

# Wang\_Xiaoxin\_assignment5b

November 30, 2018

## 0.1 Download and extract the CIFAR10 dataset

More info here: <https://www.cs.toronto.edu/~kriz/cifar.html>

```
In [0]: !wget https://www.cs.toronto.edu/~kriz/cifar-10-python.tar.gz
```

```
--2018-11-29 23:13:45-- https://www.cs.toronto.edu/~kriz/cifar-10-python.tar.gz
Resolving www.cs.toronto.edu (www.cs.toronto.edu)... 128.100.3.30
Connecting to www.cs.toronto.edu (www.cs.toronto.edu)|128.100.3.30|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 170498071 (163M) [application/x-gzip]
Saving to: cifar-10-python.tar.gz.1
```

```
cifar-10-python.tar 100%[=====>] 162.60M 4.09MB/s in 24s
```

```
2018-11-29 23:14:09 (6.66 MB/s) - cifar-10-python.tar.gz.1 saved [170498071/170498071]
```

```
In [0]: !echo Extracting data
        !tar xf cifar-10-python.tar.gz
        !echo Done extracting
```

```
Extracting data
Done extracting
```

## 0.2 Load the images and convert to a format for TensorFlow

```
In [0]: import pickle
        import numpy as np
        from keras.utils import to_categorical

        def cifar_to_2d(images):
            images = np.array(images, dtype='float') / 255
            images = images.reshape([-1, 3, 32, 32]) # Convert raw data to 2D images with 3 c
            images = images.transpose(0, 2, 3, 1) # Put the channels dimension last (TensorFl
```

```

        return images

train_X = np.zeros(shape=[50000, 32, 32, 3], dtype=float) # Placeholder for 50k images
train_y = np.zeros(shape=[50000, 10], dtype=int) # 1-hot encoding 10 classes
for i in range(1, 6):
    print('Loading training set ' + str(i))
    with open('cifar-10-batches-py/data_batch_' + str(i), 'rb') as infile:
        img_dict = pickle.load(infile, encoding='bytes')
        train_X[(i - 1) * 10000:i * 10000, :] = cifar_to_2d(img_dict[b'data'])
        train_y[(i - 1) * 10000:i * 10000, :] = to_categorical(img_dict[b'labels'])

print('Loading testing set')
with open('cifar-10-batches-py/test_batch', 'rb') as infile:
    img_dict = pickle.load(infile, encoding='bytes')
    test_X = cifar_to_2d(img_dict[b'data'])
    test_y = to_categorical(img_dict[b'labels'])

# Choose a random 10% of training data to use as the validation set.
np.random.seed(11798)
val_i = np.random.choice(len(train_X), 5000, replace=False)
val_X = train_X[val_i]
val_y = train_y[val_i]
train_X = train_X[~np.isin(np.arange(len(train_X)), val_i)]
train_y = train_y[~np.isin(np.arange(len(train_y)), val_i)]

print(val_X.shape) # Should now be 5000 32x32 images with 3 channels
print(val_y.shape) # Should now be 5000 one-hot labels with 10 classes
print(train_X.shape) # Should now be 45000 32x32 images with 3 channels
print(train_y.shape) # Should now be 45000 one-hot labels with 10 classes

```

```

Loading training set 1
Loading training set 2
Loading training set 3
Loading training set 4
Loading training set 5
Loading testing set
(5000, 32, 32, 3)
(5000, 10)
(45000, 32, 32, 3)
(45000, 10)

```

### 0.3 Design a convolutional model for classifying the images

```
In [0]: from keras import models, layers, optimizers
```

```

# Here we design a model using the "functional" Keras API.
m_input = layers.Input(shape=train_X[0].shape) # Use the shape of the first image as
m = m_input

#m = layers.Dropout(rate=0.2)(m) # using dropout here will not improve

m = layers.Conv2D(filters=100,kernel_size=(2, 2))(m) # https://keras.io/layers/convol

#m = layers.convolutional.SeparableConv2D(filters=100,kernel_size=(2,2))(m) # this me

m = layers.Activation('relu')(m)

m = layers.advanced_activations.LeakyReLU(alpha=0.35)(m)# this layer helped a litte

m = layers.MaxPooling2D(pool_size=(2, 2))(m) # https://keras.io/layers/pooling/

m = layers.Flatten()(m)

m = layers.Dense(50, activation='relu')(m)# used to be 60: 92.96% After several tests

m = layers.Dropout(rate=0.1)(m) # 92.8%->93.14%: using dropout here increase 0.3%

m = layers.Dense(10, activation='softmax')(m) # activation used to be 'relu'. I found

m_output = m

model = models.Model(m_input, m_output)

```

```

#opt = optimizers.RMSprop(lr=.001) # 34.24
opt = optimizers.RMSprop(lr=0.001, rho=0.9, epsilon=1e-06) # 0.001 is the best lr. an
#opt = optimizers.Adagrad(lr=.001) # 34.88
#opt = optimizers.Adadelta(lr=1.0, rho=0.95, epsilon=1e-06) # 46
#opt = optimizers.Adamax(lr=0.002, beta_1=0.9, beta_2=0.999, epsilon=1e-08) #36.59
#opt = optimizers.Nadam(lr=0.002, beta_1=0.9, beta_2=0.999, epsilon=1e-08, schedule_de

# I tested out all the optimizers above and found out rmsprop is the best with lr at 0

model.compile(loss='binary_crossentropy', optimizer=opt, metrics=['accuracy']) # lo

# The accuracy rate in the end is 93.12%

model.summary()

```

Layer (type)	Output Shape	Param #
input_36 (InputLayer)	(None, 32, 32, 3)	0
conv2d_36 (Conv2D)	(None, 31, 31, 100)	1300
activation_37 (Activation)	(None, 31, 31, 100)	0
leaky_re_lu_34 (LeakyReLU)	(None, 31, 31, 100)	0
max_pooling2d_35 (MaxPooling)	(None, 15, 15, 100)	0
flatten_35 (Flatten)	(None, 22500)	0
dense_69 (Dense)	(None, 50)	1125050
dropout_17 (Dropout)	(None, 50)	0
dense_70 (Dense)	(None, 10)	510

=====  
 Total params: 1,126,860  
 Trainable params: 1,126,860  
 Non-trainable params: 0  
 =====

## 0.4 Train and validate the model

All your hyperparameter tuning needs to be done here!

```
In [0]: model.fit(train_X, train_y, batch_size=128, epochs=10, validation_data=(val_X, val_y))
```

Train on 45000 samples, validate on 5000 samples

```
Epoch 1/10
45000/45000 [=====] - 13s 287us/step - loss: 0.2633 - acc: 0.9039 - va
Epoch 2/10
45000/45000 [=====] - 11s 235us/step - loss: 0.2236 - acc: 0.9139 - va
Epoch 3/10
45000/45000 [=====] - 11s 237us/step - loss: 0.2080 - acc: 0.9195 - va
Epoch 4/10
45000/45000 [=====] - 10s 225us/step - loss: 0.1982 - acc: 0.9228 - va
Epoch 5/10
45000/45000 [=====] - 10s 227us/step - loss: 0.1902 - acc: 0.9259 - va
Epoch 6/10
45000/45000 [=====] - 10s 226us/step - loss: 0.1841 - acc: 0.9278 - va
Epoch 7/10
45000/45000 [=====] - 10s 226us/step - loss: 0.1783 - acc: 0.9301 - va
Epoch 8/10
45000/45000 [=====] - 10s 226us/step - loss: 0.1729 - acc: 0.9325 - va
Epoch 9/10
45000/45000 [=====] - 10s 230us/step - loss: 0.1687 - acc: 0.9342 - va
Epoch 10/10
45000/45000 [=====] - 11s 247us/step - loss: 0.1647 - acc: 0.9357 - va
```

Out[0]: <keras.callbacks.History at 0x7fbbb9f47fd0>

## 0.5 Evaluate the FINAL model on testing data

Only run once, when you are finished adjusting your model

```
In [0]: loss, acc = model.evaluate(test_X, test_y)
        print('Test accuracy:', acc)
```

```
10000/10000 [=====] - 2s 203us/step
Test accuracy: 0.9311999886512756
```

## 0.6 Exporting your results to PDF

NOTE: This currently only seems to work in the Chrome browser

1. Download your notebook with *File* -> *Download .ipynb*
2. Rename with your name like in other assignments, for example  
bosch\_nigel\_assignment5b.ipynb
3. Upload to the *Files* pane on the left side of the screen
4. Run the command in the next cell (with your filename) to convert to PDF
5. Click *Refresh* in the Files pane on the left
6. Double-click the PDF to download it

```
In [0]: !apt install pandoc
        !apt install texlive-xetex
        !jupyter nbconvert --to pdf lastname_firstname_assignmentXX.ipynb
```

Reading package lists... Done

Building dependency tree

Reading state information... Done

The following additional packages will be installed:

liblua5.1-0 libluajit-5.1-2 libluajit-5.1-common libyaml-0-2 pandoc-data

Suggested packages:

texlive-latex-recommended texlive-xetex texlive-luatex pandoc-citeproc  
texlive-latex-extra context wkhtmltopdf

The following NEW packages will be installed:

liblua5.1-0 libluajit-5.1-2 libluajit-5.1-common libyaml-0-2 pandoc  
pandoc-data

0 upgraded, 6 newly installed, 0 to remove and 5 not upgraded.

Need to get 7,150 kB of archives.

After this operation, 53.8 MB of additional disk space will be used.

Get:1 http://archive.ubuntu.com/ubuntu bionic/main amd64 libyaml-0-2 amd64 0.1.7-2ubuntu3 [47.1 kB]

Get:2 http://archive.ubuntu.com/ubuntu bionic/universe amd64 liblua5.1-0 amd64 5.1.5-8.1build2 [114 kB]

Get:3 http://archive.ubuntu.com/ubuntu bionic/universe amd64 libluajit-5.1-common all 2.1.0~beta3+dfsg-5.1 [14.1 kB]

Get:4 http://archive.ubuntu.com/ubuntu bionic/universe amd64 libluajit-5.1-2 amd64 2.1.0~beta3+dfsg-5.1 [114 kB]

Get:5 http://archive.ubuntu.com/ubuntu bionic/universe amd64 pandoc-data all 1.19.2.4~dfsg-1build4 [1,141 kB]

Get:6 http://archive.ubuntu.com/ubuntu bionic/universe amd64 pandoc amd64 1.19.2.4~dfsg-1build4 [5,889 kB]

Fetched 7,150 kB in 2s (4,605 kB/s)

Selecting previously unselected package libyaml-0-2:amd64.

