

# Using Project Photon on vCloud Air

## Introduction

Project Photon is a secure, fully-customizable container host optimized for the VMware platform. By following this guide, you will be able to deploy it within your organization's vCloud Air Application Catalog.

## Prerequisites

Prior to starting, it is expected that you have a vCloud Air Account. If your organization doesn't already have one, you may register for an On Demand Account [here](#).

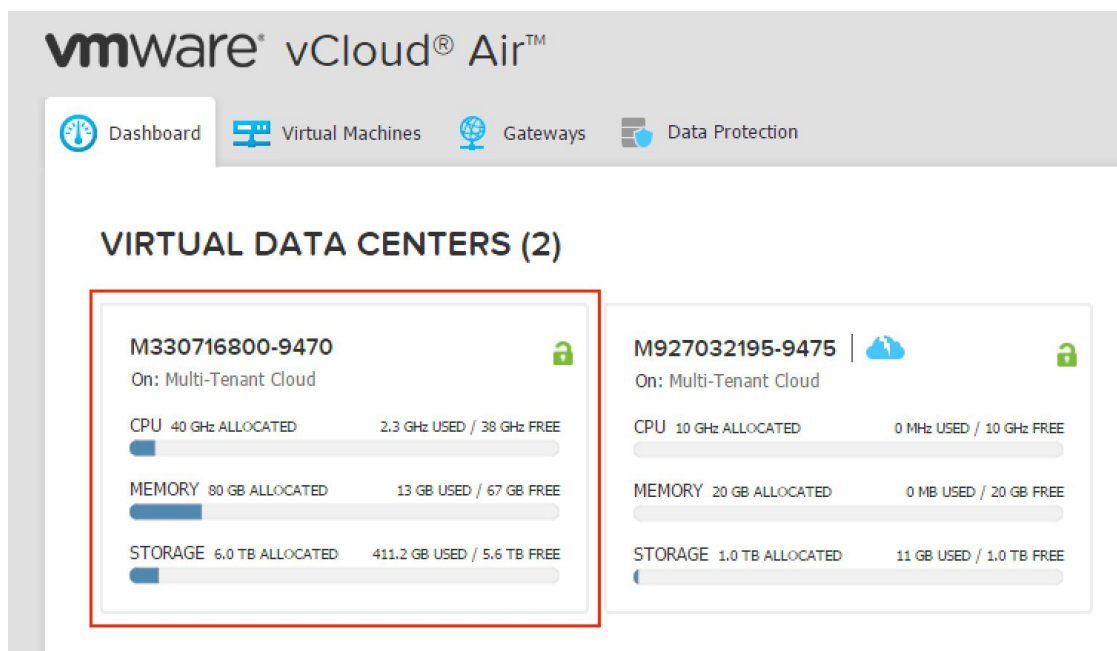
## Downloading Project Photon

For the purpose of this, the quickest way is to download the ISO directly from [here](#).

## Creating a Project Photon vApp on vCloud Air


A catalog item is a common repository for applications that can be deployed within your vCloud Air Organisations. It contains not only ISO's, but also virtual machines, and collectively vApps that also encompass Network Topologies.

1. Login to vCloud Air – <http://vca.vmware.com/> and then select the appropriate VDC.




2. Once inside your vCloud Air virtual datacenter select **Manage Catalogs in vCloud Director** on the far right of screen.





 Users

VM QUOTA: Unlimited

RELATED LINKS

 vCloud Director API URL





 Cloud Provider Address

 Manage Catalogs in vCloud Director

0 / 38 GHz FREE

3. Select the **\*\*\_Media & Other\*\*\_** tab and **\_\*\*\_**upload the Project Photon ISO which you have downloaded in the previous step, by clicking on the upload icon.
4. From your this page, Select “My Cloud” on the navigation bar, followed by so that we can start creating your Project Photon vApp.



M330716800-9470

 Home  My Cloud  Catalogs  Administration

**Catalogs**

- My Organization's Catalogs
- Public Catalogs

**My Organization's Catalogs**

Name	Version	Status
Developer Catalog	1	Ready

5. Click the *Build New vApp* button       

6. Define the Name, Runtime lease and storage lease values as desired.

**New vApp**

**Select Name and Location**

A vApp is a cloud computer system that contains one or more virtual machines. Describe this vApp and lease settings.

Name:  \*

Description:

**Virtual Datacenter**

Select the Virtual Datacenter (VDC) in which this vApp is stored and runs when it is started.

**Leases**

Runtime lease:

How long this vApp can run before it is automatically stopped.

Storage lease:

When this vApp is stopped, how long it is available before being automatically cleaned up.

7. Select the "New Virtual Machine" button

**New vApp**

**Select Name and Location**

**Add Virtual Machines**

You can search the catalog for virtual machines to add to this vApp or add a new, blank new VM and install an operating system.

