

## 0. Instructions

Please complete the following take home test and return a plain text file or PDF with the answers to all questions. If you do not know the answers, you are encouraged to find them.

## 1. Coding

### Chunkify Function

Please write code that implements the function. The example function result is given in Python, you may implement using the language you are most comfortable with, and include the use of standard libraries where appropriate.

```
# Groups characters from an input string into fixed length chunks
# with a given fill value
# Example:
#     chunkify('ABCDEFGH', 3, 'x') -> ['ABC', 'DEF', 'Gxx']
def chunkify(string, chunk_length, fill='x'):
    pass
```

## 2. Debugging

### Analyze Failures

Get this KVM [qcow2 image](#)

Please show the commands you use to start via libvirt with this [XML](#).

To login use

- User: ubuntu
- Password: ubuntu
- SSH server runs by default and guest does dhcp (or use the serial console)

In that image clarify the following things:

- Apache is not starting, why?
- What is going on with `/var/crash/_usr_sbin_postconf.1000.crash` (use [debug symbols](#) and [apport-retrace](#) / [apport-unpack](#) to get started)

### Makefile Weirdness

It was determined that a certain linker flag was causing problems in the build of a package, so a change was added to `debian/rules` to remove that flag:

```
override_dh_auto_build:
    CFLAGS="$(CFLAGS) $(CPPFLAGS)" \
    LDFLAGS="$(dpkg-buildflags --get LDFLAGS \
    | sed -e 's/-Wl,-Bsymbolic-functions//')" \
    dh_auto_build
```

The flag was removed from LDFLAGS via a simple sed expression. It turns out this change actually made LDFLAGS empty. Why?

## 3. Packaging

Note: Even if some of that is new to you, you can find most of what you need on Ubuntu and Debian wiki pages.

### Package versioning

Given a package in Ubuntu with the following version string: **1.3-4ubuntu5.2~ppa2**

Please answer these questions giving as much detail as you need. If you have to look things up, give us links to where you looked things up.

- a) What is the upstream version?
- b) What is the meaning of the "~" (tilde) character, and why was it used there?
- c) Is this a sync from a Debian package or does it have Ubuntu modifications? Why?
- d) If you were going to prepare a change to that package and upload it to the same place where it is, what would the new version string be and why?

## 4. Testing

### ISO Testing

Download the latest Ubuntu Server ISO from the link below:

<http://cdimage.ubuntu.com/ubuntu-server/bionic/daily-live/current/bionic-live-server-amd64.iso>

What install scenarios would you propose to test using the above ISO? For example, the simplest test is to install with the default options. What other scenarios exist? Not looking for how (e.g. automation mechanism), but rather what paths and inputs would you test.

## 5. OSS Participation and involvement

### Code

Point us to or share with us code that you are especially proud of and explain why you are proud of it.

### Open Source

If you have participated in open source software previously, please point us to public repos that you have participated in or describe your involvement.

### Community

If you have common community based accounts like Launchpad, Github, Gitlab, Ask Ubuntu, Stack Overflow, please point to them here.