

# Options for Running WHONET and BacLink on a Mac Computer



Brigham and Women's  
Hospital

Division of Infectious Diseases

WHO Collaborating Centre for  
Surveillance of Antimicrobial  
Resistance

Boston, October 2024

## Contents

Introduction .....	2
Option 1: Install Windows Using Boot Camp (Mac only).....	2
Option 2: Install Windows Using Another Boot Loader (Linux, Unix, etc.).....	3
Option 3: Run a Windows Virtual Machine .....	3
Option 4: Provision a Remotely Accessible Windows Server .....	3
Option 5: Cloud-Hosted Virtual Machine.....	4

## Introduction

The WHONET and BacLink software are designed to run natively on the Windows operating system. There are several options for non-Windows users who still wish to use our software which are outlined in this document. Each option enables you to run or access a Windows interface from a non-Windows computer, such as a Mac or Linux. Once you can access Windows using one of these options, you may then proceed to use WHONET and BacLink like any other user.

Options 1 and 2 require you to make changes to your computer and should only be attempted if you understand the procedure and risks well.

Option 3 uses virtualization technology to run a fully functional Windows operating system on top of Mac. This means that you would not partition your hard drive. You would first run Mac as usual, and then separately launch and connect to the “virtual machine” to do your work.

Option 4 describes how a hospital IT group might provision a Windows server physical or virtual machine and make this system accessible.

Option 5 describes how to create a cloud-based virtual machine, which is potentially accessible from any internet connected computer (Windows, Mac, Linux, etc.) globally with the proper credentials. This requires no modifications to your local computer and can serve many users at once. However, there may be relevant legal concerns regarding your permission to transmit and store data with a 3<sup>rd</sup> party hosting provider, like Amazon Web Services.

## Option 1: Install Windows Using Boot Camp (Mac only)

Boot Camp is a boot loader program which runs prior to your operating system when you start your computer. For typical computers, there is only a single hard drive zone (called partition), with a single operating system installed to it (Mac). It is possible, however, to create an additional partition on your hard drive, and install the Windows operating system to this location.

When you turn your computer on, you will select either Mac or Windows using the Boot Camp boot loader. This option would give you a fully functional Windows installation running on your Mac computer’s hardware.

Please follow the instructions from Apple Support:

<https://support.apple.com/en-us/102622>

## Option 2: Install Windows Using Another Boot Loader (Linux, Unix, etc.)

Linux systems often use a different boot loader system called GRUB, but the function is like what is described above for Boot Camp. It is possible to partition the hard drive into Linux and Windows areas, install Windows, and choose between the operating systems on system startup. The procedure for this varies based on your distribution and version.

## Option 3: Run a Windows Virtual Machine

It is possible to set up a Windows “virtual machine” on a Mac computer. This is a fully functional Windows operating system, which runs on your own computer, using your computer’s processor, memory, and other resources. This method does not require you to partition your computer’s hard drive or use Boot Camp. Users would boot their computers to Mac, and separately launch the virtual machine using the virtualization software they have configured (VMWare Fusion, Parallels Desktop, etc.).

If you are interested in this option, please search the web for the most relevant information, or follow this link for an overview of the process and requirements.

<https://www.macworld.com/article/668848/best-virtual-machine-software-for-mac.html>

## Option 4: Provision a Remotely Accessible Windows Server

You may contact your technical support personnel to inquire whether it is possible for them to create a Windows Server on your network that could be used by any number of WHONET users as needed. Each user would have their own credentials to the server and would log in using the Remote Desktop Protocol (RDP). This should make it possible for users of Windows, Mac, Linux, Android, etc. to log in to the machine without altering their computers (aside from installing a remote desktop client, if it is not already present).

The system resources required for WHONET and BacLink are very minimal. It is usually possible to repurpose existing hardware if purchasing new hardware is too costly, or if you wish to try this method without investing in the hardware. For example, if you can obtain a desktop computer which meets the minimum requirements for the version of Windows Server you wish to use, this computer could be erased and transformed into the dedicated Windows Server by the technical support team.

## Option 5: Cloud-Hosted Virtual Machine

It is possible to use a virtual machine that is running in the cloud by using one of the many available hosting providers, such as Amazon Web Services (AWS). In the AWS context, this service is known as the “Elastic Compute Cloud” or EC2.

Regardless of hosting provider, the result is a Windows virtual machine that is remotely accessible (according to your configured policies). This methodology has many advantages, but you may have legal considerations to resolve regarding the sharing and storage of your potentially sensitive data.

Technically speaking, this is the simplest approach to implement because the hosting provider manages many of the details your IT team would otherwise be responsible for if they created their own dedicated server on premises.

Regardless of hosting provider choice, you will configure a Windows Server virtual machine with the minimum acceptable system resources (to minimize operational costs). System resources can always be changed later if they prove insufficient, but WHONET and BacLink should run well given the minimum specifications required for Windows Server.

Each WHONET user should have an associated Windows user provisioned on the virtual machine, which they will then use to connect through the Remote Desktop Protocol (RDP). This enables users on virtually any operating system to log in to the Windows Server to do their WHONET and BacLink tasks.