Ubuntu Packaging

2. Deploy Package

심경섭 (https://kssim.com)

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개요

개요

- 생성한 패키지를 PPA 에 업로드

- PPA 를 생성하고, 패키지를 만들때 사용한 Key 를 등록함

- 패키지를 만들때 사용한 Key 는 OpenPGP Key 로 등록되어야함
  - 등록이 되지 않으면, 패키지가 업로드 되지 않음

PGP 등록

IRC:

No IRC nicknames registered.

SSH keys:

kssim@ip-172-31-29-241
kssim@dev

OpenPGP keys:

0940EE77A7BA47A83D005C0B5B7EE9489FD41E43,
2F32792C570477228CCDED60CF9DAA29E92F93A9

Languages:

English

Time zone:

UTC (UTC+0000)

PGP 등록

Import an OpenPGP key

To start using an OpenPGP key with your Launchpad account, simply paste its fingerprint below. The key must be registered with the Ubuntu key server. (How to get the fingerprint)

Fingerprint: 3938 9B5B D2C0 E6C3 33EB D0F9 2252 D166 98F4 F5B0

Example: 27E0 7815 B47C 0397 90D5 8589 27D9 A27B F3F9 6058

Next, Launchpad will send email to you at ksub0912@gmail.com with instructions on finishing the process.

Import Key or Cancel

PGP 등록

```
➜  workspace gpg --fingerprint
/home/kssim/.gnupg/pubring.gpg
------------------------------
pub   2048R/98F4F5B0 2018-03-30
      Key fingerprint = 3938 9B5B D2C0 E6C3 33EB  D0F9 2252 D166 98F4 F5B0
uid                  KyeongSeob Sim <ksub0912@gmail.com>
sub   2048R/F0787046 2018-03-30
```

PGP 등록

Change your OpenPGP keys

A message has been sent to ksub0912@gmail.com, encrypted with the key 2048R/39389B5BD2C0E6C333EBD0F92252D16698F4F5B0. To confirm the key is yours, decrypt the message and follow the link inside.

PGP 등록

Hello,

This message contains the instructions for confirming registration of an OpenPGP key for use in Launchpad. The confirmation instructions have been encrypted with the OpenPGP key you have attempted to register. If you cannot read the unencrypted instructions below, it may be because your mail reader does not support automatic decryption of "ASCII armored" encrypted text.

Exact instructions for enabling this depends on the specific mail reader you are using. Please see this support page for more information:

https://help.launchpad.net/ReadingOpenPgpMail

For more general information on OpenPGP and related tools such as Gnu Privacy Guard (GPG), please see:

https://help.ubuntu.com/community/GnuPrivacyGuardHowto

-----BEGIN PGP MESSAGE-----
Version: GnuPG v1

hQEMAwEJwdrweHBGAQf/QH0PLfq6XGbY4jbXJn3urh4cSgMPb9QnKW3vZRS2wl1J
HpDRxV3hKzSv+riHxnlJ5jKpqS87eqjU5wA6W4WtXPbtQEYm8Xb2USn6+/CIZdXg
slHW+MAAnOrQByhcHOzeTDjH0BQc0+HXURs3gGg6aGPFXhmYK88ajkqpnEnTUaW6
T1NEgmQUd09W90v/Er+ph5fFKdIhwirvUAZgznHVgBmpQ3yQPfDFqviKKvLrVMm7
oOOS0yJ1uTPpJ1GBlOd6zevJVHijg6R3s1MzOV2NWXkX61keuNsZd5ubisBbWRUj
+OnVYTB5E/j0gtcg2t4jixes52noOYrUqSXxRf/S59LAtgH7aI5VQGo4beR4ifT4
ZkJwCP02yd88Z3DH97sWR7XF4juKOGS5I1Hr2fIRByeexjrx1w2Fgc9vKW3s04/d
EgXbmq0Rl5R2j4F9DbJWoda/TDCyawu+tzyvI6T01756XEnjcctLvkT3v8jgzlOZ
ZeSpaV7/kWfvQUJZ8I6UEU1JzR89pCbZdd+N8VbyY+pFMpgftGmHt10MJ4C2A6xN
Jyt5d81x/dz8mqMcLLchiAgyLCTBc3FA0O7fXfYDtASkoTkFoRVQR2wCH4LdWgUa
2zkC0wqRdqKs3RdsJlmfDOeYhaAA7B3TmpZAqt+Fsufwt7+bdiws6CjoIU3ZAyJn
PRzxlsjzYP5PbDUvx9nQ43L/5zThJvmriYB9Y7cu3lT/od/KJM4utD8JeDr/S88Z
+3xNrOmxz0/GiWRJL57H8YodYBr36TQvU0tvt2U4w6Tot6c6t9RYIuBVz35wk9u8
kG9Uumeo+XDn1nseU7q1NwslJSVvAmxg
=TGIR
-----END PGP MESSAGE-----
Thanks,

