Case Study: Smart Reply Implemented as Nueral Question Answer

About Dataset:

Data Stanford Question Answering Dataset (SQuAD) is a reading comprehension dataset, consisting of questions posed by crowdworkers on a set of Wikipedia articles, where the answer to every question is a segment of text, or span, from the corresponding reading passage, or the question might be unanswerable. You can download this dataset here https://rajpurkar.github.io/SQuAD-explorer/ (https://rajpurkar.github.io/SQuAD-explorer/)

SQuAD 1.1: the previous version of the SQuAD dataset, contains 100,000+ question-answer pairs on 500+ articles.

Here I used SQuAD 1.1. Each article contains following structure:

The Below case study is implemented using the referance from https://arxiv.org/pdf/1704.00051.pdf (https://arxiv.org/pdf/1704.00051.pdf)

```
structure:
  article (dict)
  ├── title (str)
  ├── paragraphs (dict)
      ├── context (str)
      └── qas (dict)
          ├── question (str)
          ├── id (str)
          └── answers (dict)
              ├── answer_start (integer)
              └── text (str)
  ...
  └── paragraphs n
      ├── context
      └── qas
```

Problem Statement:

Predicting the right answer for the given question and context.

In [2]:
```
# importing all necessary files
import warnings
warnings.filterwarnings("ignore")
import pandas as pd
import numpy as np
from textblob import TextBlob
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
from tqdm import tqdm
import json
import re
import nltk
import csv


from langdetect import detect
from pickle import dump,load

import tensorflow as tf
import sys
import datetime
import os
import six

from collections import Counter
import string
import re
import sys
```

```
WARNING: Logging before flag parsing goes to stderr.
W0824 19:10:22.356319 17008 __init__.py:690]

  TensorFlow's `tf-nightly` package will soon be updated to TensorFlow 2.0.

  Please upgrade your code to TensorFlow 2.0:
    * https://www.tensorflow.org/beta/guide/migration_guide

  Or install the latest stable TensorFlow 1.X release:
    * `pip install -U "tensorflow==1.*"`

  Otherwise your code may be broken by the change.
```

1. Preprocessing

In [2]:
```
train = pd.read_json("SQuAD/train-v1.1.json")
dev = pd.read_json("SQuAD/dev-v1.1.json")

print(train.shape)
print(dev.shape)
```

In [4]:
```
dev.head()
```

Out[4]:

	data	version
0	{'title': 'Super_Bowl_50', 'paragraphs': [{'co...	1.1
1	{'title': 'Warsaw', 'paragraphs': [{'context':...	1.1
2	{'title': 'Normans', 'paragraphs': [{'context'...	1.1
3	{'title': 'Nikola_Tesla', 'paragraphs': [{'con...	1.1
4	{'title': 'Computational_complexity_theory', '...	1.1

In [7]:
```
# getting train data and dev data into csv file

contexts = []
questions = []
answers_text = []
answers_start = []
title = []
for i in range(train.shape[0]):
    topic = train.iloc[i,0]['paragraphs']
    title_ = train.iloc[i,0]['title']
    for sub_para in topic:
        for q_a in sub_para['qas']:
            questions.append(q_a['question'])
            if len(q_a['answers'])>0 :
                answers_start.append(q_a['answers'][0]['answer_start'])
                answers_text.append(q_a['answers'][0]['text'])
            else:
                answers_start.append(None)
                answers_text.append(None)
            contexts.append(sub_para['context'])
            title.append(title_)

# test data

test_contexts = []
test_questions = []
test_answers_text = []
test_answers_start = []
test_title = []
for i in range(dev.shape[0]):
    topic = dev.iloc[i,0]['paragraphs']
    title_ = dev.iloc[i,0]['title']
    for sub_para in topic:
        for q_a in sub_para['qas']:
            test_questions.append(q_a['question'])
            if len(q_a['answers'])>0 :
                test_answers_start.append(q_a['answers'][0]['answer_start'])
                test_answers_text.append(q_a['answers'][0]['text'])
            else:
                test_answers_start.append(None)
                test_answers_text.append(None)
            test_contexts.append(sub_para['context'])
            test_title.append(title_)
```

In [8]:
```
train = pd.DataFrame({"context":contexts, "question": questions, "answer_start": answers_start, "text": answers_text,'title':title})
train.dropna(inplace=True)

train.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 87599 entries, 0 to 87598
Data columns (total 5 columns):
context         87599 non-null object
question        87599 non-null object
answer_start    87599 non-null int64
text            87599 non-null object
title           87599 non-null object
dtypes: int64(1), object(4)
memory usage: 4.0+ MB
```

In [9]:
```
dev = pd.DataFrame({"context":test_contexts, "question": test_questions, "answer_start": test_answers_start, "text": test_answers_text,'title':test_title})
dev.dropna(inplace=True)
dev.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 10570 entries, 0 to 10569
Data columns (total 5 columns):
context         10570 non-null object
question        10570 non-null object
answer_start    10570 non-null int64
text            10570 non-null object
title           10570 non-null object
dtypes: int64(1), object(4)
memory usage: 495.5+ KB
```

In [10]:
```
train.head()
```

Out[10]:

	context	question	answer_start	text	title
0	Architecturally, the school has a Catholic cha...	To whom did the Virgin Mary allegedly appear i...	515	Saint Bernadette Soubirous	University_of_Notre_Dame
1	Architecturally, the school has a Catholic cha...	What is in front of the Notre Dame Main Building?	188	a copper statue of Christ	University_of_Notre_Dame
2	Architecturally, the school has a Catholic cha...	The Basilica of the Sacred heart at Notre Dame...	279	the Main Building	University_of_Notre_Dame
3	Architecturally, the school has a Catholic cha...	What is the Grotto at Notre Dame?	381	a Marian place of prayer and reflection	University_of_Notre_Dame
4	Architecturally, the school has a Catholic cha...	What sits on top of the Main Building at Notre...	92	a golden statue of the Virgin Mary	University_of_Notre_Dame

2. Data Preprocessing

2.1 Text data cleaning

In [309]:
```
def decontracted(phrase):
    """
    This function remooves punctuation from given sentence.
    """
    # specific
    phrase = re.sub(r"won't", "will not", phrase)
    phrase = re.sub(r"can\'t", "can not", phrase)

    # general
    phrase = re.sub(r"n\'t", " not", phrase)
    phrase = re.sub(r"\'re", " are", phrase)
    phrase = re.sub(r"\'s", " is", phrase)
    phrase = re.sub(r"\'d", " would", phrase)
    phrase = re.sub(r"\'ll", " will", phrase)
    phrase = re.sub(r"\'t", " not", phrase)
    phrase = re.sub(r"\'ve", " have", phrase)
    phrase = re.sub(r"\'m", " am", phrase)

    # string operation
    phrase = phrase.replace('\\r', ' ')
    phrase = phrase.replace('\\"', ' ')
    phrase = phrase.replace('\\n', ' ')

    phrase = re.sub('[^A-Za-z0-9]+', ' ', phrase.lower())

    return phrase


def tokenize(sentence):
    """
    Returns tokenised words.
    """
    return nltk.word_tokenize(sentence)

def answer_span(context,ans):
    """
    This funtion returns anwer span start index and end index.
    """
    ans_token = tokenize(ans)
    con_token = tokenize(context)
    ans_len = len(ans_token)

    if ans_len!=0 and ans_token[0] in con_token:

        indices = [i for i, x in enumerate(con_token) if x == ans_token[0]]
        try:

            if(len(indices)>1):
                start = [i for i in indices if (con_token[i:i+ans_len] == ans_
token) ]
                end = start[0] + ans_len - 1
                return start[0],end

            else:
                start = con_token.index(ans_token[0])
                end = start + ans_len - 1
```

```
                return start,end
        except:
            return -1,-1
    else:
        return -1,-1
```

1. Context

In [12]:
```
# for train data

from tqdm import tqdm
preprocessed_context = []
# tqdm is for printing the status bar
for sentance in tqdm(train["context"].values):
    sent = decontracted(sentance)
    preprocessed_context.append(sent.strip())

train["clean_context"] = preprocessed_context

# for dev data
from tqdm import tqdm
dev_preprocessed_context = []
# tqdm is for printing the status bar
for sentance in tqdm(dev["context"].values):
    sent = decontracted(sentance)
    dev_preprocessed_context.append(sent.strip())

dev["clean_context"] = dev_preprocessed_context
```

```
100%|████████████████████████████████████████████████████████████████
| 87599/87599 [00:07<00:00, 12266.31it/s]
100%|████████████████████████████████████████████████████████████████
| 10570/10570 [00:00<00:00, 11661.38it/s]
```

In [13]:
```
preprocessed_context[0]
```

Out[13]:
```
'architecturally the school has a catholic character atop the main building i
s gold dome is a golden statue of the virgin mary immediately in front of the
main building and facing it is a copper statue of christ with arms upraised w
ith the legend venite ad me omnes next to the main building is the basilica o
f the sacred heart immediately behind the basilica is the grotto a marian pla
ce of prayer and reflection it is a replica of the grotto at lourdes france w
here the virgin mary reputedly appeared to saint bernadette soubirous in 1858
at the end of the main drive and in a direct line that connects through 3 sta
tues and the gold dome is a simple modern stone statue of mary'
```

1. Qustions

In [14]:
```
# for train data

from tqdm import tqdm
preprocessed_question = []
# tqdm is for printing the status bar
for sentance in tqdm(train["question"].values):
    sent = decontracted(sentance)
    preprocessed_question.append(sent.strip())

train["clean_question"] = preprocessed_question


# for dev data

from tqdm import tqdm
dev_preprocessed_question = []
# tqdm is for printing the status bar
for sentance in tqdm(dev["question"].values):
    sent = decontracted(sentance)
    dev_preprocessed_question.append(sent.strip())

dev["clean_question"] = dev_preprocessed_question
```

```
100%|████████████████████████████████████████████████████████████████
| 87599/87599 [00:01<00:00, 53002.99it/s]
100%|████████████████████████████████████████████████████████████████
| 10570/10570 [00:00<00:00, 56982.19it/s]
```

In [15]:
```
preprocessed_question[:5]
```

Out[15]:
```
['to whom did the virgin mary allegedly appear in 1858 in lourdes france',
 'what is in front of the notre dame main building',
 'the basilica of the sacred heart at notre dame is beside to which structur
e',
 'what is the grotto at notre dame',
 'what sits on top of the main building at notre dame']
```

1. Answers

In [16]:
```
# for train data

preprocessed_answer = []
# tqdm is for printing the status bar
for sentance in tqdm(train["text"].values):
    sent = decontracted(sentance)
    preprocessed_answer.append(sent.strip())


train["clean_answer"] = preprocessed_answer

# for dev data

dev_preprocessed_answer = []
# tqdm is for printing the status bar
for sentance in tqdm(dev["text"].values):
    sent = decontracted(sentance)
    dev_preprocessed_answer.append(sent.strip())

dev["clean_answer"] = dev_preprocessed_answer
```

```
100%|████████████████████████████████████████████████████████████████
| 87599/87599 [00:01<00:00, 65264.39it/s]
100%|████████████████████████████████████████████████████████████████
| 10570/10570 [00:00<00:00, 64279.64it/s]
```

2.2 Language Detection

The language of the message is iden-tified and non-English messages are discarded.