(Reading database ... 22298 files and directories currently installed.)

Preparing to unpack .../0-libyaml-0-2\_0.1.7-2ubuntu3\_amd64.deb ...

Unpacking libyaml-0-2:amd64 (0.1.7-2ubuntu3) ...

Selecting previously unselected package liblua5.1-0:amd64.

Preparing to unpack .../1-liblua5.1-0\_5.1.5-8.1build2\_amd64.deb ...

Unpacking liblua5.1-0:amd64 (5.1.5-8.1build2) ...

Selecting previously unselected package libluajit-5.1-common.

Preparing to unpack .../2-libluajit-5.1-common\_2.1.0~beta3+dfsg-5.1\_all.deb ...

Unpacking libluajit-5.1-common (2.1.0~beta3+dfsg-5.1) ...

Selecting previously unselected package libluajit-5.1-2:amd64.

Preparing to unpack .../3-libluajit-5.1-2\_2.1.0~beta3+dfsg-5.1\_amd64.deb ...

Unpacking libluajit-5.1-2:amd64 (2.1.0~beta3+dfsg-5.1) ...

Selecting previously unselected package pandoc-data.

Preparing to unpack .../4-pandoc-data\_1.19.2.4~dfsg-1build4\_all.deb ...

Unpacking pandoc-data (1.19.2.4~dfsg-1build4) ...

Selecting previously unselected package pandoc.

Preparing to unpack .../5-pandoc\_1.19.2.4~dfsg-1build4\_amd64.deb ...

Unpacking pandoc (1.19.2.4~dfsg-1build4) ...

Setting up libluajit-5.1-common (2.1.0~beta3+dfsg-5.1) ...

Setting up pandoc-data (1.19.2.4~dfsg-1build4) ...

Setting up libyaml-0-2:amd64 (0.1.7-2ubuntu3) ...

Processing triggers for libc-bin (2.27-3ubuntu1) ...

```

Setting up liblua5.1-2:amd64 (2.1.0~beta3+dfsg-5.1) ...
Setting up liblua5.1-0:amd64 (5.1.5-8.1build2) ...
Setting up pandoc (1.19.2.4~dfsg-1build4) ...
Processing triggers for libc-bin (2.27-3ubuntu1) ...
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fonts-droid-fallback fonts-lato fonts-lmodern fonts-noto-mono fonts-texgyre
  javascript-common libauthen-sasl-perl libavahi-client3 libavahi-common-data
  libavahi-common3 libcairo2 libcups2 libcupsfilters1 libcupsimage2
  libdata-dump-perl libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2
  libdrm-radeon1 libencode-locale-perl libfile-basedir-perl
  libfile-desktopentry-perl libfile-listing-perl libfile-mimeinfo-perl
  libfont-afm-perl libfontenc1 libgl1 libgl1-mesa-dri libgl1-mesa-glx
  libglx-mesa0 libglx0 libgs9 libgs9-common libhtml-form-perl
  libhtml-format-perl libhtml-parser-perl libhtml-tagset-perl
  libhtml-tree-perl libhttp-cookies-perl libhttp-daemon-perl libhttp-date-perl
  libhttp-message-perl libhttp-negotiate-perl libidn11 libijs-0.35
  libio-html-perl libio-socket-ssl-perl libipc-system-simple-perl libjbig0
  libjbig2dec0 libjs-jquery libkpathsea6 liblcms2-2 liblvm6.0
  liblwp-mediatypes-perl liblwp-protocol-https-perl libmailtools-perl
  libnet-dbus-perl libnet-http-perl libnet-smtp-ssl-perl libnet-ssleay-perl
  libnspr4 libnss3 libpaper-utils libpaper1 libpciaccess0 libpixmap-1-0
  libpoppler73 libpotrace0 libptexenc1 libruby2.5 libsensors4 libsynctex1
  libtexlua52 libtexlua52 libtext-iconv-perl libtie-ixhash-perl libtiff5
  libtimedate-perl libtry-tiny-perl liburi-perl libutempter0 libwww-perl
  libwww-robotrules-perl libx11-protocol-perl libxaw7 libxcb-glx0
  libxcb-render0 libxcb-shape0 libxcb-shm0 libxcomposite1 libxcursor1
  libxdamage1 libxfixes3 libxi6 libxinerama1 libxml-parser-perl
  libxml-twig-perl libxml-xpathengine-perl libxmu6 libxmuu1 libxpm4 libxrandr2
  libxt6 libxtst6 libxv1 libxxf86dga1 libxxf86vm1 libzzip-0-13 lmodern netbase
  perl-openssl-defaults poppler-data preview-latex-style rake ruby
  ruby-did-you-mean ruby-minitest ruby-net-telnet ruby-power-assert
  ruby-test-unit ruby2.5 rubygems-integration shared-mime-info tclutils tcl
  tcl8.6 tex-common tex-gyre texlive-base texlive-binaries
  texlive-fonts-recommended texlive-latex-base texlive-latex-extra
  texlive-latex-recommended texlive-pictures texlive-plain-generic tipa tk
  tk8.6 x11-utils x11-xserver-utils xbitmaps xdg-utils xterm

```

#### Suggested packages:

```

  fonts-noto apache2 | lighttpd | httpd libdigest-hmac-perl libgssapi-perl
  cups-common liblcms2-utils libcrypt-ssleay-perl pciutils lm-sensors
  libauthen-ntlm-perl libunicode-map8-perl libunicode-string-perl
  xml-twig-tools poppler-utils ghostscript fonts-japanese-mincho
  | fonts-ipafont-mincho fonts-japanese-gothic | fonts-ipafont-gothic
  fonts-arphic-ukai fonts-arphic-uming fonts-nanum ri ruby-dev bundler
  tcl-tclreadline debhelper gv | postscript-viewer perl-tk xpdf-reader
  | pdf-viewer texlive-fonts-recommended-doc texlive-latex-base-doc

```

```
python-pygments icc-profiles libfile-which-perl
libspreadsheet-parseexcel-perl texlive-latex-extra-doc
texlive-latex-recommended-doc texlive-pstricks dot2tex prerex ruby-tcltk
| libtcltk-ruby texlive-pictures-doc vprerex mesa-utils nickle cairo-5c
xorg-docs-core xfonts-cyrillic
```

The following NEW packages will be installed:

```
fonts-droid-fallback fonts-lato fonts-lmodern fonts-noto-mono fonts-texgyre
javascript-common libauthen-sasl-perl libavahi-client3 libavahi-common-data
libavahi-common3 libcairo2 libcups2 libcupsfilters1 libcupsimage2
libdata-dump-perl libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2
libdrm-radeon1 libencode-locale-perl libfile-basedir-perl
libfile-desktopentry-perl libfile-listing-perl libfile-mimeinfo-perl
libfont-afm-perl libfontenc1 libgl1 libgl1-mesa-dri libgl1-mesa-glx
libglx-mesa0 libglx0 libgs9 libgs9-common libhtml-form-perl
libhtml-format-perl libhtml-parser-perl libhtml-tagset-perl
libhtml-tree-perl libhttp-cookies-perl libhttp-daemon-perl libhttp-date-perl
libhttp-message-perl libhttp-negotiate-perl libidn11 libijs-0.35
libio-html-perl libio-socket-ssl-perl libipc-system-simple-perl libjbig0
libjbig2dec0 libjs-jquery libkpathsea6 liblcms2-2 libllvm6.0
liblwp-mediatypes-perl liblwp-protocol-https-perl libmailtools-perl
libnet-dbus-perl libnet-http-perl libnet-smtp-ssl-perl libnet-ssleay-perl
libnspr4 libnss3 libpaper-utils libpaper1 libpciaccess0 libpixman-1-0
libpoppler73 libpotrace0 libptexenc1 libruby2.5 libsensors4 libsyntax1
libtexlua52 libtexlua52 libtext-iconv-perl libtie-ixhash-perl libtiff5
libtimedate-perl libtry-tiny-perl liburi-perl libutempter0 libwww-perl
libwww-robotrules-perl libx11-protocol-perl libxaw7 libxcb-glx0
libxcb-render0 libxcb-shape0 libxcb-shm0 libxcomposite1 libxcursor1
libxdamage1 libxfixes3 libxi6 libxinerama1 libxml-parser-perl
libxml-twig-perl libxml-xpathengine-perl libxmu6 libxmuu1 libxpm4 libxrandr2
libxt6 libxtst6 libxv1 libxxf86dga1 libxxf86vm1 libzzip-0-13 lmodern netbase
perl-openssl-defaults poppler-data preview-latex-style rake ruby
ruby-did-you-mean ruby-minitest ruby-net-telnet ruby-power-assert
ruby-test-unit ruby2.5 rubygems-integration shared-mime-info t1utils tcl
tcl8.6 tex-common tex-gyre texlive-base texlive-binaries
texlive-fonts-recommended texlive-latex-base texlive-latex-extra
texlive-latex-recommended texlive-pictures texlive-plain-generic
texlive-xetex tipa tk tk8.6 x11-utils x11-xserver-utils xbitmaps xdg-utils
xterm
```

0 upgraded, 146 newly installed, 0 to remove and 5 not upgraded.

Need to get 175 MB of archives.

