



EVERGREEN
International Conference 2021

Grow your own Evergreen!

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Why Do You Need Your Own Evergreen?

Test Drive and Learn About the Evergreen System

Test Existing and New Functionality

Explore New Releases

Test and Confirm Launchpad Bugs

Test and Sign off on Launchpad Bugs

Fix Bugs!



Why Grow Your Own?

It's YOUR System

You Can Get Under the Hood

You Can Get Adventurous and Try Things You Would Not on Other Systems You Use or Have Access To

You Can Break It Without Inconveniencing Anyone Else

If You Break It, You Can Just Start Over

Great Learning Opportunity!



What Skills Do You Need to Build Your System?

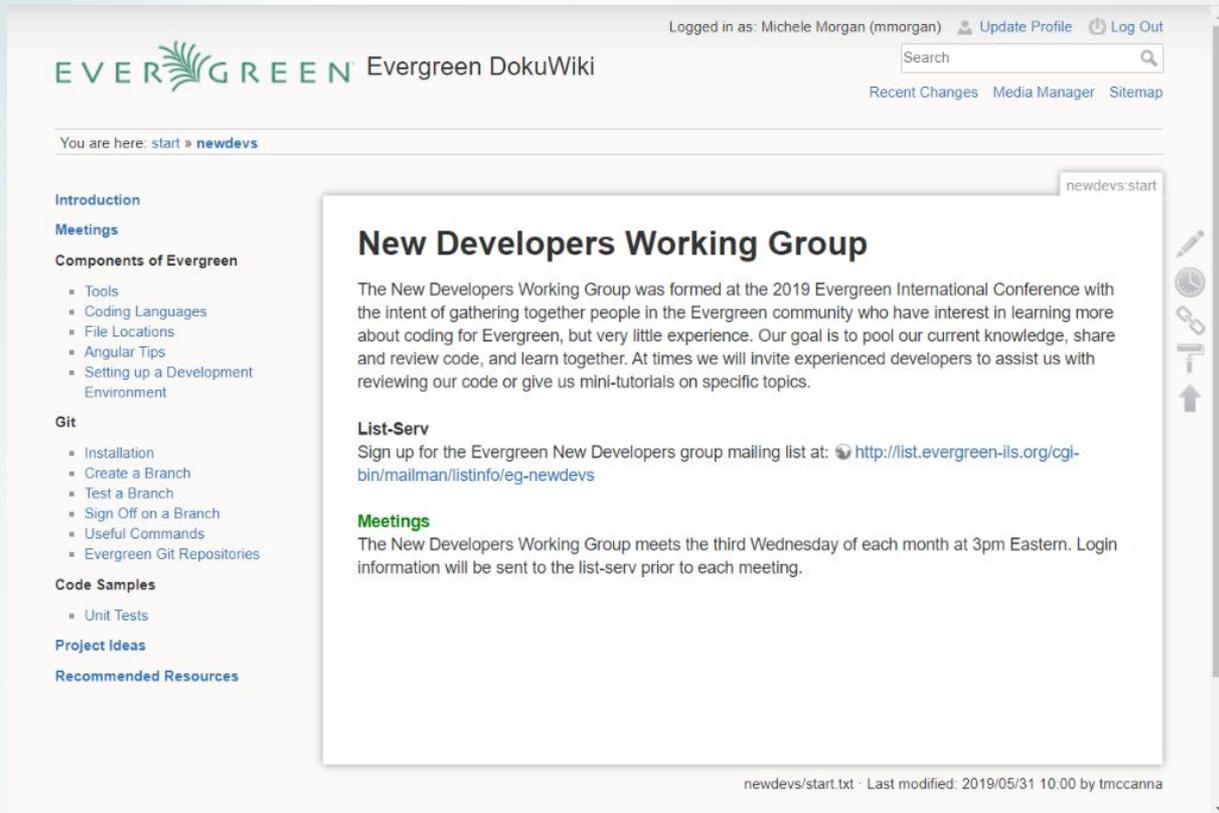
That Depends on Your Goals...

The NewDevs Page on the Evergreen Wiki is a Good Reference

<https://wiki.evergreen-ils.org/doku.php?id=newdevs:start>



New Developers Working Group (Terran McCanna++)



The screenshot shows a web browser displaying the Evergreen DokuWiki page for the New Developers Working Group. The page is titled "New Developers Working Group" and is part of the "newdevs" namespace. The header includes the Evergreen logo, the site name "Evergreen DokuWiki", and user information for Michele Morgan (mmorgan). A search bar and navigation links for "Recent Changes", "Media Manager", and "Sitemap" are also present. The main content area is divided into sections: "Introduction", "Meetings", "Components of Evergreen" (with sub-items like Tools, Coding Languages, File Locations, Angular Tips, and Setting up a Development Environment), "Git" (with sub-items like Installation, Create a Branch, Test a Branch, Sign Off on a Branch, Useful Commands, and Evergreen Git Repositories), "Code Samples" (with sub-item Unit Tests), "Project Ideas", and "Recommended Resources". The "Meetings" section is highlighted in green and contains the text: "The New Developers Working Group meets the third Wednesday of each month at 3pm Eastern. Login information will be sent to the list-serv prior to each meeting." The "List-Serv" section provides a link to the mailing list: <http://list.evergreen-ils.org/cgi-bin/mailman/listinfo/eg-newdevs>. The footer of the page indicates the file path "newdevs/start.txt" and the last modification date and time: "Last modified: 2019/05/31 10:00 by tmcanna".

Logged in as: Michele Morgan (mmorgan) [Update Profile](#) [Log Out](#)

EVERGREEN Evergreen DokuWiki

Search

[Recent Changes](#) [Media Manager](#) [Sitemap](#)

You are here: [start](#) » [newdevs](#)

newdevs:start

New Developers Working Group

The New Developers Working Group was formed at the 2019 Evergreen International Conference with the intent of gathering together people in the Evergreen community who have interest in learning more about coding for Evergreen, but very little experience. Our goal is to pool our current knowledge, share and review code, and learn together. At times we will invite experienced developers to assist us with reviewing our code or give us mini-tutorials on specific topics.

List-Serv

Sign up for the Evergreen New Developers group mailing list at: <http://list.evergreen-ils.org/cgi-bin/mailman/listinfo/eg-newdevs>

Meetings

The New Developers Working Group meets the third Wednesday of each month at 3pm Eastern. Login information will be sent to the list-serv prior to each meeting.

newdevs/start.txt · Last modified: 2019/05/31 10:00 by tmcanna



Useful Skills to Have (Or Learn Along the Way)

Command Line Interface

Navigating Linux File Systems

SQL

IP Addresses and Basic Networking

Git for Testing, Signing Off, Fixing Launchpad Bugs



How Do We Build Our System?



We Could:

Find a Piece of Hardware

Install Ubuntu or Debian OS

Follow the Evergreen Installation Instructions from Evergreen Downloads:

https://evergreen-ils.org/documentation/install/README_3_7.html



Installing the Evergreen server

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Installing the Evergreen server

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We Can Instead:

Build a Virtual Ubuntu Server on Our Desktop or Laptop Workstations

Install Evergreen on Our VM Using Scripts That Do All the Work



Why a Virtual Server?

Can Run on Your Workstation

Low Overhead

Invoke When Needed

Save State

Can Have Multiples

Disposable - But in a Good Way



Note: You Will Need a Powerful Workstation
to Build and Run Your Virtual Evergreen



Components

Platform for Virtual Machines - VirtualBox

Ubuntu Server Installation Download

Script to Install Evergreen - Ansible



VirtualBox

<https://www.virtualbox.org/wiki/Downloads>



The screenshot shows the VirtualBox website's download page. On the left is a navigation menu with links for About, Screenshots, Downloads, Documentation (with sub-links for End-user docs and Technical docs), Contribute, and Community. The main content area features the VirtualBox logo, a search bar, and links for Login and Preferences. The page title is "Download VirtualBox". Below this, it states that users will find links to binaries and source code. There are three main sections: "VirtualBox binaries" with a license agreement and links to 6.0 and 5.2 builds; "VirtualBox 6.1.22 platform packages" with a list of supported operating systems; and a note that binaries are released under the GPL version 2.



VirtualBox

Download VirtualBox

search...
Login Preferences

Here you will find links to VirtualBox binaries and its source code.

VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

If you're looking for the latest VirtualBox 6.0 packages, see [VirtualBox 6.0 builds](#). Please also use version 6.0 if you need to run VMs with software virtualization, as this has been discontinued in 6.1. Version 6.0 will remain supported until July 2020.

If you're looking for the latest VirtualBox 5.2 packages, see [VirtualBox 5.2 builds](#). Please also use version 5.2 if you still need support for 32-bit hosts, as this has been discontinued in 6.0. Version 5.2 will remain supported until July 2020.

VirtualBox 6.1.22 platform packages

- [Windows hosts](#)
- [OS X hosts](#)
- [Linux distributions](#)
- [Solaris hosts](#)
- [Solaris 11 IPS hosts](#)

The binaries are released under the terms of the GPL version 2.

About
Screenshots
Downloads
Documentation
 End-user docs
 Technical docs
Contribute
Community



Scripts for Building Evergreen: Ansible (Bill Erickson++)

<https://github.com/berick/evergreen-ansible-installer>

☰ README.md

evergreen-ansible-installer

Ansible-based installer for OpenSRF and Evergreen.