In [310]:
```
# function for language detction

def get_language(string):

    """
    This function returns the language of string. Uses Textblob which internal
ly uses google API.

    This creates problem when you have to check for too many values.

    You will get --> 'HTTPError: HTTP Error 429: Too Many Requests'

    @return - language

    """
    return TextBlob(string).detect_language()


def language(string):
    """
    Not as accurate as TextBlob but gets our work done.

    @return - language

    """
    return detect(string)
```

In [18]:
```
# for train data

train["language"] = train["clean_context"].apply(language)
print(np.unique(train["language"]))

# for dev data

dev["language"] = dev["clean_context"].apply(language)
print(np.unique(dev["language"]))
```

```
['en' 'it' 'pt']
['en']
```

In [19]:
```
train = train[train["language"] == 'en']
print(train.shape)

dev = dev[dev["language"] == 'en']
print(dev.shape)
```

```
(87595, 9)
(10570, 9)
```

In [34]:
```
train.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 87388 entries, 0 to 87598
Data columns (total 11 columns):
context           87388 non-null object
question          87388 non-null object
answer_start      87388 non-null int64
text              87388 non-null object
title             87388 non-null object
clean_context     87388 non-null object
clean_question    87388 non-null object
clean_answer      87388 non-null object
language          87388 non-null object
ans_span          87388 non-null object
exact             87388 non-null int64
dtypes: int64(2), object(9)
memory usage: 8.0+ MB
```

2.3 Calculating ans span for given ans and context

In [35]:
```
ans_span = []
for i in range(len(train)):
    s,e = answer_span(train["clean_context"].iloc[i],train["clean_answer"].ilo
c[i])
    ans_span.append((s,e))

print("number of answer not matching context :- ",ans_span.count((-1,-1)))

train["ans_span"] = ans_span
```

```
number of answer not matching context :-  0
```

In [36]:
```
ans_span = []
for i in range(len(dev)):
    s,e = answer_span(dev["clean_context"].iloc[i],dev["clean_answer"].iloc[i
])
    ans_span.append((s,e))

print("number of answer not matching context :- ",ans_span.count((-1,-1)))

dev["ans_span"] = ans_span
```

```
number of answer not matching context :-  0
```

In [37]:
```
print(train.shape)
print(dev.shape)
```

```
(87388, 11)
(10548, 11)
```

In [38]:
```
train = train[train["ans_span"] != (-1,-1)]
dev = dev[dev["ans_span"] != (-1,-1)]
```

In [39]:
```
print(train.shape)
print(dev.shape)
```

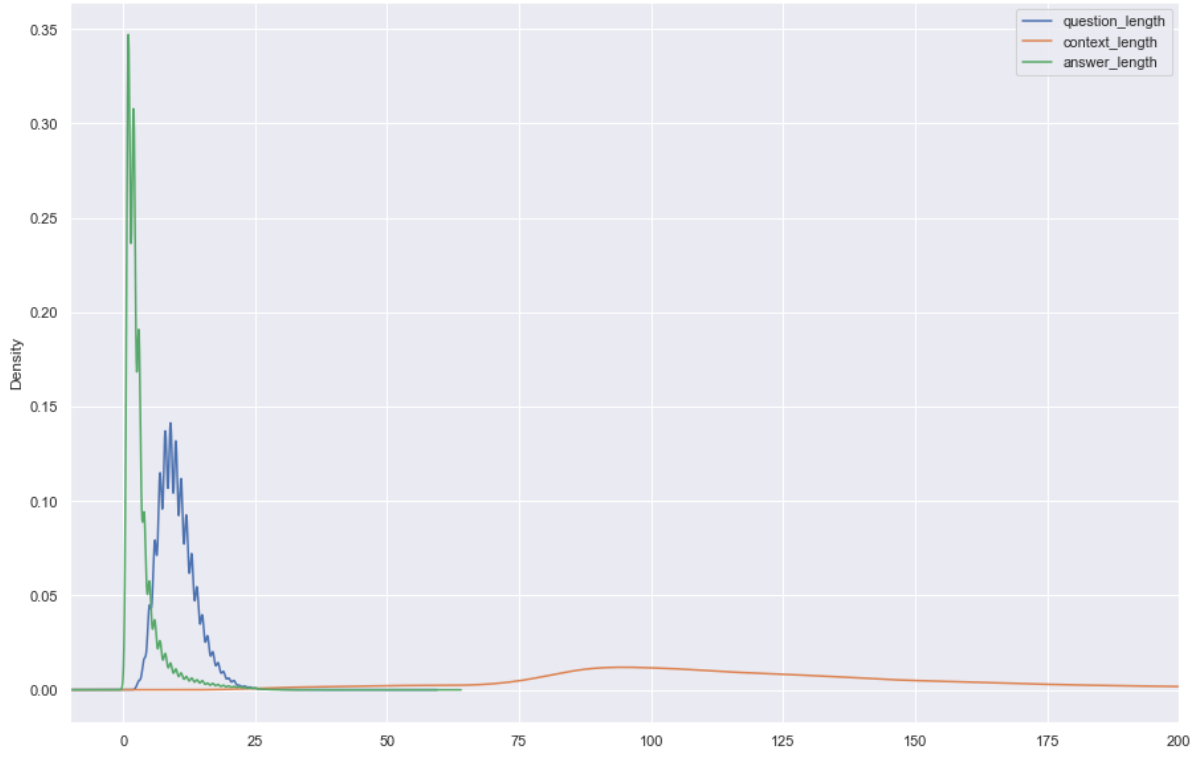
```
(87388, 11)
(10548, 11)
```

3. EDA

In [46]:
```
# adding context_length ,question_length and answer_length features for eda
train["context_length"] = train["clean_context"].apply(lambda x:len(x.split
()))
train["question_length"] = train["clean_question"].apply(lambda x:len(x.split
()))
train["answer_length"] = train["clean_answer"].apply(lambda x:len(x.split()))
```

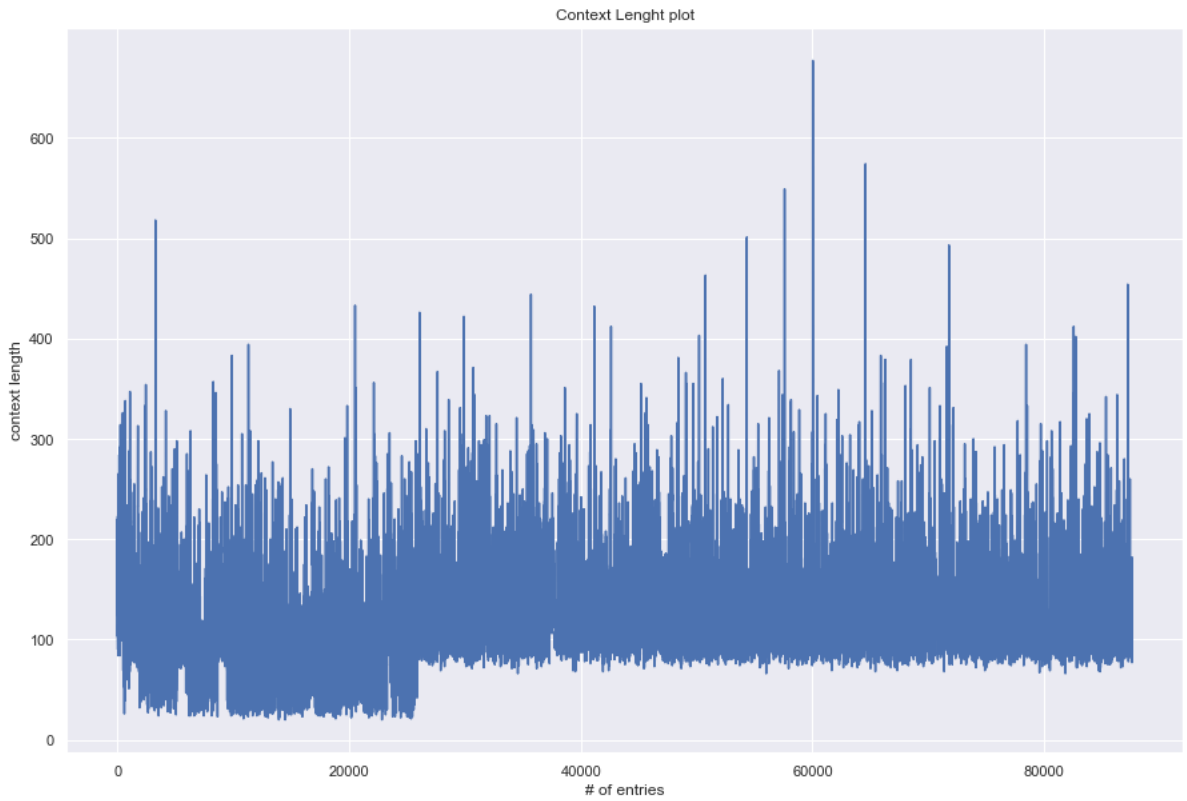
In [47]:
```
sns.set()
tf = train[["question_length","context_length","answer_length"]]
tf.plot.kde(figsize=(15,10),xlim=(-10,200))
```