After this operation, 688 MB of additional disk space will be used.

```
Get:1 http://archive.ubuntu.com/ubuntu bionic/main amd64 fonts-droid-fallback all 1:6.0.1r16-1
Get:2 http://archive.ubuntu.com/ubuntu bionic/main amd64 fonts-lato all 2.0-2 [2,698 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxinerama1 amd64 2:1.1.3-1 [7,908 B]
Get:4 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxxf86dga1 amd64 2:1.1.4-1 [13.7 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxxf86vm1 amd64 1:1.1.4-1 [10.6 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/main amd64 poppler-data all 0.4.8-2 [1,479 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic/main amd64 tex-common all 6.09 [33.0 kB]
```



Get:8 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libidn11 amd64 1.33-2.1ubuntu1 [45.7 kB]  
 Get:9 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libtext-iconv-perl amd64 1.7-5build6 [12.7 kB]  
 Get:10 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 netbase all 5.4 [12.7 kB]  
 Get:11 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 shared-mime-info amd64 1.9-2 [426 kB]  
 Get:12 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libxmuu1 amd64 2:1.1.2-2 [9,674 B]  
 Get:13 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 fonts-lmodern all 2.004.5-3 [4,551 kB]  
 Get:14 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 fonts-noto-mono all 20171026-2 [75.5 kB]  
 Get:15 <http://archive.ubuntu.com/ubuntu> bionic/universe amd64 fonts-texgyre all 20160520-1 [8,751 kB]  
 Get:16 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 javascript-common all 11 [6,066 B]  
 Get:17 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libavahi-common-data amd64 0.7-3ubuntu1 [11.9 kB]  
 Get:18 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libavahi-common3 amd64 0.7-3ubuntu1 [7,112 B]  
 Get:19 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libavahi-client3 amd64 0.7-3ubuntu1 [19.5 kB]  
 Get:20 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libpixmap-1-0 amd64 0.34.0-2 [229 kB]  
 Get:21 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libxcb-render0 amd64 1.13-1 [14.7 kB]  
 Get:22 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libxcb-shm0 amd64 1.13-1 [5,572 B]  
 Get:23 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libcairo2 amd64 1.15.10-2 [580 kB]  
 Get:24 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libcups2 amd64 2.2.7-1ubuntu2 [354 kB]  
 Get:25 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libjbig0 amd64 2.1-3.1build1 [26.7 kB]  
 Get:26 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libtiff5 amd64 4.0.9-5 [152 kB]  
 Get:27 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libcupsfilters1 amd64 1.20.2-0ubuntu1 [11.9 kB]  
 Get:28 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libcupsimage2 amd64 2.2.7-1ubuntu2 [11.9 kB]  
 Get:29 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libdata-dump-perl all 1.23-1 [27.0 kB]  
 Get:30 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libdrm-amdgpu1 amd64 2.4.91-2 [19.0 kB]  
 Get:31 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libpciaccess0 amd64 0.14-1 [17.9 kB]  
 Get:32 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libdrm-intel1 amd64 2.4.91-2 [59.8 kB]  
 Get:33 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libdrm-nouveau2 amd64 2.4.91-2 [16.5 kB]  
 Get:34 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libdrm-radeon1 amd64 2.4.91-2 [21.7 kB]  
 Get:35 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libencode-locale-perl all 1.05-1 [12.7 kB]  
 Get:36 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libipc-system-simple-perl all 1.25-4 [12.7 kB]  
 Get:37 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libfile-basedir-perl all 0.07-1 [16.9 kB]  
 Get:38 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 liburi-perl all 1.73-1 [77.2 kB]  
 Get:39 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libfile-desktopentry-perl all 0.22-1 [12.7 kB]  
 Get:40 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libtimedate-perl all 2.3000-2 [37.5 kB]  
 Get:41 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libhttp-date-perl all 6.02-1 [10.4 kB]  
 Get:42 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libfile-listing-perl all 6.04-1 [9,751 B]  
 Get:43 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libfile-mimeinfo-perl all 0.28-1 [41.9 kB]  
 Get:44 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libfont-afm-perl all 1.20-2 [13.2 kB]  
 Get:45 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libfontenc1 amd64 1:1.1.3-1 [13.9 kB]  
 Get:46 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libllvm6.0 amd64 1:6.0-1ubuntu2 [14.5 kB]  
 Get:47 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libsensors4 amd64 1:3.4.0-4 [28.8 kB]  
 Get:48 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libgl1-mesa-dri amd64 18.0.5-0ubuntu0.18.04.1 [10.5 MB]  
 Get:49 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libxcb-glx0 amd64 1.13-1 [22.0 kB]  
 Get:50 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libxdamage1 amd64 1:1.1.4-3 [6,934 B]  
 Get:51 <http://archive.ubuntu.com/ubuntu> bionic/main amd64 libxfixes3 amd64 1:5.0.3-1 [10.8 kB]  
 Get:52 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libglx-mesa0 amd64 18.0.5-0ubuntu0.18.04.1 [10.5 MB]  
 Get:53 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libglx0 amd64 1.0.0-2ubuntu2 [10.5 MB]  
 Get:54 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libgl1 amd64 1.0.0-2ubuntu2.1 [10.5 MB]  
 Get:55 <http://archive.ubuntu.com/ubuntu> bionic-updates/main amd64 libgl1-mesa-glx amd64 18.0.5-0ubuntu0.18.04.1 [10.5 MB]

Get:56 http://archive.ubuntu.com/ubuntu bionic/main amd64 libijs-0.35 amd64 0.35-13 [15.5 kB]  
 Get:57 http://archive.ubuntu.com/ubuntu bionic/main amd64 libjbig2dec0 amd64 0.13-6 [55.9 kB]  
 Get:58 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 liblcms2-2 amd64 2.9-1ubuntu1 [15.5 kB]  
 Get:59 http://archive.ubuntu.com/ubuntu bionic/main amd64 libpaper1 amd64 1.1.24+nmu5ubuntu1 [15.5 kB]  
 Get:60 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgs9-common all 9.25~dfsg+1-0ubuntu1 [1,104 kB]  
 Get:61 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgs9 amd64 9.25~dfsg+1-0ubuntu1 [1,104 kB]  
 Get:62 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhtml-tagset-perl all 3.20-3 [12.1 kB]  
 Get:63 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhtml-parser-perl amd64 3.72-3build1 [12.1 kB]  
 Get:64 http://archive.ubuntu.com/ubuntu bionic/main amd64 libio-html-perl all 1.001-1 [14.9 kB]  
 Get:65 http://archive.ubuntu.com/ubuntu bionic/main amd64 liblwp-mediatypes-perl all 6.02-1 [23.5 kB]  
 Get:66 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhttp-message-perl all 6.14-1 [72.1 kB]  
 Get:67 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhtml-form-perl all 6.03-1 [23.5 kB]  
 Get:68 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhtml-tree-perl all 5.07-1 [200 kB]  
 Get:69 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhtml-format-perl all 2.12-1 [41.3 kB]  
 Get:70 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhttp-cookies-perl all 6.04-1 [17.5 kB]  
 Get:71 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhttp-daemon-perl all 6.01-1 [17.0 kB]  
 Get:72 http://archive.ubuntu.com/ubuntu bionic/main amd64 libhttp-negotiate-perl all 6.00-2 [11.5 kB]  
 Get:73 http://archive.ubuntu.com/ubuntu bionic/main amd64 perl-openssl-defaults amd64 3build1 [11.5 kB]  
 Get:74 http://archive.ubuntu.com/ubuntu bionic/main amd64 libnet-ssleay-perl amd64 1.84-1build1 [11.5 kB]  
 Get:75 http://archive.ubuntu.com/ubuntu bionic/main amd64 libio-socket-ssl-perl all 2.056-1 [11.5 kB]  
 Get:76 http://archive.ubuntu.com/ubuntu bionic/main amd64 libjs-jquery all 3.2.1-1 [152 kB]  
 Get:77 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libkpathsea6 amd64 2017.20170601-1 [11.5 kB]  
 Get:78 http://archive.ubuntu.com/ubuntu bionic/main amd64 libnet-http-perl all 6.17-1 [22.7 kB]  
 Get:79 http://archive.ubuntu.com/ubuntu bionic/main amd64 libtry-tiny-perl all 0.30-1 [20.5 kB]  
 Get:80 http://archive.ubuntu.com/ubuntu bionic/main amd64 libwww-robotrules-perl all 6.01-1 [11.5 kB]  
 Get:81 http://archive.ubuntu.com/ubuntu bionic/main amd64 libwww-perl all 6.31-1 [137 kB]  
 Get:82 http://archive.ubuntu.com/ubuntu bionic/main amd64 liblwp-protocol-https-perl all 6.07-5 [11.5 kB]  
 Get:83 http://archive.ubuntu.com/ubuntu bionic/main amd64 libnet-smtp-ssl-perl all 1.04-1 [5,994 B]  
 Get:84 http://archive.ubuntu.com/ubuntu bionic/main amd64 libmailtools-perl all 2.18-1 [74.0 kB]  
 Get:85 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxml-parser-perl amd64 2.44-2build1 [11.5 kB]  
 Get:86 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxml-twig-perl all 1:3.50-1 [156 kB]  
 Get:87 http://archive.ubuntu.com/ubuntu bionic/main amd64 libnet-dbus-perl amd64 1.1.0-4build2 [11.5 kB]  
 Get:88 http://archive.ubuntu.com/ubuntu bionic/main amd64 libnspr4 amd64 2:4.18-1ubuntu1 [112 kB]  
 Get:89 http://archive.ubuntu.com/ubuntu bionic/main amd64 libnss3 amd64 2:3.35-2ubuntu2 [1,135 kB]  
 Get:90 http://archive.ubuntu.com/ubuntu bionic/main amd64 libpaper-utils amd64 1.1.24+nmu5ubuntu1 [11.5 kB]  
 Get:91 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libpoppler73 amd64 0.62.0-2ubuntu0.18.04.1 [1,104 kB]  
 Get:92 http://archive.ubuntu.com/ubuntu bionic/main amd64 libpotrace0 amd64 1.14-2 [17.4 kB]  
 Get:93 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libptexenc1 amd64 2017.20170601-1 [11.5 kB]  
 Get:94 http://archive.ubuntu.com/ubuntu bionic/main amd64 rubygems-integration all 1.11 [4,994 B]  
 Get:95 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 ruby2.5 amd64 2.5.1-1ubuntu1 [11.5 kB]  
 Get:96 http://archive.ubuntu.com/ubuntu bionic/main amd64 ruby amd64 1:2.5.1 [5,712 B]  
 Get:97 http://archive.ubuntu.com/ubuntu bionic/main amd64 rake all 12.3.1-1 [45.1 kB]  
 Get:98 http://archive.ubuntu.com/ubuntu bionic/main amd64 ruby-did-you-mean all 1.2.0-2 [9,700 B]  
 Get:99 http://archive.ubuntu.com/ubuntu bionic/main amd64 ruby-minitest all 5.10.3-1 [38.6 kB]  
 Get:100 http://archive.ubuntu.com/ubuntu bionic/main amd64 ruby-net-telnet all 0.1.1-2 [12.6 kB]  
 Get:101 http://archive.ubuntu.com/ubuntu bionic/main amd64 ruby-power-assert all 0.3.0-1 [7,950 B]  
 Get:102 http://archive.ubuntu.com/ubuntu bionic/main amd64 ruby-test-unit all 3.2.5-1 [61.1 kB]  
 Get:103 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libruby2.5 amd64 2.5.1-1ubuntu1 [11.5 kB]

