The latest release of FOG Project is v1.5.0, released February 26th 2018.

At this time, FOG Project can only be installed on a computer running Linux. We recommend using a Long Term Support distribution meant for servers, such as CentOS or Debian, though you can use a variety of other distributions. We also recommend installing FOG Project inside a virtual machine, to aid in easy backups and upgrades.

Downloading

You can download a pre-packaged tarball of the latest release of FOG Project, v1.5.0, from here. Please verify that your download matches one of the following checksums:

<table>
<thead>
<tr>
<th>md5</th>
<th>sha1</th>
</tr>
</thead>
<tbody>
<tr>
<td>92d5a69b44e0e5cda33c4d5db73596d2</td>
<td>e00ecada1f54dc69ae76f9f3e7329aeab151f3a</td>
</tr>
</tbody>
</table>

Installing

To install FOG Project, an internet connection is required. During installation, it will download other binaries and install any needed dependencies. More detailed guides can be found in the wiki, however, installation is as simple as extracting the tarball and running the install script:

```
tar -xsvf fog_x.x.x.tar.gz
cd fog_x.x.x/bin
sudo ./install.sh
```
joe@fog:~$ wget https://github.com/FOGProject/fogproject/releases/download/1.5.0/fog_1.5.0.tar.gz
Installing

To install FOG Project, an internet connection is required. During installation, it will download other binaries and install any needed dependencies. More detailed guides can be found in the wiki, however, installation is as simple as extracting the tarball and running the install script:

```
$ tar xsvf fog_x.x.tar.gz
$ cd fog_x.x/bin
$ sudo ./install.sh
```

Next Steps

Once installed, check out the wiki for more information and guides. If you need help head over to the forums.
joe@fog:~$ tar -xvzf fog_1.5.0.tar.gz
Free Computer Imaging Solution

Credits: http://fogproject.org/Credits
http://fogproject.org/Credits
Released under GPL Version 3

Version: 1.5.0 Installer/Updater

What version of Linux would you like to run the installation for?

1) Redhat Based Linux (Redhat, CentOS, Mageia)
2) Debian Based Linux (Debian, Ubuntu, Kubuntu, Edubuntu)
3) Arch Linux

Choice: [2] 2
What version of Linux would you like to run the installation for?

1) Redhat Based Linux (Redhat, CentOS, Mageia)
2) Debian Based Linux (Debian, Ubuntu, Kubuntu, Edubuntu)
3) Arch Linux

Choice: [2] 2

Starting Debian based Installation

*** Detected a potential need to reinstall apache and php files.
*** This will remove the /etc/php* and /etc/apache2* directories
*** and remove/purge the apache and php files from this system.
*** If you're okay with this please type Y, anything else will
*** continue the installation, but may mean you will need to
*** remove the files later and make proper changes as
*** necessary. (Y/N):
*** continue the installation, but may mean you will need to
*** remove the files later and make proper changes as
*** necessary. (Y/N):

Y

* Removing apache and php files.................................Done
* Stopping web services......................................Failed
* Removing the apache and php packages......................Done
* Resetting our variables to specify php version 7.1.........Done

FOG Server installation modes:
  * Normal Server: (Choice N)
    This is the typical installation type and
    will install all FOG components for you on this
    machine. Pick this option if you are unsure what to pick.

  * Storage Node: (Choice S)
    This install mode will only install the software required
    to make this server act as a node in a storage group

More information:

What type of installation would you like to do? [N/s (Normal/Storage)] N
*** necessary. (Y/N):

Y

* Removing apache and php files...........................................Done
* Stopping web services......................................................Failed
* Removing the apache and php packages..................................Done
* Resetting our variables to specify php version 7.1....................Done

FOG Server installation modes:

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More information:

What type of installation would you like to do? [N/s (Normal/Storage)] N

What is the IP address to be used by this FOG Server? [144.38.201.40]
* Stopping web services.................................Failed
* Removing the apache and php packages..................Done
* Resetting our variables to specify php version 7.1........Done

FOG Server installation modes:
  * Normal Server: (Choice N)
    This is the typical installation type and will install all FOG components for you on this machine. Pick this option if you are unsure what to pick.