Out[47]: <matplotlib.axes._subplots.AxesSubplot at 0x2df9d2e0080>



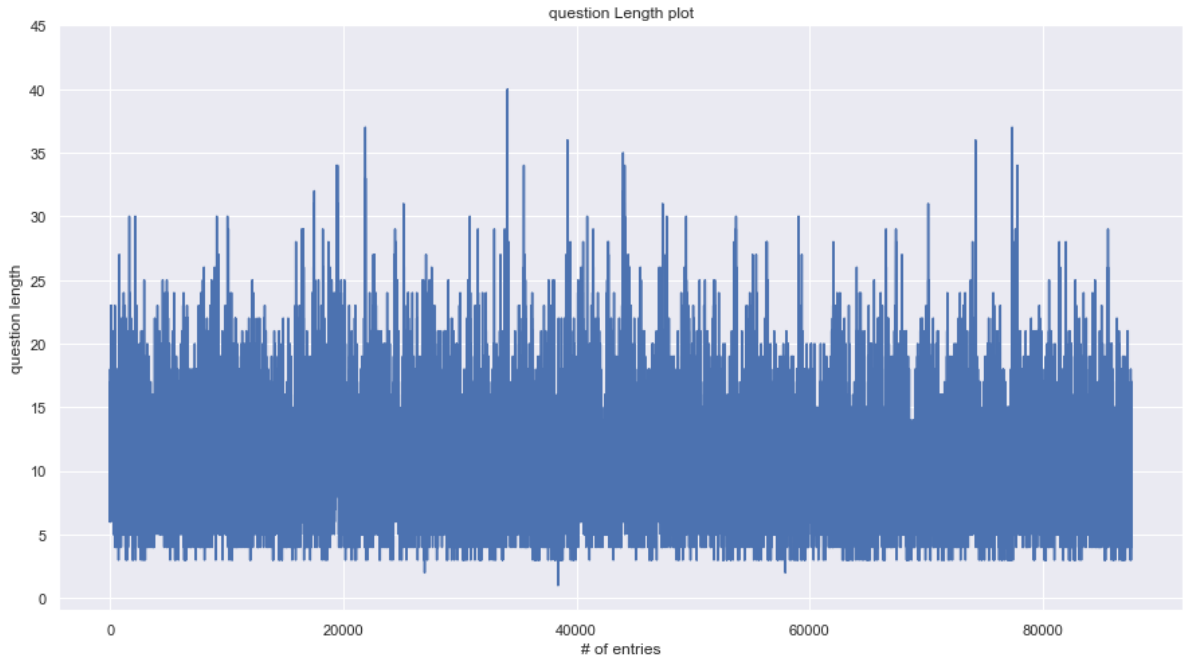
1. Train Context Length

In [48]:
```
plt.figure(figsize=(15,10))
plt.plot(train["context_length"])
plt.xlabel("# of entries")
plt.ylabel("context length")
plt.yticks(range(0,700,100))
plt.title("Context Lenght plot")
plt.show()
```



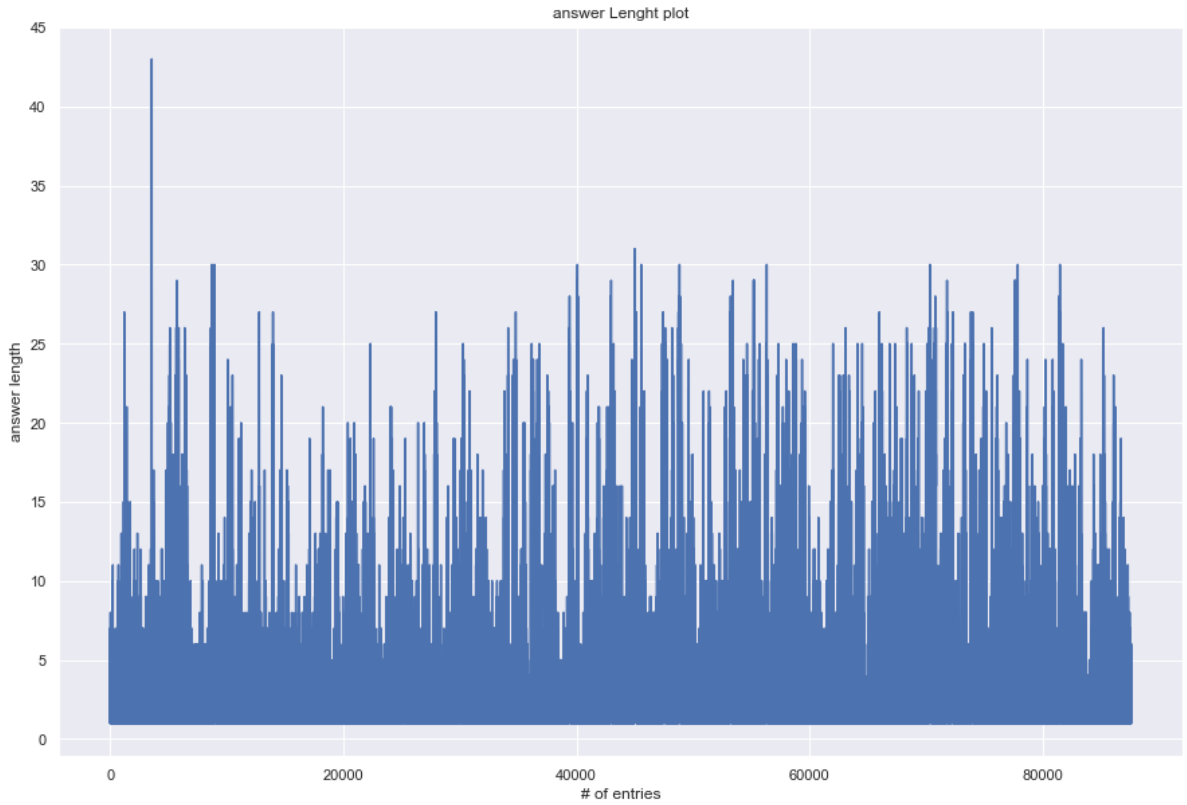
1. Train Question Length

In [49]:
```
plt.figure(figsize=(15,8))
plt.plot(train["question_length"])
plt.xlabel("# of entries")
plt.ylabel("question length")
plt.yticks(range(0,50,5))
plt.title("question Length plot")
plt.show()
```



1. Answer Length plot

In [50]:
```
plt.figure(figsize=(15,10))
plt.plot(train["answer_length"])
plt.xlabel("# of entries")
plt.ylabel("answer length")
plt.yticks(range(0,50,5))
plt.title("answer Lenght plot")
plt.show()
```



In [538]:
```
train["answer_length"].describe()
```

Out[538]:
```
count    30000.000000
mean         3.305233
std          3.448970
min          1.000000
25%          1.000000
50%          2.000000
75%          4.000000
max         31.000000
Name: answer_length, dtype: float64
```

Observations:

1. On an avg. answer length lies in the range of 1-15
2. Avg. question length found to be 15
3. Maximum context length found to be 680

4. Encoding

If you have files , you can start from here...

In [2]:
```
# train.to_csv("train.csv")
# dev.to_csv("dev.csv")

train = pd.read_csv("train.csv")
dev = pd.read_csv("dev.csv")
```

In [3]:
```
from sklearn.model_selection import train_test_split
from sklearn.utils import resample,shuffle

train = resample(train)
train = shuffle(train,n_samples =50000)

train,dev = train_test_split(train,test_size = 0.2)
train,cv = train_test_split(train,test_size=0.25)

print(train.shape)
print(cv.shape)
print(dev.shape)
```

```
(30000, 15)
(10000, 15)
(10000, 15)
```

In [4]:
```
# loading already stored embeding matrix and dictionary

with open("embedding.pkl","rb") as f:
    embedding_matrix = load(f)
print("Shpae of embedding matrix is ",embedding_matrix.shape)

with open("word2ix.pkl","rb") as f:
    word2ix = load(f)

print(len(word2ix))
```

```
Shpae of embedding matrix is  (74621, 300)
74620
```

In [5]:
```
cv.to_csv("data/cv.csv")
dev.to_csv("data/dev.csv")
train.to_csv("data/train.csv")
```

In [6]:
```
# using keras as it is highly optimized.
from keras.preprocessing.text import Tokenizer
token = Tokenizer()
token.word_index = word2ix
```

```
Using TensorFlow backend.
```

In [7]:
```
# word2ix and ix2word dictionary
word2ix = token.word_index
ix2word = dict()

for k,v in word2ix.items():
    ix2word[v] = k

print(len(word2ix))
print(len(ix2word))
```

```
74620
74620
```

In [12]:
```
from keras.backend import gather
from nltk.stem import WordNetLemmatizer
import nltk
nltk.download('wordnet')
lemmatizer = WordNetLemmatizer()
```

```
[nltk_data] Error loading wordnet: <urlopen error [WinError 10060] A
[nltk_data]     connection attempt failed because the connected party
[nltk_data]     did not properly respond after a period of time, or
[nltk_data]     established connection failed because connected host
[nltk_data]     has failed to respond>
```

In [31]:
```
d = pd.read_table("tags",delimiter = "|",header=None)

pos_tags_list = d[0].values
pos_tags_list = [et.strip() for et in pos_tags_list]
tag_to_num = {tag:i for i, tag in enumerate(sorted(pos_tags_list),1)}
num_to_tag = {i:tag for i, tag in enumerate(sorted(pos_tags_list),1)}

QUES_LEN = 40
CON_LEN = 680
TAGS = 36


print(len(pos_tags_list))
```

```
36
```