1. Select an OS target branch
2. Follow instructions for README of the selected target.

OS Targets

- Ubuntu 20.04 for Evergreen 3.7 and up
- Ubuntu 18.04 for Evergreen 3.2 and up
- Ubuntu 16.04 for Evergreen 3.1 and up
- Ubuntu 16.04 for Evergreen 3.0



Scripts for Building Evergreen: Ansible

🔗 Quick How-To

1. Install Ubuntu 20.04
2. Clone and run the Ansible playbook using an Ubuntu login which has sudo (but not as root).

```
# Use the latest ansible version for Ubuntu
sudo apt-get install software-properties-common # sometimes necessary
sudo apt-add-repository ppa:ansible/ansible
sudo apt-get update
sudo apt-get install git ansible
git clone --branch ubuntu-20.04 \
    https://github.com/berick/evergreen-ansible-installer.git
cd evergreen-ansible-installer
sudo ansible-playbook playbook.yml

# Alternate example demonstrating variable overrides by installing a
# specific OpenSRF branch.
# sudo ansible-playbook playbook.yml -e osrf_git_branch=rel_3_1

# Install with the sample locales defined in translations.yml
# sudo ansible-playbook playbook.yml -e translations=true

# Install with a different deployment user (named 'deploy') on a remote machine
# sudo ansible-playbook playbook.yml -e hosts=other.example.org -e deploy_user=deploy
```

1. In Chrome/FF navigate to <https://<HOSTNAME>/eg/staff/> and click through the SSL warning to access the staff client.



Scripts for Building Evergreen: Docker (Blake Henderson++)

<https://hub.docker.com/r/mobiusoffice/evergreen-ils>

```
docker run -it -p 80:80 -p 443:443 -p 210:210 -p 6001:6001 -p 32:22 -p  
5433:5432 -h app.evergreen.com mobiusoffice/evergreen-ils
```

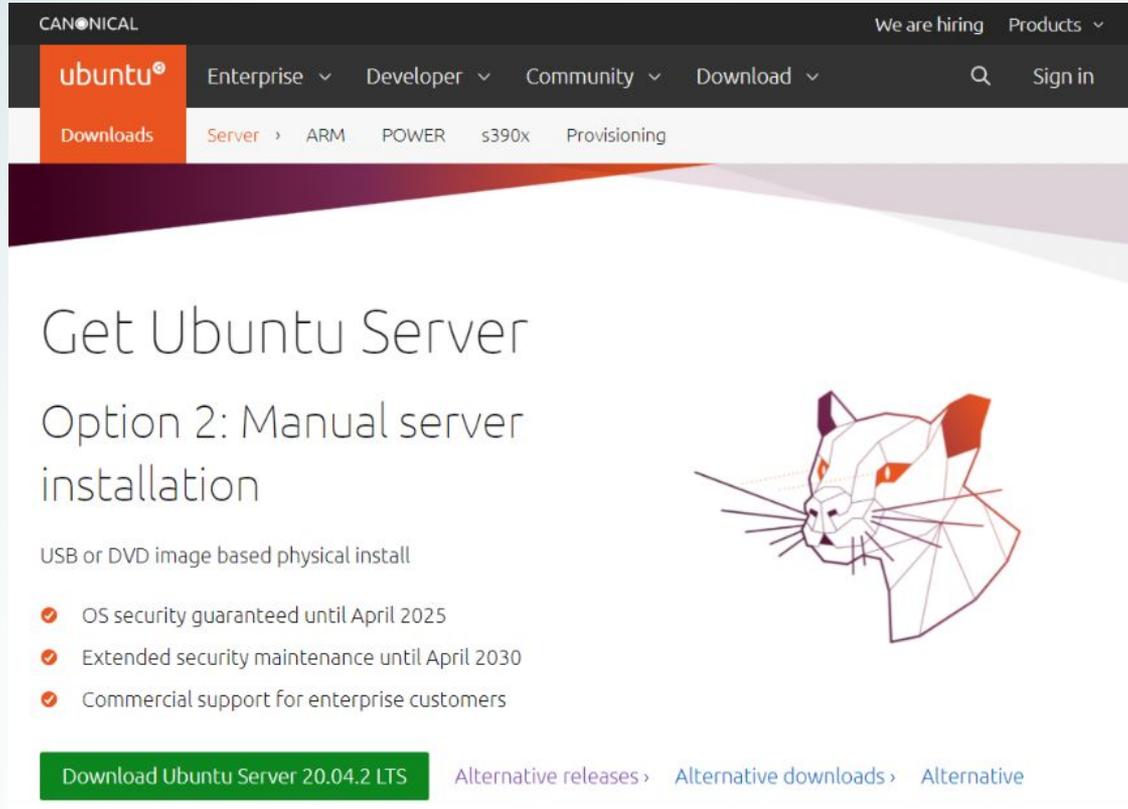
Will load a self contained ubuntu 16.04 server with postgres 9.5/9.6. Web based staff client and xul runner staff client included (pre EG3.2). Once running, you should see an ansible script kick off, which will end with PLAY RECAP *****
127.0.0.1 : ok=74 changed=53 unreachable=0 failed=0

Once you see that, the server is setup and ready for connections. Keep in mind if you press CTRL+C - the server will die. Please use CTRL+pq instead to leave it running.

The SSH login to the docker container is defaulted to: user/password The Evergreen global admin account is defaulted to: admin/demo123 The Git repo that is used to create the images is here: <https://github.com/mcoia/eg-docker>



Ubuntu - <https://ubuntu.com/download/server>



The screenshot shows the Ubuntu website's navigation bar with the Canonical logo, 'ubuntu' logo, and menu items for Enterprise, Developer, Community, and Download. The 'Download' menu is expanded to show 'Server', 'ARM', 'POWER', 's390x', and 'Provisioning'. The main content area features the heading 'Get Ubuntu Server' and 'Option 2: Manual server installation'. Below this, it lists 'USB or DVD image based physical install' and three bullet points: 'OS security guaranteed until April 2025', 'Extended security maintenance until April 2030', and 'Commercial support for enterprise customers'. A green button labeled 'Download Ubuntu Server 20.04.2 LTS' is prominent, followed by links for 'Alternative releases', 'Alternative downloads', and 'Alternative'. A stylized wireframe cat head is on the right.

CANONICAL We are hiring Products ▾

ubuntu® Enterprise ▾ Developer ▾ Community ▾ Download ▾ 🔍 Sign in

Downloads Server ▸ ARM POWER s390x Provisioning

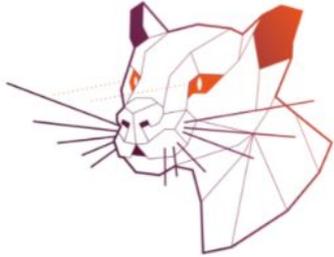
Get Ubuntu Server

Option 2: Manual server installation

USB or DVD image based physical install

- ✓ OS security guaranteed until April 2025
- ✓ Extended security maintenance until April 2030
- ✓ Commercial support for enterprise customers

[Download Ubuntu Server 20.04.2 LTS](#) [Alternative releases ▸](#) [Alternative downloads ▸](#) [Alternative](#)



Downloaded Ubuntu Server Installer

For Use With VirtualBox:

ubuntu-20.04.2-live-server-amd64.iso



Let's Grow an Evergreen!



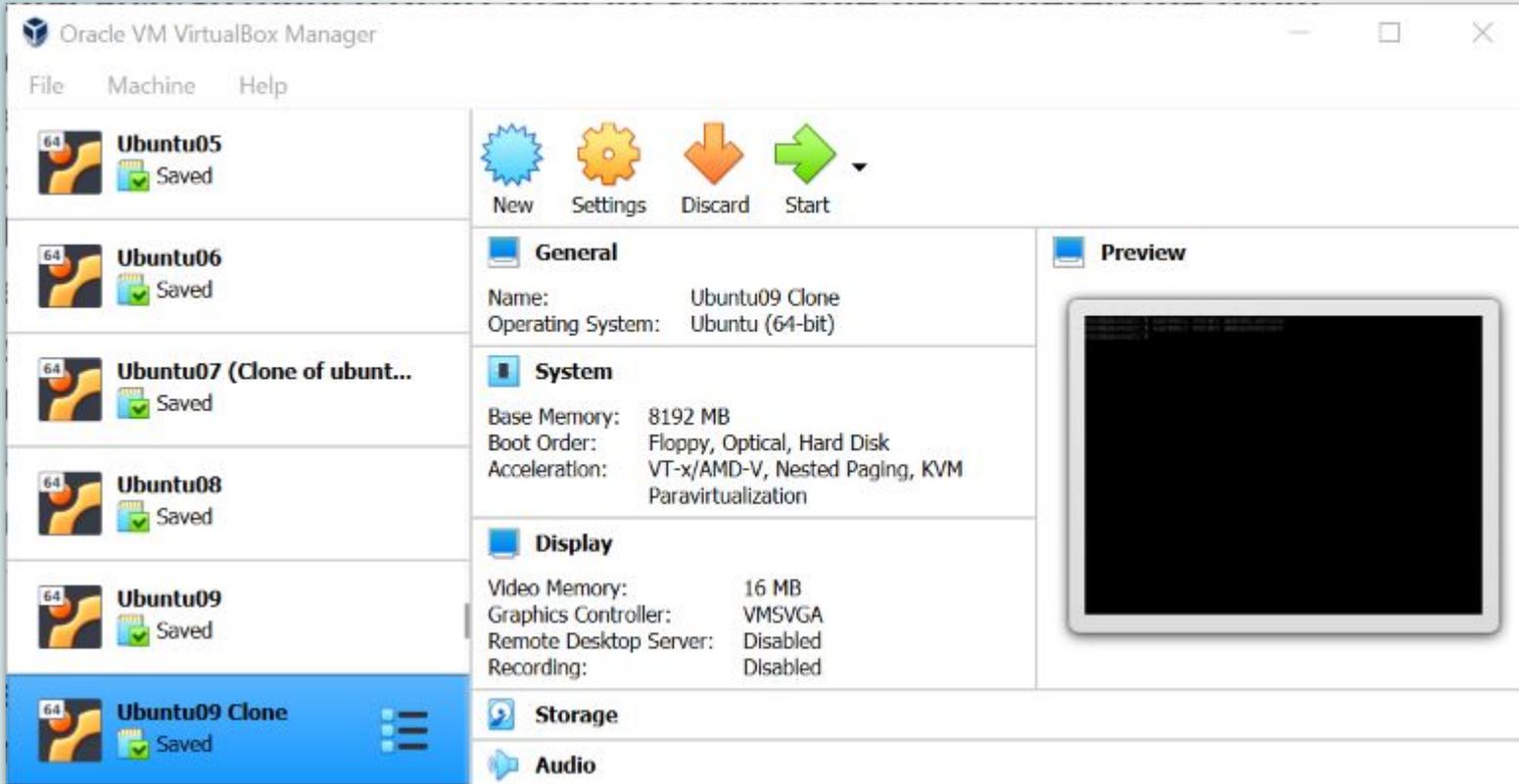
Disclaimer: I Am Not A Sysadmin

Much Trial and Error Went Into Developing This Process

There May Well Be Better Ways to Accomplish Some of These Steps and I Am Always Willing to Learn Ways to Make Life Easier



Build Your Ubuntu VM Using VirtualBox



The screenshot displays the Oracle VM VirtualBox Manager interface. On the left, a list of virtual machines is shown, including Ubuntu05 through Ubuntu09 and Ubuntu09 Clone. The 'Ubuntu09 Clone' VM is selected and highlighted in blue. The main area on the right shows the settings for this VM, organized into several tabs: General, System, Display, Storage, and Audio. The General tab is active, showing the VM name as 'Ubuntu09 Clone' and the operating system as 'Ubuntu (64-bit)'. The System tab shows a base memory of 8192 MB and various acceleration options. The Display tab shows a video memory of 16 MB and a graphics controller of VMSVGA. The Storage and Audio tabs are also visible but not expanded.