Look in:

Name	1 ▲	OS	Gold Master	vApp	Catalog
discus		Other (64-bit)	-	Discus	CNA

Name	OS	Gold Master	vApp	Catalog



8. Name the Virtual Machine (note that the hostname will inherit this value), set the **\_Operating System Family\_** to **Linux** and the **Operating System** to **Other Linux (64-bit)**. Set the desired CPU configuration, amount of memory and disk space needed as needed. When the dialog box closes, be sure to hit the Next button to proceed.

**New Virtual Machine**

Virtual Machine name:  \*

A label for this VM that appears in VCD lists.

Computer name:  \*

The computer name / host name set in the guest OS of this VM that identifies it on a network.  
This field is restricted to 15 characters for Windows. For non-Windows systems it can be 63 characters long and contain dots.

Description:

Virtual hardware version:

Operating System Family: ☐ Microsoft Windows ☒ Linux ☐ Other

Operating System:

Number of virtual CPUs:

Cores per socket:

Number of sockets: 2

☐ Expose hardware-assisted CPU virtualization to guest OS  
Select this option to support virtualization servers or 64-bit VMs running on this virtual machine.

Memory:

Hard disk size:

Bus type:

*Note: VMware recommends at least 2CPU cores & 384MB of RAM for Photon, with additional memory recommended depending on the number and size of your containers.*

9. Select your desired Storage Policy

**New vApp**

Select Name and Location  
Add Virtual Machines  
**Configure Resources**  
Configure Virtual Machines  
Configure Networking  
Ready to Complete

**Configure Resources**  
Select what Storage Policies this vApp's virtual machines will use when deployed.

Virtual Machine	Storage Policy	Template VM Default Storage Policy
Photon *	Standard	

Back Next Finish Cancel

10. For this example we will connect the Project Photon VM directly to the routed org network to simplify the required NAT rules to access our application. In your environment, configure the networking as appropriate for the desired connectivity within your vCloud Air environment. Be sure to change the IP Assignment to DHCP, as the currently shipping version of VMware Tools in Photon does not support guest customisation. This limitation means that selecting IP Pool settings will not provide an IP address to the VM. Once you have completed this step, click the Finish button.

**New vApp**

Select Name and Location  
Add Virtual Machines  
Configure Resources  
**Configure Virtual Machines**  
Configure Networking  
Ready to Complete

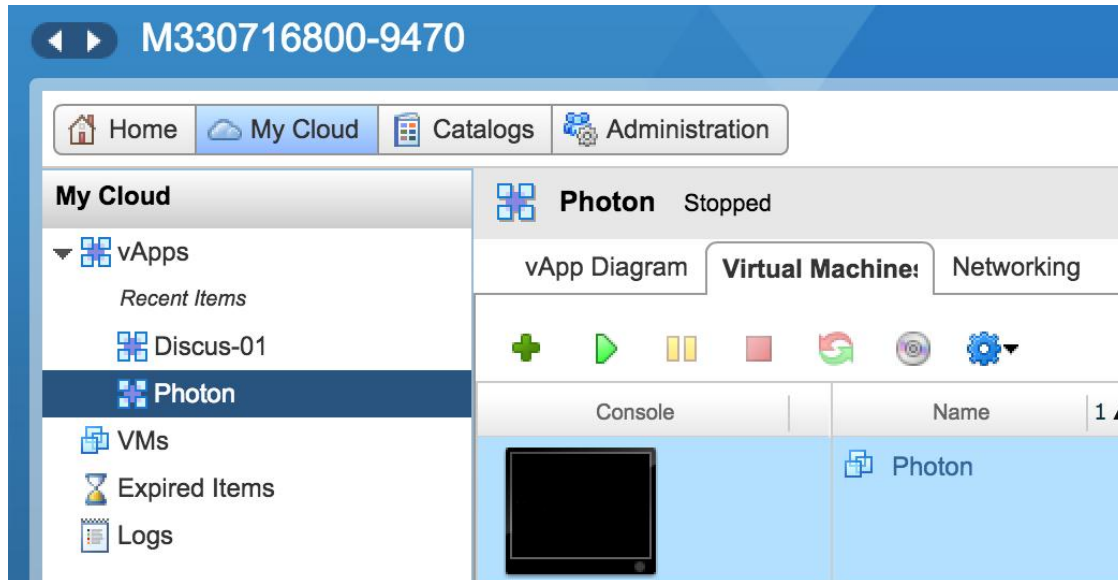
**Configure Virtual Machines**  
Name each virtual machine and select the network to which you want it to connect. You can configure additional properties for virtual machines after you complete this wizard.