In [32]:
```
def exact_lemma(ques_tokens,con_tokens):
    """
    This function returns array of two binary features. Exact match and lemma.

    """
    exact = [1 if ecw in ques_tokens else 0 for ecw in con_tokens]
    lemma = [1 if lemmatizer.lemmatize(et, pos="v") in ques_tokens else 0 for
et in con_tokens]
    bi = np.array([exact,lemma])
    return np.transpose(bi)


def term_ferquency(tokens):
    """
    This funtion returns term frequecy of every word.
    """
    l = len(tokens)
    tf = [tokens.count(ew)/l for ew in tokens]
    tf = np.array([tokens.count(ew)/l for ew in tokens])
    return np.reshape(tf,(l,-1))


def tags(tokens):
    """
    This function returns POS tags.
    """
    return nltk.pos_tag(tokens)

def pos_ner(tokens):
    """
    This function returns one hot encoded pos/ner tags for each word.
    """
    pos = np.zeros((len(tokens),len(tag_to_num)+1))
    pos_tags = tags(tokens)
    pi,ti = zip(*pos_tags)
    pos[np.arange(len(tokens)),[tag_to_num[i] if i in tag_to_num else 0 for i
in ti]] = 1
    return pos


def tokenize(sentence):
    """
    Returns tokenised words.
    """
    return nltk.word_tokenize(sentence)

def get_glove(tokens):
    """
    This function returns glove vectors for given tokens.
    """
    indices = [word2ix[w] if w in word2ix else 0 for w in tokens]
    return gather(embedding_matrix,indices)
```

```
def context_question(context,question):
    """
    This function takes context and question and perform various operatons on
 them.
    """
    con_tokens = tokenize(context)
    ques_tokens = tokenize(question)

    # this function returns term frequency of every word in context.
    term_ferq = term_ferquency(con_tokens)

    # this function returns matrix of one_hot_enoced pos tags. (tokens_size,3
3)
    pos_ = pos_ner(con_tokens)

    # this function retuns matrix of glove vector. (tokens_size,300)
    glove_ = get_glove(con_tokens)

    #exact, lemma binary feature.
    ex_lem = exact_lemma(ques_tokens,con_tokens)

    # stack glvoe + pos_ + term_frequency horizontally 300 + 36 + 1 + 2 = 338
    final = tf.concat([glove_,pos_,term_ferq,ex_lem],axis = 1)

    # as context_length is fixed to 680. Add zero matrix of size (680 - tokens
_size). and stack vertically.
    zeros = tf.zeros((CON_LEN - final.shape.as_list()[0],final.shape.as_list()
[1]),dtype=tf.float64)

    final = tf.concat([final,zeros],axis=0)
    return final
```

POS Tags Feature[One Hot Encoded]

In [83]:
```
train_pos_tag = []
for i in range(len(train)):
    tk = tokenize(train["clean_context"].iloc[i])
    pos = pos_ner(tk)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    train_pos_tag.append(tk)
```

In [85]:
```
# for cv data
cv_pos_tag = []
for i in range(len(cv)):
    tk = tokenize(cv["clean_context"].iloc[i])
    pos = pos_ner(tk)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    cv_pos_tag.append(tk)
```

In [86]:
```
dev_pos_tag = []
for i in range(len(dev)):
    tk = tokenize(dev["clean_context"].iloc[i])
    pos = pos_ner(tk)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    dev_pos_tag.append(tk)
```

Term Frequency

In [88]:
```
train_term[5].shape
```

Out[88]: (78, 1)

In [89]:
```
# for train data
train_term = []
for i in range(len(train)):
    tk = tokenize(train["clean_context"].iloc[i])
    pos = term_ferquency(tk)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    train_term.append(tk)
```

In [90]:
```
# for dev data
dev_term = []
for i in range(len(dev)):
    tk = tokenize(dev["clean_context"].iloc[i])
    pos = term_ferquency(tk)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    dev_term.append(tk)
```

In [91]:
```
# for cv data
cv_term = []
for i in range(len(cv)):
    tk = tokenize(cv["clean_context"].iloc[i])
    pos = term_ferquency(tk)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    cv_term.append(tk)
```

In [92]:
```
cv_term[5].shape
```

Out[92]: (680, 1)

Exact And Lemma Form [Binary Feature]

In [507]:
```
# for train data
train_excat_lemma = []
for i in tqdm(range(len(train))):
    ques_tokens = tokenize(train["clean_question"].iloc[i])
    con_tokens = tokenize(train["clean_context"].iloc[i])
    pos = exact_lemma(ques_tokens,con_tokens)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    train_excat_lemma.append(tk)
```

In [98]:
```
# for dev data
dev_excat_lemma = []
for i in tqdm(range(len(dev))):
    ques_tokens = tokenize(dev["clean_question"].iloc[i])
    con_tokens = tokenize(dev["clean_context"].iloc[i])
    pos = exact_lemma(ques_tokens,con_tokens)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    dev_excat_lemma.append(tk)
```

In [97]:
```
# for cv data
cv_excat_lemma = []
for i in tqdm(range(len(cv))):
    ques_tokens = tokenize(cv["clean_question"].iloc[i])
    con_tokens = tokenize(cv["clean_context"].iloc[i])
    pos = exact_lemma(ques_tokens,con_tokens)
    p_ = np.zeros((CON_LEN - pos.shape[0],pos.shape[1]))
    tk = np.concatenate((pos,p_))
    cv_excat_lemma.append(tk)
```

Total words in train manual -- code

In [131]:
```
# # getting all unique words from context
# word_vocab = set()

# for ec in train["clean_context"].values:
#     word_vocab.update(ec.split())

# for ec in train["clean_question"].values:
#     word_vocab.update(ec.split())


# print("Total unique words in training data are {}".format(len(word_vocab)))


# # word2ix and ix2word dictionary
# word2ix = dict()
# ix2word = dict()

# for i,w in enumerate(list(word_vocab),1):
#     word2ix[w] = i
#     ix2word[i] = w

# print(len(word2ix))
# print(len(ix2word))
```

```
Total unique words in training data are 77855
```

In [13]:
```
# FIXING Some values
VOCAB_SIZE = len(word2ix) + 1
GLOVE = 300
QUES_LEN = 40
CON_LEN = 680
```

4.1 Encoding

1. Qustion

In [135]:
```
train_clean_question_sequence = token.texts_to_sequences(train["clean_questio
n"].values)
print(type(train_clean_question_sequence))

dev_clean_question_sequence = token.texts_to_sequences(dev["clean_question"].v
alues)
print(type(dev_clean_question_sequence))

cv_clean_question_sequence = token.texts_to_sequences(cv["clean_question"].val
ues)
print(type(cv_clean_question_sequence))
```

```
<class 'list'>
<class 'list'>
<class 'list'>
```

In [136]:
```
# padding sequences
from keras.preprocessing.sequence import pad_sequences
```

In [137]:
```
train_question_sequence = pad_sequences(train_clean_question_sequence,maxlen=Q
UES_LEN,padding="post")


print("Max Question Sequence length is {}".format(train_question_sequence.shap
e[1]))

cv_question_sequence = pad_sequences(cv_clean_question_sequence,maxlen=QUES_LE
N,padding="post")
dev_question_sequence = pad_sequences(dev_clean_question_sequence,maxlen=QUES_
LEN,padding="post")

print(train_question_sequence.shape)
print(cv_question_sequence.shape)
print(dev_question_sequence.shape)
```

```
Max Question Sequence length is 40
(30000, 40)
(10000, 40)
(10000, 40)
```

2. Context

In [138]:
```
train_clean_context_sequence = token.texts_to_sequences(train["clean_context"]
.values)
print(type(train_clean_context_sequence))

dev_clean_context_sequence = token.texts_to_sequences(dev["clean_context"].val
ues)
print(type(dev_clean_context_sequence))

cv_clean_context_sequence = token.texts_to_sequences(cv["clean_context"].value
s)
print(type(cv_clean_context_sequence))
```

```
<class 'list'>
<class 'list'>
<class 'list'>
```

In [139]:
```
train_context_sequence = pad_sequences(train_clean_context_sequence,maxlen=CON
_LEN)

# fix this value as results may vary during various runs

print("Max context Sequence length is {}".format(train_context_sequence.shape[
1]))

cv_context_sequence = pad_sequences(cv_clean_context_sequence,maxlen=CON_LEN)
dev_context_sequence = pad_sequences(dev_clean_context_sequence,maxlen=CON_LEN
)

print(train_context_sequence.shape)
print(cv_context_sequence.shape)
print(dev_context_sequence.shape)
```

```
Max context Sequence length is 680
(30000, 680)
(10000, 680)
(10000, 680)
```

Fix these values as results may vary due to change in train and cv during SPLIT

- QUES_LEN = 40
- CON_LEN = 677
- VOCAB_SIZE = 77880
- GLOVE = 300

3. Creating Anser Sequences

Encode y_trues as big array consisting of start_labe + end_label. As this logic was used in loss function used.

y_true = start_label + end_label

In [133]:
```
train["ans_span"] = train["ans_span"].apply(lambda x :eval(x))
dev["ans_span"] = dev["ans_span"].apply(lambda x :eval(x))
cv["ans_span"] = cv["ans_span"].apply(lambda x :eval(x))
```

In [276]:
```
# # for train data
# y_train = []

# for i in range(len(train)):

#     s_ = np.zeros(CON_LEN,dtype = "int32")

#     start,end = train["ans_span"].iloc[i]
#     s_[start:end] = 1
#     y_train.append(s_)


# # for cv data
# y_cv = []

# for i in range(len(cv)):

#     s_ = np.zeros(CON_LEN,dtype = "int32")

#     start,end = cv["ans_span"].iloc[i]
#     s_[start:end] = 1
#     y_cv.append(s_)


# # for dev data
y_dev_c = []

for i in range(len(dev)):

    s_ = np.zeros(CON_LEN,dtype = "int32")

    start,end = dev["ans_span"].iloc[i]
    s_[start:end] = 1
    y_dev_c.append(s_)
```

In [134]:
```
# for train data
y_train = []

for i in range(len(train)):

    s_ = np.zeros(CON_LEN,dtype = "int32")
    e_ = np.zeros(CON_LEN,dtype = "int32")

    start,end = train["ans_span"].iloc[i]
    s_[start] = 1
    e_[end] = 1
    y_train.append(np.concatenate((s_,e_)))


# for cv data
y_cv = []

for i in range(len(cv)):

    s_ = np.zeros(CON_LEN,dtype = "int32")
    e_ = np.zeros(CON_LEN,dtype = "int32")

    start,end = cv["ans_span"].iloc[i]
    s_[start] = 1
    e_[end] = 1
    y_cv.append(np.concatenate((s_,e_)))


# for dev data
y_dev = []

for i in range(len(dev)):

    s_ = np.zeros(CON_LEN,dtype = "int32")
    e_ = np.zeros(CON_LEN,dtype = "int32")

    start,end = dev["ans_span"].iloc[i]
    s_[start] = 1
    e_[end] = 1
    y_dev.append(np.concatenate((s_,e_)))
```

4.2 Embedding matrix

In [24]:
```
# we are using glove 300d vectors for encoding...

words = pd.read_table("glove/glove.42B.300d/glove.42B.300d.txt", sep=" ", inde
x_col=0, header=None, quoting=csv.QUOTE_NONE)

def vec(w):
    """
    This function returns 300 dimetional vector for a given word.
    """
    return words.loc[w].as_matrix()
```