Oracle VM VirtualBox Manager

File Machine Help

64 **Ubuntu05** Saved

64 **Ubuntu06** Saved

64 **Ubuntu07 (Clone of ubuntu05)** Saved

64 **Ubuntu08** Saved

64 **Ubuntu09** Saved

64 **Ubuntu09 Clone** Saved

New Settings Discard Start

General

Name: Ubuntu09 Clone
Operating System: Ubuntu (64-bit)

System

Base Memory: 8192 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization

Display

Video Memory: 16 MB
Graphics Controller: VMSVGA
Remote Desktop Server: Disabled
Recording: Disabled

Storage

Audio

Preview



Build Your Ubuntu VM

The screenshot shows the Oracle VM VirtualBox Manager interface. On the left, a list of virtual machines is displayed, including Ubuntu05 through Ubuntu09 and Ubuntu09 Clone. The 'New' button, represented by a blue star icon, is highlighted with a red arrow. Below the 'New' button are icons for 'Settings', 'Discard', and 'Start'. The main area shows the configuration for the selected VM, 'Ubuntu09 Clone', with tabs for 'General', 'System', 'Display', 'Storage', and 'Audio'. The 'General' tab is active, showing the name 'Ubuntu09 Clone' and the operating system 'Ubuntu (64-bit)'. The 'System' tab shows base memory of 8192 MB and boot order of Floppy, Optical, Hard Disk. The 'Display' tab shows video memory of 16 MB and graphics controller of VMSVGA. The 'Storage' and 'Audio' tabs are also visible.

Oracle VM VirtualBox Manager

File Machine Help

64 Ubuntu05 Saved

64 Ubuntu06 Saved

64 Ubuntu07 (Clone of ubuntu... Saved

64 Ubuntu08 Saved

64 Ubuntu09 Saved

64 Ubuntu09 Clone Saved

New Settings Discard Start

General

Name: Ubuntu09 Clone
Operating System: Ubuntu (64-bit)

System

Base Memory: 8192 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization

Display

Video Memory: 16 MB
Graphics Controller: VMSVGA
Remote Desktop Server: Disabled
Recording: Disabled

