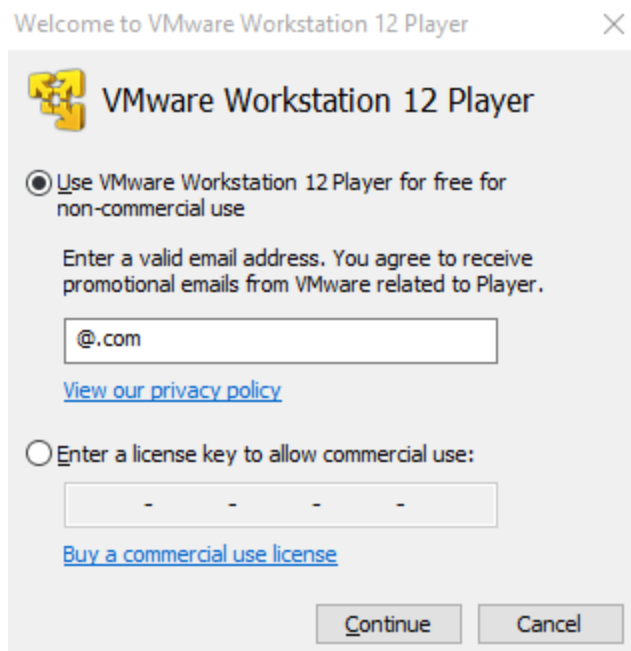
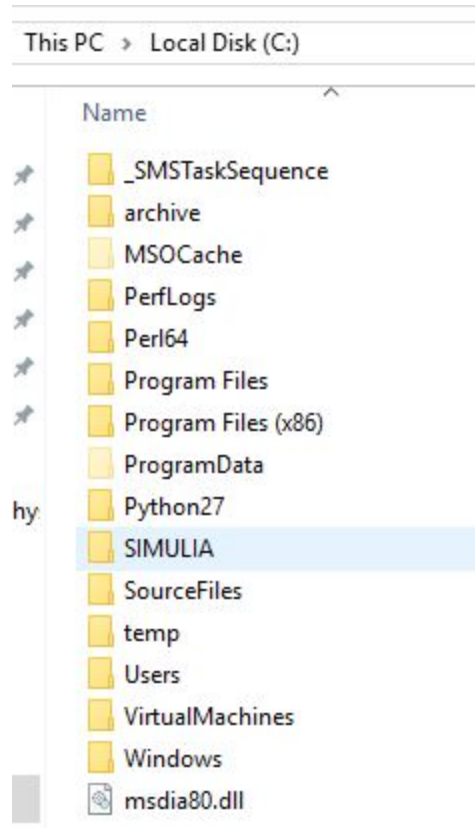