In [25]:
```
# +1 for zero embedding
VOCAB_SIZE = (len(word2ix)+1)
GLOVE = 300
word_array = words.index.values

print("Shape of embedding matrix is of order ({} x {})".format(VOCAB_SIZE,GLOV
E))
```

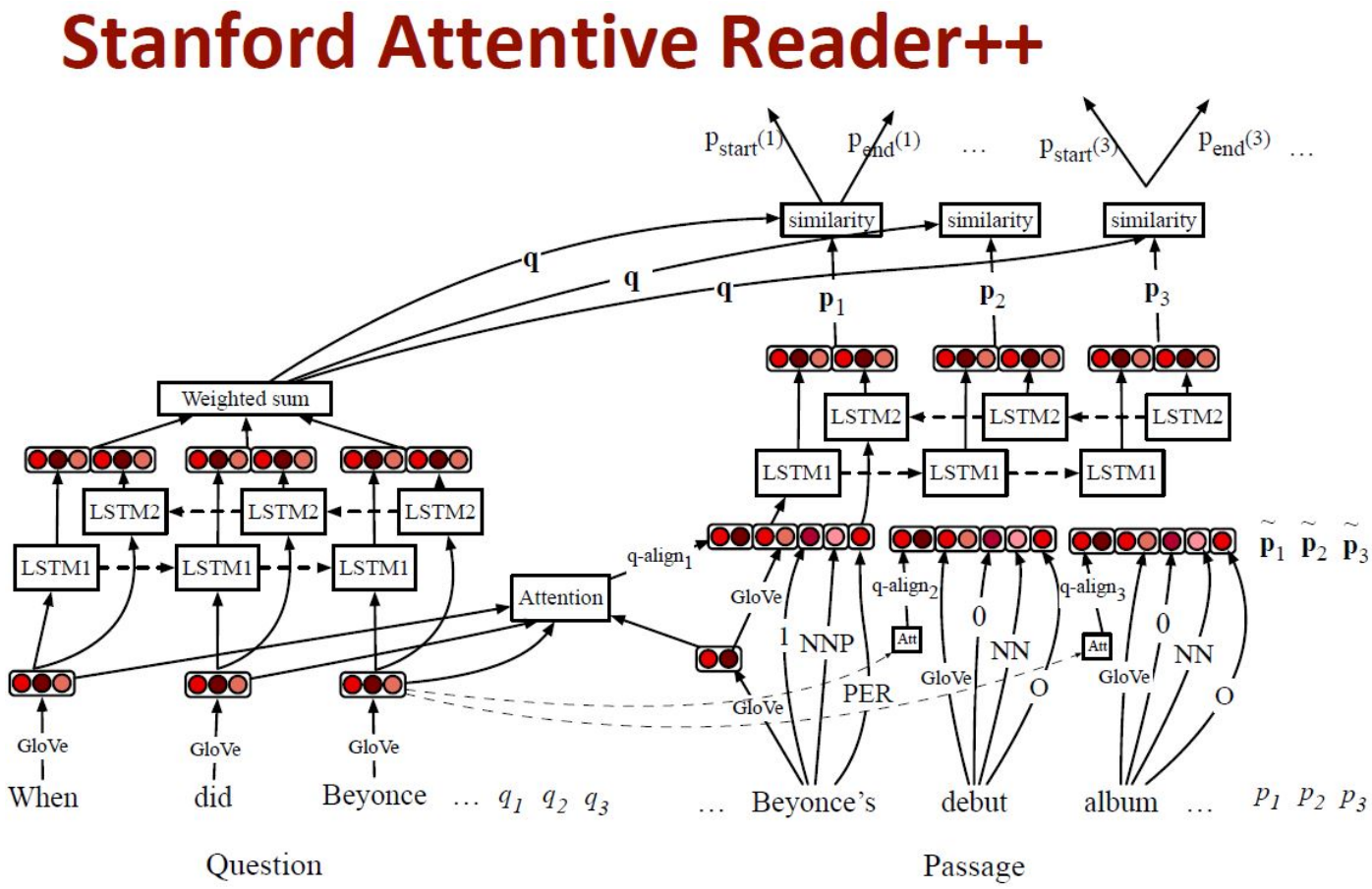
```
Shape of embedding matrix is of order (74621 x 300)
```

In [26]:
```
embedding_matrix = np.zeros((VOCAB_SIZE,GLOVE))

print("Embedding matrix shape is ",embedding_matrix.shape)


for ew in tqdm(word2ix):
    if ew in word_array:
        embedding_matrix[word2ix[ew]] = vec(ew)

print("Saving the embedding matrix for future use...")

with open("embedding.pkl","wb") as f:
    dump(embedding_matrix,f)
```

```
Embedding matrix shape is  (74621, 300)

100%|██████████████████████████████████████████████████████████████████
██| 74620/74620 [1:25:11<00:00, 13.42it/s]

Saving the embedding matrix for future use...
```

5. Model

The model implemented in below is Standford Attentive Reader Model. This model is more similar to given prediction task **Smart Reply: Google Gmail**



5.1 Model Classes

All the Attention classes are implemented as per mentioned in above.Here with list of all classes implemented.

1. Embedding - For embedding layer
2. BiLSTM - For bi-directional LSTM
3. Attention - weighted sum
4. Aligned Question Embedding
5. Bilinear Similarity
6. Prediction

In [69]:
```
from tensorflow.keras.layers import Bidirectional,LSTM,Dense,Dropout,BatchNorm
alization,Flatten,Input
from tensorflow.keras.models import Model
from tensorflow.keras.layers import concatenate
```

5.1.1 Embedding - For embedding layer

In [53]:
```
class Embedding(tf.keras.Model):
    """
    This class applies embedding layer to given input.

    """
    def __init__(self, vocab_size,embedding_matrix , embedding_dim = 300):

        super(Embedding,self).__init__()

        self.embedding = tf.keras.layers.Embedding(vocab_size, embedding_dim,w
eights=[embedding_matrix],trainable=False,mask_zero=True)

    def call(self, x):

        x = self.embedding(x)
        return x
```

5.1.2 BiLSTM - For bi-directional LSTM

In [54]:
```
class BiLSTM(tf.keras.Model):
    """
    This class is for bidirectional LSTM we are going to use.
    """

    def __init__(self,num_units):

        super(BiLSTM, self).__init__()

        self.num_units = num_units
        self.bilstm = Bidirectional(LSTM(num_units,return_sequences=True,recur
rent_initializer='glorot_uniform',dropout = 0.3))

    def call(self,x):

        output = self.bilstm(x)
        return output
```

5.1.3 Attention - Weighted Context Vector

$$\mathbf{q} = \sum_j b_j \mathbf{q}_j$$

$$\text{For learned } \mathbf{w}, \quad b_j = \frac{\exp(\mathbf{w} \cdot \mathbf{q}_j)}{\sum_{j'} \exp(\mathbf{w} \cdot \mathbf{q}_{j'})}$$

In [55]:
```
class Attention(tf.keras.Model):

    """
    This class implements a weighted sum attention.

    """
    def __init__(self, units = 1):

        super(Attention, self).__init__()
        self.W = tf.keras.layers.Dense(units)

    def call(self, values):

        # values is the output of encoder. shape of values (batch,max_len,unit
s)
        #score shape will be (batch,max_len,1)
        score = self.W(values)

        # attention_weights shape == (batch_size, max_length, 1)
        attention_weights = tf.nn.softmax(score, axis=1)

        # context_vector shape after sum == (batch_size, hidden_size)
        # for clear understanding please check broadcasting in numpy
        context_vector = attention_weights * values
        context_vector = tf.reduce_sum(context_vector, axis=1)

        return context_vector, attention_weights
```

5.1.4 Aligned question Embedding

Alpha is a single dense layer with ReLU nonlinearity.

$$f_{align}(p_i) = \sum_j a_{i,j}\mathbf{E}(q_j)$$

$$q_{i,j} = \frac{\exp(\alpha(\mathbf{E}(p_i)) \cdot \alpha(\mathbf{E}(q_j)))}{\sum_{j'} \exp(\alpha(\mathbf{E}(p_i)) \cdot \alpha(\mathbf{E}(q'_j)))}$$

In [56]:
```
class AlignAttention(tf.keras.Model):

    """
    This class implements ths aligned question embedding as mentioned in pape
r.
    For better understanding please check the concept of broadcasting.
    @ returns : (batch_size,decoder_timesteps,encoder_units)

    """

    def __init__(self, units = 1):

        super(AlignAttention, self).__init__()

        self.W1 = tf.keras.layers.Dense(units,activation="relu")
        self.W2 = tf.keras.layers.Dense(units,activation="relu")

    def call(self,encoder,decoder):

        # shape of encoder is (batch_size,encoder_timesteps,encoder_units)
        # shape of decoder (batch_size,decoder_timesteps,decoder_units)

        # check for efficient way to transform (64,30,128)) * (64,150,128) ==>
(64,150,128)

        temporal_tensor = []

        for i in range(decoder.shape[1]):
            # for every time slice (64,i,128)
            query = decoder[:,i,:]

            # shape (64,128) --> (64,1,128)
            hidden_with_time_axis = tf.expand_dims(query, 1)

            # score shape == (batch_size, max_length, 1)
            score = self.W1(encoder) * self.W2(hidden_with_time_axis)
            # attention_weights shape == (batch_size, max_length, 1)
            attention_weights = tf.nn.softmax(score, axis=1)

            context_vector = attention_weights * encoder
            # context_vector shape after sum == (batch_size, hidden_size)
            context_vector = tf.reduce_sum(context_vector, axis=1)

            temporal_tensor.append(tf.expand_dims(context_vector,axis = 1))
            #batch_,hidden_ = context_vector.shape
            #temporal_tensor.append(tf.reshape(context_vector,(batch_,-1,hidde
n_)))

        # concate all tensor along temporal axis.
        # return shape should be (batch,decoder_timestep,hidden)
        q_align = tf.concat(temporal_tensor,axis = 1)

        return tf.concat([q_align,decoder],axis = 2)
```