☐ Show network adapter type  
Adapter choice can affect both networking performance and migration compatibility. Consult the VMware KnowledgeBase for more information on choosing among the network adapter support for various guest operating systems and hosts.

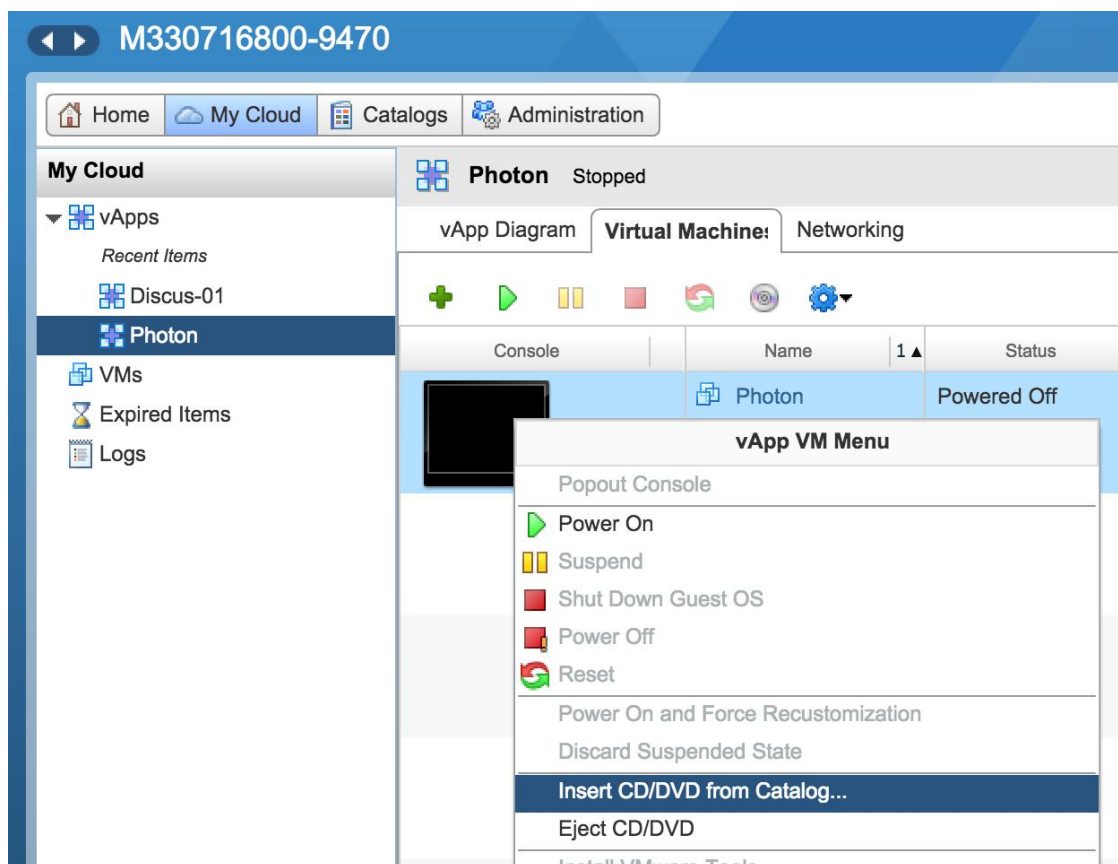
Virtual Machine	Computer Name	Primary NIC	Network	IP Assignment
Photon	Photon *	NIC 0	M330716800-9470-defa	DHCP

Back Next Finish Cancel

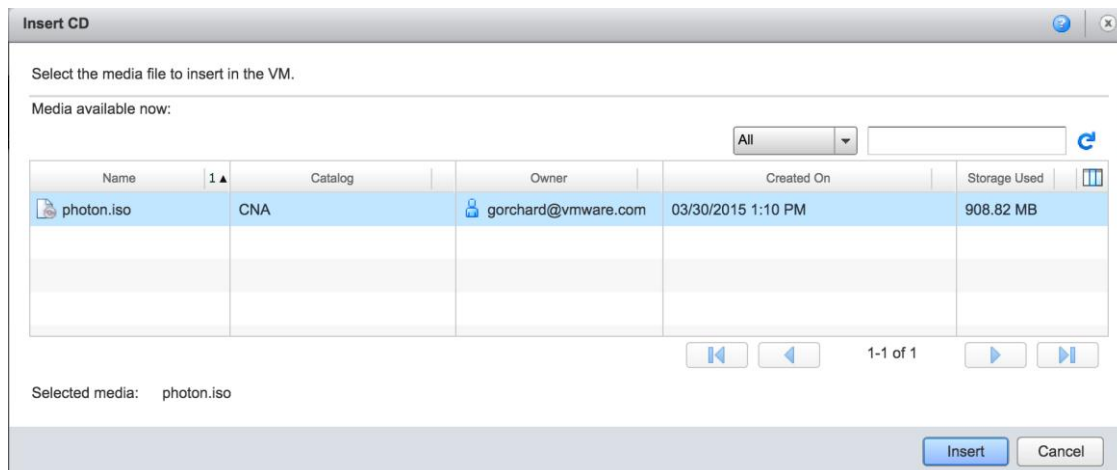
11. Back on your My Cloud screen, double click your Photon vApp