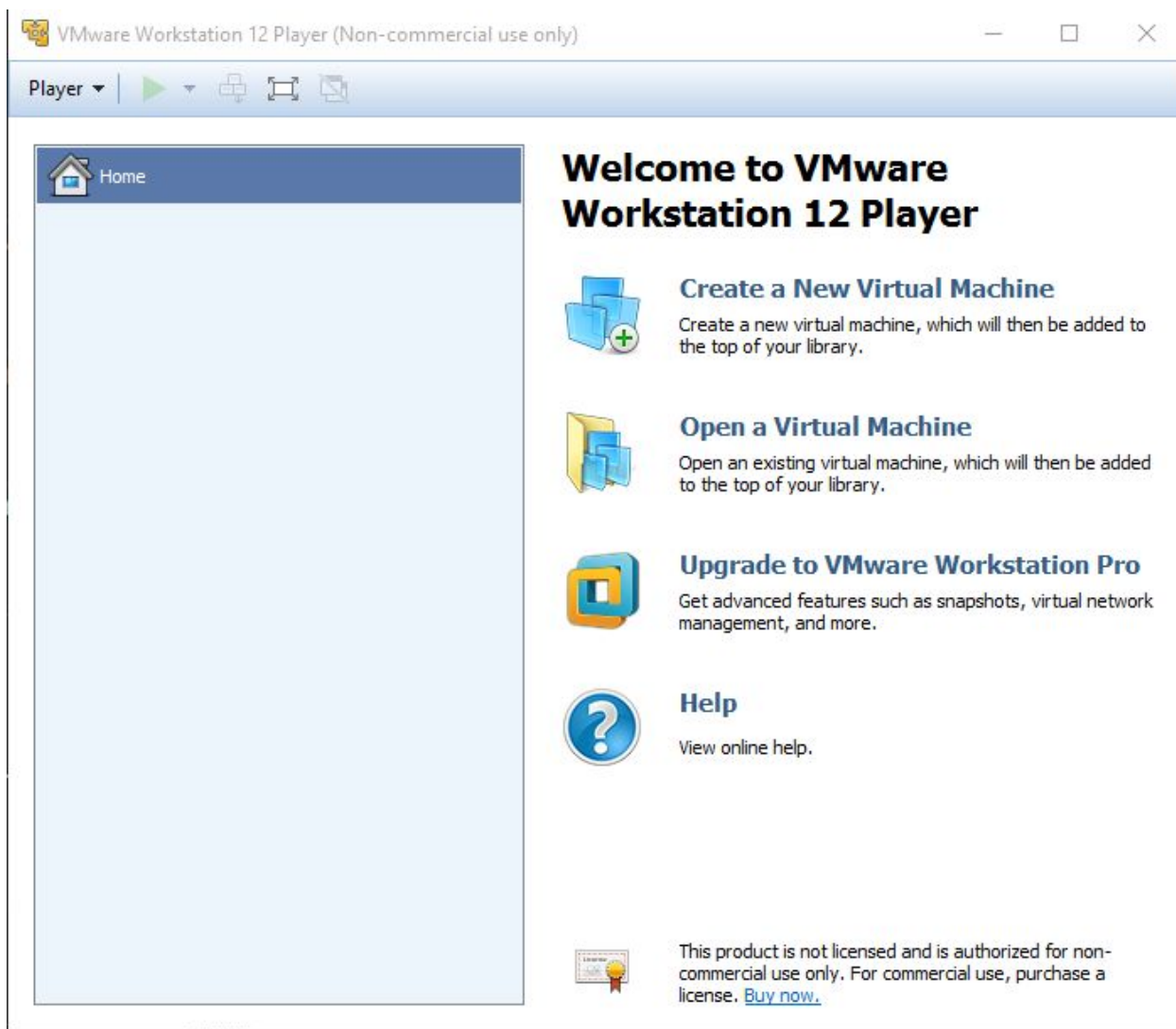
## Virtual Machines - Windows Host with Ubuntu Guest

- Download and Install VMware Player from here -
  - <http://www.vmware.com/products/player/playerpro-evaluation.html> using default options.
- Create folder - **C:\VirtualMachines** and set all users to modify rights to that folder.
- When VMware Player is first opened, a Welcome screen appears.
- Enter an email account to '**register**' the software.



## Creating Virtual Machines

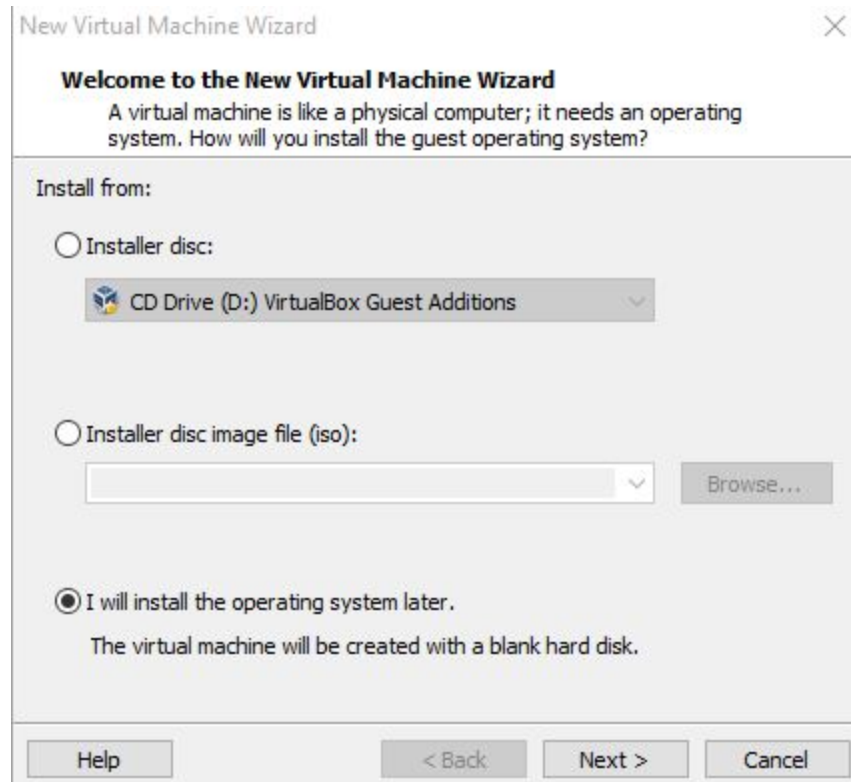
Here, Create a New Virtual Machine and the Wizard tool will begin.