In [57]:
```
# uncomment to test the layer.

# # test code
# in_ = Input(shape=(30,300),batch_size=64)
# en = LSTM(128,return_sequences=True)(in_)
# print(en.shape)

# # test code
# in_ = Input(shape=(100,300),batch_size=64)
# de = LSTM(128,return_sequences=True)(in_)
# print(de.shape)

# att = AlignAttention()(en,de)
# print(att.shape)
```

5.1.5 Bilinear Term for probability calculations

we use a bilinear term to capture the similarity between pi and q and compute the probabilities of each token being start and end.

$$P_{start}(i) \propto \exp\left(\mathbf{p}_i \mathbf{W}_s \mathbf{q}\right)$$
$$P_{end}(i) \propto \exp\left(\mathbf{p}_i \mathbf{W}_e \mathbf{q}\right)$$

In [58]:
```
class BilinearSimilarity(tf.keras.Model):
    """
    This function calcualtes biliear term used for answer span prediction.
    Referance took from --> https://github.com/kellywzhang/reading-comprehension/blob/master/attention.py

    """

    def __init__(self,hidden_size):

        super(BilinearSimilarity,self).__init__()

        self.units = hidden_size * 2
        self.WS = tf.keras.layers.Dense(self.units)
        self.WE = tf.keras.layers.Dense(self.units)


    def call(self,query,values):

        # quesry corresponds to final question context vector (batch_size,hidden)
        # values are output of decoder i.e context (batch_size,decoder_timesteps,hidden)

        # taking transpose of values (0,1,2) --> (0,2,1)

        #values = tf.transpose(values,[0,2,1])



        ################ start prediction ######################
        start = self.WS(query)

        # ading time_slice to question (batch_size,1,hidden)
        # shape (64,128) --> (64,1,128)
        hidden_start_time_axis = tf.expand_dims(start, -1)

        # squeeze remooves time slice we added before
        # final shape = (batch_size,decoder_timesteps)
        start_ = tf.squeeze(tf.matmul(values,hidden_start_time_axis),-1)

        start_ = tf.nn.softmax(start_,axis = 1)

        ################ end prediction ######################
        end = self.WE(query)

        hidden_end_time_axis = tf.expand_dims(end, -1)

        # squeeze remooves time slice we added before
        # final shape = (batch_size,decoder_timesteps)
        end_ = tf.squeeze(tf.matmul(values,hidden_end_time_axis),-1)
        end_ = tf.nn.softmax(end_,axis=1)

        prob = tf.concat((start_,end_),axis = 1)

        return prob
```

```
# this class is beacause we are using custom loss function.
# so need start and end logits. Which is used during calculation of loss.

class BilinearSimilarityLogits(tf.keras.Model):
    """
    This class is for calculating start and end logits.
    Referance took from --> https://github.com/kellywzhang/reading-comprehensi
on/blob/master/attention.py

    """

    def __init__(self,hidden_size):

        super(BilinearSimilarityLogits,self).__init__()

        self.units = hidden_size * 2
        self.WS = tf.keras.layers.Dense(self.units)
        self.WE = tf.keras.layers.Dense(self.units)


    def call(self,query,values):

        # quesry corresponds to final question context vector (batch_size,hidd
en)
        # values are output of decoder i.e context (batch_size,decoder_timeste
ps,hidden)

        # taking transpose of values (0,1,2) --> (0,2,1)

        values = tf.transpose(values,[0,2,1])



        ################ start prediction ######################
        start = self.WS(query)

        # ading time_slice to question (batch_size,1,hidden)
        # shape (64,128) --> (64,1,128)
        hidden_start_time_axis = tf.expand_dims(start, 1)

        # squeeze remooves time slice we added before
        # final shape = (batch_size,decoder_timesteps)

        start_logit = tf.squeeze(tf.matmul(hidden_start_time_axis,values),axis
=1)

        #start_ = tf.nn.softmax(start_,axis = 1)

        ################ end prediction ######################
        end = self.WE(query)

        hidden_end_time_axis = tf.expand_dims(end, 1)

        # squeeze remooves time slice we added before
        # final shape = (batch_size,decoder_timesteps)
```

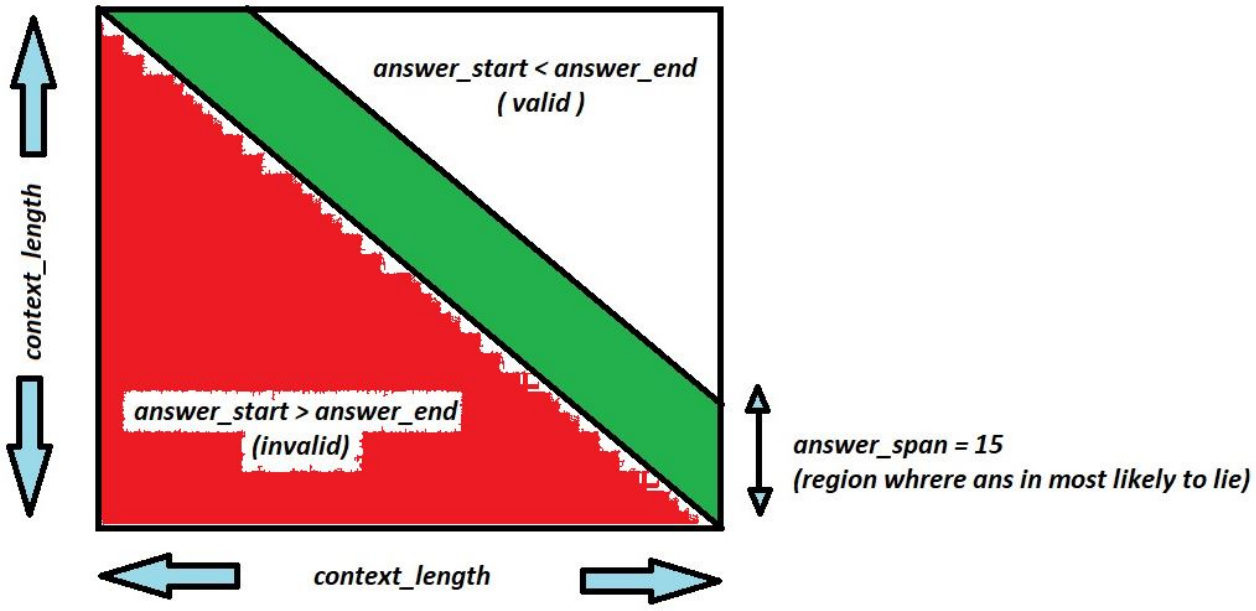
```
        end_logit = tf.squeeze(tf.matmul(hidden_end_time_axis,values),axis=1)
        #end_ = tf.nn.softmax(end_,axis=1)

        # shape is (batch_size,2* timesteps)
        logits = tf.concat([start_logit,end_logit],axis=1)
        return logits
```

In [59]:
```
# uncomemnt code to test the layer.

# # test code
# from tensorflow.keras.layers import Dense,Input
# q = Input(shape=(256,),batch_size=64)
# v = Input(shape=(400,256),batch_size=64)
# bln = BilinearSimilarityLogits(128)(q,v)
# bln
```

5.1.6 Predict

During prediction, we choose the best span from token i to token i' such that i <= i' <= i + 15 and Pstart(i) * Pend(i0) is maximized.

Please refer [https://hanxiao.github.io/2018/04/21/Teach-Machine-to-Comprehend-Text-and-Answer-Question-with-Tensorflow/ (https://hanxiao.github.io/2018/04/21/Teach-Machine-to-Comprehend-Text-and-Answer-Question-with-Tensorflow/)](https://hanxiao.github.io/2018/04/21/Teach-Machine-to-Comprehend-Text-and-Answer-Question-with-Tensorflow/)



5.1.6 Prediction class

In [121]:
```
# remeber to use softmax before prediction is using input from class BilinearS
imilarityLogits. As we are getting logits.
# Need to aaply softmax layer.

class Prediction(tf.keras.Model):
    """
    This class predicts probabilities of start and end token.
    Took referance from https://hanxiao.github.io/2018/04/21/Teach-Machine-to-
Comprehend-Text-and-Answer-Question-with-Tensorflow/

    """
    def __init__(self,token_span = 15):

        super(Prediction,self).__init__()
        self.token_span = token_span

    def call(self,prob):

        #assert start_prob.shape == end_prob.shape , "Please check probabiliti
es shape"


        start_prob = prob[:,:CON_LEN]
        end_prob = prob[:,CON_LEN:]

        # do the outer product
        outer = tf.matmul(tf.expand_dims(start_prob, axis=2),tf.expand_dims(en
d_prob, axis=1))

        outer = tf.matrix_band_part(outer, 0, self.token_span)

        #print(outer.shape)

        # start_position will have shape of (batch_size,)
        start_position = tf.reduce_max(outer, axis=2)
        #end position will have shape of (batch_size,)
        end_position = tf.reduce_max(outer, axis=1)

        probab = tf.concat([start_position,end_position],axis=1)
        return probab

        # masking start and end position to get y_pred as [0,0,0,1,1,1,0,...]
        # sequence mask will convert to 2D tensor of shape (batch_size,timeste
ps)

        #s_ = tf.sequence_mask(start_position,self.timesteps,dtype=tf.int32)
        #e_ = tf.sequence_mask(end_position,self.timesteps,dtype= tf.int32)

        # to get answers from start to end subtract 1 from start_position.
        #s_ = s_ - 1



        # subtract end_postion from start_positions to get in form of array
        # final shape should be (batch_size,timesteps)
```

```
        #return tf.subtract(e_,s_)
```

5.1.7 Custom Loss Function

In [105]:
```
def logits_loss(y_true,logits):
    """
    Custom loss function which minimises log_loss.
    Referance https://stackoverflow.com/questions/50063613/add-loss-function-in-keras
    """

    #y_true = tf.cast(y_true,dtype=tf.int32)
    #logits = tf.cast(logits,dtype=tf.float32)

    # breaking the tensor into two half's to get start and end label.
    start_label = y_true[:,:CON_LEN]
    end_label = y_true[:,CON_LEN:]

    # braking the logits tensor into start and end part for loss calcultion.
    start_logit = logits[:,:CON_LEN]
    end_logit = logits[:,CON_LEN:]

    start_loss = tf.keras.backend.categorical_crossentropy(start_label,start_logit)
    end_loss = tf.keras.backend.categorical_crossentropy(end_label,end_logit)

#     start_loss = tf.losses.sparse_softmax_cross_entropy(labels=start_label, logits=start_logit)
#     end_loss = tf.losses.sparse_softmax_cross_entropy(labels=end_label, logits=end_logit)

    # as per paer

    loss = start_loss + end_loss

    return loss
```