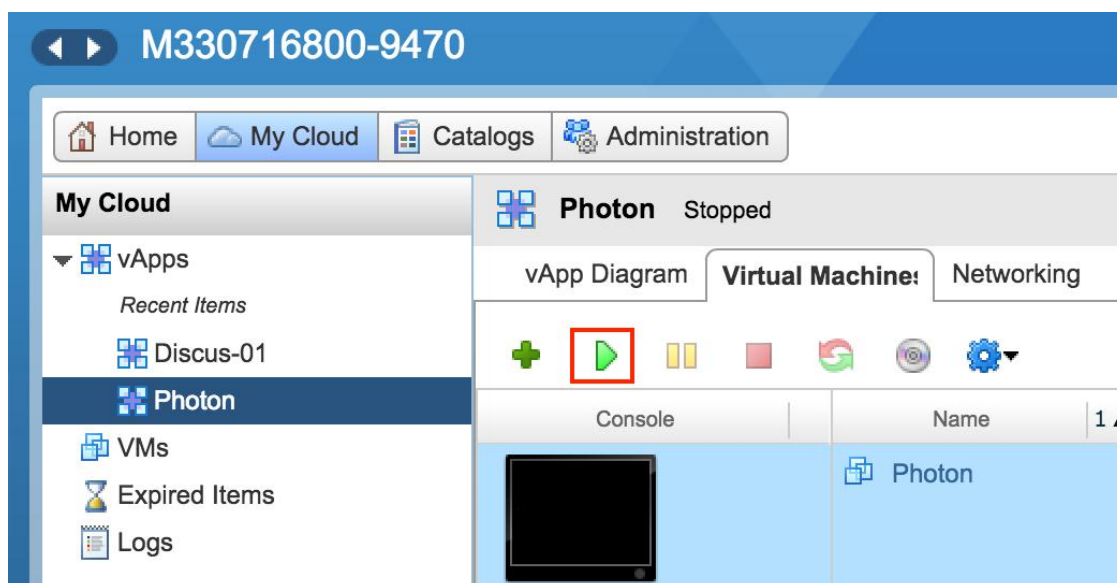
12. Right click the Project Photon VM and select "Insert CD/DVD from Catalog..."



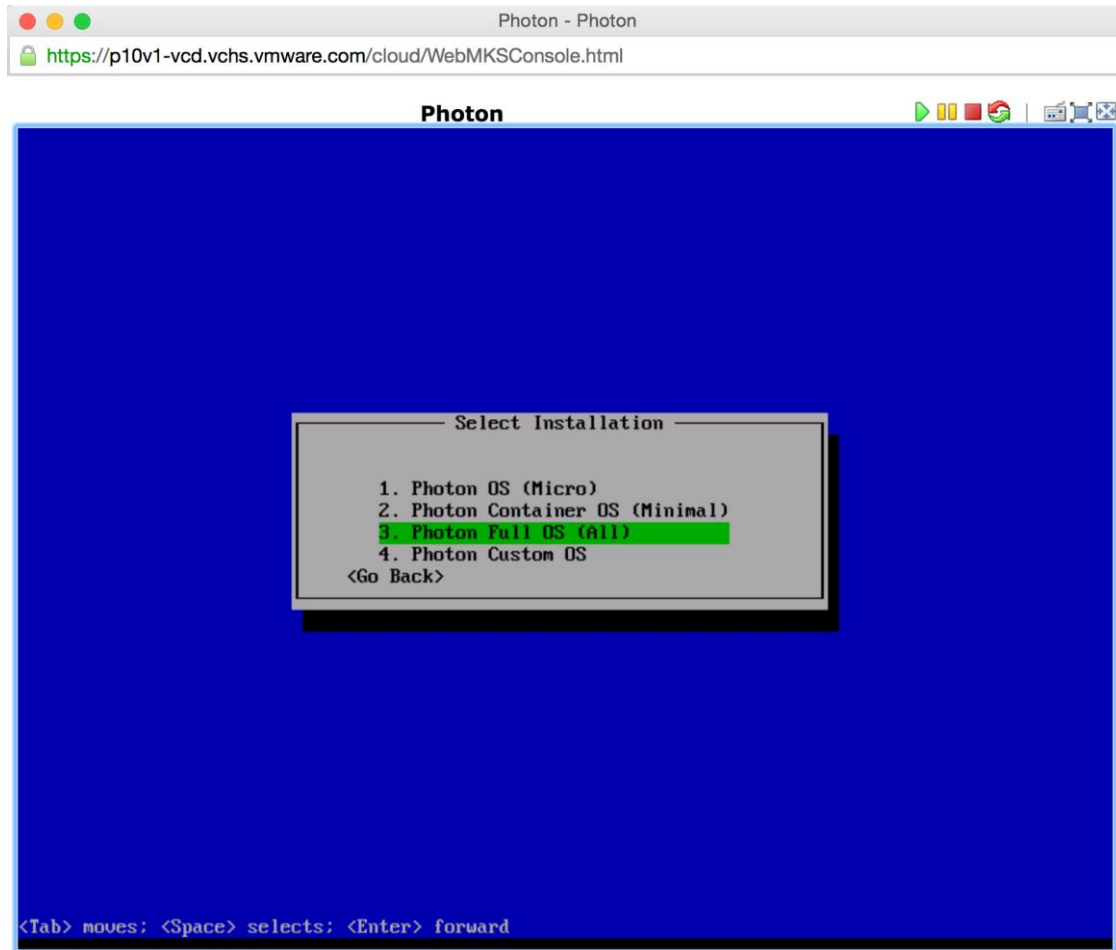
13. Select the Project Photon ISO file and click *Insert*.