Storage

Audio

Preview



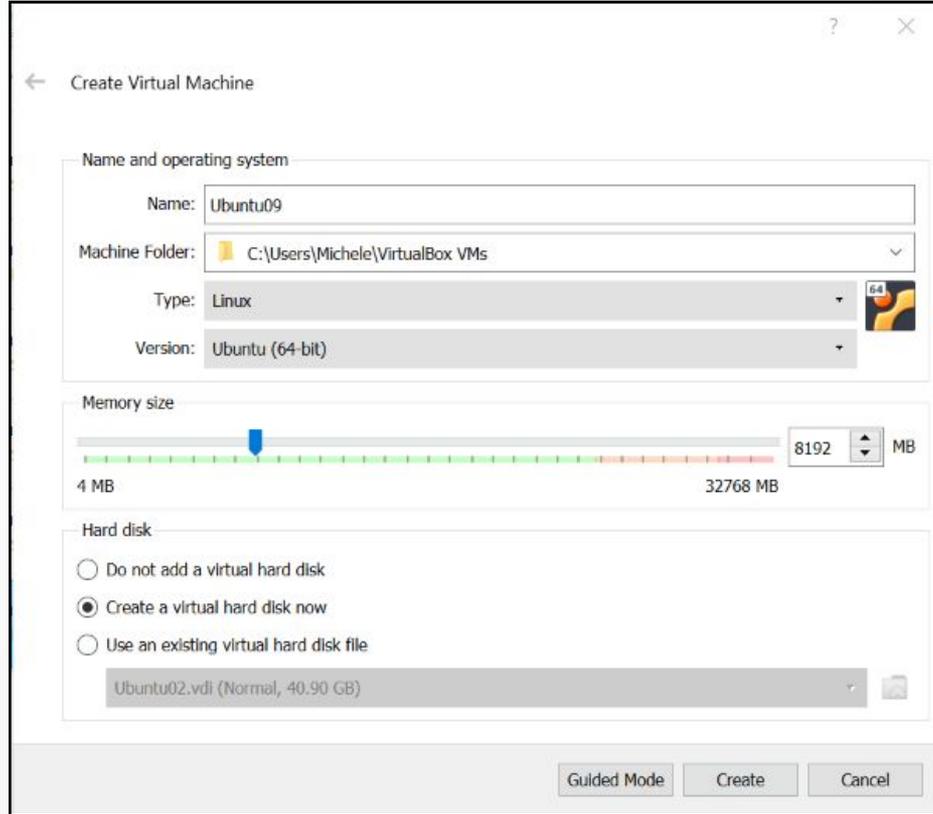
Build Your Ubuntu VM

Name Your Server

Increase the Memory Size ~ 8 GB

Create a virtual hard disk now

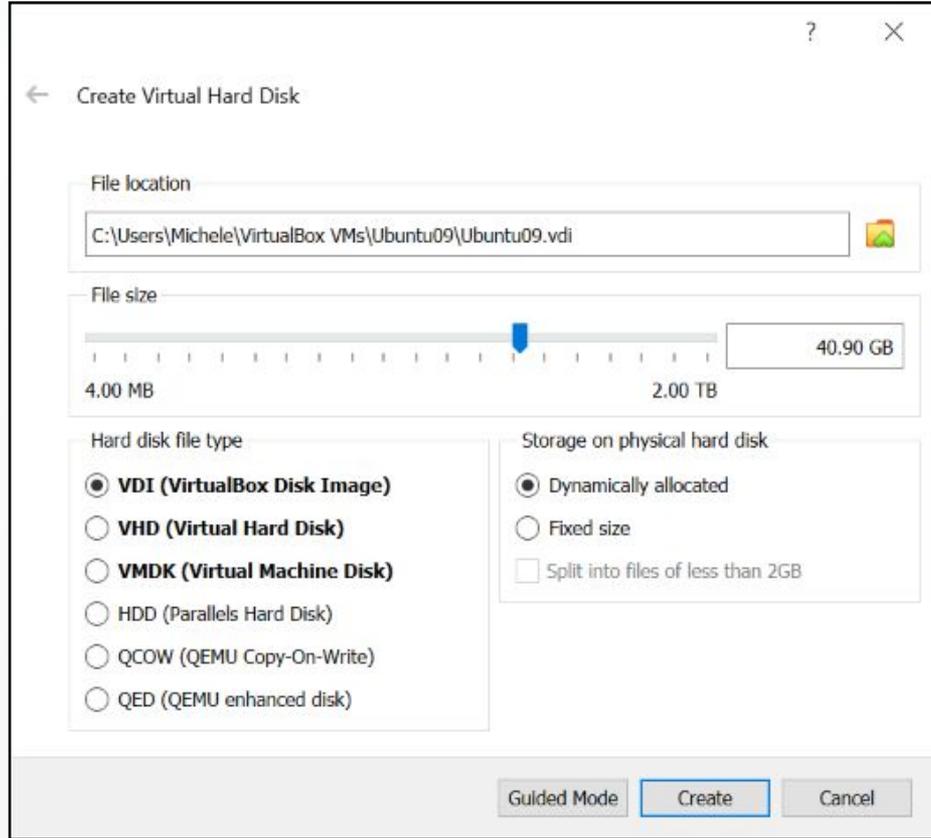
Click Create



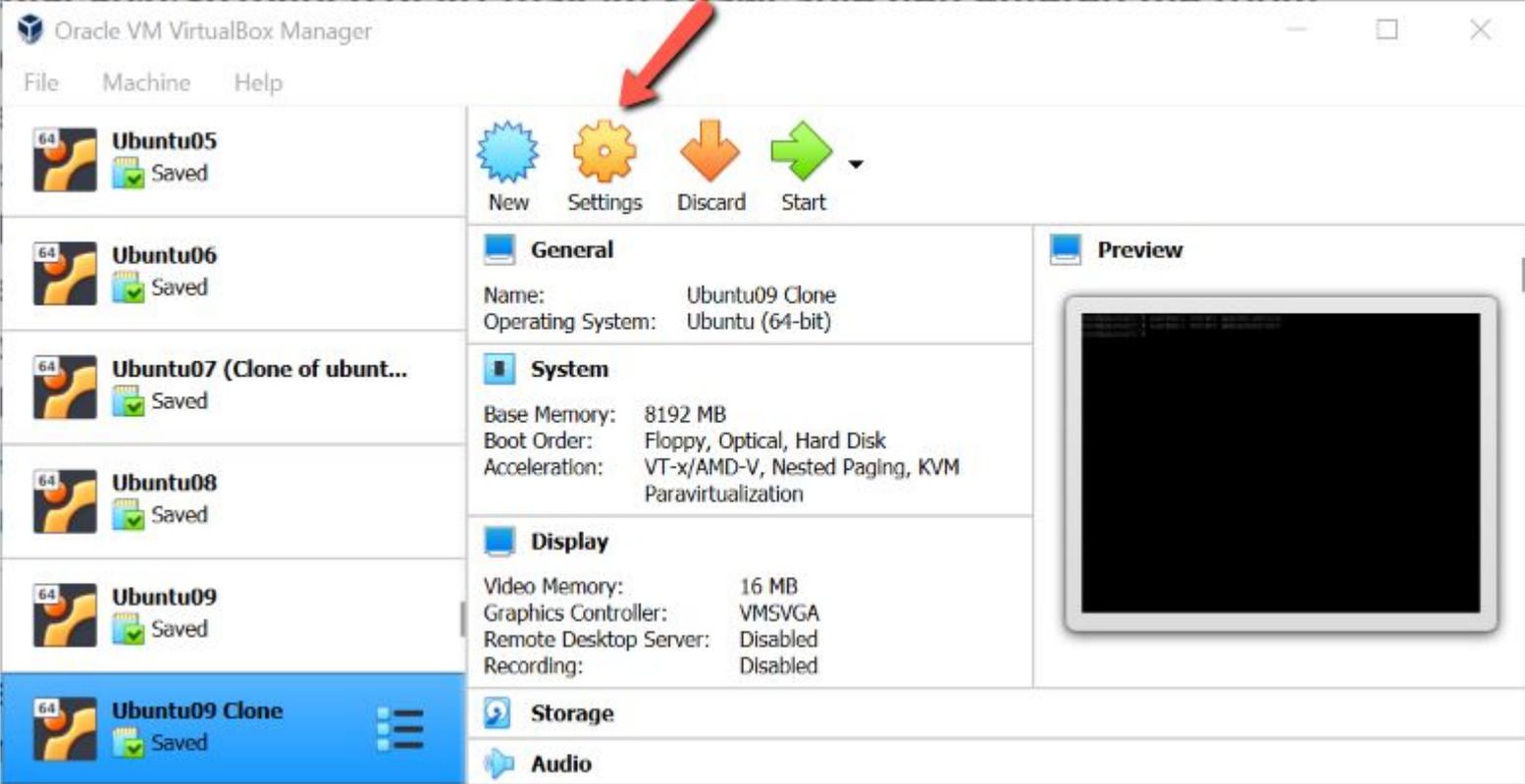
Build Your Ubuntu VM

Increase the Hard Disk Size ~ 40 GB

Click Create



Build Your Ubuntu VM



Oracle VM VirtualBox Manager

File Machine Help

64 **Ubuntu05** Saved

64 **Ubuntu06** Saved

64 **Ubuntu07 (Clone of ubuntu...** Saved

64 **Ubuntu08** Saved

64 **Ubuntu09** Saved

64 **Ubuntu09 Clone** Saved

New Settings Discard Start

General
Name: Ubuntu09 Clone
Operating System: Ubuntu (64-bit)

System
Base Memory: 8192 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization

Display
Video Memory: 16 MB
Graphics Controller: VMSVGA
Remote Desktop Server: Disabled
Recording: Disabled

Storage

Audio

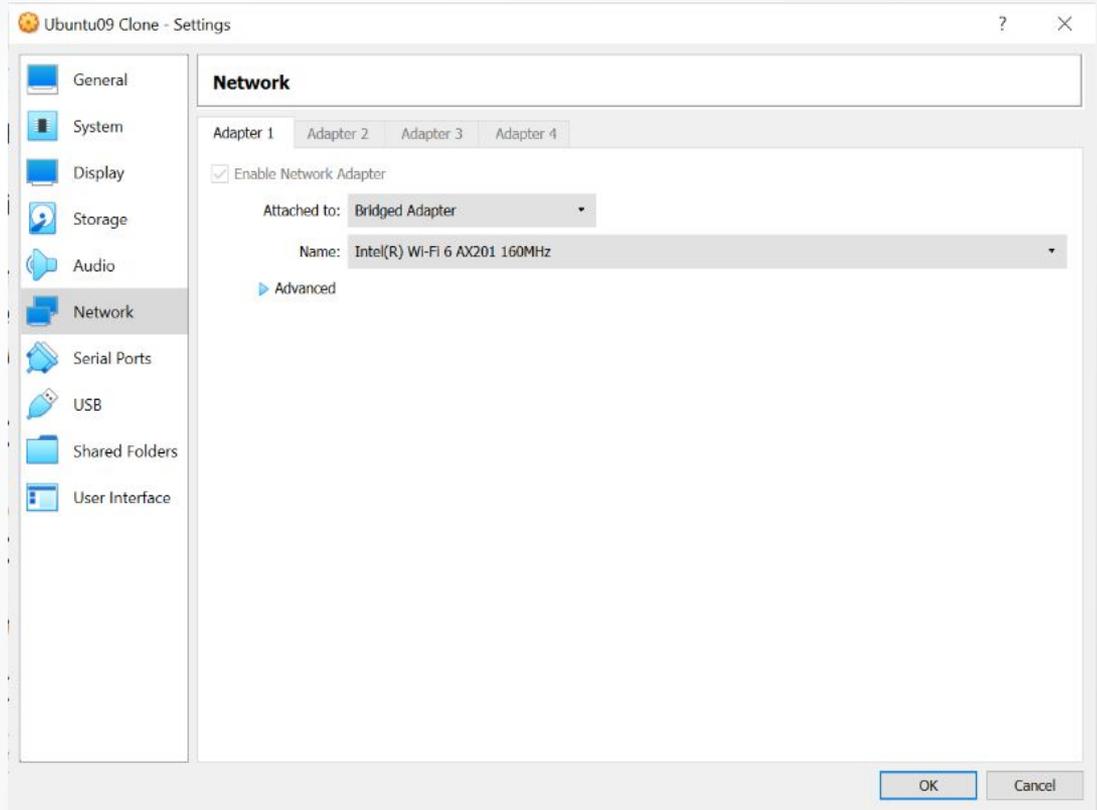
Preview



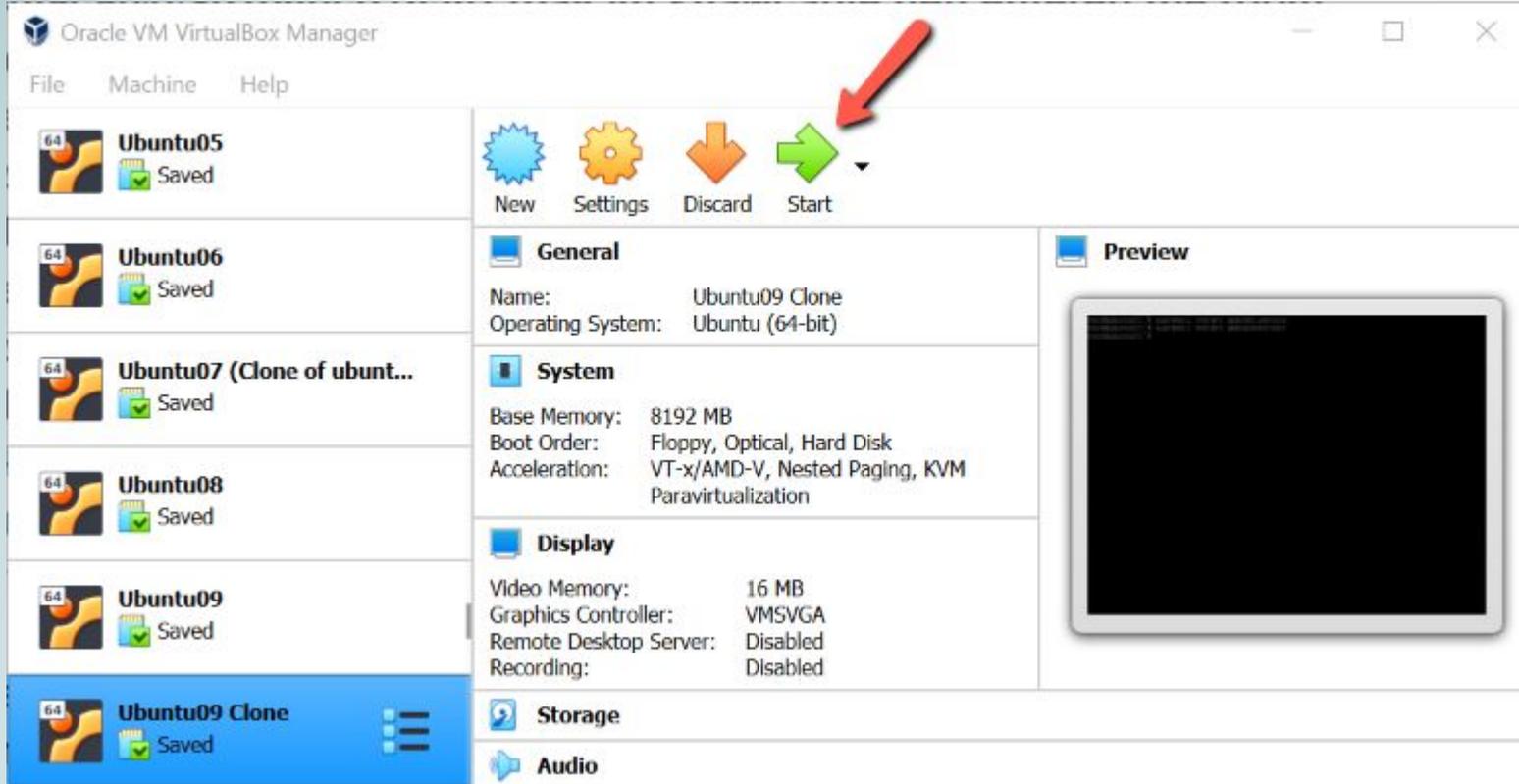
Build Your Ubuntu VM

Change from NAT to Bridged Adapter

Click OK



Build Your Ubuntu VM



The screenshot shows the Oracle VM VirtualBox Manager interface. On the left, a list of virtual machines is displayed, including Ubuntu05 through Ubuntu09 Clone. The 'Start' button, represented by a green arrow icon, is highlighted with a red arrow. The main panel shows the configuration for the selected VM, 'Ubuntu09 Clone', with tabs for General, System, Display, Storage, and Audio. The General tab is active, showing the name and operating system. The System tab shows memory and boot order settings. The Display tab shows video memory and graphics controller settings. The Storage and Audio tabs are also visible.

