

# MacVector with Assembler 12.6

## for Mac OS X

### System Requirements

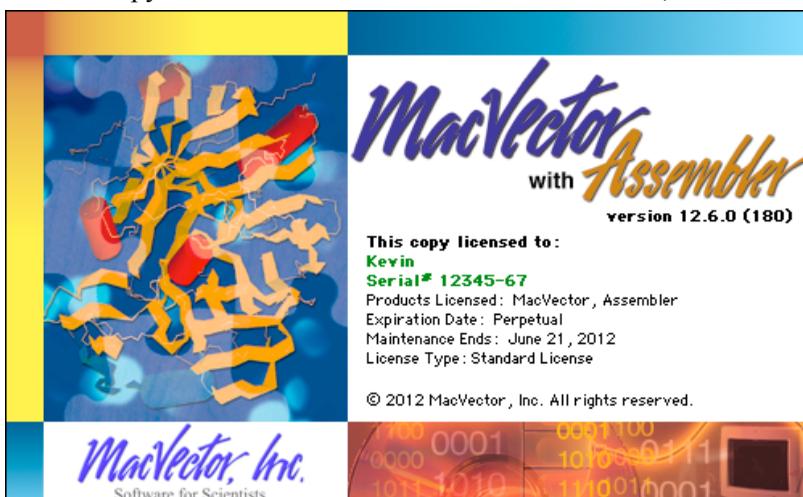
MacVector with Assembler 12.6 runs on any Intel Macintosh running **Mac OS X 10.5** or higher. There are no specific hardware requirements for MacVector – if your machine can run OS X 10.5 or above, it can run MacVector with Assembler. However, if you intend to make use of the Next Generation Sequencing Assembly functionality, we recommend you install as much RAM as you can afford or fit into the machine. For this type of analysis, the availability of RAM is perhaps more important than the speed or number of processors on the machine.

### Installation and License Activation

Both MacVector and the Assembler module are installed by double-clicking on the MacVector 12.6.pkg installer application. If you do not already have a valid MacVector with Assembler license installed on your machine, then you must enter a serial number and activation code the first time you run MacVector. This information is sent by e-mail and is also printed on the inside of the CD sleeve. You must have a valid MacVector with Assembler license to enable the Assembler functionality. 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 12.6

### De novo Assembly of FastQ Reads

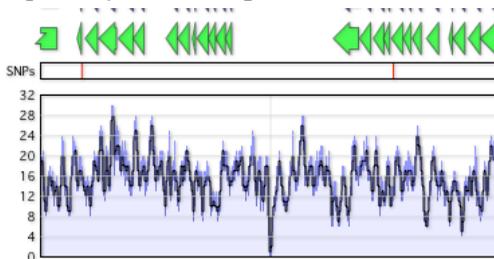
You can now assemble a moderate number of reads in a FastQ file using *phrap* without requiring that all of the results fit in memory. You can add FastQ formatted file(s) into an assembly and submit one or more of them to *phrap* for de novo assembly. The **Short Read Defaults** settings have been tweaked to reduce the memory usage of *phrap* at the cost of slightly less accurate assemblies. If you have a machine with 16 MB of RAM, around 500,000 90nt Illumina Reads can be assembled overnight on a typical desktop machine.

### Importing BAM, SAM and ACE files

If you have been sent assembly files in BAM, SAM or ACE format, you can now open these in Assembler. Create a new Assembly Project and then click on the new **Add Contig** button on the toolbar to import the file. Be aware that there are some limitations to this – MacVector will likely run out of memory if you try to display 100 million reads assembled against the entire human genome for example. However, for smaller projects (bacterial, yeast or single human chromosomes) you should find this works just fine.

### Reference Assembly

All child contigs are now annotated back to the reference contig as a feature. Selections in a child contig will be reflected in the reference contig. SNPs reported in the SNP tab of reference assemblies are now displayed graphically in the **Map** tab;



### Miscellaneous Enhancements

Performance reading assembly project AXML files has been improved.

### Assembly Project file format

Assembler now uses a file Package to store the individual files of an Assembly Project. A Package is a special type of folder under OS X that is viewed as a single file. Right click and choose **Show Package Contents** to view the individual files. The actual project is still saved as a BSML file, an XML-based format, within the package. This file will also contain any trace files. However, any reads file that has been added as a reference will not be stored within this file. Also note that the individual BAM files and BAM file indexes are also stored within the File Package. When older Assembly Project files are opened you will be prompted to save them as a new file. Your older file will be preserved.

## 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 problems. New sales of MacVector include 12 months of support that also entitles you to any upgrades to MacVector 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>