14. Once the CD is inserted (note that the CD icon changes to blue) click on the Start button.

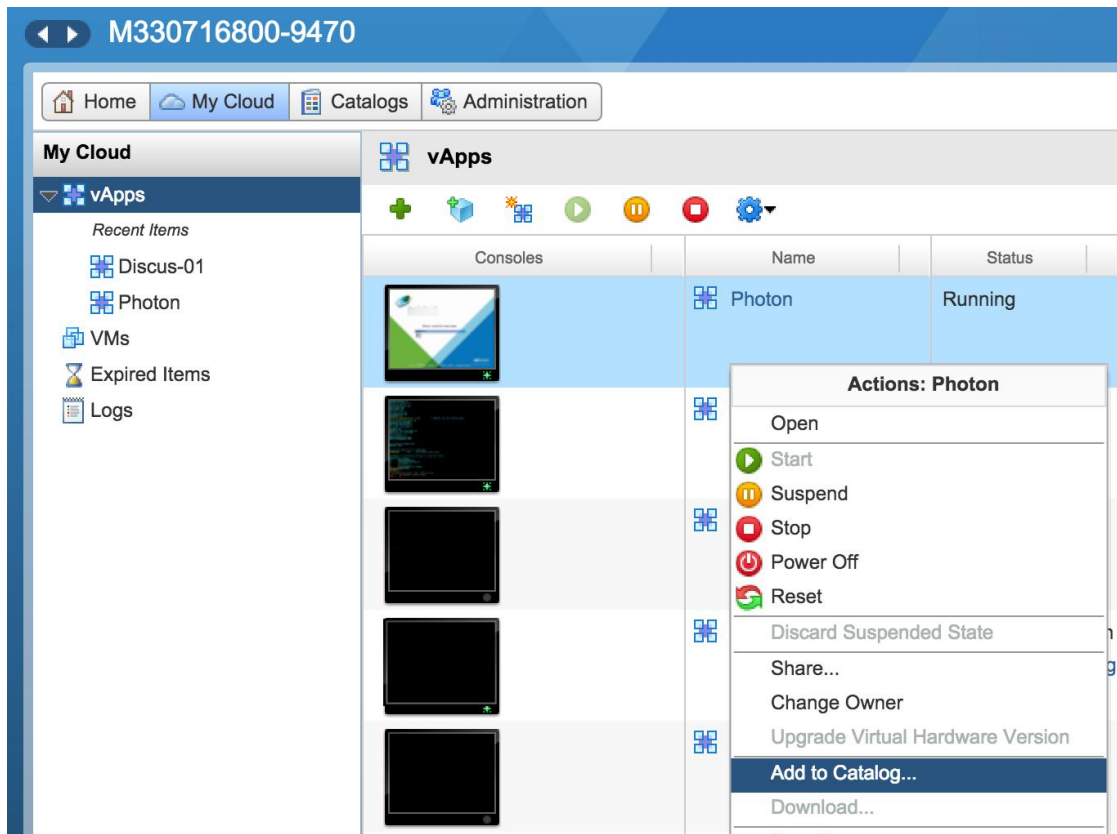


15. Follow the on-screen instruction and install Project Photon

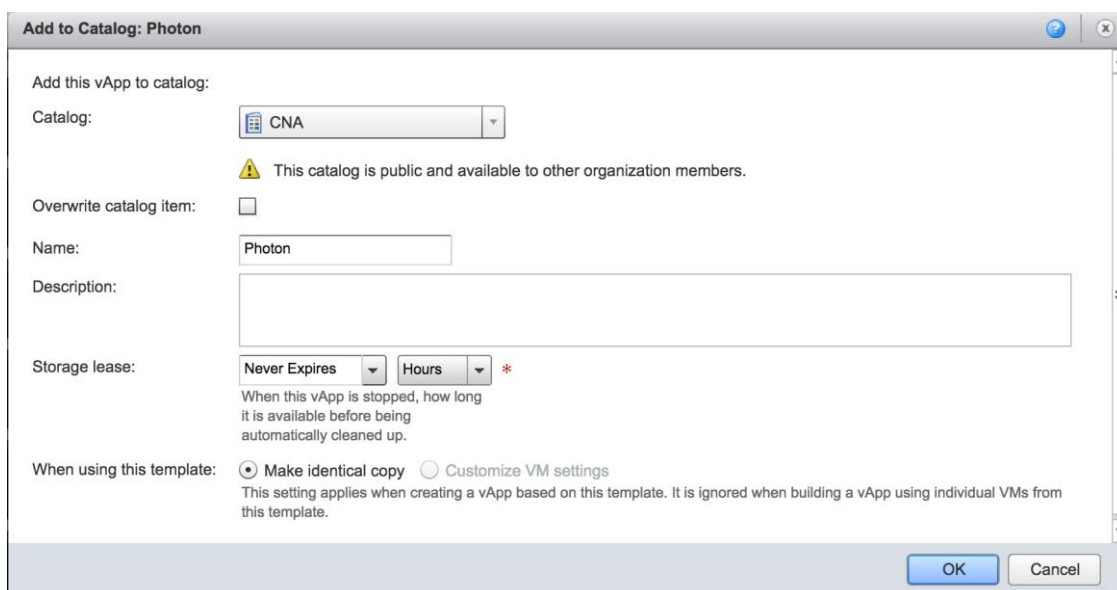