## Creating Virtual Machines

Select **Install the operating later.**

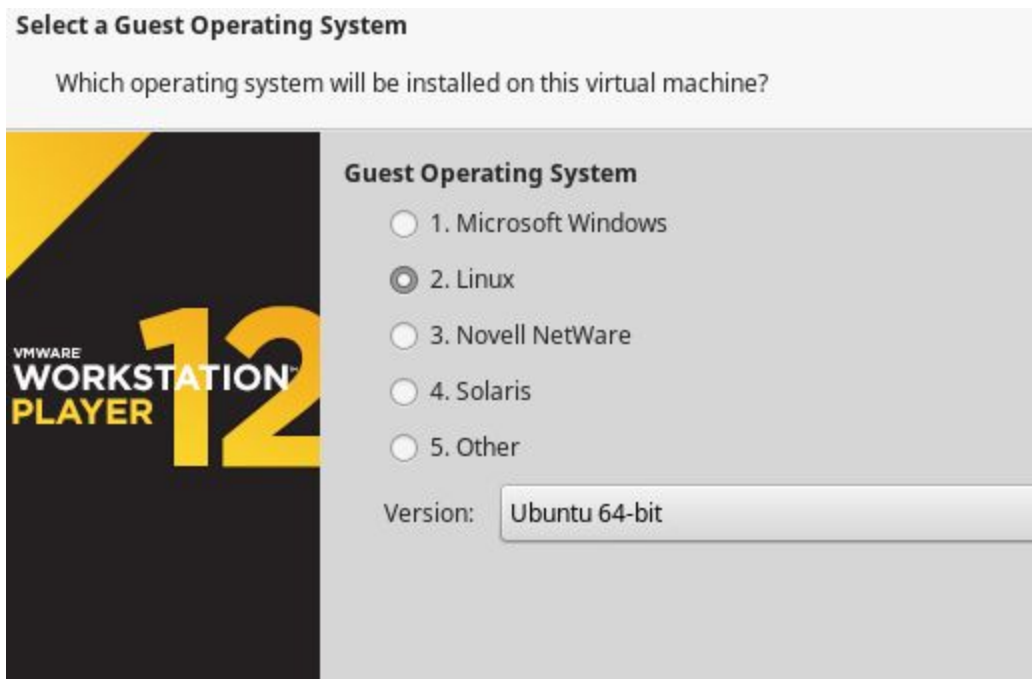
Click Next.



Select Linux as the Guest operating system

Select Ubuntu-64bit as the version.

Click Next.



## Creating Virtual Machines

Title the Virtual Machine as **Campus1604** or **Campus1604-computername**, example **Campus16.04-r01joeminer**.

Location = **C:\VirtualMachines\Campus1604**

Click Next

New Virtual Machine Wizard

**Name the Virtual Machine**  
What name would you like to use for this virtual machine?

Virtual machine name:

Location:

< Back    Next >    Cancel

## Creating Virtual Machines

Give the virtual hard drive an appropriate drive size. For most installs, 60-80GB will suffice.

Click Next



New Virtual Machine Wizard

### Specify Disk Capacity

How large do you want this disk to be?

The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.

Maximum disk size (GB):