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Get:104 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libsynctex1 amd64 2017.20170
Get:105 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libtexlua52 amd64 2017.20170
Get:106 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libtexluaajit2 amd64 2017.20170
Get:107 http://archive.ubuntu.com/ubuntu bionic/main amd64 libtie-ixhash-perl all 1.23-2 [11.2 kB]
Get:108 http://archive.ubuntu.com/ubuntu bionic/main amd64 libutempter0 amd64 1.1.6-3 [7,898 B]
Get:109 http://archive.ubuntu.com/ubuntu bionic/main amd64 libx11-protocol-perl all 0.56-7 [14.9 kB]
Get:110 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxt6 amd64 1:1.1.5-1 [160 kB]
Get:111 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxmu6 amd64 2:1.1.2-2 [46.0 kB]
Get:112 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxpm4 amd64 1:3.5.12-1 [34.0 kB]
Get:113 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxaw7 amd64 2:1.0.13-1 [173 kB]
Get:114 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxcb-shape0 amd64 1.13-1 [5,964 B]
Get:115 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxcomposite1 amd64 1:0.4.4-2 [6,984 B]
Get:116 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxcursor1 amd64 1:1.1.15-1 [19.8 kB]
Get:117 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxi6 amd64 2:1.7.9-1 [29.2 kB]
Get:118 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxml-xpathengine-perl all 0.14-1 [11.2 kB]
Get:119 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxrandr2 amd64 2:1.5.1-1 [18.1 kB]
Get:120 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxtst6 amd64 2:1.2.3-1 [12.8 kB]
Get:121 http://archive.ubuntu.com/ubuntu bionic/main amd64 libxv1 amd64 2:1.0.11-1 [10.7 kB]
Get:122 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libzip-0-13 amd64 0.13.62-3 [11.2 kB]
Get:123 http://archive.ubuntu.com/ubuntu bionic/main amd64 lmodern all 2.004.5-3 [9,631 kB]
Get:124 http://archive.ubuntu.com/ubuntu bionic/main amd64 preview-latex-style all 11.91-1ubuntu1 [11.2 kB]
Get:125 http://archive.ubuntu.com/ubuntu bionic/main amd64 t1utils amd64 1.41-2 [56.0 kB]
Get:126 http://archive.ubuntu.com/ubuntu bionic/main amd64 tcl8.6 amd64 8.6.8+dfsg-3 [14.4 kB]
Get:127 http://archive.ubuntu.com/ubuntu bionic/universe amd64 tcl amd64 8.6.0+9 [5,146 B]
Get:128 http://archive.ubuntu.com/ubuntu bionic/universe amd64 tex-gyre all 20160520-1 [4,998 B]
Get:129 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 texlive-binaries amd64 2017.20180305-1 [11.2 MB]
Get:130 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 xdg-utils all 1.1.2-1ubuntu1 [11.2 kB]
Get:131 http://archive.ubuntu.com/ubuntu bionic/main amd64 texlive-base all 2017.20180305-1 [11.2 MB]
Get:132 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-fonts-recommended all 2017.20180305-1 [11.2 MB]
Get:133 http://archive.ubuntu.com/ubuntu bionic/main amd64 texlive-latex-base all 2017.20180305-1 [11.2 MB]
Get:134 http://archive.ubuntu.com/ubuntu bionic/main amd64 texlive-latex-recommended all 2017.20180305-1 [11.2 MB]
Get:135 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-pictures all 2017.20180305-1 [11.2 MB]
Get:136 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-latex-extra all 2017.20180305-1 [11.2 MB]
Get:137 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-plain-generic all 2017.20180305-1 [11.2 MB]
Get:138 http://archive.ubuntu.com/ubuntu bionic/universe amd64 tipa all 2:1.3-20 [2,978 kB]
Get:139 http://archive.ubuntu.com/ubuntu bionic/universe amd64 texlive-xetex all 2017.20180305-1 [11.2 MB]
Get:140 http://archive.ubuntu.com/ubuntu bionic/main amd64 tk8.6 amd64 8.6.8-4 [12.3 kB]
Get:141 http://archive.ubuntu.com/ubuntu bionic/universe amd64 tk amd64 8.6.0+9 [3,178 B]
Get:142 http://archive.ubuntu.com/ubuntu bionic/main amd64 x11-utils amd64 7.7+3build1 [196 kB]
Get:143 http://archive.ubuntu.com/ubuntu bionic/main amd64 x11-xserver-utils amd64 7.7+7build1 [196 kB]
Get:144 http://archive.ubuntu.com/ubuntu bionic/main amd64 xbitmaps all 1.1.1-2 [28.1 kB]
Get:145 http://archive.ubuntu.com/ubuntu bionic/universe amd64 xterm amd64 330-1ubuntu2 [661 kB]
Get:146 http://archive.ubuntu.com/ubuntu bionic/main amd64 libauthen-sasl-perl all 2.1600-1 [48.8 kB]
Fetched 175 MB in 10s (17.4 MB/s)
Extracting templates from packages: 100%
Preconfiguring packages ...
Selecting previously unselected package fonts-droid-fallback.
(Reading database ... 22428 files and directories currently installed.)

```

```

Preparing to unpack .../000-fonts-droid-fallback_1%3a6.0.1r16-1.1_all.deb ...
Unpacking fonts-droid-fallback (1:6.0.1r16-1.1) ...
Selecting previously unselected package fonts-lato.
Preparing to unpack .../001-fonts-lato_2.0-2_all.deb ...
Unpacking fonts-lato (2.0-2) ...
Selecting previously unselected package libxinerama1:amd64.
Preparing to unpack .../002-libxinerama1_2%3a1.1.3-1_amd64.deb ...
Unpacking libxinerama1:amd64 (2:1.1.3-1) ...
Selecting previously unselected package libxxf86dga1:amd64.
Preparing to unpack .../003-libxxf86dga1_2%3a1.1.4-1_amd64.deb ...
Unpacking libxxf86dga1:amd64 (2:1.1.4-1) ...
Selecting previously unselected package libxxf86vm1:amd64.
Preparing to unpack .../004-libxxf86vm1_1%3a1.1.4-1_amd64.deb ...
Unpacking libxxf86vm1:amd64 (1:1.1.4-1) ...
Selecting previously unselected package poppler-data.
Preparing to unpack .../005-poppler-data_0.4.8-2_all.deb ...
Unpacking poppler-data (0.4.8-2) ...
Selecting previously unselected package tex-common.
Preparing to unpack .../006-tex-common_6.09_all.deb ...
Unpacking tex-common (6.09) ...
Selecting previously unselected package libidn11:amd64.
Preparing to unpack .../007-libidn11_1.33-2.1ubuntu1_amd64.deb ...
Unpacking libidn11:amd64 (1.33-2.1ubuntu1) ...
Selecting previously unselected package libtext-iconv-perl.
Preparing to unpack .../008-libtext-iconv-perl_1.7-5build6_amd64.deb ...
Unpacking libtext-iconv-perl (1.7-5build6) ...
Selecting previously unselected package netbase.
Preparing to unpack .../009-netbase_5.4_all.deb ...
Unpacking netbase (5.4) ...
Selecting previously unselected package shared-mime-info.
Preparing to unpack .../010-shared-mime-info_1.9-2_amd64.deb ...
Unpacking shared-mime-info (1.9-2) ...
Selecting previously unselected package libxmuu1:amd64.
Preparing to unpack .../011-libxmuu1_2%3a1.1.2-2_amd64.deb ...
Unpacking libxmuu1:amd64 (2:1.1.2-2) ...
Selecting previously unselected package fonts-lmodern.
Preparing to unpack .../012-fonts-lmodern_2.004.5-3_all.deb ...
Unpacking fonts-lmodern (2.004.5-3) ...
Selecting previously unselected package fonts-noto-mono.
Preparing to unpack .../013-fonts-noto-mono_20171026-2_all.deb ...
Unpacking fonts-noto-mono (20171026-2) ...
Selecting previously unselected package fonts-texgyre.
Preparing to unpack .../014-fonts-texgyre_20160520-1_all.deb ...
Unpacking fonts-texgyre (20160520-1) ...
Selecting previously unselected package javascript-common.
Preparing to unpack .../015-javascript-common_11_all.deb ...
Unpacking javascript-common (11) ...
Selecting previously unselected package libavahi-common-data:amd64.

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Preparing to unpack .../016-libavahi-common-data_0.7-3.1ubuntu1.1_amd64.deb ...
Unpacking libavahi-common-data:amd64 (0.7-3.1ubuntu1.1) ...
Selecting previously unselected package libavahi-common3:amd64.
Preparing to unpack .../017-libavahi-common3_0.7-3.1ubuntu1.1_amd64.deb ...
Unpacking libavahi-common3:amd64 (0.7-3.1ubuntu1.1) ...
Selecting previously unselected package libavahi-client3:amd64.
Preparing to unpack .../018-libavahi-client3_0.7-3.1ubuntu1.1_amd64.deb ...
Unpacking libavahi-client3:amd64 (0.7-3.1ubuntu1.1) ...
Selecting previously unselected package libpixmap-1-0:amd64.
Preparing to unpack .../019-libpixmap-1-0_0.34.0-2_amd64.deb ...
Unpacking libpixmap-1-0:amd64 (0.34.0-2) ...
Selecting previously unselected package libxcb-render0:amd64.
Preparing to unpack .../020-libxcb-render0_1.13-1_amd64.deb ...
Unpacking libxcb-render0:amd64 (1.13-1) ...
Selecting previously unselected package libxcb-shm0:amd64.
Preparing to unpack .../021-libxcb-shm0_1.13-1_amd64.deb ...
Unpacking libxcb-shm0:amd64 (1.13-1) ...
Selecting previously unselected package libcairo2:amd64.
Preparing to unpack .../022-libcairo2_1.15.10-2_amd64.deb ...
Unpacking libcairo2:amd64 (1.15.10-2) ...
Selecting previously unselected package libcups2:amd64.
Preparing to unpack .../023-libcups2_2.2.7-1ubuntu2.1_amd64.deb ...
Unpacking libcups2:amd64 (2.2.7-1ubuntu2.1) ...
Selecting previously unselected package libjbig0:amd64.
Preparing to unpack .../024-libjbig0_2.1-3.1build1_amd64.deb ...
Unpacking libjbig0:amd64 (2.1-3.1build1) ...
Selecting previously unselected package libtiff5:amd64.
Preparing to unpack .../025-libtiff5_4.0.9-5_amd64.deb ...
Unpacking libtiff5:amd64 (4.0.9-5) ...
Selecting previously unselected package libcupsfilters1:amd64.
Preparing to unpack .../026-libcupsfilters1_1.20.2-0ubuntu3_amd64.deb ...
Unpacking libcupsfilters1:amd64 (1.20.2-0ubuntu3) ...
Selecting previously unselected package libcupsimage2:amd64.
Preparing to unpack .../027-libcupsimage2_2.2.7-1ubuntu2.1_amd64.deb ...
Unpacking libcupsimage2:amd64 (2.2.7-1ubuntu2.1) ...
Selecting previously unselected package libdata-dump-perl.
Preparing to unpack .../028-libdata-dump-perl_1.23-1_all.deb ...
Unpacking libdata-dump-perl (1.23-1) ...
Selecting previously unselected package libdrm-amdgpu1:amd64.
Preparing to unpack .../029-libdrm-amdgpu1_2.4.91-2_amd64.deb ...
Unpacking libdrm-amdgpu1:amd64 (2.4.91-2) ...
Selecting previously unselected package libpciaccess0:amd64.
Preparing to unpack .../030-libpciaccess0_0.14-1_amd64.deb ...
Unpacking libpciaccess0:amd64 (0.14-1) ...
Selecting previously unselected package libdrm-intel1:amd64.
Preparing to unpack .../031-libdrm-intel1_2.4.91-2_amd64.deb ...
Unpacking libdrm-intel1:amd64 (2.4.91-2) ...
Selecting previously unselected package libdrm-nouveau2:amd64.