16. Once the installation is complete, eject the media and return to your My Cloud page. Right click your vApp and select “Add to Catalog...”



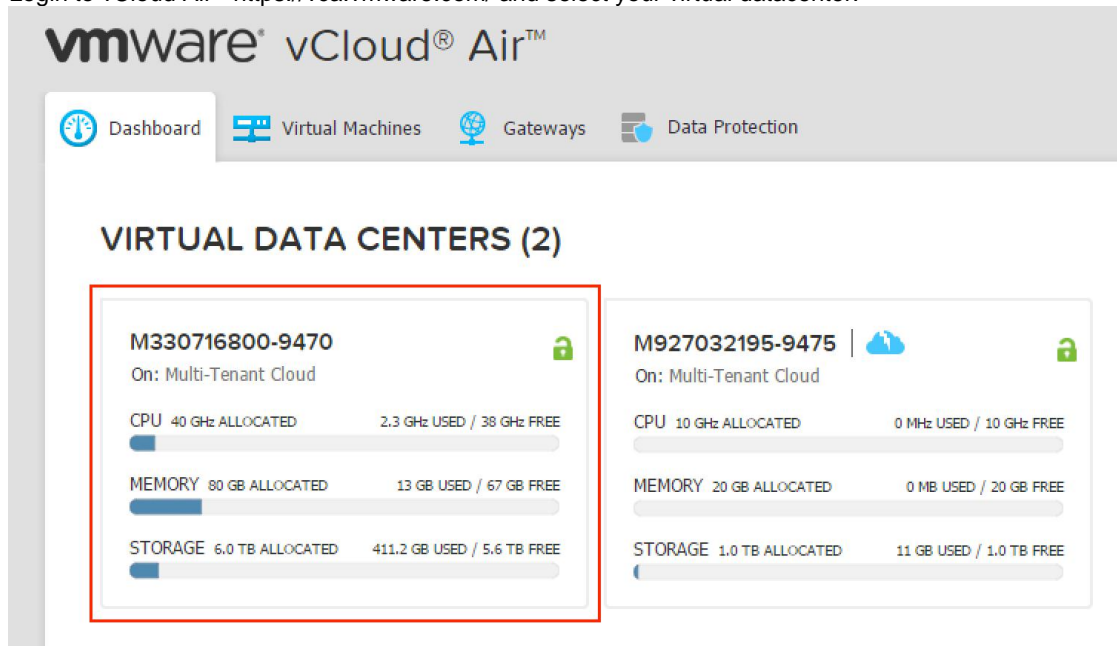
17. Select the Catalog to add the Project Photon vApp to, ensure that “Make identical copy” is selected and then click OK.



