

## Setup a MacStadium VMware Private Cloud for iOS and macOS Continuous Integration Projects

Follow these steps to setup a MacStadium VMware private cloud to run builds for macOS or iOS continuous integration projects on dedicated Mac hardware. [Read the full how-to guide](#) for more details about each step.

### Connect to Your Cloud

- After you have created a MacStadium account and started a private cloud, visit the [MacStadium portal](#) to get your IP Plan document.
- Access your environment via a VPN.
  - On Windows, see [Configuration Cisco IPSEC VPN in Windows using Shrew VPN Client](#)
  - On macOS, see [How to setup a MacStadium Cisco IPSEC VPN connection](#)

### Connect to the vSphere Web Client

- Click the “vCenter Web Client” URL in “Step 2: vCenter Login” in your IP Plan.
- Copy and paste the username and password, being careful not to include white space at the end of the fields. If you have vSphere 6.5+ then you can use the HTML5 version by changing your login url to `/ui`, for example `https://10.92.192.10/ui`. You should now be able to see your private cloud!

### Create a Virtual Machine Running macOS

- In the Navigator, right-click on the cluster and select “`New Virtual Machine`.”
- Select “`Create a new virtual machine`” and then select `Next`.
- Choose a name, e.g. “`macOS-10.12`,” and then select `Next`.
- In “`Select a compute resource`,” click `Next`. If prompted, select a specific host to deploy to if your cloud doesn’t have `[DRS Mode]` turned on. This just means that your image will run on that specific host vs. VMware determining a host for you.
- Select the datastore for your VM’s files (generally you will only have one of these). Select `Next`.
- Select the default presented for `Compatibility` and then `Next`.
- Select Guest OS Family “`Other`” and Guest OS Version “`Apple Mac OS X 12.13 (64-bit)`.” Don’t worry that this won’t match the actual macOS version; we only need one that is close.
- Select the following virtual hardware settings before selecting `Next`:
  - CPU: `2`
  - Memory: `4GB`
  - New Hard Disk: `80GB`
  - New Network: `Browse > Private-1` (The name of your private range in your IP Plan)
  - Expand `CPU` and select “`Expose hardware assisted virtualization to the guest OS`” (if you want a nested VM)
  - New CD/DVD Drive: `Datastore ISO File`. Select `ISO > OSX > macOS_Sierra.iso`. Ensure that `Connect` is ticked.
- Check to see that your summary looks correct, and then `Finish`.

## Install macOS

- Right-click on the virtual machine and select **Power > Power On**.
- Click on the virtual machine and then click on the preview image. You should now see the macOS installer initializing.
- From the “**Install macOS**” screen, if you only see the DVD image, you will need to select **Utilities > Disk Utility**.
  - Select “**VMware Virtual SATA Hard Drive Media**”
  - Select “**Erase**” with defaults
  - Close Disk Utility and select “**Untitled**”
- Wait for the installer to run. When at “How Do You Connect,” select **Local network (Ethernet)**.
- Select TCP/IP Connection Type **Manually** and enter the following details before **Next**:
  - IP Address: **10.254.50.2** (The first address from your IP Plan under the Private-1 range)
  - Subnet Mask: **255.255.255.0**
  - Router Address: **10.254.50.1**
  - DNS Servers: **8.8.8.8, 8.8.4.4** (Google’s DNS servers)
- Skip Location Services and Apple ID.
- Create an Account and note the account details.
- Set the time zone to your local time. You should now be on the desktop. You have a working Mac virtual machine!

## Install VMware Guest Tools

VMware has a set of tools that must be installed on macOS. These get mounted via a virtual CD drive.

- Download a recent version of [VMware Tools](#) and unzip it so that you have a **darwin.iso**.
- Login into vCenter and use your storage tabs to navigate to your datastore. You can upload the ISO to the root folder or create an ISO folder.
- Shut down your machine from within macOS. From the web interface, right-click on your virtual machine and select **Power > Power Off**.
- Right-click on your virtual machine and select **Edit Settings**.
- Change CD/DVD Drive 1 to **Datastore ISO File** and select the ISO you uploaded.
- Right-click on your virtual machine and select **Power > Power On**.
- After the reboot, go back into the VM desktop, log in, and install the VMware Tools when prompted.

During the tools install, you will get blocked by a security exception from the macOS; step through and explicitly allow it.

## Install Build Tools

Now that you have a working machine, you will need to install the basic software needed to run builds.

- To begin, access your host via SSH from your desktop provided you have the VPN connected.
- Install [Homebrew](#), a package manager for macOS and used for managing installation of the various tools needed for iOS and macOS CI efforts.
- Install Xcode, either via the App Store or [Xcode::Install](#), a tool for installing and managing multiple versions of Xcode.

## Create a Template

Now that you have a base operating system, you can create multiple virtual machines with different system variations.

- Convert your VM to a template and use that template to create multiple VMs that can easily be removed once they are no longer required.
- First, stop the VM if it’s running. Then right-click on VM > Select “Convert to Template.” From that point you can create new VMs from that template.