Oracle VM VirtualBox Manager

File Machine Help

64 **Ubuntu05** Saved

64 **Ubuntu06** Saved

64 **Ubuntu07 (Clone of ubuntu...** Saved

64 **Ubuntu08** Saved

64 **Ubuntu09** Saved

64 **Ubuntu09 Clone** Saved

New Settings Discard **Start**

General

Name: Ubuntu09 Clone
Operating System: Ubuntu (64-bit)

System

Base Memory: 8192 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization

Display

Video Memory: 16 MB
Graphics Controller: VMSVGA
Remote Desktop Server: Disabled
Recording: Disabled

Storage

Audio

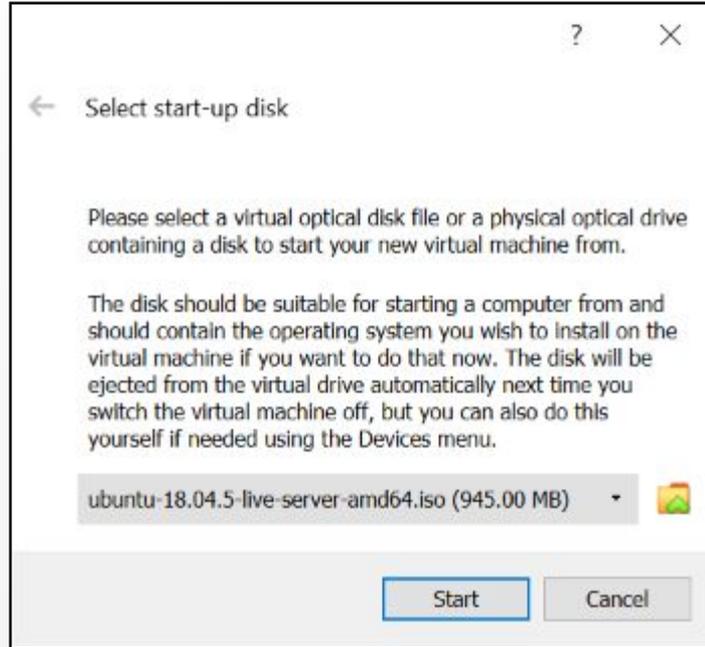
Preview



Build Your Ubuntu VM

Select Your Ubuntu .iso File
Downloaded Earlier

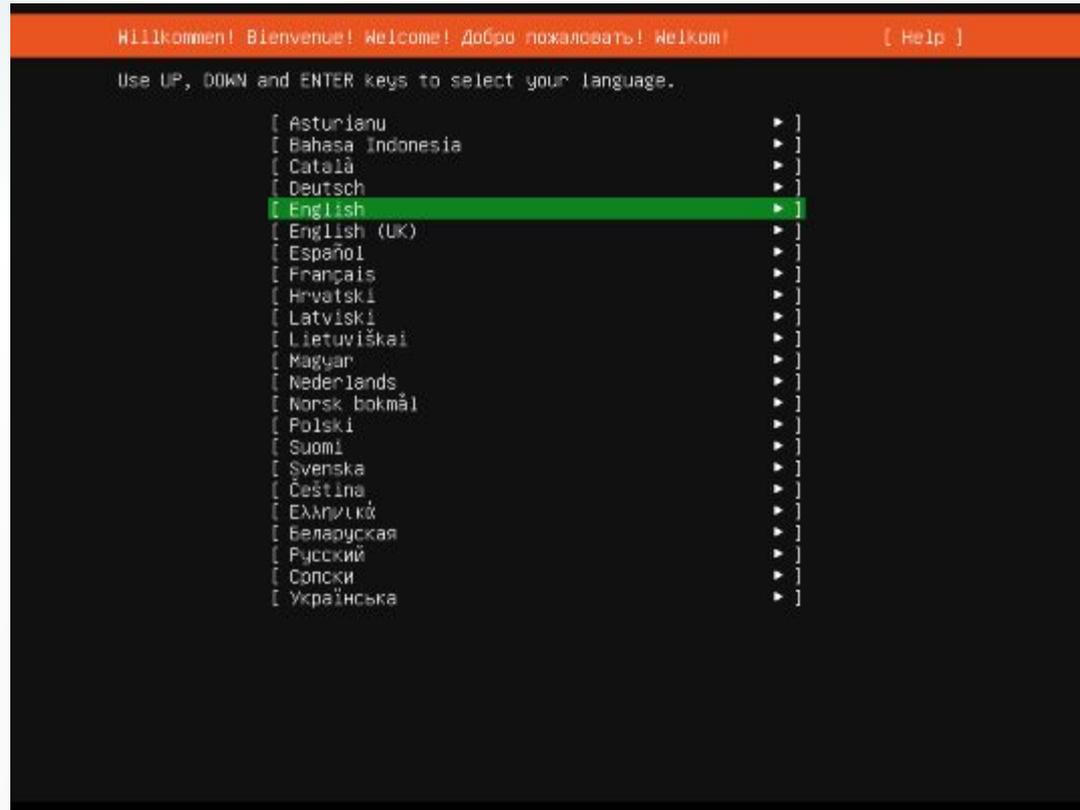
Click Start



Build Your Ubuntu VM

Use the Arrows, Space, and ENTER Keys to Navigate Through the Installation

On Most Screens Just Continue to the Next Screen



Build Your Ubuntu VM

You Will Need to Confirm Destructive Action

```
Storage configuration [ Help ]

FILE SYSTEM SUMMARY

MOUNT POINT      SIZE      TYPE      DEVICE TYPE
[ /              20.000G  new ext4  new LVM logical volume  ▶ ]
[ /boot         1.000G   new ext4  new partition of local disk ▶ ]

AVAILABLE DEVICES

Confirm destructive action

Selecting Continue below will begin the installation process and
result in the loss of data on the disks selected to be formatted.

You will not be able to return to this or a previous screen once the
installation has started.

Are you sure you want to continue?

[ No ]
[ Continue ]

partition 2 new, to be formatted as ext4, mounted at /boot 1.000G ▶
partition 3 new, PV of LVM volume group ubuntu-vg 39.892G ▶

[ Done ]
[ Reset ]
[ Back ]
```



Build Your Ubuntu VM

When Prompted, Provide:

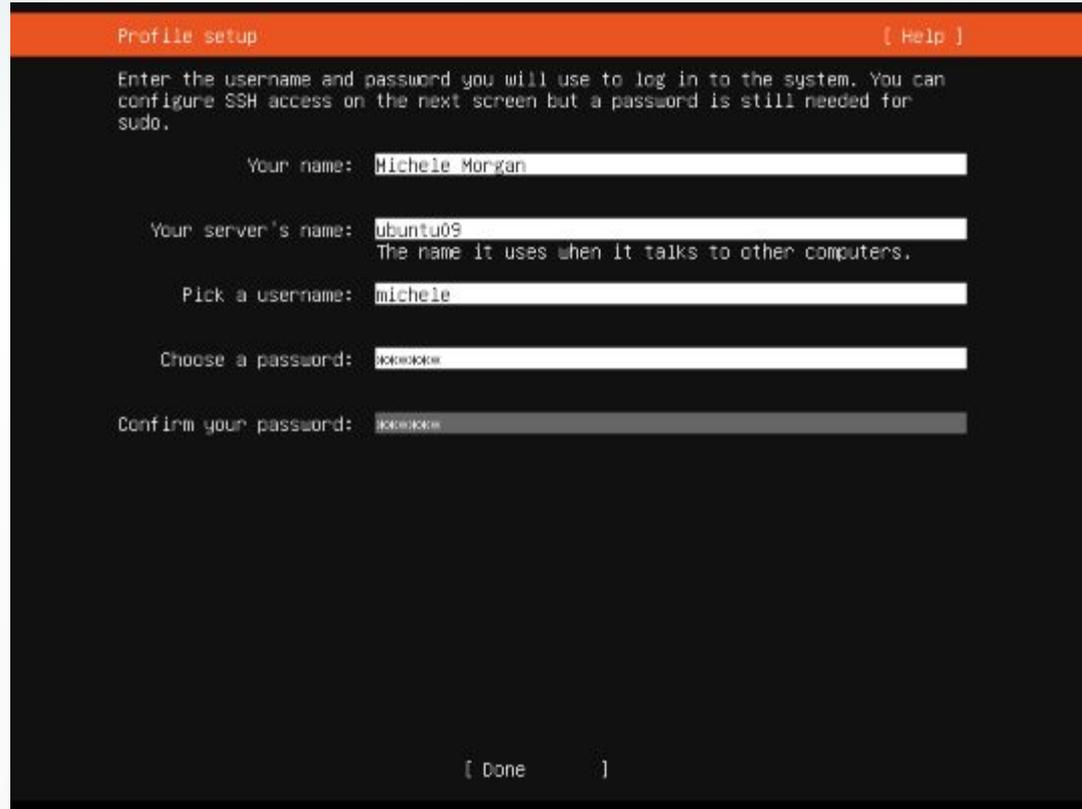
Your Name

Your Server's Name

Your Ubuntu Username

Your Ubuntu password

Navigate to Done and Press Enter



The screenshot shows a terminal window titled "Profile setup" with a red header bar. In the top right corner of the header is a "[Help]" link. The main text in the terminal reads: "Enter the username and password you will use to log in to the system. You can configure SSH access on the next screen but a password is still needed for sudo." Below this are five prompts with corresponding input fields: "Your name:" with "Michele Morgan", "Your server's name:" with "ubuntu09" and a sub-prompt "The name it uses when it talks to other computers.", "Pick a username:" with "michele", "Choose a password:" with masked characters "XXXXXXXXXX", and "Confirm your password:" with masked characters "XXXXXXXXXX". At the bottom center of the terminal is a "[Done]" prompt.