  * Storage Node: (Choice S)
    This install mode will only install the software required to make this server act as a node in a storage group

More information:

What type of installation would you like to do? [N/s (Normal/Storage)] N

What is the IP address to be used by this FOG Server? [144.38.201.40]

Would you like to change the default network interface from ens3? If you are not sure, select No. [y/N] N
* Resetting our variables to specify php version 7.1........Done

FOG Server installation modes:

* Normal Server: (Choice N)
  
  This is the typical installation type and will install all FOG components for you on this machine. Pick this option if you are unsure what to pick.

* Storage Node: (Choice S)
  
  This install mode will only install the software required to make this server act as a node in a storage group

More information:
  

What type of installation would you like to do? [N/s (Normal/Storage)] N

What is the IP address to be used by this FOG Server? [144.38.201.40] N

Would you like to change the default network interface from ens3? If you are not sure, select No. [y/N] N

Would you like to setup a router address for the DHCP server? [Y/n] Y
machine. Pick this option if you are unsure what to pick.

* Storage Node: (Choice S)
  This install mode will only install the software required to make this server act as a node in a storage group

More information:

What type of installation would you like to do? [N/s (Normal/Storage)] N

What is the IP address to be used by this FOG Server? [144.38.201.40]

Would you like to change the default network interface from ens3? If you are not sure, select No. [y/N] N

Would you like to setup a router address for the DHCP server? [Y/n] Y
What is the IP address to be used for the router on the DHCP server? [144.38.201.33]

Would you like DHCP to handle DNS? [Y/n] Y
What DNS address should DHCP allow? [144.38.192.2]
More information:

What type of installation would you like to do? [N/s (Normal/Storage)] N

What is the IP address to be used by this FOG Server? [144.38.201.40]

Would you like to change the default network interface from ens3? 
If you are not sure, select No. [y/N] N

Would you like to setup a router address for the DHCP server? [Y/n] Y 
What is the IP address to be used for the router on the DHCP server? [144.38.201.33]

Would you like DHCP to handle DNS? [Y/n] Y 
What DNS address should DHCP allow? [144.38.192.2]

Would you like to use the FOG server for DHCP service? [y/N] 

This version of FOG has internationalization support, would you like to install the additional language packs? [y/N] N
Here are the settings FOG will use:

- Base Linux: Debian
- Detected Linux Distribution: Ubuntu
- Server IP Address: 144.38.201.40
- Server Subnet Mask: 255.255.255.224
- Interface: ens3
- Installation Type: Normal Server
- Internationalization: 0
- Image Storage Location: /images
- Using FOG DHCP: No
- DHCP will NOT be setup but you must setup your current DHCP server to use FOG for PXE services.

On a Linux DHCP server you must set: next-server and filename

On a Windows DHCP server you must set options 066 and 067

- Option 066/next-server is the IP of the FOG Server: (e.g. 144.38.201.40)
- Option 067/filename is the bootfile: (e.g. undionly.kpxe)

Are you sure you wish to continue (Y/N)
Are you sure you wish to continue (Y/N) Y

Installation Started

Installing required packages, if this fails
| make sure you have an active internet connection.

Adding needed repository..........................................................OK
Preparing Package Manager.........................................................OK
Packages to be installed:

apache2 bc build-essential cpp curl g++ gawk gcc genisoimage gzip html5lib
c isolinux lftp libapache2-mod-php7.1 libc6 libcurl3 liblzma-dev m4 mysql-client
mysql-server net-tools nfs-kernel-server openssh-server php7.1 php7.1-bcmath ph
php7.1-mcrypt php7.1-mysql php7.1-mysqlnd php-gettext sysv-rc-conf tar tftpd-h
pa tftp-hpa unzip vsftpd wget xinetd zlib1g