Recommended size for Ubuntu: 20 GB

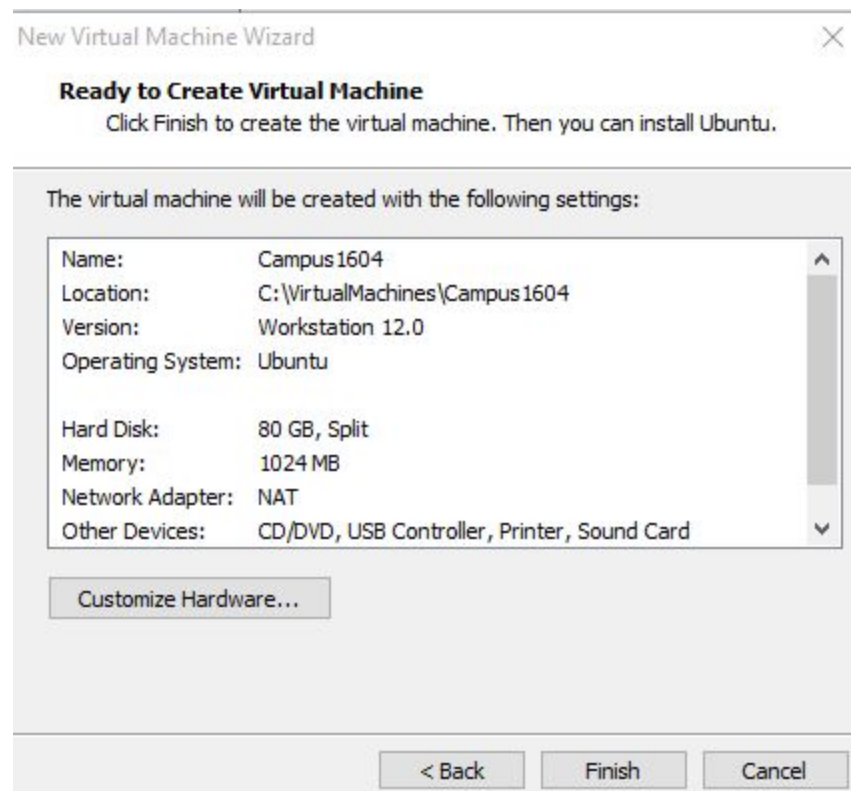
Store virtual disk as a single file

Split virtual disk into multiple files

Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.

Help < Back Next > Cancel

On the Ready to Create Virtual Machine window, click **Customize Hardware**.



New Virtual Machine Wizard

### Ready to Create Virtual Machine

Click Finish to create the virtual machine. Then you can install Ubuntu.

The virtual machine will be created with the following settings:

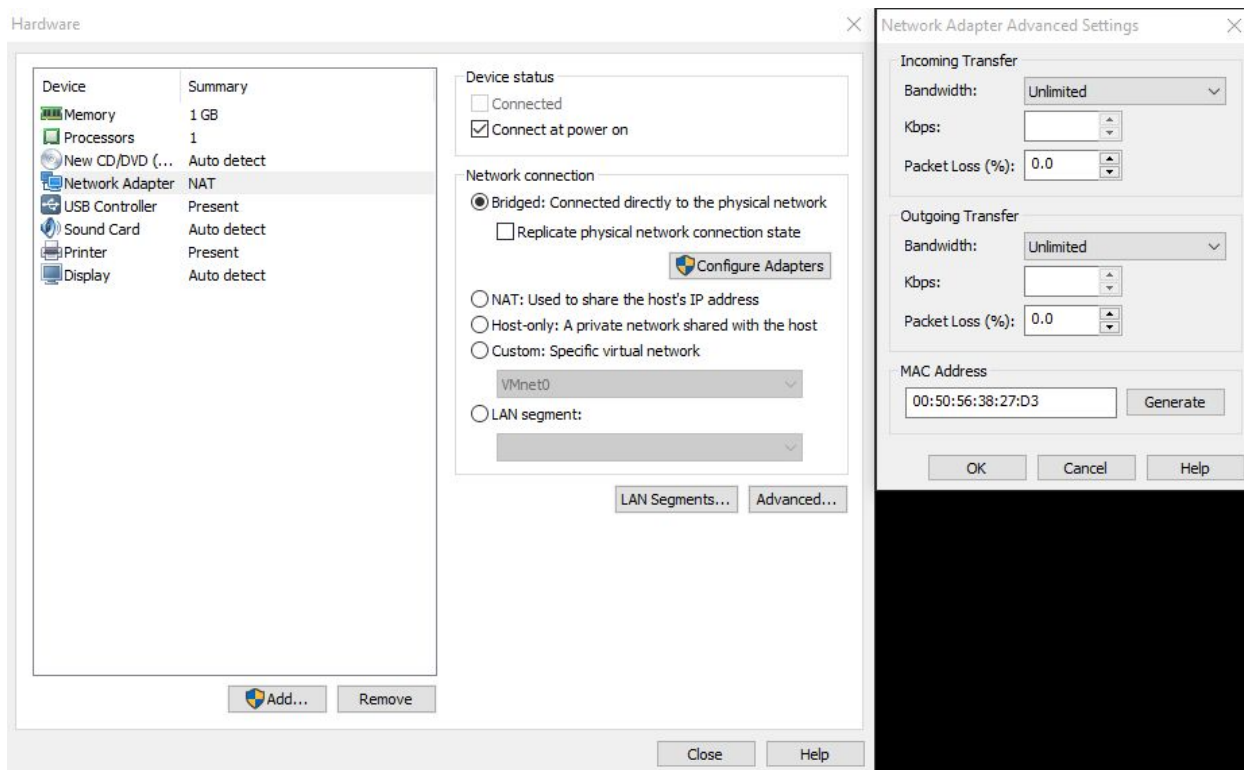
Name:	Campus1604
Location:	C:\VirtualMachines\Campus1604
Version:	Workstation 12.0
Operating System:	Ubuntu
Hard Disk:	80 GB, Split
Memory:	1024 MB
Network Adapter:	NAT
Other Devices:	CD/DVD, USB Controller, Printer, Sound Card

Customize Hardware...