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Preparing to unpack .../032-libdrm-nouveau2_2.4.91-2_amd64.deb ...
Unpacking libdrm-nouveau2:amd64 (2.4.91-2) ...
Selecting previously unselected package libdrm-radeon1:amd64.
Preparing to unpack .../033-libdrm-radeon1_2.4.91-2_amd64.deb ...
Unpacking libdrm-radeon1:amd64 (2.4.91-2) ...
Selecting previously unselected package libencode-locale-perl.
Preparing to unpack .../034-libencode-locale-perl_1.05-1_all.deb ...
Unpacking libencode-locale-perl (1.05-1) ...
Selecting previously unselected package libipc-system-simple-perl.
Preparing to unpack .../035-libipc-system-simple-perl_1.25-4_all.deb ...
Unpacking libipc-system-simple-perl (1.25-4) ...
Selecting previously unselected package libfile-basedir-perl.
Preparing to unpack .../036-libfile-basedir-perl_0.07-1_all.deb ...
Unpacking libfile-basedir-perl (0.07-1) ...
Selecting previously unselected package liburi-perl.
Preparing to unpack .../037-liburi-perl_1.73-1_all.deb ...
Unpacking liburi-perl (1.73-1) ...
Selecting previously unselected package libfile-desktopentry-perl.
Preparing to unpack .../038-libfile-desktopentry-perl_0.22-1_all.deb ...
Unpacking libfile-desktopentry-perl (0.22-1) ...
Selecting previously unselected package libtimedate-perl.
Preparing to unpack .../039-libtimedate-perl_2.3000-2_all.deb ...
Unpacking libtimedate-perl (2.3000-2) ...
Selecting previously unselected package libhttp-date-perl.
Preparing to unpack .../040-libhttp-date-perl_6.02-1_all.deb ...
Unpacking libhttp-date-perl (6.02-1) ...
Selecting previously unselected package libfile-listing-perl.
Preparing to unpack .../041-libfile-listing-perl_6.04-1_all.deb ...
Unpacking libfile-listing-perl (6.04-1) ...
Selecting previously unselected package libfile-mimeinfo-perl.
Preparing to unpack .../042-libfile-mimeinfo-perl_0.28-1_all.deb ...
Unpacking libfile-mimeinfo-perl (0.28-1) ...
Selecting previously unselected package libfont-afm-perl.
Preparing to unpack .../043-libfont-afm-perl_1.20-2_all.deb ...
Unpacking libfont-afm-perl (1.20-2) ...
Selecting previously unselected package libfontenc1:amd64.
Preparing to unpack .../044-libfontenc1_1%3a1.1.3-1_amd64.deb ...
Unpacking libfontenc1:amd64 (1:1.1.3-1) ...
Selecting previously unselected package libllvm6.0:amd64.
Preparing to unpack .../045-libllvm6.0_1%3a6.0-1ubuntu2_amd64.deb ...
Unpacking libllvm6.0:amd64 (1:6.0-1ubuntu2) ...
Selecting previously unselected package libsensors4:amd64.
Preparing to unpack .../046-libsensors4_1%3a3.4.0-4_amd64.deb ...
Unpacking libsensors4:amd64 (1:3.4.0-4) ...
Selecting previously unselected package libgl1-mesa-dri:amd64.
Preparing to unpack .../047-libgl1-mesa-dri_18.0.5-0ubuntu0~18.04.1_amd64.deb ...
Unpacking libgl1-mesa-dri:amd64 (18.0.5-0ubuntu0~18.04.1) ...
Selecting previously unselected package libxcb-glx0:amd64.

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Preparing to unpack .../048-libxcb-glx0_1.13-1_amd64.deb ...
Unpacking libxcb-glx0:amd64 (1.13-1) ...
Selecting previously unselected package libxdamage1:amd64.
Preparing to unpack .../049-libxdamage1_1%3a1.1.4-3_amd64.deb ...
Unpacking libxdamage1:amd64 (1:1.1.4-3) ...
Selecting previously unselected package libxfixes3:amd64.
Preparing to unpack .../050-libxfixes3_1%3a5.0.3-1_amd64.deb ...
Unpacking libxfixes3:amd64 (1:5.0.3-1) ...
Selecting previously unselected package libglx-mesa0:amd64.
Preparing to unpack .../051-libglx-mesa0_18.0.5-0ubuntu0~18.04.1_amd64.deb ...
Unpacking libglx-mesa0:amd64 (18.0.5-0ubuntu0~18.04.1) ...
Selecting previously unselected package libglx0:amd64.
Preparing to unpack .../052-libglx0_1.0.0-2ubuntu2.2_amd64.deb ...
Unpacking libglx0:amd64 (1.0.0-2ubuntu2.2) ...
Selecting previously unselected package libgl1:amd64.
Preparing to unpack .../053-libgl1_1.0.0-2ubuntu2.2_amd64.deb ...
Unpacking libgl1:amd64 (1.0.0-2ubuntu2.2) ...
Selecting previously unselected package libgl1-mesa-glx:amd64.
Preparing to unpack .../054-libgl1-mesa-glx_18.0.5-0ubuntu0~18.04.1_amd64.deb ...
Unpacking libgl1-mesa-glx:amd64 (18.0.5-0ubuntu0~18.04.1) ...
Selecting previously unselected package libijs-0.35:amd64.
Preparing to unpack .../055-libijs-0.35_0.35-13_amd64.deb ...
Unpacking libijs-0.35:amd64 (0.35-13) ...
Selecting previously unselected package libjbig2dec0:amd64.
Preparing to unpack .../056-libjbig2dec0_0.13-6_amd64.deb ...
Unpacking libjbig2dec0:amd64 (0.13-6) ...
Selecting previously unselected package liblcms2-2:amd64.
Preparing to unpack .../057-liblcms2-2_2.9-1ubuntu0.1_amd64.deb ...
Unpacking liblcms2-2:amd64 (2.9-1ubuntu0.1) ...
Selecting previously unselected package libpaper1:amd64.
Preparing to unpack .../058-libpaper1_1.1.24+nmu5ubuntu1_amd64.deb ...
Unpacking libpaper1:amd64 (1.1.24+nmu5ubuntu1) ...
Selecting previously unselected package libgs9-common.
Preparing to unpack .../059-libgs9-common_9.25~dfsg+1-0ubuntu0.18.04.2_all.deb ...
Unpacking libgs9-common (9.25~dfsg+1-0ubuntu0.18.04.2) ...
Selecting previously unselected package libgs9:amd64.
Preparing to unpack .../060-libgs9_9.25~dfsg+1-0ubuntu0.18.04.2_amd64.deb ...
Unpacking libgs9:amd64 (9.25~dfsg+1-0ubuntu0.18.04.2) ...
Selecting previously unselected package libhtml-tagset-perl.
Preparing to unpack .../061-libhtml-tagset-perl_3.20-3_all.deb ...
Unpacking libhtml-tagset-perl (3.20-3) ...
Selecting previously unselected package libhtml-parser-perl.
Preparing to unpack .../062-libhtml-parser-perl_3.72-3build1_amd64.deb ...
Unpacking libhtml-parser-perl (3.72-3build1) ...
Selecting previously unselected package libio-html-perl.
Preparing to unpack .../063-libio-html-perl_1.001-1_all.deb ...
Unpacking libio-html-perl (1.001-1) ...
Selecting previously unselected package liblwp-mediatypes-perl.

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Preparing to unpack .../064-liblwp-mediatypes-perl_6.02-1_all.deb ...
Unpacking liblwp-mediatypes-perl (6.02-1) ...
Selecting previously unselected package libhttp-message-perl.
Preparing to unpack .../065-libhttp-message-perl_6.14-1_all.deb ...
Unpacking libhttp-message-perl (6.14-1) ...
Selecting previously unselected package libhtml-form-perl.
Preparing to unpack .../066-libhtml-form-perl_6.03-1_all.deb ...
Unpacking libhtml-form-perl (6.03-1) ...
Selecting previously unselected package libhtml-tree-perl.
Preparing to unpack .../067-libhtml-tree-perl_5.07-1_all.deb ...
Unpacking libhtml-tree-perl (5.07-1) ...
Selecting previously unselected package libhtml-format-perl.
Preparing to unpack .../068-libhtml-format-perl_2.12-1_all.deb ...
Unpacking libhtml-format-perl (2.12-1) ...
Selecting previously unselected package libhttp-cookies-perl.
Preparing to unpack .../069-libhttp-cookies-perl_6.04-1_all.deb ...
Unpacking libhttp-cookies-perl (6.04-1) ...
Selecting previously unselected package libhttp-daemon-perl.
Preparing to unpack .../070-libhttp-daemon-perl_6.01-1_all.deb ...
Unpacking libhttp-daemon-perl (6.01-1) ...
Selecting previously unselected package libhttp-negotiate-perl.
Preparing to unpack .../071-libhttp-negotiate-perl_6.00-2_all.deb ...
Unpacking libhttp-negotiate-perl (6.00-2) ...
Selecting previously unselected package perl-openssl-defaults:amd64.
Preparing to unpack .../072-perl-openssl-defaults_3build1_amd64.deb ...
Unpacking perl-openssl-defaults:amd64 (3build1) ...
Selecting previously unselected package libnet-ssleay-perl.
Preparing to unpack .../073-libnet-ssleay-perl_1.84-1build1_amd64.deb ...
Unpacking libnet-ssleay-perl (1.84-1build1) ...
Selecting previously unselected package libio-socket-ssl-perl.
Preparing to unpack .../074-libio-socket-ssl-perl_2.056-1_all.deb ...
Unpacking libio-socket-ssl-perl (2.056-1) ...
Selecting previously unselected package libjs-jquery.
Preparing to unpack .../075-libjs-jquery_3.2.1-1_all.deb ...
Unpacking libjs-jquery (3.2.1-1) ...
Selecting previously unselected package libkpathsea6:amd64.
Preparing to unpack .../076-libkpathsea6_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking libkpathsea6:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libnet-http-perl.
Preparing to unpack .../077-libnet-http-perl_6.17-1_all.deb ...
Unpacking libnet-http-perl (6.17-1) ...
Selecting previously unselected package libtry-tiny-perl.
Preparing to unpack .../078-libtry-tiny-perl_0.30-1_all.deb ...
Unpacking libtry-tiny-perl (0.30-1) ...
Selecting previously unselected package libwww-robotrules-perl.
Preparing to unpack .../079-libwww-robotrules-perl_6.01-1_all.deb ...
Unpacking libwww-robotrules-perl (6.01-1) ...
Selecting previously unselected package libwww-perl.