Build Your Ubuntu VM

Install the OpenSSH Server if You Intend to Connect to Your Server Using a Terminal Application or Text Editor

```
SSH Setup [ Help ]

You can choose to install the OpenSSH server package to enable secure remote
access to your server.

[X] Install OpenSSH server

Import SSH identity: [ No ▼ ]
                    You can import your SSH keys from Github or Launchpad.

Import Username:

[X] Allow password authentication over SSH

[ Done ]
[ Back ]
```



Build Your Ubuntu VM

Install Finished!

Reboot!

```
Installation complete! [ Help ]

----- Finished install! -----
running '/snap/bin/subiquity.subiquity-configure-apt
/snap/subiquity/1966/usr/bin/python3 true'
  curtin command apt-config
  curtin command in-target
running 'curtin curthooks'
  curtin command curthooks
  configuring apt configuring apt
  installing missing packages
  configuring iscsi service
  configuring raid (mdadm) service
  installing kernel
  setting up swap
  apply networking config
  writing etc/fstab
  configuring multipath
  updating packages on target system
  configuring pollinate user-agent on target
  updating initramfs configuration
  configuring target system bootloader
  installing grub to target devices
finalizing installation
  running 'curtin hook'
  curtin command hook
  executing late commands
final system configuration
  configuring cloud-init
  restoring apt configuration
  downloading and installing security updates

[ View full log ]
[ Reboot ]
```



Build Your Ubuntu VM

Login With Your Username and
Password

```
Ubuntu 18.04.5 LTS ubuntu09 tty1
ubuntu09 login: _
```



Build Your Ubuntu VM

Note Your Server's IP Address

10.0.2.15

```
Ubuntu 18.04.5 LTS ubuntu09 tty1
ubuntu09 login: michele
Password:
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 4.15.0-142-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Thu Apr 22 20:50:06 UTC 2021

System load: 0.25          Processes:            88
Usage of /:  29.7% of 19.5GB Users logged in:      0
Memory usage: 1%          IP address for enp0s3: 10.0.2.15
Swap usage:  0%

52 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

michele@ubuntu09:~$
```



Congratulations! You Have an Ubuntu
System!



Save the State of Your Server When Closing



Now Let's Install Evergreen



A Note About Users

michele - \$ - User Created During Ubuntu Install, For Logging Into Your VM and Running the Install Script

root - # - All Powerful User

opensrf - \$ - User That “Owns” Evergreen



Cheatsheet - Changing User on Your VM

```
michele@ubuntu09:~$ sudo su - root
```

```
[sudo] password for michele:
```

```
root@ubuntu09:~# su - opensrf
```

```
opensrf@ubuntu09:~$ exit
```

```
root@ubuntu09:~# exit
```

```
michele@ubuntu09:~$
```



Ansible Install Instructions

As michele user:

```
$ sudo apt-get install software-properties-common
```

```
$ sudo apt-get update
```

```
$ sudo apt-get install git ansible
```

```
$ git clone --branch ubuntu-18.04 https://github.com/berick/evergreen-ansible-installer.git
```

```
$ cd evergreen-ansible-installer
```

```
$ sudo ansible-playbook playbook.yml
```



Installing Evergreen

Ansible Script in Action

```
remote: Total 454 (delta 15), reused 22 (delta 8), pack-reused 418
Receiving objects: 100% (454/454), 100.13 KiB | 1.19 MiB/s, done.
Resolving deltas: 100% (205/205), done.
michele@ubuntu09:~$ cd evergreen-ansible-installer
michele@ubuntu09:~/evergreen-ansible-installer$ sudo ansible-playbook playbook.yml
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit
localhost does not match 'all'

[WARNING]: Found variable using reserved name: hosts

PLAY [127.0.0.1] *********************************************************************

TASK [Gathering Facts] *************************************************************
ok: [127.0.0.1]

TASK [Install OpenSRF Pre-Prereqs] **************************************************
changed: [127.0.0.1] => (item=make)
ok: [127.0.0.1] => (item=git)

TASK [Create opensrf user] **********************************************************
changed: [127.0.0.1]

TASK [Check export PATH for opensrf user profile] ************************************
changed: [127.0.0.1]

TASK [Check LD_LIBRARY_PATH for opensrf user profile] *****************************
changed: [127.0.0.1]

TASK [Add public/private jabber hosts to /etc/hosts] *****************************
changed: [127.0.0.1]

TASK [Checkout OpenSRF Repository] *************************************************
changed: [127.0.0.1]

TASK [Install OpenSRF Prereqs] **************************************************
```



Installing Evergreen

Finished!

```
TASK [Reload System Configs] *****
changed: [127.0.0.1]

TASK [Enable OpenSRF Service] *****
skipping: [127.0.0.1]

TASK [Enable OpenSRF Websocketd Service] *****
changed: [127.0.0.1]

TASK [Enable Evergreen Reporter Service] *****
skipping: [127.0.0.1]

TASK [Starting Services] *****
changed: [127.0.0.1]

TASK [Starting Services (systemd)] *****
skipping: [127.0.0.1]

TASK [Giving Services Time To Start...] *****
Pausing for 10 seconds
(ctrl+C then 'C' = continue early, ctrl+C then 'A' = abort)
ok: [127.0.0.1]

TASK [Running Autogen] *****
changed: [127.0.0.1]

TASK [Restarting Apache] *****
changed: [127.0.0.1]

TASK [Starting Websockets] *****
changed: [127.0.0.1]

PLAY RECAP *****
127.0.0.1          : ok=105  changed=96  unreachable=0  failed=0

michele@ubuntu09:~/evergreen-ansible-installer$ _
```



Connecting to Evergreen

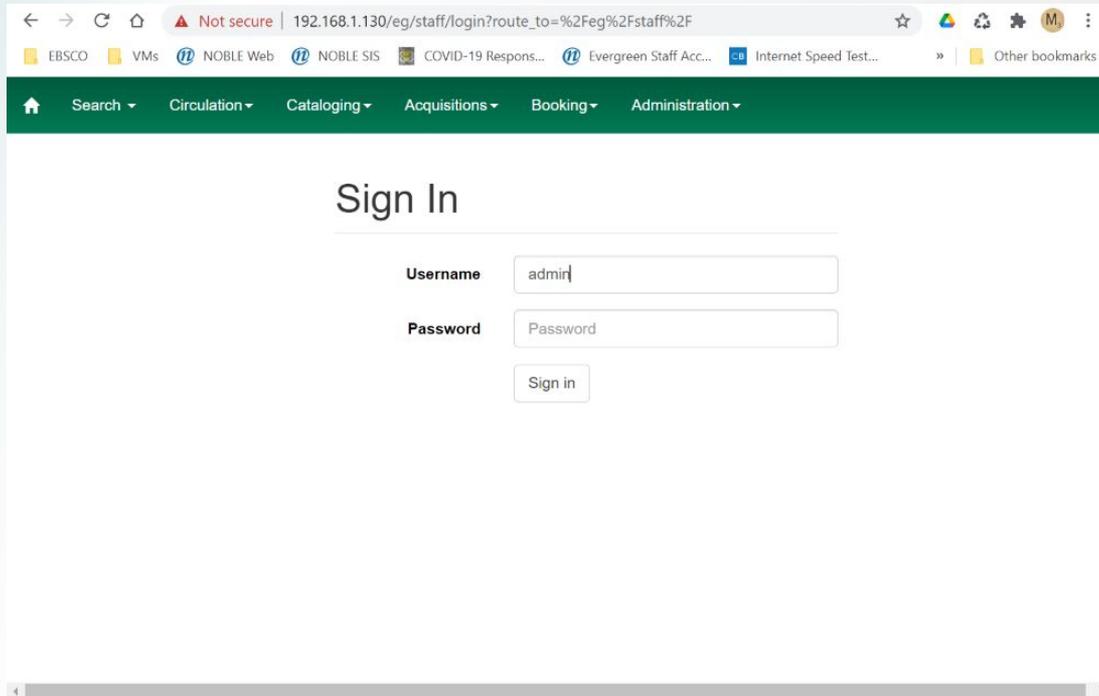
In Your Browser, Go To `http://<vm ip address>/eg/staff/`

Username:

admin

Password:

demo123



Not secure | 192.168.1.130/eg/staff/login?route_to=%2Feg%2Fstaff%2F

EBSCO VMs NOBLE Web NOBLE SIS COVID-19 Respons... Evergreen Staff Acc... Internet Speed Test... Other bookmarks

Search ◯ Circulation ◯ Cataloging ◯ Acquisitions ◯ Booking ◯ Administration ◯

Sign In

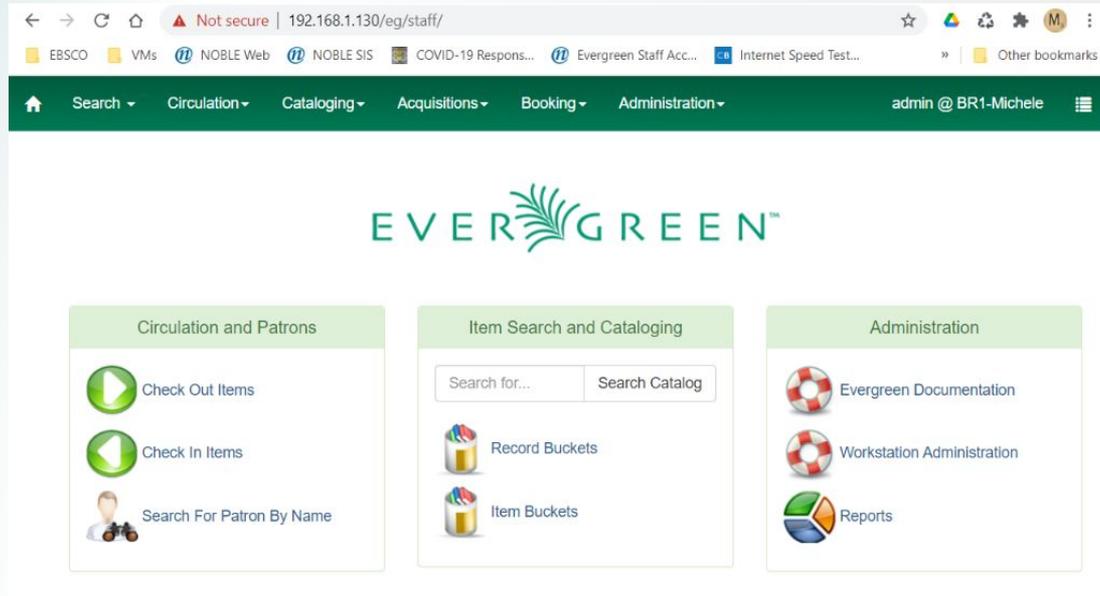
Username

Password



Connecting to Evergreen

http://<vm ip address>/eg/staff/



The screenshot shows a web browser window with the address bar displaying "192.168.1.130/eg/staff/". The browser's address bar also shows "Not secure" and a warning icon. The browser's bookmark bar includes "EBSCO", "VMs", "NOBLE Web", "NOBLE SIS", "COVID-19 Respons...", "Evergreen Staff Acc...", "Internet Speed Test...", and "Other bookmarks". The browser's navigation bar includes a home icon, "Search", "Circulation", "Cataloging", "Acquisitions", "Booking", "Administration", and the user "admin @ BR1-Michele".