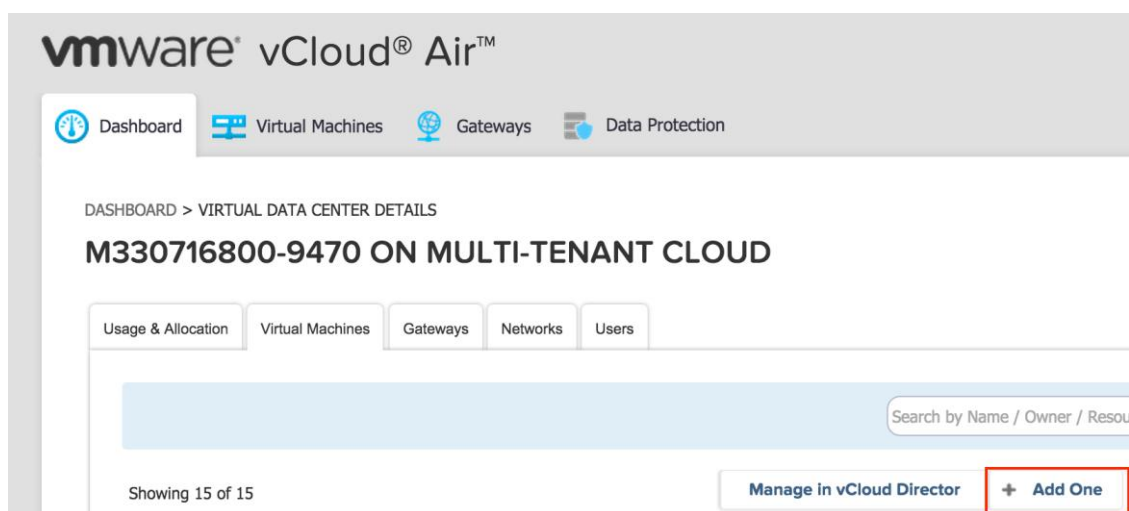
## Getting Containers Running with Project Photon

Now that you've created a Project Photon vApp in your catalog, you must deploy a vApp from the catalog entry to create a container host and, then, launch containers.

1. Login to vCloud Air - <https://vca.vmware.com/> and select your virtual datacenter.



2. To deploy your Project Photon vApp, click "Add One".



3. Select Project Photon from your catalog (not the public VMware catalog).

## New Virtual Machine on M330716800-9470



Select Template

VMware Catalog

My Catalog

Only those templates that are available for use are listed

Title	Description
<input checked="" type="radio"/> Photon	

Continue

[Create My Virtual Machine from Scratch](#)



4. Enter a name for the vApp, a name for the computer and then click “Deploy This Virtual Machine”.

## New Virtual Machine on M330716800-9470



IMAGE	Photon	<a href="#">Change</a>
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### ADD KEY DETAILS

*You can always edit them later*

Name	<input type="text" value="photon"/>
Computer Name	<input type="text" value="photon"/>

### Allocated Resources

1 vCPU | 1 GB vRAM | 16 GB (Standard) Primary Drive [Change](#)

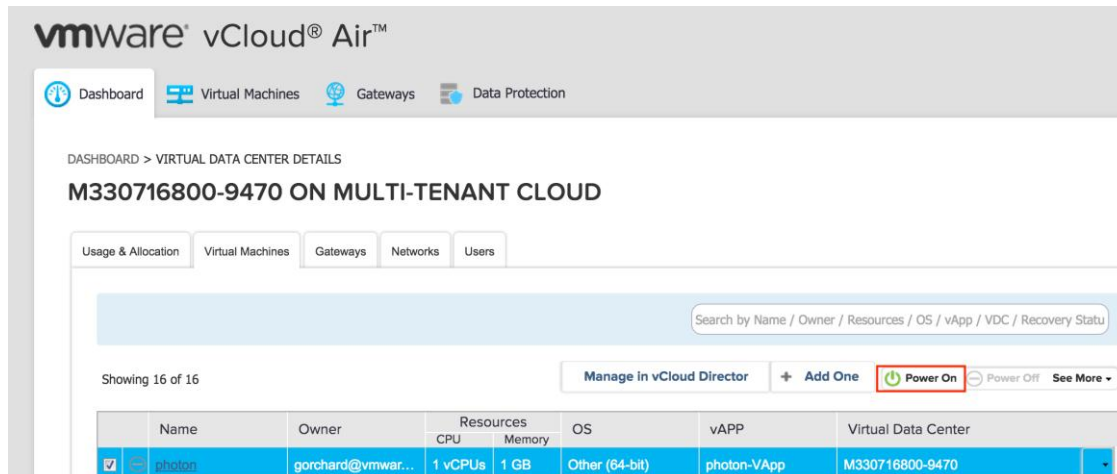
### NETWORK ASSIGNMENT

- ☒ Connect to network - M330716800-9470-default-routed (Gateway IP: 61.209.203.191/25) (You can always edit this later)
- ☐ Select network manually (Advanced)