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Preparing to unpack .../080-libwww-perl_6.31-1_all.deb ...
Unpacking libwww-perl (6.31-1) ...
Selecting previously unselected package liblwp-protocol-https-perl.
Preparing to unpack .../081-liblwp-protocol-https-perl_6.07-2_all.deb ...
Unpacking liblwp-protocol-https-perl (6.07-2) ...
Selecting previously unselected package libnet-smtp-ssl-perl.
Preparing to unpack .../082-libnet-smtp-ssl-perl_1.04-1_all.deb ...
Unpacking libnet-smtp-ssl-perl (1.04-1) ...
Selecting previously unselected package libmailtools-perl.
Preparing to unpack .../083-libmailtools-perl_2.18-1_all.deb ...
Unpacking libmailtools-perl (2.18-1) ...
Selecting previously unselected package libxml-parser-perl.
Preparing to unpack .../084-libxml-parser-perl_2.44-2build3_amd64.deb ...
Unpacking libxml-parser-perl (2.44-2build3) ...
Selecting previously unselected package libxml-twig-perl.
Preparing to unpack .../085-libxml-twig-perl_1%3a3.50-1_all.deb ...
Unpacking libxml-twig-perl (1:3.50-1) ...
Selecting previously unselected package libnet-dbus-perl.
Preparing to unpack .../086-libnet-dbus-perl_1.1.0-4build2_amd64.deb ...
Unpacking libnet-dbus-perl (1.1.0-4build2) ...
Selecting previously unselected package libnspr4:amd64.
Preparing to unpack .../087-libnspr4_2%3a4.18-1ubuntu1_amd64.deb ...
Unpacking libnspr4:amd64 (2:4.18-1ubuntu1) ...
Selecting previously unselected package libnss3:amd64.
Preparing to unpack .../088-libnss3_2%3a3.35-2ubuntu2_amd64.deb ...
Unpacking libnss3:amd64 (2:3.35-2ubuntu2) ...
Selecting previously unselected package libpaper-utils.
Preparing to unpack .../089-libpaper-utils_1.1.24+nm5ubuntu1_amd64.deb ...
Unpacking libpaper-utils (1.1.24+nm5ubuntu1) ...
Selecting previously unselected package libpoppler73:amd64.
Preparing to unpack .../090-libpoppler73_0.62.0-2ubuntu2.2_amd64.deb ...
Unpacking libpoppler73:amd64 (0.62.0-2ubuntu2.2) ...
Selecting previously unselected package libpotrace0.
Preparing to unpack .../091-libpotrace0_1.14-2_amd64.deb ...
Unpacking libpotrace0 (1.14-2) ...
Selecting previously unselected package libptexenc1:amd64.
Preparing to unpack .../092-libptexenc1_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking libptexenc1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package rubygems-integration.
Preparing to unpack .../093-rubygems-integration_1.11_all.deb ...
Unpacking rubygems-integration (1.11) ...
Selecting previously unselected package ruby2.5.
Preparing to unpack .../094-ruby2.5_2.5.1-1ubuntu1.1_amd64.deb ...
Unpacking ruby2.5 (2.5.1-1ubuntu1.1) ...
Selecting previously unselected package ruby.
Preparing to unpack .../095-ruby_1%3a2.5.1_amd64.deb ...
Unpacking ruby (1:2.5.1) ...
Selecting previously unselected package rake.

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Preparing to unpack .../096-rake_12.3.1-1_all.deb ...
Unpacking rake (12.3.1-1) ...
Selecting previously unselected package ruby-did-you-mean.
Preparing to unpack .../097-ruby-did-you-mean_1.2.0-2_all.deb ...
Unpacking ruby-did-you-mean (1.2.0-2) ...
Selecting previously unselected package ruby-minitest.
Preparing to unpack .../098-ruby-minitest_5.10.3-1_all.deb ...
Unpacking ruby-minitest (5.10.3-1) ...
Selecting previously unselected package ruby-net-telnet.
Preparing to unpack .../099-ruby-net-telnet_0.1.1-2_all.deb ...
Unpacking ruby-net-telnet (0.1.1-2) ...
Selecting previously unselected package ruby-power-assert.
Preparing to unpack .../100-ruby-power-assert_0.3.0-1_all.deb ...
Unpacking ruby-power-assert (0.3.0-1) ...
Selecting previously unselected package ruby-test-unit.
Preparing to unpack .../101-ruby-test-unit_3.2.5-1_all.deb ...
Unpacking ruby-test-unit (3.2.5-1) ...
Selecting previously unselected package libruby2.5:amd64.
Preparing to unpack .../102-libruby2.5_2.5.1-1ubuntu1.1_amd64.deb ...
Unpacking libruby2.5:amd64 (2.5.1-1ubuntu1.1) ...
Selecting previously unselected package libsyntax1:amd64.
Preparing to unpack .../103-libsyntax1_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking libsyntax1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libtexlua52:amd64.
Preparing to unpack .../104-libtexlua52_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking libtexlua52:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libtexluajit2:amd64.
Preparing to unpack .../105-libtexluajit2_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking libtexluajit2:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package libtie-ixhash-perl.
Preparing to unpack .../106-libtie-ixhash-perl_1.23-2_all.deb ...
Unpacking libtie-ixhash-perl (1.23-2) ...
Selecting previously unselected package libutempter0:amd64.
Preparing to unpack .../107-libutempter0_1.1.6-3_amd64.deb ...
Unpacking libutempter0:amd64 (1.1.6-3) ...
Selecting previously unselected package libx11-protocol-perl.
Preparing to unpack .../108-libx11-protocol-perl_0.56-7_all.deb ...
Unpacking libx11-protocol-perl (0.56-7) ...
Selecting previously unselected package libxt6:amd64.
Preparing to unpack .../109-libxt6_1%3a1.1.5-1_amd64.deb ...
Unpacking libxt6:amd64 (1:1.1.5-1) ...
Selecting previously unselected package libxmu6:amd64.
Preparing to unpack .../110-libxmu6_2%3a1.1.2-2_amd64.deb ...
Unpacking libxmu6:amd64 (2:1.1.2-2) ...
Selecting previously unselected package libxpm4:amd64.
Preparing to unpack .../111-libxpm4_1%3a3.5.12-1_amd64.deb ...
Unpacking libxpm4:amd64 (1:3.5.12-1) ...
Selecting previously unselected package libxaw7:amd64.

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Preparing to unpack .../112-libxaw7_2%3a1.0.13-1_amd64.deb ...
Unpacking libxaw7:amd64 (2:1.0.13-1) ...
Selecting previously unselected package libxcb-shape0:amd64.
Preparing to unpack .../113-libxcb-shape0_1.13-1_amd64.deb ...
Unpacking libxcb-shape0:amd64 (1.13-1) ...
Selecting previously unselected package libxcomposite1:amd64.
Preparing to unpack .../114-libxcomposite1_1%3a0.4.4-2_amd64.deb ...
Unpacking libxcomposite1:amd64 (1:0.4.4-2) ...
Selecting previously unselected package libxcursor1:amd64.
Preparing to unpack .../115-libxcursor1_1%3a1.1.15-1_amd64.deb ...
Unpacking libxcursor1:amd64 (1:1.1.15-1) ...
Selecting previously unselected package libxi6:amd64.
Preparing to unpack .../116-libxi6_2%3a1.7.9-1_amd64.deb ...
Unpacking libxi6:amd64 (2:1.7.9-1) ...
Selecting previously unselected package libxml-xpathengine-perl.
Preparing to unpack .../117-libxml-xpathengine-perl_0.14-1_all.deb ...
Unpacking libxml-xpathengine-perl (0.14-1) ...
Selecting previously unselected package libxrandr2:amd64.
Preparing to unpack .../118-libxrandr2_2%3a1.5.1-1_amd64.deb ...
Unpacking libxrandr2:amd64 (2:1.5.1-1) ...
Selecting previously unselected package libxtst6:amd64.
Preparing to unpack .../119-libxtst6_2%3a1.2.3-1_amd64.deb ...
Unpacking libxtst6:amd64 (2:1.2.3-1) ...
Selecting previously unselected package libxv1:amd64.
Preparing to unpack .../120-libxv1_2%3a1.0.11-1_amd64.deb ...
Unpacking libxv1:amd64 (2:1.0.11-1) ...
Selecting previously unselected package libzip-0-13:amd64.
Preparing to unpack .../121-libzip-0-13_0.13.62-3.1ubuntu0.18.04.1_amd64.deb ...
Unpacking libzip-0-13:amd64 (0.13.62-3.1ubuntu0.18.04.1) ...
Selecting previously unselected package lmodern.
Preparing to unpack .../122-lmodern_2.004.5-3_all.deb ...
Unpacking lmodern (2.004.5-3) ...
Selecting previously unselected package preview-latex-style.
Preparing to unpack .../123-preview-latex-style_11.91-1ubuntu1_all.deb ...
Unpacking preview-latex-style (11.91-1ubuntu1) ...
Selecting previously unselected package tlutils.
Preparing to unpack .../124-tlutils_1.41-2_amd64.deb ...
Unpacking tlutils (1.41-2) ...
Selecting previously unselected package tcl8.6.
Preparing to unpack .../125-tcl8.6_8.6.8+dfsg-3_amd64.deb ...
Unpacking tcl8.6 (8.6.8+dfsg-3) ...
Selecting previously unselected package tcl.
Preparing to unpack .../126-tcl_8.6.0+9_amd64.deb ...
Unpacking tcl (8.6.0+9) ...
Selecting previously unselected package tex-gyre.
Preparing to unpack .../127-tex-gyre_20160520-1_all.deb ...
Unpacking tex-gyre (20160520-1) ...
Selecting previously unselected package texlive-binaries.