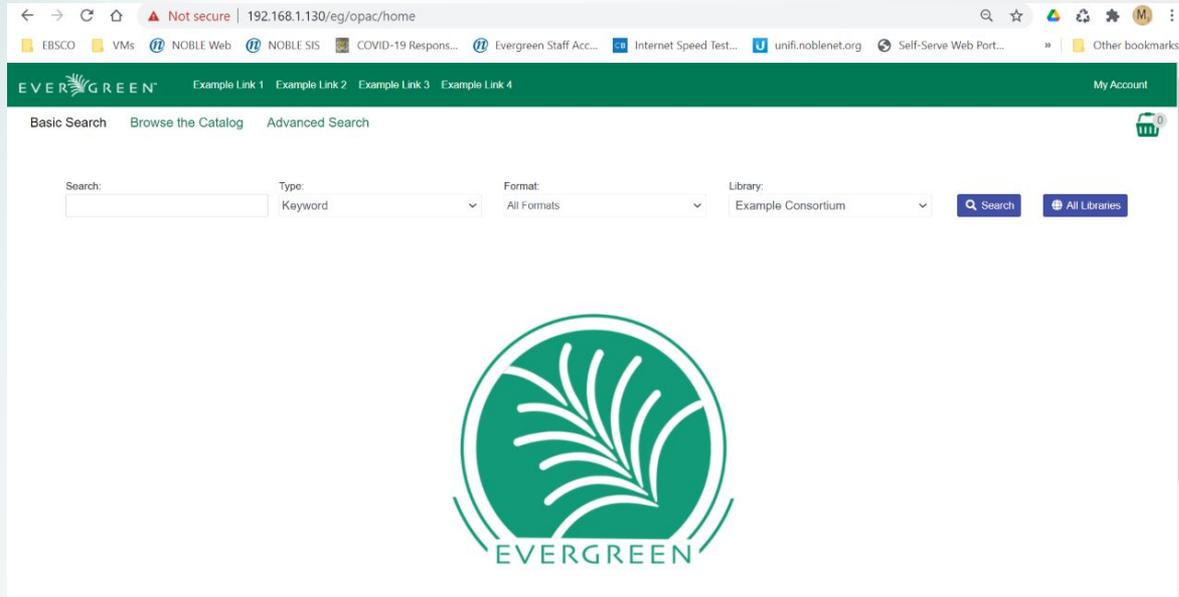
The main content area features the "EVERGREEN" logo at the top center. Below the logo, there are three main sections:

- Circulation and Patrons**: Contains "Check Out Items", "Check In Items", and "Search For Patron By Name".
- Item Search and Cataloging**: Contains a search bar with "Search for..." and "Search Catalog" buttons, "Record Buckets", and "Item Buckets".
- Administration**: Contains "Evergreen Documentation", "Workstation Administration", and "Reports".



Connecting to Evergreen - OPAC

http://<vm ip address>



The screenshot shows a web browser window with the address bar displaying "192.168.1.130/eg/opac/home". The page features a green header with the "EVERGREEN" logo and navigation links for "Example Link 1" through "Example Link 4", and a "My Account" link. Below the header, there are search options: "Basic Search", "Browse the Catalog", and "Advanced Search". The search interface includes a text input field for the search term, dropdown menus for "Type" (set to "Keyword"), "Format" (set to "All Formats"), and "Library" (set to "Example Consortium"). There are "Search" and "All Libraries" buttons. The main content area displays a large circular logo with a stylized green leaf design and the word "EVERGREEN" below it.



Cheatsheet - Fix the OPAC (Jeff Davis++)

As opensrf user

```
$ cd /openils/var/web/opac/deps
```

```
$ npm install
```



Stock Database

“Concerto” Database - Small Collection of Users, Records, Holdings and Transactions

Concerto Logins:

https://wiki.evergreen-ils.org/doku.php?id=qa:concerto_logins



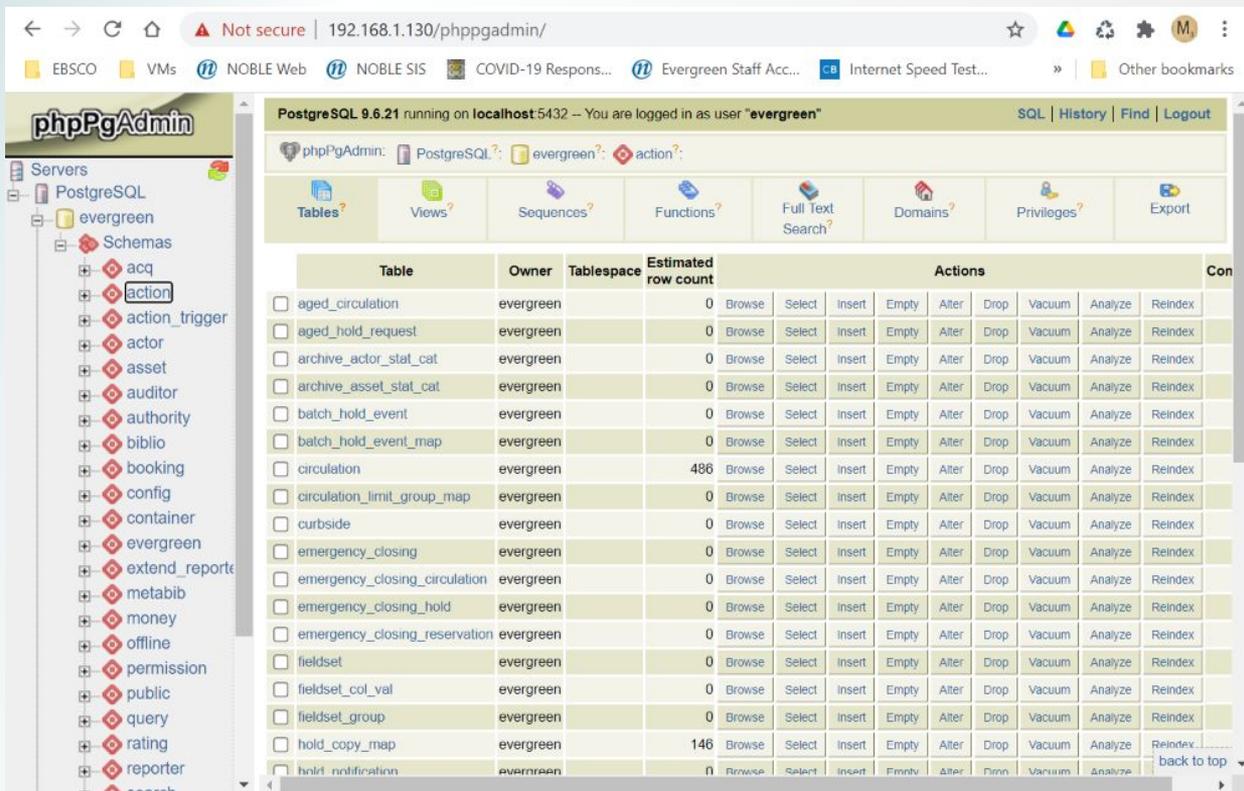
Congratulations! You Have an Evergreen System!



A Few Ways to Customize Your System



PhpPgadmin - A GUI Interface to the Evergreen Database



The screenshot displays the phpPgAdmin web interface for a PostgreSQL 9.6.21 database. The browser address bar shows the URL `192.168.1.130/phpPgadmin/`. The interface is titled "PostgreSQL 9.6.21 running on localhost 5432" and indicates the user is logged in as "evergreen".

On the left, a navigation tree shows the database structure: Servers > PostgreSQL > evergreen > Schemas > **action**. The "action" schema is selected, and its tables are listed in the main content area.

Below the navigation tree, there are icons for various database objects: Tables, Views, Sequences, Functions, Full Text Search, Domains, Privileges, and Export.

The main content area displays a table of database tables with the following columns: Table, Owner, Tablespace, Estimated row count, and Actions. The "action" table is highlighted in green.

Table	Owner	Tablespace	Estimated row count	Actions	Con
<input type="checkbox"/> aged_circulation	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> aged_hold_request	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> archive_actor_stat_cat	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> archive_asset_stat_cat	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> batch_hold_event	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> batch_hold_event_map	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> circulation	evergreen		486	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> circulation_limit_group_map	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> curbside	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> emergency_closing	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> emergency_closing_circulation	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> emergency_closing_hold	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> emergency_closing_reservation	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> fieldset	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> fieldset_col_val	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> fieldset_group	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> hold_copy_map	evergreen		146	Browse Select insert Empty Alter Drop Vacuum Analyze Reindex	
<input type="checkbox"/> hold_notification	evergreen		0	Browse Select insert Empty Alter Drop Vacuum Analyze	Reindex back to top



Cheatsheet - Install Phppgadmin

```
# apt-get install phppgadmin
```

```
# vi /etc/apache2/conf-enabled/phppgadmin.conf
```

Edit the file to comment out Require local

```
# Require local
```

Save the file and restart apache

```
# systemctl restart apache2.service
```

Browse To <http://<ip address>/phppgadmin>

Username, Password: evergreen



Cheatsheet - Setting Up Git

```
$ git config --global user.email "mmorgan@noblenet.org"
```

```
$ git config --global user.name "Michele Morgan"
```

See the [NewDevs Page](#) for Instructions for Requesting Permission for the Evergreen Git Repository



Cheatsheet - Adding the Working Git Repository

As the opensrf User

```
$ cd /home/opensrf/Evergreen
```

```
$ git remote add working git@git.evergreen-ils.org:working/Evergreen.git
```

Show Your Repositories

```
$ git remote -v
```



Tip: Cloning Your VM Can Save You Some Work

Once You Have Your Evergreen System Running, Don't Touch It!