< Back Finish Cancel

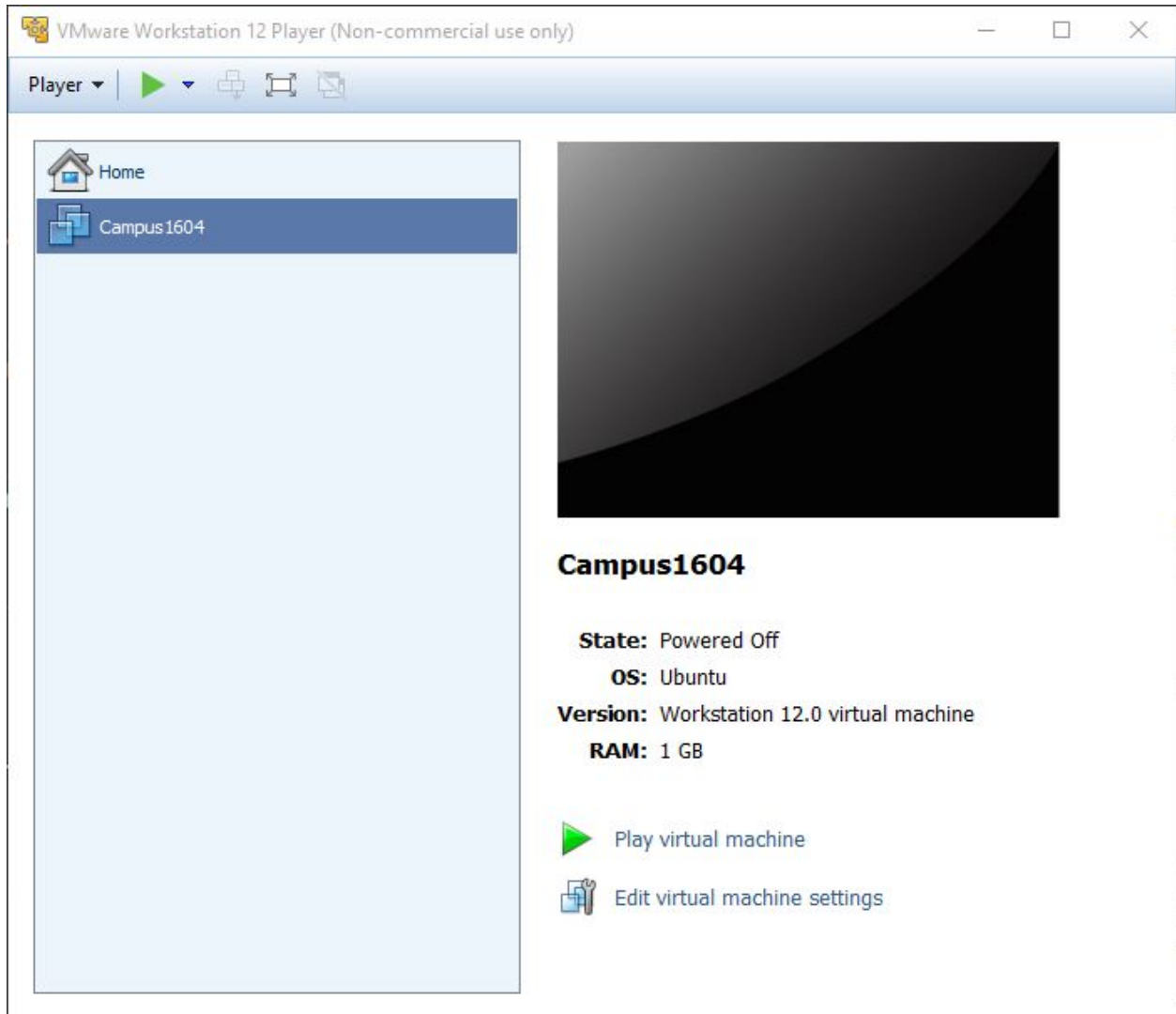
## Creating Virtual Machines

- This window contains more detailed options. Here we need to set the virtual MAC address.
- Click **Network Adapter**, then select the **Bridged** option. The **Network Adapter Advanced Settings** window will open.
- Generate a new MAC address and log it somewhere. It will be need for the Network Registration in NETDB.
- Once The network adapter is set, close that window and return to the 'Ready to Create Virtual Machine' window and click Finish.