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Preparing to unpack .../128-texlive-binaries_2017.20170613.44572-8ubuntu0.1_amd64.deb ...
Unpacking texlive-binaries (2017.20170613.44572-8ubuntu0.1) ...
Selecting previously unselected package xdg-utils.
Preparing to unpack .../129-xdg-utils_1.1.2-1ubuntu2.3_all.deb ...
Unpacking xdg-utils (1.1.2-1ubuntu2.3) ...
Selecting previously unselected package texlive-base.
Preparing to unpack .../130-texlive-base_2017.20180305-1_all.deb ...
Unpacking texlive-base (2017.20180305-1) ...
Selecting previously unselected package texlive-fonts-recommended.
Preparing to unpack .../131-texlive-fonts-recommended_2017.20180305-1_all.deb ...
Unpacking texlive-fonts-recommended (2017.20180305-1) ...
Selecting previously unselected package texlive-latex-base.
Preparing to unpack .../132-texlive-latex-base_2017.20180305-1_all.deb ...
Unpacking texlive-latex-base (2017.20180305-1) ...
Selecting previously unselected package texlive-latex-recommended.
Preparing to unpack .../133-texlive-latex-recommended_2017.20180305-1_all.deb ...
Unpacking texlive-latex-recommended (2017.20180305-1) ...
Selecting previously unselected package texlive-pictures.
Preparing to unpack .../134-texlive-pictures_2017.20180305-1_all.deb ...
Unpacking texlive-pictures (2017.20180305-1) ...
Selecting previously unselected package texlive-latex-extra.
Preparing to unpack .../135-texlive-latex-extra_2017.20180305-2_all.deb ...
Unpacking texlive-latex-extra (2017.20180305-2) ...
Selecting previously unselected package texlive-plain-generic.
Preparing to unpack .../136-texlive-plain-generic_2017.20180305-2_all.deb ...
Unpacking texlive-plain-generic (2017.20180305-2) ...
Selecting previously unselected package tipa.
Preparing to unpack .../137-tipa_2%3a1.3-20_all.deb ...
Unpacking tipa (2:1.3-20) ...
Selecting previously unselected package texlive-xetex.
Preparing to unpack .../138-texlive-xetex_2017.20180305-1_all.deb ...
Unpacking texlive-xetex (2017.20180305-1) ...
Selecting previously unselected package tk8.6.
Preparing to unpack .../139-tk8.6_8.6.8-4_amd64.deb ...
Unpacking tk8.6 (8.6.8-4) ...
Selecting previously unselected package tk.
Preparing to unpack .../140-tk_8.6.0+9_amd64.deb ...
Unpacking tk (8.6.0+9) ...
Selecting previously unselected package x11-utils.
Preparing to unpack .../141-x11-utils_7.7+3build1_amd64.deb ...
Unpacking x11-utils (7.7+3build1) ...
Selecting previously unselected package x11-xserver-utils.
Preparing to unpack .../142-x11-xserver-utils_7.7+7build1_amd64.deb ...
Unpacking x11-xserver-utils (7.7+7build1) ...
Selecting previously unselected package xbitmaps.
Preparing to unpack .../143-xbitmaps_1.1.1-2_all.deb ...
Unpacking xbitmaps (1.1.1-2) ...
Selecting previously unselected package xterm.

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Preparing to unpack .../144-xterm_330-1ubuntu2_amd64.deb ...
Unpacking xterm (330-1ubuntu2) ...
Selecting previously unselected package libauthen-sasl-perl.
Preparing to unpack .../145-libauthen-sasl-perl_2.1600-1_all.deb ...
Unpacking libauthen-sasl-perl (2.1600-1) ...
Setting up libgs9-common (9.25~dfsg+1-0ubuntu0.18.04.2) ...
Setting up libhtml-tagset-perl (3.20-3) ...
Setting up libxi6:amd64 (2:1.7.9-1) ...
Setting up libkpathsea6:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up libjs-jquery (3.2.1-1) ...
Setting up libpaper1:amd64 (1.1.24+nmu5ubuntu1) ...

Creating config file /etc/papersize with new version
Setting up libtexlua52:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up libxinerama1:amd64 (2:1.1.3-1) ...
Setting up libtry-tiny-perl (0.30-1) ...
Setting up fonts-droid-fallback (1:6.0.1r16-1.1) ...
Setting up libxcb-glx0:amd64 (1.13-1) ...
Setting up libpaper-utils (1.1.24+nmu5ubuntu1) ...
Setting up libfont-afm-perl (1.20-2) ...
Setting up tk8.6 (8.6.8-4) ...
Setting up libsystex1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up libxcb-render0:amd64 (1.13-1) ...
Setting up libptexenc1:amd64 (2017.20170613.44572-8ubuntu0.1) ...
Setting up tex-common (6.09) ...
update-language: texlive-base not installed and configured, doing nothing!
Setting up libxdamage1:amd64 (1:1.1.4-3) ...
Setting up libxfixes3:amd64 (1:5.0.3-1) ...
Processing triggers for mime-support (3.60ubuntu1) ...
Setting up libdrm-amdgpu1:amd64 (2.4.91-2) ...
Setting up libencode-locale-perl (1.05-1) ...
Setting up libllvm6.0:amd64 (1:6.0-1ubuntu2) ...
Setting up libtimedate-perl (2.3000-2) ...
Setting up liblcms2-2:amd64 (2.9-1ubuntu0.1) ...
Setting up libjbig0:amd64 (2.1-3.1build1) ...
Setting up xbitmaps (1.1.1-2) ...
Setting up poppler-data (0.4.8-2) ...
Setting up perl-openssl-defaults:amd64 (3build1) ...
Setting up libipc-system-simple-perl (1.25-4) ...
Setting up libfile-basedir-perl (0.07-1) ...
Setting up libio-html-perl (1.001-1) ...
Setting up libtie-ixhash-perl (1.23-2) ...
Setting up tex-gyre (20160520-1) ...
Setting up libtiff5:amd64 (4.0.9-5) ...
Setting up preview-latex-style (11.91-1ubuntu1) ...
Setting up fonts-texgyre (20160520-1) ...
Setting up libnspr4:amd64 (2:4.18-1ubuntu1) ...
Setting up libxmuu1:amd64 (2:1.1.2-2) ...

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Setting up libutempter0:amd64 (1.1.6-3) ...  
Setting up libxtst6:amd64 (2:1.2.3-1) ...  
Setting up fonts-noto-mono (20171026-2) ...  
Setting up fonts-lato (2.0-2) ...  
Setting up libjbig2dec0:amd64 (0.13-6) ...  
Setting up ruby-did-you-mean (1.2.0-2) ...  
Setting up libpixmap-1-0:amd64 (0.34.0-2) ...  
Setting up libxcursor1:amd64 (1:1.1.15-1) ...  
Setting up liblwp-mediatypes-perl (6.02-1) ...  
Setting up libxxf86dga1:amd64 (2:1.1.4-1) ...  
Processing triggers for libc-bin (2.27-3ubuntu1) ...  
Setting up liburi-perl (1.73-1) ...  
Setting up tiutils (1.41-2) ...  
Setting up libtext-iconv-perl (1.7-5build6) ...  
Setting up libdata-dump-perl (1.23-1) ...  
Setting up tcl8.6 (8.6.8+dfsg-3) ...  
Setting up libhtml-parser-perl (3.72-3build1) ...  
Setting up ruby-net-telnet (0.1.1-2) ...  
Setting up libijs-0.35:amd64 (0.35-13) ...  
Setting up libfontenc1:amd64 (1:1.1.3-1) ...  
Setting up libxcomposite1:amd64 (1:0.4.4-2) ...  
Setting up libxcb-shm0:amd64 (1.13-1) ...  
Setting up libxpm4:amd64 (1:3.5.12-1) ...  
Setting up rubygems-integration (1.11) ...  
Setting up libxt6:amd64 (1:1.1.5-1) ...  
Setting up libxcb-shape0:amd64 (1.13-1) ...  
Setting up libpciaccess0:amd64 (0.14-1) ...  
Setting up libpotrace0 (1.14-2) ...  
Setting up libxv1:amd64 (2:1.0.11-1) ...  
Setting up libx11-protocol-perl (0.56-7) ...  
Setting up libxml-xpathengine-perl (0.14-1) ...  
Setting up libsensors4:amd64 (1:3.4.0-4) ...  
Setting up shared-mime-info (1.9-2) ...  
Setting up libnet-http-perl (6.17-1) ...  
Setting up libdrm-radeon1:amd64 (2.4.91-2) ...  
Setting up javascript-common (11) ...  
Setting up libxxf86vm1:amd64 (1:1.1.4-1) ...  
Setting up libdrm-nouveau2:amd64 (2.4.91-2) ...  
Setting up ruby-minitest (5.10.3-1) ...  
Setting up libzip-0-13:amd64 (0.13.62-3.1ubuntu0.18.04.1) ...  
Setting up xdg-utils (1.1.2-1ubuntu2.3) ...  
Setting up libwww-robotrules-perl (6.01-1) ...  
Setting up libtexluajit2:amd64 (2017.20170613.44572-8ubuntu0.1) ...  
Setting up libauthen-sasl-perl (2.1600-1) ...  
Setting up libidn11:amd64 (1.33-2.1ubuntu1) ...  
Setting up libxrandr2:amd64 (2:1.5.1-1) ...  
Setting up fonts-lmodern (2.004.5-3) ...  
Setting up ruby-power-assert (0.3.0-1) ...

```

Setting up libavahi-common-data:amd64 (0.7-3.1ubuntu1.1) ...
Setting up netbase (5.4) ...
Setting up libcairo2:amd64 (1.15.10-2) ...
Setting up libhttp-date-perl (6.02-1) ...
Setting up libnet-ssleay-perl (1.84-1build1) ...
Setting up tcl (8.6.0+9) ...
Setting up libnss3:amd64 (2:3.35-2ubuntu2) ...
Setting up libio-socket-ssl-perl (2.056-1) ...
Setting up libhtml-tree-perl (5.07-1) ...
Setting up libxmu6:amd64 (2:1.1.2-2) ...
Setting up libpoppler73:amd64 (0.62.0-2ubuntu2.2) ...
Setting up libdrm-intel1:amd64 (2.4.91-2) ...
Setting up tk (8.6.0+9) ...
Setting up libfile-desktopentry-perl (0.22-1) ...
Setting up libfile-listing-perl (6.04-1) ...
Setting up libhttp-message-perl (6.14-1) ...
Setting up libavahi-common3:amd64 (0.7-3.1ubuntu1.1) ...
Setting up libfile-mimeinfo-perl (0.28-1) ...
Setting up lmodern (2.004.5-3) ...
Setting up libhttp-negotiate-perl (6.00-2) ...
Setting up libxaw7:amd64 (2:1.0.13-1) ...
Setting up libnet-smtp-ssl-perl (1.04-1) ...
Setting up libhtml-format-perl (2.12-1) ...
Setting up libhttp-cookies-perl (6.04-1) ...
Setting up libgl1-mesa-dri:amd64 (18.0.5-0ubuntu0~18.04.1) ...
Setting up libhttp-daemon-perl (6.01-1) ...
Setting up xterm (330-1ubuntu2) ...
update-alternatives: using /usr/bin/xterm to provide /usr/bin/x-terminal-emulator (x-terminal-emulator)
update-alternatives: warning: skip creation of /usr/share/man/man1/x-terminal-emulator.1.gz because associated
update-alternatives: using /usr/bin/lxterm to provide /usr/bin/x-terminal-emulator (x-terminal-emulator)
update-alternatives: warning: skip creation of /usr/share/man/man1/x-terminal-emulator.1.gz because associated
Setting up libhtml-form-perl (6.03-1) ...
Setting up x11-xserver-utils (7.7+7build1) ...
Setting up libavahi-client3:amd64 (0.7-3.1ubuntu1.1) ...
Setting up libglx-mesa0:amd64 (18.0.5-0ubuntu0~18.04.1) ...
Setting up libcups2:amd64 (2.2.7-1ubuntu2.1) ...
Setting up libmailtools-perl (2.18-1) ...
Setting up libcupsfilters1:amd64 (1.20.2-0ubuntu3) ...
Setting up libcupsimage2:amd64 (2.2.7-1ubuntu2.1) ...
Setting up libglx0:amd64 (1.0.0-2ubuntu2.2) ...
Setting up libgs9:amd64 (9.25~dfsg+1-0ubuntu0.18.04.2) ...
Setting up texlive-binaries (2017.20170613.44572-8ubuntu0.1) ...
update-alternatives: using /usr/bin/xdvi-xaw to provide /usr/bin/xdvi.bin (xdvi.bin) in auto mode
update-alternatives: using /usr/bin/bibtex.original to provide /usr/bin/bibtex (bibtex) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/man1/bibtex.1.gz because associated file
Setting up texlive-base (2017.20180305-1) ...
mktexlsr: Updating /var/lib/texmf/ls-R-TEXLIVEDIST...
mktexlsr: Updating /var/lib/texmf/ls-R-TEXMFMAIN...

