

Intro to using ArcGIS on a Mac

This is a brief guide to introduce Mac users to the various options available to make installing ArcGIS on a Mac possible. **Note that in all cases, you must obtain a copy of a Windows OS – Vista or XP.**

Intro to Running ArcGIS on a Mac

This document will outline a few of the ways one can get ArcGIS up and running on a Mac and will provide a brief overview of requirements for each.

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Intro to Running ArcGIS on a Mac

Option Overview

There are multiple ways of running ArcGIS on a Mac – a program that is currently not compatible with the Macintosh operating system (Mac OS X). Currently, there are two major virtualization programs that allow you run Windows like a program, and from within that window you would run ArcGIS just like you would in Windows or you can open the Windows programs in Mac-like windows, but they are really running from the Windows OS. These two virtualization programs are VMware Fusion (<http://www.vmware.com/products/fusion>) and Parallels Desktop for Mac (<http://www.parallels.com/products/desktop>).

The other option is Boot Camp (<http://www.apple.com/support/bootcamp/>) from Apple. It is software that comes with the Leopard operating system or later operating systems. Boot Camp is not virtualization software; instead, with Boot Camp you can either run Windows as your operating system or Mac, but not both at the same time.

For any of the options you choose whether you decide to go with virtualization software or Boot Camp, keep in mind that you will need to obtain your own copy of Windows (see ArcGIS Requirements below to guide your choice of Windows operating system).

ArcGIS Requirements

As you will be using ArcGIS with any option you choose, make sure that your computer meets the requirements outlined by ESRI for ArcGIS Desktop. The requirements listed below are for ArcGIS 9.3 (the full list can be found here: <http://wikis.esri.com/wiki/display/ag93bsr/ArcGIS+Desktop>):

Supported Operating System	Minimum Version	Maximum Version	Limitations
Windows 2000 Professional	SP4	SP4	
Windows Vista (32-bit) Ultimate, Enterprise, Business, Home Premium	SP1	SP1	

Windows Vista (64-bit) Ultimate, Home, Enterprise, Business	SP1	SP1	64-bit processors support
Windows XP (32-bit) Professional Edition, Home Edition	SP1	SP3	Windows XP SP2 & SP3 Limitations
Windows XP (64-bit (EM64T)) Professional Edition, Home Edition	SP1	SP3	Windows XP SP2 & SP3 Limitations 64-bit processors support

Hardware Reqs

CPU Speed	1.6 GHz recommended or higher
Processor	Intel Core Duo, Pentium 4 or Xeon Processors See Dual or dual-core support policy (Macs with Intel processor fit this requirement)
Memory/RAM	1 GB minimum, 2 GB recommended or higher If using the ArcSDE Personal Edition for Microsoft SQL Server Express software, 2 GB of RAM is required.
Disk Space	2.4 GB (For full install, up to 6 GB) In addition, up to 50 MB of disk space maybe needed in the Windows System directory (typically C:\Windows\System32). You can view the disk space requirement for each of the 9.3 components in the Setup program. If using ArcGlobe (as part of 3D Analyst), additional disk space may be required. ArcGlobe will create cache files when used.

Option Comparison

VMware Fusion 2.0 (<http://www.vmware.com/products/fusion/>)

1. *Cost*: \$40 through the UIC Micro/Station: <http://www.microstation.uic.edu/> or go to the website for a trial download
1. *Compatibility*: VMware allows you to run Windows and Mac at the same time. You can also copy & paste between Windows and Mac. You can also copy and move files between the operating systems. For a full list of features, see the website.
 - a. VMWare Fusion 2.0.5. is the latest version and preliminary tests show that it works with Snow Leopard – however, this is a tentative statement. Furthermore, Snow Leopard will not work in 64-bit mode on VMWare Fusion.
2. *Benefits*: Because you can run Windows and Windows programs like Mac programs, switching between the two is much faster than Boot Camp.
2. *Downsides*: Because both systems operate at the same time and each are using memory, applications are slower than if you were using them on Boot Camp.
3. *Basic Requirements (see full list at website)*:
 - a. Any of the Intel- based Macs running Mac OS X 10.4.11(Tiger) or later
 - b. 1 GB of RAM (2 GB recommended)
 - c. At least 400 MB for VMware software, and then at least 5 GB of hard drive space (an installation of ArcGIS will take up to 3 GB)
 - d. One of the following Windows OS:
 - i. For 32-bit Intel Core Duo Macs: Windows XP Professional or Home Edition SP2, Windows XP Professional or Home Edition SP3, Windows Vista Business, Enterprise, Ultimate, Home Basic, and Home Premium Editions (and SP1 editions)
 - ii. 64-bit Intel Core 2 Duo/Xeon Macs: Windows XP Professional or Home Edition SP2, Windows Vista Business, Enterprise, Ultimate, Home Basic, and Home Premium Editions (and SP1 editions)