## Creating Virtual Machines

This will open the main VMware Player window and the Campus1604 Virtual Machine will be in the recent VMs list.



- Before clicking Play, visit [itweb.mst.edu/~netdb](http://itweb.mst.edu/~netdb). Here the virtual machine needs to be registered as a .managed.mst.edu computer.
- Find the userID of whom this will be registered and try to pick a registration number, close the name used for the system. This may help with bookkeeping in the future. If the system is in your presence, add a new computer name label to the computer, indicating there is an Ubuntu virtual machine and list the name of the virtual machine. That way, should anyone from IT be investigating this system, there is an easy identifier as to how the system is built.

## Creating Virtual Machines

- On the **NETDB** page, in the Description field, provide the location of the virtual machine
- Example - **Ubuntu 16.04 VM installed on r##userID**
- In the Admin Comments section, use **Ubuntu 16.04 LTS Workstation** ...or whichever Ubuntu version we are using at the time.
- In the DHCP options, select the **PXE-RST: PXE Boot - Research Support** option. This will tell the system to look at our PXE server.

[Main Menu](#) - [Register Desktop](#) - [Search Hosts](#) - [Create Host](#) - [Edit Host](#)  
[Help Request System](#) - [IT](#) - [Campus Web](#)

### Adding option PXE-RST to host r91rlhaffer.managed.mst.edu.

Search for host:

[Create a new host](#)

[View host details for r91rlhaffer.managed.mst.edu](#)

[View history for r91rlhaffer.managed.mst.edu](#)

[View host metadata for r91rlhaffer.managed.mst.edu](#)

[Refresh Display](#)

Host Information	
Full Host Name:	<a href="#">r91rlhaffer.managed.mst.edu</a>
Host Domain:	managed.mst.edu
Registration Type:	desktop
Owner UserID:	rlhaffer ( <a href="#">Analyze</a> )
Created:	2016-12-12 11:38:37
Last Modified:	2016-12-12 11:39:19 by rlhaffer ( <a href="#">Analyze</a> )
Description:	Ubuntu 16.04 VM on r99rlhaffer
Admin Comments:	Ubuntu 16.04 LTS Workstation
Host Expiration Date:	Not yet determined.

Owner Details	
UserID:	rlhaffer ( <a href="#">Analyze</a> )
User Type:	Faculty/Staff
Name:	Haffer, Randy
Department:	Information Technology
Address:	102B Centennial Hall
Title:	SYSTEM ADMINISTRATOR-EXPERT
Phone:	(573) 341-6251
Email:	<a href="mailto:rlhaffer@mst.edu">rlhaffer@mst.edu</a>

Location and Description of Host	
Location:	No location set.
Description:	Ubuntu 16.04 VM on r99rlhaffer <a href="#">Clear</a>
New Location:	<input type="text"/>
New Description:	Ubuntu 16.04 VM on r99rlhaffer
<input type="button" value="Update"/>	

Admin Comments for Host	
Admin Comments:	Ubuntu 16.04 LTS Workstation <a href="#">Clear</a>
New Admin Comments:	<input type="text"/> <input type="button" value="Update"/>

DHCP Host Options	
Extra DHCP options can be added to the host when specifically required. Regular desktop systems should not require any special options. Do not use this option unless directed by IT.	
PXE-RST: PXE Boot - Research Support - <a href="#">Delete Option</a>	
<input type="text"/>	<input type="button" value="Add Additional Option"/>