Installing package: apache2......................................................OK
Installing package: bc.............................................................OK
Installing package: build-essential.........................................OK
* Setting up fog user................................. OK
* Setting up fog password............................ OK
* Stopping FOGMulticastManager.service Service...... OK
* Stopping FOGImageReplicator.service Service........ OK
* Stopping FOGSnapinReplicator.service Service....... OK
* Stopping FOGScheduler.service Service.............. OK
* Stopping FOGPingHosts.service Service............... OK
* Stopping FOGSnapinHash.service Service.............. OK
* Stopping FOGImageSize.service Service............... OK
* Setting up and starting MySQL...................... OK
* Backing up user reports......................... Done
* Stopping web service............................... OK
* Is the MySQL password blank? (Y/n) Y
* Stopping FOGMulticastManager.service Service...... OK
* Stopping FOGImageReplicator.service Service........ OK
* Stopping FOGSnapinReplicator.service Service....... OK
* Stopping FOGScheduler.service Service.............. OK
* Stopping FOGPingHosts.service Service............... OK
* Stopping FOGSnapinHash.service Service.............. OK
* Stopping FOGImageSize.service Service............... OK
* Setting up and starting MySQL......................
* Backing up old data.................OK
* Copying new files to web folder........OK
* Creating config file................OK
* Unzipping the binaries................Done
* Copying binaries where needed........Done
* Enabling apache and fpm services on boot......OK
* Creating SSL CA........................OK
* Creating SSL Private Key...............OK
* Creating SSL Certificate..............OK
* Creating auth pub key and cert..........OK
* Resetting SSL Permissions..............OK
* Setting up Apache virtual host (no SSL)...OK
* Starting and checking status of web services...OK
* Changing permissions on apache log files...OK
* Backing up database...................OK

* You still need to install/update your database schema.
* This can be done by opening a web browser and going to:

http://144.38.201.40/fog/management

* Press [Enter] key when database is updated/installed.
If you would like to backup your FOG database you can do so using MySQL Administrator or by running the following command in a terminal window (Applications->System Tools->Terminal), this will save the backup in your home directory.

```
mysqldump --allow-keywords --x --v fog > fogbackup.sql
```

Your FOG database schema is not up to date, either because you have updated or this is a new FOG installation. If this is an upgrade, there will be a database backup stored on your FOG server defaulting under the folder /home/fogDBbackups. Should anything go wrong, this backup will enable you to return to the previous install if needed.

Are you sure you wish to install or update the FOG database?

Install/Update Now
* Copying binaries where needed...............................Done
* Enabling apache and fpm services on boot..................OK
* Creating SSL CA...........................................OK
* Creating SSL Private Key.................................OK
* Creating SSL Certificate................................OK
* Creating auth pub key and cert............................OK
* Resetting SSL Permissions................................OK
* Setting up Apache virtual host (no SSL)..................OK
* Starting and checking status of web services..............OK
* Changing permissions on apache log files................OK
* Backing up database......................................OK

* You still need to install/update your database schema.
* This can be done by opening a web browser and going to:

  http://144.38.201.40/fog/management

* Press [Enter] key when database is updated/installed.

* Setting up storage......................................OK
  Skipped
* Setting up and starting TFTP and PXE Servers...........
* Setting up exports file.................................OK
* Setting up and starting RPCBind.......................OK
* Setting up and starting NFS Server.................OK
* Linking FOG Logs to Linux Logs....................OK
* Linking FOG Service config /etc....................OK
* Ensuring node username and passwords match........Done

* Setup complete

You can now login to the FOG Management Portal using the information listed below. The login information is only if this is the first install.

This can be done by opening a web browser and going to:

http://144.38.201.40/fog/management

Default User Information
Username: fog
Password: password

joe@fog:~/.fog_1.5.0/bin$
is only if this is the first install.