Parallels Desktop 4.0 for Mac (<http://www.parallels.com/products/desktop/>)

3. *Cost*: \$40 through the UIC Micro/Station: <http://www.microstation.uic.edu/> or go to the website for a trial download
4. *Compatibility*: Like VMware, Parallels allows you run Windows and Mac at the same time and allows you to copy & paste between Windows and Mac. You can also copy and move files between the operating systems.

- a. Parallels 4.0 with the latest updates is compatible with Snow Leopard, and if you have 4.0 on Leopard, upgrading to Snow Leopard should not damage your files, but be sure to back up just in case.
5. *Benefits:* Because you can run Windows and Windows programs like Mac programs, switching between the two is much faster than Boot Camp.
6. *Downsides:* Again, because both systems operate at the same time and each are using memory, applications are slower than if you were using them on Boot Camp.
7. *Basic Requirements (see full list at website):*
 - a. Any of the 32- or 64-bit Intel- based Mac running Mac OS X 10.5 (Leopard) or 10.6 (Snow Leopard)
 - b. 1 GB of RAM (2 GB recommended to run Windows Vista)
 - c. At least 450 MB for Parallels software, and then at least 15 GB of hard drive space (ArcGIS will take up to 3 GB of space)
 - d. One of the following Windows OS:
 - i. For 32-bit Intel Core Duo Macs: XP Professional and Home Edition, Vista Business, Ultimate, Enterprise, Home and Home Premium, and potentially Windows 7 (experimental)
 - ii. For 64-bit Intel Core 2 Duo/Xeon Macs: Above OS's, XP Professional or Vista Business, Enterprise and Ultimate

Parallels or VMware?

To make this choice, decide what features you want and review the features listed on each website. Also, take into account which operating systems you have on your Mac and which operating systems you want to run and each program's system requirements.

For a comparison of Parallels and VMware Fusion in terms of speed, read the following articles:

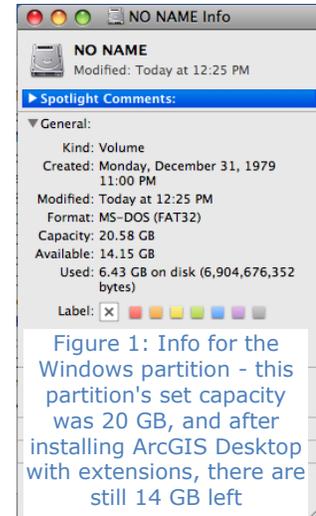
"Head-to-Head: Parallels Desktop for Mac vs. VMware Fusion" from MacTech
<http://www.mactech.com/articles/mactech/Vol.25/25.04/VMbenchmarks/index-001.html>

"VMWare Fusion 2 vs. Parallels Desktop 4: Let's Dance" from the Apple Blog
<http://theappleblog.com/2008/11/11/vmware-fusion-2-vs-parallels-desktop-4-lets-dance/>

And finally, ESRI's Mac support page: <http://edcommunity.esri.com/software/mac/>