5.2 Building Model

In [62]:
```
UNITS = 64
```

In [63]:
```
# model building...

# question embedding
q_input = Input(shape=(QUES_LEN,))
q_emb = Embedding(VOCAB_SIZE,embedding_matrix)(q_input)

# encoder
q_cont = BiLSTM(UNITS)(q_emb)

# question context
q_cont,_ = Attention()(q_cont)
print(q_cont.shape)
```

```
WARNING:tensorflow:From C:\Users\rdbz3b\AppData\Local\Continuum\anaconda3\lib
\site-packages\tensorflow\python\ops\resource_variable_ops.py:435: colocate_w
ith (from tensorflow.python.framework.ops) is deprecated and will be removed
in a future version.
Instructions for updating:
Colocations handled automatically by placer.
WARNING:tensorflow:From C:\Users\rdbz3b\AppData\Local\Continuum\anaconda3\lib
\site-packages\tensorflow\python\keras\backend.py:4010: calling dropout (from
tensorflow.python.ops.nn_ops) with keep_prob is deprecated and will be remove
d in a future version.
Instructions for updating:
Please use `rate` instead of `keep_prob`. Rate should be set to `rate = 1 - k
eep_prob`.
(?, 128)
```

In [101]:
```
# context side model

# try to improve AlignAttention performance.
c_input = Input(shape=(CON_LEN,))

# context embedding
c_emb = Embedding(VOCAB_SIZE,embedding_matrix)(c_input)



# exact_match
ex_ = Input(shape=(CON_LEN,2))

# pos tags
pos_ = Input(shape=(CON_LEN,len(tag_to_num)+1))

# term frequency
term_ = Input(shape=(CON_LEN,1))

# concatenate input
concat = concatenate([c_emb,ex_,pos_,term_])

c_ = BiLSTM(UNITS)(concat)

print("final output that is fed to bilinear ",c_.shape)
```

```
final output that is fed to bilinear  (?, 680, 128)
```

In [124]:
```
# bilinear term
print("Question context shape ",q_cont.shape)
print("final o/p of context ",c_.shape)

logits = BilinearSimilarity(UNITS)(q_cont,c_)
Y_prob = Prediction()(logits)
print("Logits shape ",logits.shape)
```

```
Question context shape  (?, 128)
final o/p of context  (?, 680, 128)
Logits shape  (?, 1360)
```

In [126]:
```
model = Model(inputs = [q_input,c_input,ex_,pos_,term_],outputs =Y_prob)
model.summary()
```

```
__________________________________________________________________________________
_____________________
Layer (type)                 Output Shape              Param #     Connected to
==================================================================================
======================
input_1 (InputLayer)         (None, 40)                0
__________________________________________________________________________________
_____________________
input_19 (InputLayer)        (None, 680)               0
__________________________________________________________________________________
_____________________
embedding (Embedding)        (None, 40, 300)           22386300    input_1[0]
[0]
__________________________________________________________________________________
_____________________
embedding_10 (Embedding)     (None, 680, 300)          22386300    input_19[0]
[0]
__________________________________________________________________________________
_____________________
input_20 (InputLayer)        (None, 680, 2)            0
__________________________________________________________________________________
_____________________
input_21 (InputLayer)        (None, 680, 37)           0
__________________________________________________________________________________
_____________________
input_22 (InputLayer)        (None, 680, 1)            0
__________________________________________________________________________________
_____________________
bi_lstm (BiLSTM)             (None, 40, 128)           186880      embedding[0]
[0]
__________________________________________________________________________________
_____________________
concatenate_4 (Concatenate)  (None, 680, 340)          0           embedding_10
[0][0]
                                                                   input_20[0]
[0]
                                                                   input_21[0]
[0]
                                                                   input_22[0]
[0]
__________________________________________________________________________________
_____________________
attention (Attention)        [(None, 128), (None,      129         bi_lstm[0]
[0]
__________________________________________________________________________________
_____________________
bi_lstm_2 (BiLSTM)           (None, 680, 128)          207360      concatenate_
4[0][0]
__________________________________________________________________________________
_____________________
bilinear_similarity_3 (Bilinear (None, 1360)           33024       attention[0]
[0]
                                                                   bi_lstm_2[0]
[0]
__________________________________________________________________________________
_____________________
prediction_4 (Prediction)    (None, 1360)              0           bilinear_sim
```

```
ilarity_3[0][0]
==================================================================================
====================
Total params: 45,199,993
Trainable params: 427,393
Non-trainable params: 44,772,600
__________________________________________________________________________________
____________________
```

5.2.1 Generator Function for Data

In [160]:
```
from numpy import array
def generator_function(length,batch_size = 64,data_type = 'Train'):
    """
    This function is generates batches of data to avoid strain on memory.
    """
    X1, X2,X3,X4,X5, y = list(), list(), list(),list(), list(), list()
    flag = True
    if data_type == 'Val':
        flag = False
    n = 0
    # loop forever over datapoints.
    while 1:
        for i in range(length):
            n += 1
            if flag:
                X1.append(train_question_sequence[i])
                X2.append(train_context_sequence[i])
                X3.append(train_excat_lemma[i])
                X4.append(train_pos_tag[i])
                X5.append(train_term[i])
                y.append(y_train[i])
            else:
                X1.append(cv_question_sequence[i])
                X2.append(cv_context_sequence[i])
                X3.append(cv_excat_lemma[i])
                X4.append(cv_pos_tag[i])
                X5.append(cv_term[i])
                y.append(y_cv[i])
            if n== batch_size:
                yield ((array(X1),array(X2),array(X3),array(X4),array(X5)),arr
ay(y))
                X1, X2,X3,X4,X5 ,y = list(), list(), list(),list(), list(), li
st()
                n=0
```

In [167]:
```
# https://datascience.stackexchange.com/questions/35775/how-to-find-auc-metric-value-for-keras-model
from sklearn import metrics
from keras import backend as K
from sklearn.metrics import roc_auc_score

# https://stackoverflow.com/questions/41032551/how-to-compute-receiving-operating-characteristic-roc-and-auc-in-keras
```

In [173]:
```
# using tensorboard instance for callbacks
from time import time
from datetime import datetime
from tensorflow.python.keras.callbacks import TensorBoard

tensorboard = TensorBoard(log_dir="logs_123/{}".format(time()))

# model compilation
model.compile(optimizer="adamax",loss=logits_loss,metrics=['acc'])
```

In [174]:
```
epochs = 25
batch_size = 64
train_length = len(y_train)
cv_length = len(y_cv)
train_steps = train_length//batch_size
cv_steps = cv_length//32
```

In [187]:
```
# checkpointer = tf.keras.callbacks.ModelCheckpoint(filepath='model/weights.{epoch:02d}-{val_loss:.2f}.hdf5', verbose=1,save_best_only=True)
# history = tf.keras.callbacks.History()
from keras_tqdm import TQDMNotebookCallback
```

In [188]:
```
# # keras, model definition...
# cb = TQDMNotebookCallback()
# setattr(cb,'on_train_batch_begin',lambda x,y:None)
# setattr(cb,'on_train_batch_end',lambda x,y:None)
```