```

```

mktexlsr: Updating /var/lib/texmf/ls-R...
mktexlsr: Done.
tl-paper: setting paper size for dvips to a4: /var/lib/texmf/dvips/config/config-paper.ps
tl-paper: setting paper size for dvipdfmx to a4: /var/lib/texmf/dvipdfmx/dvipdfmx-paper.cfg
tl-paper: setting paper size for xdvi to a4: /var/lib/texmf/xdvi/XDvi-paper
tl-paper: setting paper size for pdftex to a4: /var/lib/texmf/tex/generic/config/pdftexconfig.
tl-paper: setting paper size for dvipdfmx to letter: /var/lib/texmf/dvipdfmx/dvipdfmx-paper.cfg
tl-paper: setting paper size for dvips to letter: /var/lib/texmf/dvips/config/config-paper.ps
tl-paper: setting paper size for pdftex to letter: /var/lib/texmf/tex/generic/config/pdftexcon
tl-paper: setting paper size for xdvi to letter: /var/lib/texmf/xdvi/XDvi-paper
Setting up libgl1:amd64 (1.0.0-2ubuntu2.2) ...
Setting up texlive-fonts-recommended (2017.20180305-1) ...
Setting up texlive-plain-generic (2017.20180305-2) ...
Setting up texlive-latex-base (2017.20180305-1) ...
Setting up texlive-latex-recommended (2017.20180305-1) ...
Setting up texlive-pictures (2017.20180305-1) ...
Setting up tipa (2:1.3-20) ...
Regenerating '/var/lib/texmf/fmtutil.cnf-DEBIAN'... done.
Regenerating '/var/lib/texmf/fmtutil.cnf-TEXLIVEDIST'... done.
update-fmtutil has updated the following file(s):
    /var/lib/texmf/fmtutil.cnf-DEBIAN
    /var/lib/texmf/fmtutil.cnf-TEXLIVEDIST
If you want to activate the changes in the above file(s),
you should run fmtutil-sys or fmtutil.
Setting up x11-utils (7.7+3build1) ...
Setting up libgl1-mesa-glx:amd64 (18.0.5-0ubuntu0~18.04.1) ...
Setting up texlive-latex-extra (2017.20180305-2) ...
Setting up texlive-xetex (2017.20180305-1) ...
Setting up rake (12.3.1-1) ...
Setting up liblwp-protocol-https-perl (6.07-2) ...
Setting up libwww-perl (6.31-1) ...
Setting up ruby2.5 (2.5.1-1ubuntu1.1) ...
Setting up libxml-parser-perl (2.44-2build3) ...
Setting up ruby (1:2.5.1) ...
Setting up libxml-twig-perl (1:3.50-1) ...
Setting up ruby-test-unit (3.2.5-1) ...
Setting up libnet-dbus-perl (1.1.0-4build2) ...
Setting up libruby2.5:amd64 (2.5.1-1ubuntu1.1) ...
Processing triggers for tex-common (6.09) ...
Running updmap-sys. This may take some time... done.
Running mktexlsr /var/lib/texmf ... done.
Building format(s) --all.
    This may take some time... done.
Processing triggers for libc-bin (2.27-3ubuntu1) ...
[NbConvertApp] WARNING | pattern u'lastname_firstname_assignmentXX.ipynb' matched no files
This application is used to convert notebook files (*.ipynb) to various other
formats.

```



WARNING: THE COMMANDLINE INTERFACE MAY CHANGE IN FUTURE RELEASES.

## Options

-----

Arguments that take values are actually convenience aliases to full Configurables, whose aliases are listed on the help line. For more information on full configurables, see '--help-all'.

### --execute

Execute the notebook prior to export.

### --allow-errors

Continue notebook execution even if one of the cells throws an error and include the error

### --no-input

Exclude input cells and output prompts from converted document.

This mode is ideal for generating code-free reports.

### --stdout

Write notebook output to stdout instead of files.

### --stdin

read a single notebook file from stdin. Write the resulting notebook with default basename

### --inplace

Run nbconvert in place, overwriting the existing notebook (only relevant when converting to notebook format)

### -y

Answer yes to any questions instead of prompting.

### --clear-output

Clear output of current file and save in place, overwriting the existing notebook.

### --debug

set log level to logging.DEBUG (maximize logging output)

### --no-prompt

Exclude input and output prompts from converted document.

### --generate-config

generate default config file

### --nbformat=<Enum> (NotebookExporter.nbformat\_version)

Default: 4

Choices: [1, 2, 3, 4]

The nbformat version to write. Use this to downgrade notebooks.

### --output-dir=<Unicode> (FilesWriter.build\_directory)

Default: ''

Directory to write output(s) to. Defaults to output to the directory of each notebook. To recover previous default behaviour (outputting to the current working directory) use . as the flag value.

### --writer=<DottedObjectName> (NbConvertApp.writer\_class)

Default: 'FilesWriter'

Writer class used to write the results of the conversion

### --log-level=<Enum> (Application.log\_level)

Default: 30

Choices: (0, 10, 20, 30, 40, 50, 'DEBUG', 'INFO', 'WARN', 'ERROR', 'CRITICAL')  
Set the log level by value or name.

`--reveal-prefix=<Unicode>` (`SlidesExporter.reveal_url_prefix`)  
Default: `u''`  
The URL prefix for reveal.js (version 3.x). This defaults to the reveal CDN, but can be any url pointing to a copy of reveal.js.  
For speaker notes to work, this must be a relative path to a local copy of reveal.js: e.g., "reveal.js".  
If a relative path is given, it must be a subdirectory of the current directory (from which the server is run).  
See the usage documentation  
(<https://nbconvert.readthedocs.io/en/latest/usage.html#reveal-js-html-slideshow>) for more details.

`--to=<Unicode>` (`NbConvertApp.export_format`)  
Default: `'html'`  
The export format to be used, either one of the built-in formats, or a dotted object name that represents the import path for an `'Exporter'` class

`--template=<Unicode>` (`TemplateExporter.template_file`)  
Default: `u''`  
Name of the template file to use

`--output=<Unicode>` (`NbConvertApp.output_base`)  
Default: `''`  
overwrite base name use for output files. can only be used when converting one notebook at a time.

`--post=<DottedOrNone>` (`NbConvertApp.postprocessor_class`)  
Default: `u''`  
PostProcessor class used to write the results of the conversion

`--config=<Unicode>` (`JupyterApp.config_file`)  
Default: `u''`  
Full path of a config file.

To see all available configurables, use `--help-all`

## Examples

-----

The simplest way to use nbconvert is

```
> jupyter nbconvert mynotebook.ipynb
```

which will convert mynotebook.ipynb to the default format (probably HTML).

You can specify the export format with `--to`.`

Options include ['asciidoc', 'custom', 'html', 'latex', 'markdown', 'notebook', 'pdf', 'py

```
> jupyter nbconvert --to latex mynotebook.ipynb
```

Both HTML and LaTeX support multiple output templates. LaTeX includes

'base', 'article' and 'report'. HTML includes 'basic' and 'full'. You can specify the flavor of the format used.

```
> jupyter nbconvert --to html --template basic mynotebook.ipynb
```

You can also pipe the output to stdout, rather than a file

```
> jupyter nbconvert mynotebook.ipynb --stdout
```

PDF is generated via latex

```
> jupyter nbconvert mynotebook.ipynb --to pdf
```

You can get (and serve) a Reveal.js-powered slideshow

```
> jupyter nbconvert myslides.ipynb --to slides --post serve
```

Multiple notebooks can be given at the command line in a couple of different ways:

```
> jupyter nbconvert notebook*.ipynb
> jupyter nbconvert notebook1.ipynb notebook2.ipynb
```

or you can specify the notebooks list in a config file, containing::

```
c.NbConvertApp.notebooks = ["my_notebook.ipynb"]
```

```
> jupyter nbconvert --config mycfg.py
```