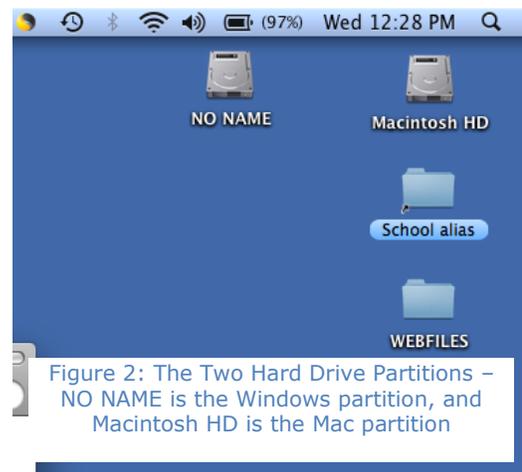
Boot Camp (<http://www.apple.com/support/bootcamp/>)

1. *Cost:* Free with Leopard and newer operating systems
2. *Compatibility:* With Boot Camp, you can open and explore the partitions, and copy and move files between the partitions (one for Windows and one for Mac).
3. *Benefits:* Because you are not splitting memory between running Windows and running Mac as you do when using virtualization software, ArcGIS will run at full speed. Additionally, upgrading your operating system should not have any effect on Boot Camp and your partition.
4. *Downsides:* Because Boot Camp lets you run either Mac or Windows, you cannot run any of your Mac programs when running ArcGIS in Windows and vice versa. Additionally, when you do want to switch from one to the other, you must reboot.



5. *Basic Requirements* (see full list at Boot Camp link above):

- a. An Intel- based Mac running Mac OS X 10.5 (Leopard) or 10.6 (Snow Leopard)
- b. At least 10 GB of empty space is required when partitioning your hard drive to use for Windows (ArcGIS will take up to 3 GB)
- c. One of the following Windows OS:
 - i. 32-bit Microsoft Windows XP Home Edition or Professional with Service Pack 2 or Service Pack 3 disc
 - ii. 32-bit Microsoft Windows Vista Home Basic, Home Premium, Business, or Ultimate disc
 - iii. And for some MacPro or MacBook Pro computers, 64-bit Microsoft Windows Vista Home Basic, Home Premium, Business, or Ultimate disc



Installation

VMware Fusion 2.0

Before installing, make sure to back up your computer, and to download the installation guide here: http://www.vmware.com/pdf/fusion_getting_started_20.pdf
This is a short guide, so if you need additional help see the Resources page here: <http://www.vmware.com/products/fusion/resources/>

A few notes about installation:

- After installing, go to the VMware Fusion Download page to update your version (<http://www.vmware.com/download/fusion/>), especially if you are running Snow Leopard on your Mac.

Parallels Desktop 4.0 for Mac

Before installing, make sure to back up your computer, and to download the installation guide here: http://www.vmware.com/pdf/fusion_getting_started_20.pdf
This is a short guide, so if you need additional help see the Resources page here: <http://www.vmware.com/products/fusion/resources/>

Boot Camp

Before installing Boot Camp, make sure to back-up the contents of your computer somewhere and download and print the manual at: http://manuals.info.apple.com/en_US/Boot_Camp_Install-Setup.pdf

Go to your Utilities folder to find the Boot Camp Assistant, and then open it. Follow the instructions on screen and in the manual. The entire process will take about an hour or two to complete.

A few notes about installation:

- If after installing Windows in Step 3, your computer will restart. If you see a black screen with a blinking _ at the top, restart by holding down the Power button to turn off and then on, and while your computer starts up, hold down the Option button. It will restart in Windows, and if not, choose that option.
- Make sure to partition enough space for



Windows. 5 GB is not enough – 10 should be sufficient.

- If you want to use Internet Explorer/Firefox while in Windows mode, make sure to download antivirus software.
- To choose which operating system to use, hold down the Option key while your computer starts. While in Windows, you can use the icon in the tray at the bottom to choose to start in Mac.

Other Options

There are other options for using GIS on a Mac. If you do not need to do complex analysis, you can use freeware options such as Quantum GIS (QGIS – qgis.org) or for analysis, you can use the freeware GRASS (<http://www.openosx.com/grass/grass.html>) or uDIG (<http://udig.refractions.net/download/>).

Or, you can use a basic GIS viewing system from ESRI called ArcExplorer (<http://www.esri.com/software/arcexplorer/download.html>).

You can also see on of the sites below for more options:

- <http://freegeographytools.com/2009/gis-related-software-for-the-mac>
- <http://edcommunity.esri.com/software/mac/>