<https://www.sdnlab.com/3679.html>

因为Mininet的方便且易用，以及实验条件及真实设备的不足，它已经被越来越多的SDN学习者使用。但在Mininet使用中，安装使用的内置Open vSwitch版本都比较低，使用者无法进行发布的新版本的使用及验证。因此，本文主要是将更新升级Mininet内置的Open vSwitch版本升级，通过重新下载安装Open vSwitch并进行配置，获取并使用Open vSwitch较高版本。

1 **环境准备**

主要使用ubuntu-13.10 64位操作系统，Mininet版本为2.1.0，内部已使用的Open vSwitch版本是1.10.2。 在Ubuntu13.10系统中安装Mininet-2.1.0版本简单提一下。

* 1. **安装Mininet(四种方案)**：<http://mininet.org/download/>

选项1：Mininet VM安装（简单，推荐）

VM安装是安装Mininet 最简单也是最安全的方式

Step1. 下载[Mininet VM镜像](https://github.com/mininet/mininet/wiki/Mininet-VM-Images)。

Step2. 下载并安装虚拟化系统。我们推荐使用[VirtualBox](https://www.virtualbox.org/wiki/Downloads)（免费，GPL），因为它是免费的，适用于OS X，Windows和Linux（尽管在我们的测试中它比VMware稍慢）。您还可以将Qemu用于任何平台，适用于Windows或Linux的[VMware Workstation](https://www.vmware.com/products/workstation-pro.html)，适用于Mac的VMware Fusion或适用于Linux的KVM（免费，GPL）。

Step3. 注册mininet-discuss邮件列表。这是Mininet 支持和友好Mininet社区讨论的来源。;-)

Step4. 运行[VM安装注意事项](http://mininet.org/vm-setup-notes/)以登录到VM并根据需要进行自定义。

Step5. 遵循[演练](http://mininet.org/walkthrough/)熟悉Mininet命令和典型用法

选项2：从源代码进行本地安装

Step1.获取源代码

**git clone git://github.com/mininet/mininet**

**step2.查看Mininet版本**

**cd mininet**

**git tag # list available versions**

**#显式查看具体的Mininet版本**

**git checkout -b 2.2.1 2.2.1 # or whatever version you wish to install**

**cd ..**

**step3. 安装Mininet**

**mininet/util/install.sh [options]**

**#option包括：**

**-a：安装Mininet VM中包含的所有内容，包括Open vSwitch等依赖项以及OpenFlow wireshark解析器和POX等附加组件。默认情况下，这些工具将建立在您的主目录中创建的目录中。**

**-nfv：安装Mininet，OpenFlow交换机和Open vSwitch**

**-s mydir：在其他选项之前使用此选项将源/构建树放置在指定目录中而不是放在主目录中。**

**#示例：**

**To install everything (using another directory for build): install.sh -s mydir -a**

**To install Mininet + user switch + OVS (using your home dir): install.sh -nfv**

**To install Mininet + user switch + OVS (using another dir:) install.sh -s mydir –nfv**

**你可以找到其他有用的选项（例如安装OpenFlow wireshark解析器，如果它尚未包含在你的wireshark版本中），可以使用**

**install.sh -h**

选项3：从软件包安装

如果您运行的是最新的Ubuntu发行版，则可以安装Mininet软件包。请注意，这可能会给你一个较早版本的Mininet，但它可以是一个非常方便的入门方式。

首先，如果您正在升级或从之前安装的Mininet（如1.0）升级或已升级的版本的Open vSwitch（可能已编译并存储在其中）**/usr/local**，请确保*从以下位置删除早期版本的Mininet和Open vSwitch的任何痕迹*