The Launchpad Team

PGP 등록

PGP 등록


```
➜  workspace gpg --decrypt key

You need a passphrase to unlock the secret key for
user: "KyeongSeob Sim <ksub0912@gmail.com>"
2048-bit RSA key, ID F0787046, created 2018-03-30 (main key ID 98F4F5B0)

gpg: gpg-agent is not available in this session
gpg: encrypted with 2048-bit RSA key, ID F0787046, created 2018-03-30
      "KyeongSeob Sim <ksub0912@gmail.com>"

Here are the instructions for confirming the OpenPGP key registration that we
received for use in Launchpad.

Requester details:

    User name     : KyeongSeob Sim
    Email address : ksub0912@gmail.com

Key details:

    Key type     : 2048R
    Fingerprint  : 39389B5BD2C0E6C333EBD0F92252D16698F4F5B0

UIDs:
    ksub0912@gmail.com

Please go here to finish adding the key to your Launchpad account:

    https://launchpad.net/token/6C1kFDWrjrrWnw2HFkjd
```

PGP 등록

Confirm OpenPGP key

Confirm the OpenPGP key 39389B5BD2C0E6C333EBD0F92252D16698F4F5B0 for KyeongSeob Sim

Cancel   Continue

PGP 등록

The key
2048R/39389B5BD2C0E6C333EBD0F92252D16698F4F5B0 was
successfully validated.

cts   ⓘ Authorized applications   ⓘ Manage commercial subscriptions

IRC: 🖉

No IRC nicknames registered.

OpenPGP keys: 🖉

0940EE77A7BA47A83D005C0B5B7EE9489FD41E43,
2F32792C570477228CCDED60CF9DAA29E92F93A9,
39389B5BD2C0E6C333EBD0F92252D16698F4F5B0

PPA 생성

PPA 생성

Existing PPAs

Read the current version of PPA Terms of Use before activating a new PPA.

URL:

http://ppa.launchpad.net/kssim/ `pkg-workshop-ppa`

At least one lowercase letter or number, followed by letters, numbers, dots, hyphens or pluses.
Keep this name short; it is used in URLs.

Display name:

`pkg-workshop-ppa`

A short title for the archive.

Description: (Optional)

A short description of the archive. URLs are allowed and will be rendered as links.

⚠️ A PPA's URL cannot be changed once it has had packages published. You will not be able to rename 👤 KyeongSeob Sim (`kssim`) until all such PPAs are deleted.

[Activate] or Cancel

패키지 업로드

업로드

- 생성한 패키지를 APT Server 에 업로드
  - APT : Advanced Packaging Tool

- Ubuntu 나 Debian 에서 제공해주는 공식 서버

- 이 외에도 사설로 구축한 APT Server 에도 업로드 가능

- Ubuntu 에서는 개인 PPA 에 업로드 할 수 있음
  - PPA : Personal Package Archive

PPA Upload

- "dput" 명령어를 사용해서 업로드
  - dput ppa:<Launchpad User Name>/<ppa-name> <package>.changes

- 업로드하기 전에, 패키지를 서명한 GPG Key 가 Launchpad 에 등록되어있어야함

- Source 의 change 로그를 올려야함

PPA Upload

PPA Upload

Launchpad PPA

[~kssim/ubuntu/ubuntu-workshop-ppa] hello_1.0.0ubuntu1_amd64.changes (Rejected)

To: KyeongSeob Sim

Reply-To: Launchpad PPA

Rejected:
Source/binary (i.e. mixed) uploads are not allowed.

hello (1.0.0ubuntu1) xenial; urgency=medium

 * Initial Release.