This can be done by opening a web browser and going to:

http://144.38.201.40/fog/management

Default User Information
Username: fog
Password: password

```
joe@fog:~/fog_1.5.0/bin$ df -h
Filesystem   Size  Used  Avail  Use% Mounted on
udev         478M   0   478M     0%  /dev
tmpfs        100M  5.7M   94M    6%  /run
/dev/sda1    5.4G  2.7G  2.5G   52%  /
tmpfs         497M   0  497M     0%  /dev/shm
tmpfs         5.0M   0   5.0M     0%  /run/lock
tmpfs         497M   0  497M     0%  /sys/fs/cgroup
tmpfs         100M   0  100M     0%  /run/user/1001
```

```
joe@fog:~/fog_1.5.0/bin$ echo "not much space for my images... oh well"
not much space for my images... oh well
```

```
joe@fog:~/fog_1.5.0/bin$
```
joe@dhcp:/etc/dhcp$ echo "Have to add settings to dhcp server"
Have to add settings to dhcp server
joe@dhcp:/etc/dhcp$  

# could override global settings from above
option domain-name-servers 8.8.8.8;
option domain-name "mojojojo.ml";
option subnet-mask 255.255.255.224;
option routers 144.38.201.33;
default-lease-time 600;
max-lease-time 7200;
# file to look for on tftpd server
# filename "pxelinux.0"
# tftp server address
# next-server 144.38.201.35;
next-server 144.38.201.40;
filename "undionly.kpxe";
}

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

# subnet 10.152.187.0 netmask 255.255.255.0 
"dhcpd.conf" 139L, 4534C written
joe@dhcp:/etc/dhcp$ sudo service isc-dhcp-server restart
joe@dhcp:~$ echo "Now lets test netboot a client"
Now lets test netboot a client
joe@dhcp:~$
I am on the machine I want to capture an image of

```
joe@db:~$ echo "I am on the machine I want to capture an image of"
```

```
joe@db:~$ df -h
Filesystem  Size  Used  Avail  Use%  Mounted on
udev       225M  0      225M   0%  /dev
tmpfs      49M   1.9M  48M    4%  /run
/dev/sd51  8.2G  5.0G  2.8G   64%  /
tmpfs      245M  0     245M   0%  /dev/shm
tmpfs      5.0M  0     5.0M   0%  /run/lock
tmpfs      245M  0     245M   0%  /sys/fs/cgroup
tmpfs      49M   0     49M    0%  /run/user/1000
```
joe@db:~$ echo "I am on the machine I want to capture an image of"
I am on the machine I want to capture an image of
joe@db:~$ df -h
Filesystem  Size  Used  Avail  Use%  Mounted on
udev        225M  0  225M   0%  /dev
tmpfs       49M  1.9M  48M   4%  /run
/run/sda1   8.2G  5.0G  2.8G  64%  /
tmpfs       245M  0  245M   0%  /dev/shm
tmpfs       5.0M  0   5.0M  0%  /run/lock
tmpfs       245M  0  245M   0%  /sys/fs/cgroup
tmpfs       49M  0   49M   0%  /run/user/1000
joe@db:~$ echo "lets see?"
lets see?
joe@db:~$ sudo shutdown -h now
Connection to db.mojojojo.ml closed by remote host.
Connection to db.mojojojo.ml closed.
jfrancom@desdemona:~$ citv bootvm mojojojo_db n
Host is NOT registered!

Boot from hard disk
Run Memtest86+
Perform Full Host Registration and Inventory
Quick Registration and Inventory
Deploy Image
Join Multicast Session
Client System Information (Compatibility)
joe@fog:~$ echo "You have to hurry to see that screen"
You have to hurry to see that screen
joe@fog:~$
Host is NOT registered!

- Boot from hard disk
- Run Memtest86+
- Perform Full Host Registration and Inventory
- Quick Registration and Inventory
- Deploy Image
- Join Multicast Session
- Client System Information (Compatibility)
Starting logging: OK
Populating /dev using udev: udevd[2375]: error creating epoll fd: Function not implemented
done
Initializing random number generator... done.
### Host Management

#### Main Menu
- List All Hosts
- Create New Host
- Export Hosts
- Import Hosts

#### All Hosts

<table>
<thead>
<tr>
<th>Host ID</th>
<th>Host</th>
<th>Imaged</th>
<th>Task</th>
<th>Assigned Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>525400080046</td>
<td>Search...</td>
<td>Search...</td>
<td>No Data</td>
<td>Search...</td>
</tr>
</tbody>
</table>

#### Group Associations

Create new group
joe@dhcp:~$ echo "that is my new host"
that is my new host
joe@dhcp:~$
Host Tasks

- **Deploy**: Deploy action will send an image saved on the FOG server to the client computer with all included snapins.