**sudo rm -rf /usr/local/bin/mn /usr/local/bin/mnexec \**

**/usr/local/lib/python\*/\*/\*mininet\* \**

**/usr/local/bin/ovs-\* /usr/local/sbin/ovs-\***

然后，要确认您正在运行的是哪个操作系统版本，请运行该命令

**lsb\_release -a**

接下来，通过输入以下命令之一来安装基本Mininet包，这些命令对应于您正在运行的发行版：

**Mininet 2.1.0 on Ubuntu 14.10: sudo apt-get install mininet**

**Mininet 2.1.0 on Ubuntu 14.04: sudo apt-get install mininet**

**Mininet 2.0.0 on Ubuntu 12.04: sudo apt-get install mininet/precise-backports**

禁止Open VSwitch Controller开机自启动

**sudo service openvswitch-controller stop**

**sudo update-rc.d openvswitch-controller disable**

如果Open vSwitch无法正常工作，则可能需要重新构建其内核模块

**sudo dpkg-reconfigure openvswitch-datapath-dkms**

**sudo service openflow-switch restart**

测试安装

sudo mn --test pingall

Mininet安装并验证成功后检验Mininet环境

mn –version

ovs-vsctl --version

以下命令则安装OpenFlow交换机和wireshark

**git clone git://github.com/mininet/mininet**

**mininet/util/install.sh -fw**

选项4. 升级现有的Mininet安装

有很多方法可以做到这一点。如果您没有对Mininet进行任何更改，您通常可以

**cd mininet**

**git fetch**

**git checkout master # Or a specific version like 2.2.1**

**git pull**

**sudo make install**

作为一种替代方法，sudo make install您也可以这样做sudo make develop，它将创建从/usr/python/...源代码树到您的源代码树的符号链接。

请注意，这只会升级Mininet本身 - 任何其他组件（如Open vSwitch等）都可以根据需要单独升级。

附：

Mininet Installation/Configuration Notes

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Mininet 2.3.0d1

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The supported installation methods for Mininet are 1) using a

pre-built VM image, and 2) native installation on Ubuntu. You can also

easily create your own Mininet VM image (4).

(Other distributions may be supported in the future - if you would

like to contribute an installation script, we would welcome it!)

1. Easiest "installation" - use our pre-built VM image!

The easiest way to get Mininet running is to start with one of our

pre-built virtual machine images from <http://mininet.org/>

Boot up the VM image, log in, and follow the instructions on the

Mininet web site.

One advantage of using the VM image is that it doesn't mess with

your native OS installation or damage it in any way.

Although a single Mininet instance can simulate multiple networks

with multiple controllers, only one Mininet instance may currently

be run at a time, and Mininet requires root access in the machine

it's running on. Therefore, if you have a multiuser system, you

may wish to consider running Mininet in a VM.

2. Next-easiest option: use our Ubuntu package!

To install Mininet itself (i.e. `mn` and the Python API) on Ubuntu

12.10+:

sudo apt-get install mininet

Note: if you are upgrading from an older version of Mininet, make

sure you remove the old OVS from `/usr/local`:

sudo rm /usr/local/bin/ovs\*

sudo rm /usr/local/sbin/ovs\*

3. Native installation from source

3.1. Native installation from source on Ubuntu 12.04+

If you're reading this, you've probably already done so, but the

command to download the Mininet source code is:

git clone git://github.com/mininet/mininet.git

Note that the above git command will check out the latest and greatest

Mininet (which we recommend!) If you want to run the last tagged/released

version of Mininet, you can look at the release tags using

cd mininet

git tag

and then

git checkout <release tag>

where <release tag> is the release you want to check out.

If you are running Ubuntu, Debian, or Fedora, you may be able to use

our handy `install.sh` script, which is in `util/`.

\*WARNING: USE AT YOUR OWN RISK!\*

`install.sh` is a bit intrusive and may possibly damage your OS

and/or home directory, by creating/modifying several directories

such as `mininet`, `openflow`, `oftest`, `pox`, etc.. We recommend

trying it in a VM before trying it on a system you use from day to day.

Although we hope it won't do anything completely terrible, you may

want to look at the script before you run it, and you should make

sure your system and home directory are backed up just in case!