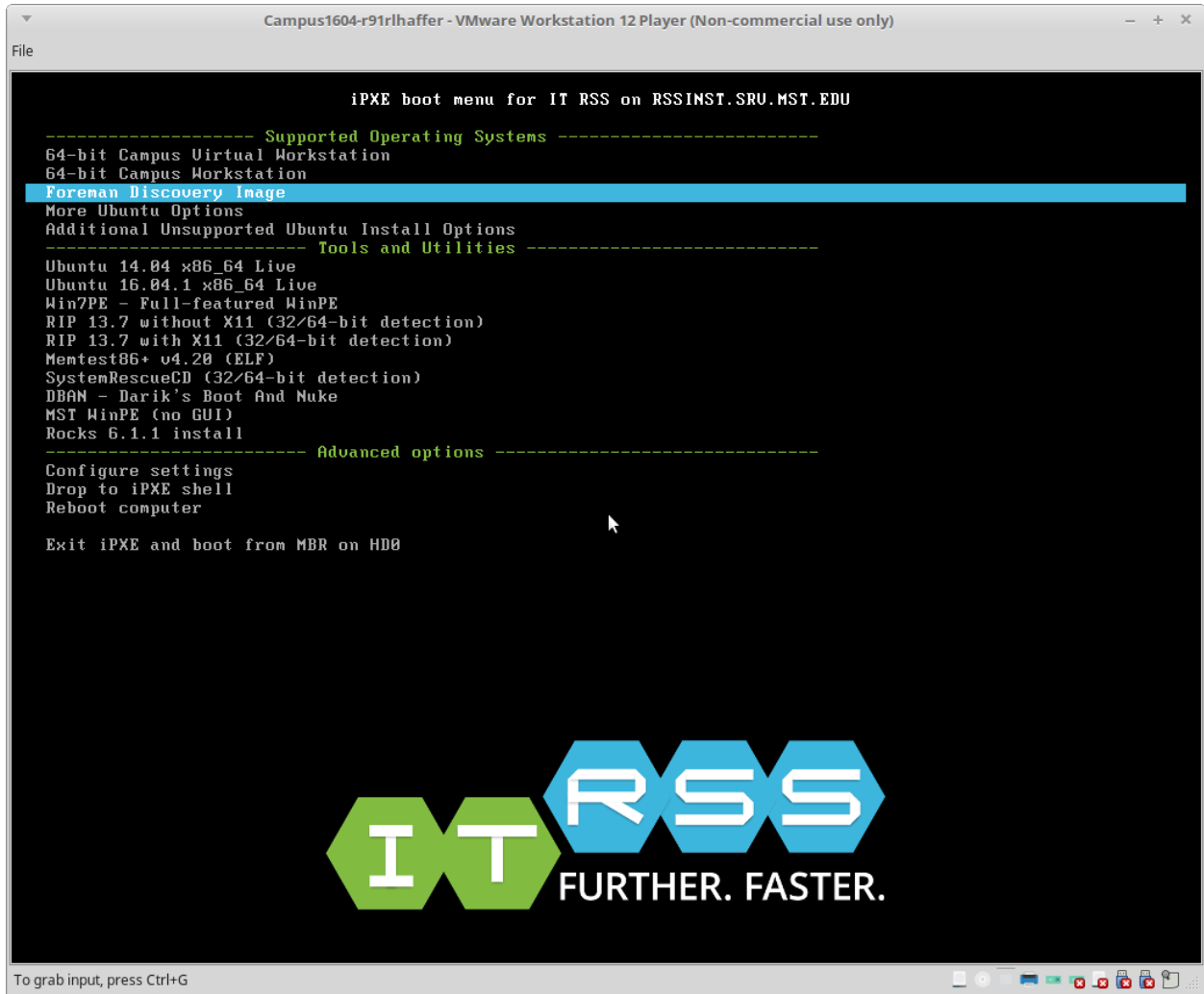
Admin Host Options	
Extra admin options can be added to the host when specifically required. Regular desktop systems should not require any special options. This functionality is limited to security staff. Be sure and also lock the host if you are disabling it.	
<input type="text"/>	<input type="button" value="Add Additional Option"/>

Registered Ethernet Addresses	
00:50:56:3A:69:19 - <a href="#">Delete</a>	
<input type="text"/>	<input type="button" value="Add New Address"/>
<a href="#">Automatically Allocate VMWare Ethernet Address</a>	