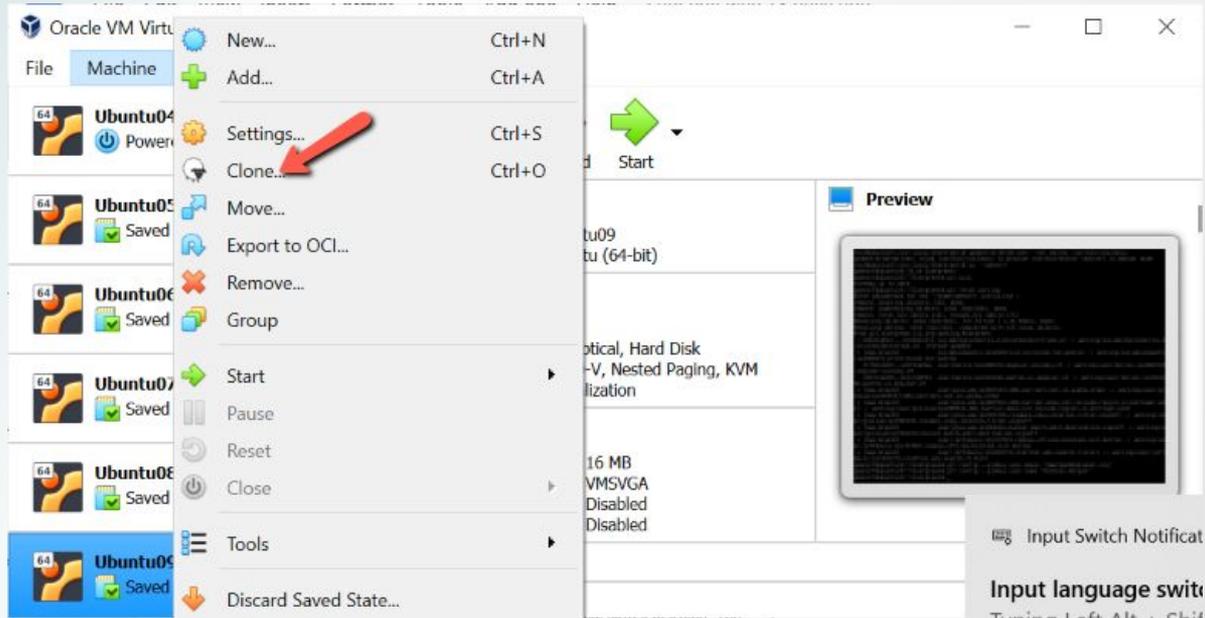
If You Plan on Tinkering, Make One or Several Clones

Clones Are Exact Duplicates of the System You Just Built

You Can Feel Better About Breaking Your System When You Can Easily Make Another Copy



Clone Your VM



Clone Your VM

← Clone Virtual Machine

New machine name and path

Please choose a name and optionally a folder for the new virtual machine. The new machine will be a clone of the machine **Ubuntu09**.

Name:

Path:

MAC Address Policy:

Additional Options:

- Keep Disk Names
- Keep Hardware UUIDs



Clone Your VM

← Clone Virtual Machine

Clone type

Please choose the type of clone you wish to create.

If you choose **Full clone**, an exact copy (including all virtual hard disk files) of the original virtual machine will be created.

If you choose **Linked clone**, a new machine will be created, but the virtual hard disk files will be tied to the virtual hard disk files of original machine and you will not be able to move the new virtual machine to a different computer without moving the original as well.

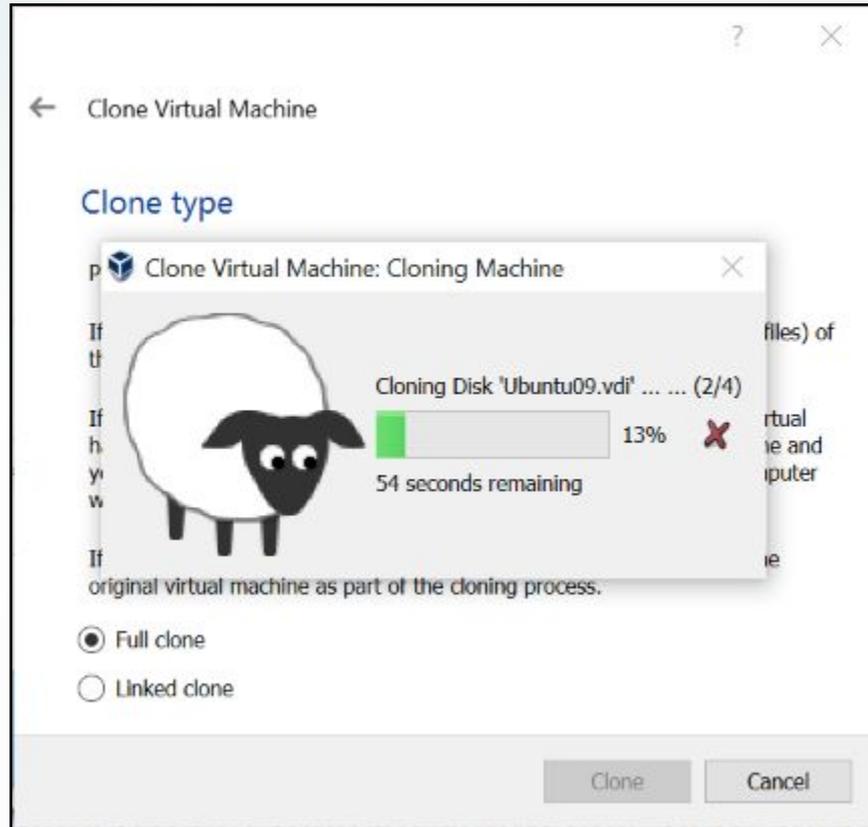
If you create a **Linked clone** then a new snapshot will be created in the original virtual machine as part of the cloning process.

Full clone

Linked clone



Clone Your VM



Clone Your VM



The screenshot shows the Oracle VM VirtualBox Manager interface. On the left, a list of VMs is displayed, each with a 64-bit icon, a name, and a 'Saved' status. The VMs are:

- Ubuntu05 (Saved)
- Ubuntu06 (Saved)
- Ubuntu07 (Clone of ubun... (Saved)
- Ubuntu08 (Saved)
- Ubuntu09 (Saved)
- Ubuntu09 Clone** (Saved) - This VM is selected and highlighted in blue.

On the right, the settings for the selected VM are shown in a pane:

- New** (blue star icon), **Settings** (orange gear icon), **Discard** (orange arrow icon), **Start** (green arrow icon)
- Audio** (speaker icon): Host Driver: Windows DirectSound, Controller: ICH AC97
- Network** (network card icon): Adapter 1: Intel PRO/1000 MT Desktop (Bridged Adapter, Intel(R) WI-FI 6 AX201 160MHz)
- USB** (USB icon): USB Controller: OHCI, Device Filters: 0 (0 active)
- Shared folders** (folder icon): None
- Description** (speech bubble icon): fresh build post 3.7 release, 192.168.1.193, Use this to clone other vms



More Cheatsheets



Cheatsheets - Legend

\$ - Means You're the opensrf User

- Means You're the root User



Cheatsheet - IP Addresses

Find Your Server's IP:

```
$ ifconfig
```

Get a New IP

```
$ sudo dhclient -r
```

```
$ sudo dhclient
```



Cheatsheet - Restart Evergreen

```
$ osrf_control --localhost --stop-all
```

```
$ osrf_control --localhost --start-all
```

```
# systemctl restart apache2.service
```

```
# systemctl restart websocketd-osrf
```



Cheatsheet - Recompile and Copy Angular Files

```
$ cd /home/opensrf/Evergreen/Open-ILS/eg2
```

```
$ ng build --prod
```

```
$ cp -rf /home/opensrf/Evergreen/Open-ILS/web/eg2/en-US/*  
/openils/var/web/eg2/en-US
```



My Favorite Cheat

\$ <UP ARROW>



Bug Testing and Signoff Process

Start Your VM

```
$ cd /home/opensrf/Evergreen
```

Make Sure Git is Up To Date

```
$ git pull
```

```
$ git fetch working
```



Bug Testing and Signoff Process

Create and Switch To a New Git Branch

```
$ git checkout -b <branchname> origin/master
```

Cherry-pick the Commits for the Patch You Are Testing - Oldest to Newest

```
$ git cherry-pick -s <first 7 characters from commit>
```



Bug Testing and Signoff Process

Put Patched Files into Place on Your VM

Depending on the Patch, This Could Involve:

- Copy the Patched File to its Installed Location
- Compile and Copy Angular Files into Place
- Rebuild Evergreen
- Restart Evergreen

Login to Your System and Test the Patch



Bug Testing and Signoff Process

Login to Your System and Test the Patch

When Testing, it's Important to Consider:

- Permissions
- Library Settings
- Global Flags
- Staff View
- Patron View
- Workflows



Bug Testing and Signoff Process

If All Looks Good, Push Your Signoff

```
$ git push working <branchname>:user/mmorgan/<remote branchname>
```

Update the Launchpad Bug



Questions?





EVERGREEN
International Conference 2021

Thank You!

Michele M. Morgan
Technical Support Analyst
NOBLE, North Of Boston Library Exchange

