPC and Intel based Macintosh computers. There are no specific hardware requirements for MacVector – if your machine can run OS X 10.4 or above, it can run MacVector Assembler. A complete installation of MacVector 12 uses approximately 127 MB of disk space.

## Installation

Both MacVector and Assembler are installed using the MacVector Installer included on this disk. In addition to the installer, you must also have a valid MacVector with Assembler license to enable the Assembler functionality. This is typically e-mailed to you and will also be printed on a sticker inside the MacVector with Assembler CD sleeve. After installation, you have 21 days to activate your MacVector with Assembler license. During that time, Assembler will be active, but once the trial period has expired both MacVector and Assembler will cease to function.

If you use Sassafras Network Copy Protection, your system administrator should have been sent an additional license file to enable the Assembler functionality on the network KeyServer.

## Validating the Installation

After installation and license activation, you can verify that the Assembler has been installed correctly by running MacVector, then choosing the **MacVector | About MacVector** menu item. It should indicate you are using an Assembler enabled copy of MacVector with a screen similar to this;



## Changes for Assembler 12.0

### Miscellaneous

The Contig Editor has been rewritten to use Quartz graphics resulting in higher quality displays and printouts.

In tiled mode, Reads can now be sorted in the Contig Editor tab.

Assembly projects can now have their contents (contigs and unassembled reads) exported in FastA format (choose File->Export As...).

## Changes for Assembler 11.0

### Next Generation Sequencing Support

The Assembler module can now read next generation sequencing files (Illumina, 454 and Solexa) in FastQ format. There is a new "Short Read Defaults" button in the phrap assembly dialog that provides optimal parameters for phrap to perform *de novo* assembly on the sequences. For MacVector with Assembler version 11.0, there is a limit of around 400,000 sequences that can be assembled. Even then, we recommend you have a machine with at least 4 GB of RAM (8 GB preferred) for optimal performance.

## Changes for Assembler 10.5

### Contig Text Printing

There is a new tab in the Contig Editor window called "Text". This is a summary of the alignment that uses the Editor tab settings to generate a printable text

display of the entire alignment. You can use this to print the alignment or copy interesting sections of the alignment for pasting into other documents. You cannot directly edit the text in this display, but it is updated dynamically whenever you make changes in the Editor tab.

## Contig Editing Enhancements

There have been a number of changes to the Contig Editor and the interactions between the Editor, Map and Feature views.

- When a Read object is selected in the Map or Features view, the Editor view now scrolls to ensure the Read sequence is visible.
- You can now use the <delete> or <backspace> keys to physically delete a residue in a Read sequence. Previously these keys would overwrite the residue with a gap character. Use <space> or “-“ keys to replace a residue with a gap.
- You can now insert residues in Read sequences or in the Consensus by holding down the <option> key while typing a residue. In the Consensus, this always inserts a gap character and maintains the alignment.
- You can now select an entire Read sequence and “nudge” it left or right using the arrow keys.

## Updated Third Party Tools and Libraries

phred 0.020425.c

phrap 1.0812

## Documentation

In addition to this document, three other documents are installed in the **MacVector/Documentation** folder that you should read;

**Contig Assembly Tutorial.pdf** – you should read this document before using MacVector Assembler for the first time. There is a Quickstart section that shows you how to get up and running quickly. This is followed by an in-depth tutorial that shows you how to use all of the features of the Assembler module.

**phrap.pdf** – this is a pdf version of the original University of Washington documentation for the phrap and cross\_match assembly algorithms. You should look here for in depth discussions of the parameters used by the algorithms.

**phred.doc** - this is a pdf version of the original University of Washington documentation for the phred base-calling algorithm.

## Support information

For assistance with MacVector Assembler, 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 problems. New sales of MacVector Assembler include 12 months of support that also entitles you to any upgrades to Assembler released during the maintenance period.

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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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