===

PPA Upload


```
→  debian_pkg_sample git:(master) x dput ppa:kssim/ubuntu-workshop-ppa  hello_1.0.0ubuntu1_source.changes
Checking signature on .changes
gpg: Signature made Fri 30 Mar 2018 11:42:56 AM UTC using RSA key ID 98F4F5B0
gpg: Good signature from "KyeongSeob Sim <ksub0912@gmail.com>"
Good signature on /home/kssim/workspace/2018-korea-ubuntu-packaging-workshop/debian_pkg_sample/hello_1.0.0ubuntu1_source.changes.
Checking signature on .dsc
gpg: Signature made Fri 30 Mar 2018 11:34:48 AM UTC using RSA key ID 98F4F5B0
gpg: Good signature from "KyeongSeob Sim <ksub0912@gmail.com>"
Good signature on /home/kssim/workspace/2018-korea-ubuntu-packaging-workshop/debian_pkg_sample/hello_1.0.0ubuntu1.dsc.
Uploading to ppa (via ftp to ppa.launchpad.net):
  Uploading hello_1.0.0ubuntu1.dsc: done.
  Uploading hello_1.0.0ubuntu1.tar.xz: done.
  Uploading hello_1.0.0ubuntu1_source.changes: done.
Successfully uploaded packages.
```

PPA Upload

Launchpad PPA

[~kssim/ubuntu/ubuntu-workshop-ppa/xenial] hello 1.0.0ubuntu1 (Accepted)

To: KyeongSeob Sim

Reply-To: Launchpad PPA

Accepted:
OK: hello_1.0.0ubuntu1.tar.xz
OK: hello_1.0.0ubuntu1.dsc
   -> Component: main Section: misc

hello (1.0.0ubuntu1) xenial; urgency=medium

 * Initial Release.

--

PPA Upload

Adding this PPA to your system

You can update your system with unsupported packages from this untrusted PPA by adding **ppa:kssim/ubuntu-workshop-ppa** to your system's Software Sources. ([Read about installing](#))

```
sudo add-apt-repository ppa:kssim/ubuntu-workshop-ppa
sudo apt-get update
```

▷ Technical details about this PPA

For questions and bugs with software in this PPA please contact 👤 KyeongSeob Sim.

PPA statistics

Activity

1 update added during the past month.

View package details

Overview of published packages

Published in: [Any series ⇅] [Filter]

1 → 1 of 1 result

First • Previous • **Next** ▶ • Last

Package	Version	Uploaded by
📦 hello	1.0.0ubuntu1 (Newer version available)	👤 KyeongSeob Sim

1 → 1 of 1 result

First • Previous • **Next** ▶ • Last

다운로드

다운로드

- 업로드한 PPA 에서 패키지를 다운받는 과정

- 패키지 업로드에 사용한 OpenGPG Key 를 시스템에 등록해야함
  - apt-key adv –keserver [key server] –recv-keys [key id]

- PPA 를 APT Repository 로 등록해야함
  - "add-apt-repository" 명령을 사용

다운로드

```
➜  debian_pkg_sample git:(master) ✗ gpg --list-keys
/home/kssim/.gnupg/pubring.gpg
------------------------------
pub   2048R/98F4F5B0 2018-03-30
uid                  KyeongSeob Sim <ksub0912@gmail.com>
sub   2048R/F0787046 2018-03-30


➜  debian_pkg_sample git:(master) ✗ sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 98F4F5B0
Executing: /tmp/tmp.LY8xJ7FOoT/gpg.1.sh --keyserver
keyserver.ubuntu.com
--recv-keys
98F4F5B0
gpg: requesting key 98F4F5B0 from hkp server keyserver.ubuntu.com
gpg: key 98F4F5B0: public key "KyeongSeob Sim <ksub0912@gmail.com>" imported
gpg: Total number processed: 1
gpg:               imported: 1  (RSA: 1)
```

다운로드


```
→  debian_pkg_sample git:(master) ✗ sudo add-apt-repository ppa:kssim/ubuntu-workshop-ppa

 More info: https://launchpad.net/~kssim/+archive/ubuntu/ubuntu-workshop-ppa
Press [ENTER] to continue or ctrl-c to cancel adding it

gpg: keyring `/tmp/tmpq582t6gw/secring.gpg' created
gpg: keyring `/tmp/tmpq582t6gw/pubring.gpg' created
gpg: requesting key D5C789A8 from hkp server keyserver.ubuntu.com
gpg: /tmp/tmpq582t6gw/trustdb.gpg: trustdb created
gpg: key D5C789A8: public key "Launchpad PPA for KyeongSeob Sim" imported
gpg: Total number processed: 1
gpg:               imported: 1  (RSA: 1)
OK
```