To install Mininet itself, the OpenFlow reference implementation, and

Open vSwitch, you may use:

util/install.sh -fnv

This should be reasonably quick, and the following command should

work after the installation:

sudo mn --test pingall

To install ALL of the software which we use for OpenFlow tutorials,

including POX, the OpenFlow WireShark dissector, the `oftest`

framework, and other potentially useful software, you may use:

util/install.sh -a

This takes about 4 minutes on our test system.

You can change the directory where the dependencies are installed using

the -s <directory> flag.

util/install.sh -s <directory> -a

3.2. Native installation from source on Fedora 18+.

As root execute the following operations:

\* install git

yum install git

\* create an user account (e.g. mininet) and add it to the wheel group

useradd [...] mininet

usermod -a -G wheel mininet

\* change the SElinux setting to permissive. It can be done

temporarily with:

setenforce 0

then login with the new account (e.g. mininet) and do the following:

\* clone the Mininet repository

git clone git://github.com/mininet/mininet.git

\* install Mininet, the OpenFlow reference implementation, and

Open vSwitch

util/install.sh -fnv

\* enable and start openvswitch

sudo systemctl enable openvswitch

sudo systemctl start openvswitch

\* test the mininet installation

sudo mn --test pingall

4. Creating your own Mininet/OpenFlow tutorial VM

Creating your own Ubuntu Mininet VM for use with the OpenFlow tutorial

is easy! First, create a new Ubuntu VM. Next, run two commands in it:

wget https://raw.github.com/mininet/mininet/master/util/vm/install-mininet-vm.sh

time install-mininet-vm.sh

Finally, verify that Mininet is installed and working in the VM:

sudo mn --test pingall

5. Installation on other Linux distributions

Although we don't support other Linux distributions directly, it

should be possible to install and run Mininet with some degree of

manual effort.

In general, you must have:

\* A Linux kernel compiled with network namespace support enabled

\* An compatible software switch such as Open vSwitch or

the Linux bridge.

\* Python, `bash`, `ping`, `iperf`, etc.

\* Root privileges (required for network device access)

We encourage contribution of patches to the `install.sh` script to

support other Linux distributions.

Good luck!

Mininet Team

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1. **OpenvSwitch安装**

2.1 下载Open vSwitch

我们升级Open vSwitch到目前最新的版本2.3.0（2014年8月14日发布），下载OpenvSwitch2.5.2（注：可下载自己需要安装的Open vSwitch版本）

cd /home

mkdir openvswitch

cd openvswitch

wget http://openvswitch.org/releases/openvswitch-2.5.2.tar.gz

tar -xzf openvswitch-2.5.2.tar.gz

cd openvswitch-2.5.2

注：为以防下文中生成的deb安装出现不必要的麻烦，建议新建目录openvswitch，在新建目录中下载Open vSwitch的包，以便后文生成的deb包在此目录下执行。

2.2 安装依赖

安装Open vSwitch需要如下依赖：

# apt-get install build-essential fakeroot

# apt-get install debhelper autoconf automake libssl-dev pkg-config bzip2 openssl python-all procps python-qt4 python-zope.interface python-twisted-conch

执行下面命令检查依赖是否已全部安装，没有安装的继续安装：

dpkg-checkbuilddeps

2.3 编译OpenvSwitch

构建Debian包

fakeroot debian/rules binary

执行此命令后，将生成用于安装Open vSwitch交换机的deb包。

2.4 安装Open vSwitch

1. 安装OpenvSwitch

cd ..   #即退出到新创建的openvswitch目录

dpkg -i \*.deb

(2) 禁止Open VSwitch Controller开机自启动

# /etc/init.d/openvswitch-controller stop

# update-rc.d openvswitch-controller disable

1. 重启OpenvSwitch

/etc/init.d/openvswitch-switch restart

2.5 验证安装

# ovs-vsctl --version