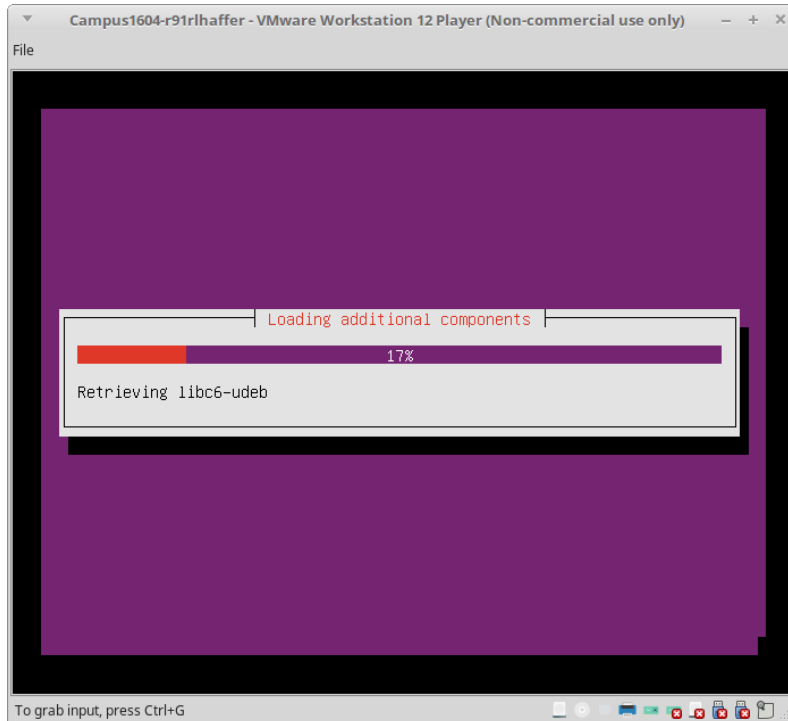
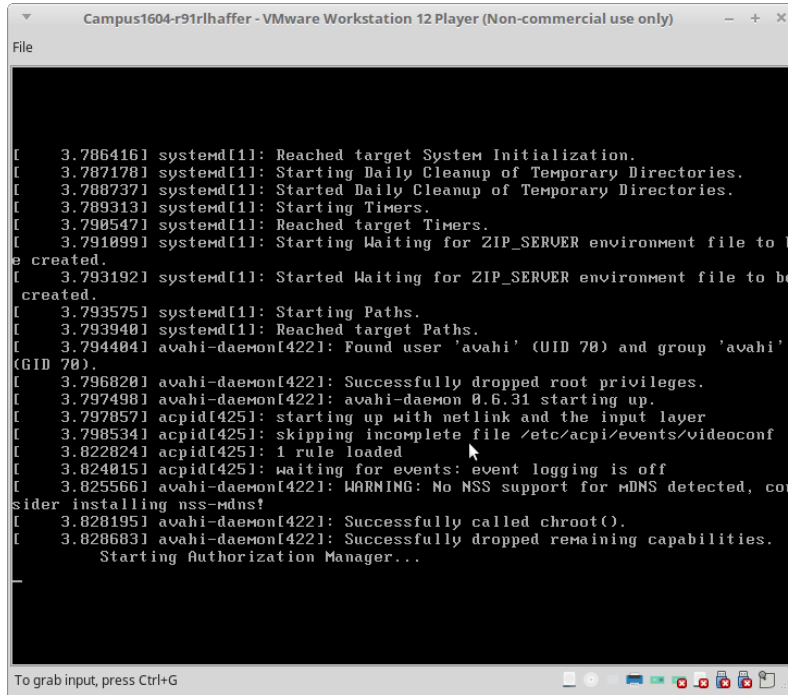
## Creating Virtual Machines

- Reboot the virtual machine and press Esc or F12, to force it to a boot options menu. Select the LAN networking. As it boots from the network card, it will connect to our PXE server.
- In the iPXE list, select Foreman Discovery Image. The system will begin to download the PXE image, then reboot again, using the downloaded image and then connect to the deployment image.



# Creating Virtual Machines

Shots as the virtual machine is building



# Creating Virtual Machines

While the system is building, the progress can be tracked on the Foreman server. **rssinst.srv.mst.edu:80**  
Search for the hostname of the virtual machine to view its information.

The screenshot shows the Foreman web interface in a browser window. The page title is "r91rlhaffer.managed.mst.edu". The navigation bar includes "Monitor", "Hosts", "Configure", and "Infrastructure". The user is logged in as "Randy Haffer".

On the right side, there are buttons for "Boot disk", "Edit", "Cancel build", "Run puppet", and "Delete".

The main content area is divided into two columns. The left column contains a "Details" section with tabs for "Audits" and "YAML", and a "Properties" section with tabs for "Metrics" and "Templates". Below these is a "Properties" table:

Properties	
Domain	managed.mst.edu
Realm	
IP Address	131.151.53.106
MAC Address	00:50:56:3a:69:19
Puppet Environment	production
Host Architecture	x86_64
Operating System	Ubuntu 14.04.1 LTS
Host group	Workstation
Owner	

The right column contains two charts. The top chart is titled "Runtime" and shows "last 7 days" of data. The bottom chart is titled "Resources" and shows "last 7 days" of data. Both charts have a y-axis from -1 to 1 and a legend. The "Runtime" chart legend includes "Config Retrieval" (red) and "Runtime" (blue). The "Resources" chart legend includes "Applied" (green), "Failed" (red), "Failed restarts" (purple), "Skipped" (grey), and "Restarted" (blue).

## Creating Virtual Machines

After an hour or so, the system should be sitting on the login screen, ready to be used.