다운로드

```
➜  debian_pkg_sample git:(master) ✗ sudo apt-get update
Hit:1 http://ppa.launchpad.net/kssim/ubuntu-workshop-ppa/ubuntu xenial InRelease
Reading package lists... Done
➜  debian_pkg_sample git:(master) ✗ apt search hello
Sorting... Done
Full Text Search... Done
hello/xenial 1.0.0ubuntu1 amd64
  sample package.

➜  debian_pkg_sample git:(master) ✗ sudo apt-get install hello
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  hello
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 3,074 B of archives.
After this operation, 22.5 kB of additional disk space will be used.
Get:1 http://ppa.launchpad.net/kssim/ubuntu-workshop-ppa/ubuntu xenial/main amd64 hello amd64 1.0.0ubuntu1 [3,074 B]
Fetched 3,074 B in 0s (5,648 B/s)
Selecting previously unselected package hello.
(Reading database ... 89054 files and directories currently installed.)
Preparing to unpack .../hello_1.0.0ubuntu1_amd64.deb ...
Unpacking hello (1.0.0ubuntu1) ...
Setting up hello (1.0.0ubuntu1) ...
```

실습

실습 과제

1.   개인 PPA 를 만든다.

2.   만들어둔 Package 를 개인 PPA 에 업로드한다.

3.   업로드한 패키지를 다운로드한다.

형상 관리|

Git

- 소스 코드의 형상을 관리하기 위한 방안으로 Git 을 사용함

- Git 에서 제공해주는 패키징 툴이 있음
  - git-buildpackage 를 설치

- Git 사용자/이메일 등록을 먼저 해야함

Git 사용자 등록

- 전역 설정으로 git 의 사용자와 이메일을 등록

- "git config" 명령을 사용

```
kssim@dev:~/hello_git$ git config --global user.email "ksub0912@gmail.com"
kssim@dev:~/hello_git$ git config --global user.name "KyeongSeob Sim"
```

소스 코드 등록

- 소스 코드의 디렉토리로 이동

- "git init" 명령을 사용해 ".git" 폴더 생성

- 관련된 소스 코드 "add"

- "commit"

소스 코드 등록


```
kssim@dev:~/hello_git$ ls -a
.   ..   debian   src
kssim@dev:~/hello_git$ git init
Initialized empty Git repository in /home/kssim/hello_git/.git/
kssim@dev:~/hello_git$ ls -a
.   ..   debian   .git   src
kssim@dev:~/hello_git$ git add debian src
kssim@dev:~/hello_git$ git status
On branch master

Initial commit

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)

        new file:   debian/README
        new file:   debian/README.Debian
        new file:   debian/README.source
        new file:   debian/changelog
        new file:   debian/compat
        new file:   debian/control
        new file:   debian/copyright
        new file:   debian/rules
        new file:   debian/source/format
        new file:   src/Makefile
        new file:   src/hello.c
```

소스 코드 등록

Packaging

- "gbp" 명령을 사용
  - gbp : git build package

Packaging

Packaging


```
dpkg-buildpackage: full upload; Debian-native package (full source is included)
Now running lintian...
W: hello source: out-of-date-standards-version 3.9.6 (current is 3.9.7)
E: hello: helper-templates-in-copyright
W: hello: copyright-has-url-from-dh_make-boilerplate
E: hello: copyright-contains-dh_make-todo-boilerplate
W: hello: readme-debian-contains-debmake-template
Finished running lintian.
```

Branch

Tagging

- 소스 코드의 형상을 유지하기 위한 또 하나의 방법

- git 에서 제공해주는 명령을 사용해서 tag 를 생성

- Upstream tag 와 Debian tag 가 있음

Upstream Tag

- "git tag" 명령을 사용

- Tag 의 이름을 지정할 수 있음

Upstream Tag

```
kssim@dev:~/hello_git$ git tag -a upstream/1.0.0 -m "Upstream tagging v1.0.0"
kssim@dev:~/hello_git$ git tag
upstream/1.0.0
```

Debian Tag

- "gbp buildpackage" 명령을 사용

- Tag 의 이름이 "debian/버전" 형태로 고정됨

- 버전은 changelog 에 있는 마지막 버전으로 표기됨

Debian Tag

QnA