- **Capture**: Capture will pull an image from a client computer that will be saved on the server.

- **Advanced**: View advanced tasks for this host.
we have to create an image first, before we can capture one
<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Linux  - (50)</td>
</tr>
<tr>
<td>Image Path</td>
<td>/images/ image_of_db</td>
</tr>
<tr>
<td>Image Type</td>
<td>Single Disk - Resizeable - (1)</td>
</tr>
<tr>
<td>Partition</td>
<td>Everything - (1)</td>
</tr>
<tr>
<td>Image Enabled</td>
<td>On</td>
</tr>
<tr>
<td>Replicate?</td>
<td>On</td>
</tr>
<tr>
<td>Compression</td>
<td>10</td>
</tr>
<tr>
<td>Image Manager</td>
<td>Partimage</td>
</tr>
<tr>
<td>Create Image</td>
<td>Add</td>
</tr>
</tbody>
</table>
Host Management Edit: db.mojojojo.ml

Main Menu
- List All Hosts
- Create New Host
- Export Hosts
- Import Hosts

Host Tasks
- **Deploy**
  - Deploy action will send an image saved on the FOG server to the client computer with all included snapins.

- **Capture**
  - Capture will pull an image from a client computer that will be saved on the server.

Advanced
- View advanced tasks for this host.
<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary MAC</td>
<td>52:54:00:08:00:46</td>
</tr>
<tr>
<td>Host description</td>
<td>Created by FOG Reg on April 3, 2018, 9:33 pm</td>
</tr>
<tr>
<td>Host Product Key</td>
<td></td>
</tr>
<tr>
<td>Host Image</td>
<td>- Please select an option -</td>
</tr>
<tr>
<td>Host Kernel</td>
<td></td>
</tr>
<tr>
<td>Host Kernel Arguments</td>
<td>image_of_db - (2)</td>
</tr>
<tr>
<td>Host Init</td>
<td></td>
</tr>
<tr>
<td>Host Primary Disk</td>
<td></td>
</tr>
<tr>
<td>Host BIOS Exit Type</td>
<td>- Please Select an option -</td>
</tr>
</tbody>
</table>
Host Management Edit: db.mojojojo.ml

Main Menu
- List All Hosts
- Create New Host
- Export Hosts
- Import Hosts

Host Tasks
- Deploy
  Deploy action will send an image saved on the FOG server to the client computer with all included snapins.
- Capture
  Capture will pull an image from a client computer that will be saved on the server.
- Advanced
  View advanced tasks for this host.
joe@fog:~$ echo "reboot that image"
reboot that image
joe@fog:~$
* Checking Operating System......................Linux
* Checking CPU Cores............................1
* Send method.....................................NFS
* Attempting to check in.........................Done
* Mounting File System..........................Done
* Checking Mounted File System...............Done
* Checking img variable is set...............Done
* Preparing to send image file to server
* Preparing backup location.....................Done
* Setting permission on /images/525400080046........Done
* Removing any pre-existing files..............Done
* Using Image: image_of_db
* Looking for Hard Disk.........................Done
* Reading Partition Tables.....................Done
* Using Hard Disk: /dev/sda
* Now FOG will attempt to capture the image using Partclone
* Checking for fixed partitions...............Done
* Getting Windows/Linux Partition Count........Done
* NTFS Partition count of: 0
* EXTFS Partition count of: 1
* Setting up any additional fixed parts
* Saving original partition table..............Done
* Saving original disk/parts UUIDs
* Shrinking Partitions on disk
* Checking extfs volume (/dev/sda1)..........Done