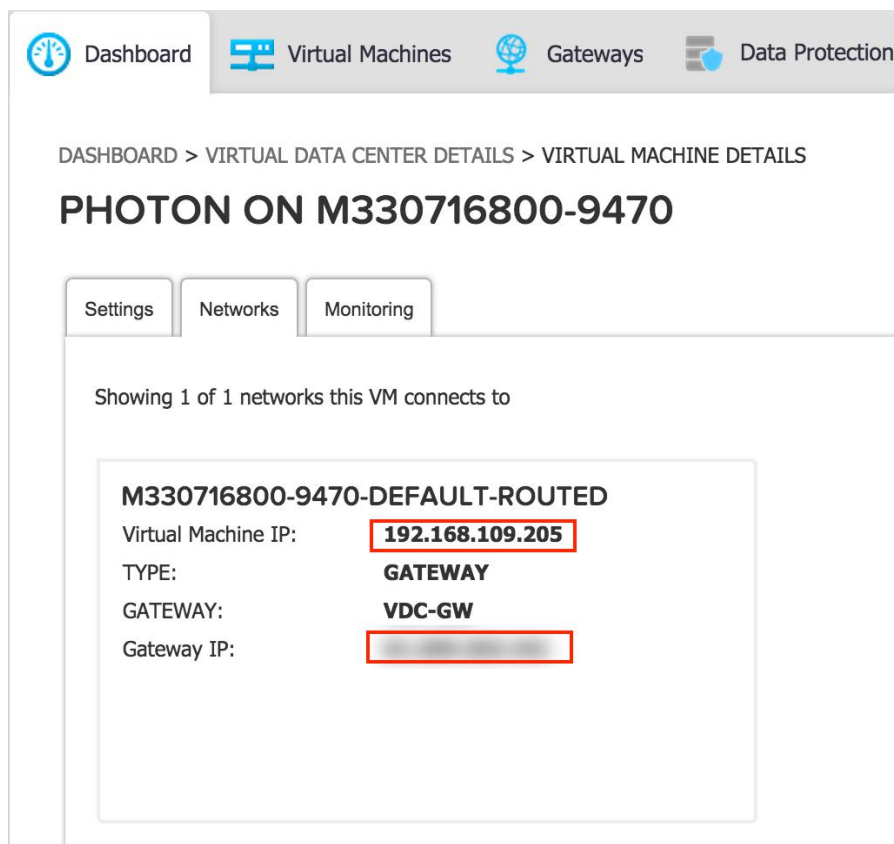
**Deploy This Virtual Machine**



5. After a few moments you will see a notification that your virtual machine has been successfully created. Select the Project Photon virtual machine, and then click the Power On button.



6. We will need to get the IP of the VM in order to configure the NAT rule(s), so click into your VM, and then select the Networks tab. Make note of both the Virtual Machine IP and the Gateway IP.



- Select the appropriate gateway for your virtual datacenter.



- Create a new Destination NAT rule.



9. Configure the NAT rule as follows to enable SSH access to your VM. Use the IP address details noted in step 6.

### Edit a Destination NAT Rule

Original (External) IP

Must belong to the sub-allocated IP range of the edge gateway.

Protocol

TCP

Original Port/Range

22

ICMP type

Translated (Internal) IP/Range ?

192.168.109.205

Translated Port/Range

22

Settings

☒ Enable this rule.

Save

10. Create another Destination NAT rule and configure it for HTTP access to your application. Use the IP address details noted in step 6.

### Edit a Destination NAT Rule

Original (External) IP

Must belong to the sub-allocated IP range of the edge gateway.

Protocol

TCP

Original Port/Range

80

ICMP type

Translated (Internal) IP/Range ?

192.168.109.205

Translated Port/Range

80

Settings

☒ Enable this rule.

Save

### Enable HTTP access to your Project Photon instance running on vCloud Air

Configure HTTP (Port 80) access on the Edge Gateway that is responsible for the Project Photon traffic. Now, record the External IP (Home > Gateways Tab) that you're exposing for Project Photon from the Gateway IP.

### Run the Docker container

Start the Docker service so that it is enabled at boot time: `$ systemctl enable docker && systemctl start docker` Now to bring up a Docker container with Nginx simply run: `$ docker run -p 80:80 vmwarecna/nginx` Then navigate your browser to the recorded IP from the previous step, and you should see a fresh Nginx installation and welcome screen.