In [189]:
```
for i in range(epochs):
    print("Epoch {} start at time ".format(i),datetime.now())
    generator = generator_function(train_length,batch_size)
    cv_generator = generator_function(cv_length,32,"cv")
    model.fit_generator(generator, epochs=1, steps_per_epoch=train_steps,verbo
se=0,callbacks=[tensorboard],validation_data=cv_generator,validation_steps=cv_
steps)
    model.save_weights("model_epoch_{}.h5".format(i))
```

```
Epoch 0 start at time  2019-08-03 23:44:38.683862
203/312 [==================>...........] - ETA: 5:40 - loss: 5.6976 - acc: 0.
312 - ETA: 5:31 - loss: 5.6552 - acc: 0.265 - ETA: 5:16 - loss: 6.0375 - acc:
0.239 - ETA: 5:22 - loss: 5.9348 - acc: 0.242 - ETA: 5:21 - loss: 6.0095 - ac
c: 0.250 - ETA: 5:25 - loss: 5.9980 - acc: 0.265 - ETA: 5:29 - loss: 5.8977 -
acc: 0.272 - ETA: 5:25 - loss: 5.8497 - acc: 0.273 - ETA: 5:23 - loss: 5.7841
- acc: 0.284 - ETA: 5:23 - loss: 5.8302 - acc: 0.287 - ETA: 5:20 - loss: 5.83
41 - acc: 0.286 - ETA: 5:20 - loss: 5.8486 - acc: 0.283 - ETA: 5:17 - loss:
5.8379 - acc: 0.288 - ETA: 5:14 - loss: 5.8071 - acc: 0.292 - ETA: 5:11 - los
s: 5.8101 - acc: 0.291 - ETA: 5:10 - loss: 5.8884 - acc: 0.287 - ETA: 5:09 -
loss: 5.8825 - acc: 0.283 - ETA: 5:08 - loss: 5.8455 - acc: 0.286 - ETA: 5:06
- loss: 5.8377 - acc: 0.287 - ETA: 5:05 - loss: 5.8076 - acc: 0.293 - ETA: 5:
03 - loss: 5.8202 - acc: 0.294 - ETA: 5:03 - loss: 5.8370 - acc: 0.291 - ETA:
5:01 - loss: 5.8635 - acc: 0.290 - ETA: 5:00 - loss: 5.8696 - acc: 0.289 - ET
A: 4:59 - loss: 5.8794 - acc: 0.283 - ETA: 4:57 - loss: 5.8720 - acc: 0.283 -
ETA: 4:55 - loss: 5.8849 - acc: 0.283 - ETA: 4:55 - loss: 5.8877 - acc: 0.281
- ETA: 4:54 - loss: 5.9086 - acc: 0.282 - ETA: 4:53 - loss: 5.8888 - acc: 0.2
83 - ETA: 4:51 - loss: 5.8810 - acc: 0.282 - ETA: 4:50 - loss: 5.8823 - acc:
0.281 - ETA: 4:50 - loss: 5.8977 - acc: 0.279 - ETA: 4:48 - loss: 5.8919 - ac
c: 0.278 - ETA: 4:48 - loss: 5.8901 - acc: 0.280 - ETA: 4:46 - loss: 5.8905 -
acc: 0.281 - ETA: 4:46 - loss: 5.8684 - acc: 0.280 - ETA: 4:45 - loss: 5.8783
- acc: 0.279 - ETA: 4:43 - loss: 5.8936 - acc: 0.275 - ETA: 4:41 - loss: 5.87
59 - acc: 0.280 - ETA: 4:40 - loss: 5.8585 - acc: 0.282 - ETA: 4:38 - loss:
5.8611 - acc: 0.280 - ETA: 4:38 - loss: 5.8686 - acc: 0.279 - ETA: 4:36 - los
s: 5.8759 - acc: 0.278 - ETA: 4:35 - loss: 5.8775 - acc: 0.276 - ETA: 4:34 -
loss: 5.8717 - acc: 0.277 - ETA: 4:33 - loss: 5.8615 - acc: 0.277 - ETA: 4:32
- loss: 5.8684 - acc: 0.274 - ETA: 4:31 - loss: 5.8784 - acc: 0.273 - ETA: 4:
30 - loss: 5.8958 - acc: 0.272 - ETA: 4:29 - loss: 5.8759 - acc: 0.276 - ETA:
4:28 - loss: 5.8582 - acc: 0.278 - ETA: 4:27 - loss: 5.8679 - acc: 0.280 - ET
A: 4:25 - loss: 5.8508 - acc: 0.284 - ETA: 4:24 - loss: 5.8469 - acc: 0.283 -
ETA: 4:23 - loss: 5.8399 - acc: 0.284 - ETA: 4:22 - loss: 5.8264 - acc: 0.286
- ETA: 4:21 - loss: 5.8100 - acc: 0.286 - ETA: 4:20 - loss: 5.8159 - acc: 0.2
85 - ETA: 4:19 - loss: 5.8129 - acc: 0.284 - ETA: 4:18 - loss: 5.8327 - acc:
0.282 - ETA: 4:17 - loss: 5.8330 - acc: 0.285 - ETA: 4:16 - loss: 5.8190 - ac
c: 0.287 - ETA: 4:15 - loss: 5.8257 - acc: 0.285 - ETA: 4:14 - loss: 5.8143 -
acc: 0.285 - ETA: 4:13 - loss: 5.8084 - acc: 0.285 - ETA: 4:11 - loss: 5.8134
- acc: 0.284 - ETA: 4:10 - loss: 5.8194 - acc: 0.283 - ETA: 4:09 - loss: 5.83
33 - acc: 0.283 - ETA: 4:08 - loss: 5.8306 - acc: 0.283 - ETA: 4:07 - loss:
5.8351 - acc: 0.283 - ETA: 4:06 - loss: 5.8415 - acc: 0.282 - ETA: 4:05 - los
s: 5.8352 - acc: 0.284 - ETA: 4:04 - loss: 5.8364 - acc: 0.285 - ETA: 4:03 -
loss: 5.8431 - acc: 0.283 - ETA: 4:01 - loss: 5.8483 - acc: 0.284 - ETA: 4:00
- loss: 5.8625 - acc: 0.282 - ETA: 3:59 - loss: 5.8690 - acc: 0.281 - ETA: 3:
58 - loss: 5.8588 - acc: 0.283 - ETA: 3:57 - loss: 5.8514 - acc: 0.282 - ETA:
3:56 - loss: 5.8468 - acc: 0.282 - ETA: 3:55 - loss: 5.8492 - acc: 0.282 - ET
A: 3:54 - loss: 5.8431 - acc: 0.282 - ETA: 3:53 - loss: 5.8412 - acc: 0.282 -
ETA: 3:52 - loss: 5.8363 - acc: 0.285 - ETA: 3:51 - loss: 5.8350 - acc: 0.285
- ETA: 3:50 - loss: 5.8411 - acc: 0.284 - ETA: 3:49 - loss: 5.8374 - acc: 0.2
84 - ETA: 3:47 - loss: 5.8412 - acc: 0.283 - ETA: 3:47 - loss: 5.8401 - acc:
0.283 - ETA: 3:45 - loss: 5.8385 - acc: 0.282 - ETA: 3:45 - loss: 5.8419 - ac
c: 0.282 - ETA: 3:44 - loss: 5.8412 - acc: 0.283 - ETA: 3:43 - loss: 5.8465 -
acc: 0.282 - ETA: 3:42 - loss: 5.8493 - acc: 0.283 - ETA: 3:41 - loss: 5.8444
- acc: 0.283 - ETA: 3:40 - loss: 5.8450 - acc: 0.282 - ETA: 3:39 - loss: 5.83
57 - acc: 0.283 - ETA: 3:38 - loss: 5.8351 - acc: 0.283 - ETA: 3:37 - loss:
 5.8311 - acc: 0.283 - ETA: 3:36 - loss: 5.8357 - acc: 0.282 - ETA: 3:35 - lo
ss: 5.8405 - acc: 0.281 - ETA: 3:34 - loss: 5.8394 - acc: 0.281 - ETA: 3:33 -
loss: 5.8447 - acc: 0.281 - ETA: 3:32 - loss: 5.8436 - acc: 0.282 - ETA: 3:31
- loss: 5.8466 - acc: 0.281 - ETA: 3:30 - loss: 5.8454 - acc: 0.282 - ETA: 3:
```

```
29 - loss: 5.8445 - acc: 0.283 - ETA: 3:28 - loss: 5.8462 - acc: 0.282 - ETA:
3:27 - loss: 5.8469 - acc: 0.282 - ETA: 3:26 - loss: 5.8470 - acc: 0.282 - ET
A: 3:25 - loss: 5.8552 - acc: 0.281 - ETA: 3:24 - loss: 5.8579 - acc: 0.281 -
ETA: 3:22 - loss: 5.8515 - acc: 0.282 - ETA: 3:21 - loss: 5.8525 - acc: 0.281
- ETA: 3:21 - loss: 5.8601 - acc: 0.280 - ETA: 3:20 - loss: 5.8611 - acc: 0.2
80 - ETA: 3:19 - loss: 5.8621 - acc: 0.279 - ETA: 3:18 - loss: 5.8552 - acc:
 0.281 - ETA: 3:17 - loss: 5.8510 - acc: 0.281 - ETA: 3:16 - loss: 5.8510 - a
cc: 0.281 - ETA: 3:15 - loss: 5.8511 - acc: 0.281 - ETA: 3:14 - loss: 5.8545
 - acc: 0.280 - ETA: 3:13 - loss: 5.8555 - acc: 0.280 - ETA: 3:12 - loss: 5.8
561 - acc: 0.280 - ETA: 3:11 - loss: 5.8543 - acc: 0.281 - ETA: 3:10 - loss:
 5.8571 - acc: 0.281 - ETA: 3:09 - loss: 5.8594 - acc: 0.280 - ETA: 3:08 - lo
ss: 5.8660 - acc: 0.279 - ETA: 3:07 - loss: 5.8690 - acc: 0.279 - ETA: 3:06 -
loss: 5.8768 - acc: 0.278 - ETA: 3:05 - loss: 5.8782 - acc: 0.277 - ETA: 3:03
- loss: 5.8797 - acc: 0.278 - ETA: 3:02 - loss: 5.8770 - acc: 0.278 - ETA: 3:
01 - loss: 5.8798 - acc: 0.278 - ETA: 3:00 - loss: 5.8836 - acc: 0.278 - ETA:
2:59 - loss: 5.8857 - acc: 0.278 - ETA: 2:58 - loss: 5.8832 - acc: 0.278 - ET
A: 2:57 - loss: 5.8780 - acc: 0.279 - ETA: 2:56 - loss: 5.8775 - acc: 0.279 -
ETA: 2:55 - loss: 5.8753 - acc: 0.278 - ETA: 2:54 - loss: 5.8718 - acc: 0.278
- ETA: 2:54 - loss: 5.8683 - acc: 0.279 - ETA: 2:53 - loss: 5.8670 - acc: 0.2
78 - ETA: 2:52 - loss: 5.8667 - acc: 0.278 - ETA: 2:51 - loss: 5.8709 - acc:
 0.278 - ETA: 2:50 - loss: 5.8713 - acc: 0.278 - ETA: 2:49 - loss: 5.8743 - a
cc: 0.278 - ETA: 2:48 - loss: 5.8723 - acc: 0.280 - ETA: 2:47 - loss: 5.8785
 - acc: 0.280 - ETA: 2:45 - loss: 5.8782 - acc: 0.279 - ETA: 2:45 - loss: 5.8
725 - acc: 0.280 - ETA: 2:44 - loss: 5.8712 - acc: 0.280 - ETA: 2:43 - loss:
 5.8703 - acc: 0.280 - ETA: 2:41 - loss: 5.8711 - acc: 0.281 - ETA: 2:40 - lo
ss: 5.8714 - acc: 0.280 - ETA: 2:39 - loss: 5.8727 - acc: 0.281 - ETA: 2:38 -
loss: 5.8778 - acc: 0.281 - ETA: 2:37 - loss: 5.8786 - acc: 0.281 - ETA: 2:36
- loss: 5.8793 - acc: 0.281 - ETA: 2:35 - loss: 5.8797 - acc: 0.281 - ETA: 2:
34 - loss: 5.8773 - acc: 0.280 - ETA: 2:33 - loss: 5.8799 - acc: 0.280 - ETA:
2:32 - loss: 5.8843 - acc: 0.280 - ETA: 2:31 - loss: 5.8810 - acc: 0.280 - ET
A: 2:30 - loss: 5.8760 - acc: 0.281 - ETA: 2:29 - loss: 5.8698 - acc: 0.281 -
ETA: 2:27 - loss: 5.8699 - acc: 0.281 - ETA: 2:26 - loss: 5.8697 - acc: 0.281
- ETA: 2:25 - loss: 5.8676 - acc: 0.281 - ETA: 2:24 - loss: 5.8640 - acc: 0.2
81 - ETA: 2:23 - loss: 5.8660 - acc: 0.280 - ETA: 2:22 - loss: 5.8678 - acc:
 0.280 - ETA: 2:21 - loss: 5.8686 - acc: 0.280 - ETA: 2:20 - loss: 5.8706 - a
cc: 0.280 - ETA: 2:19 - loss: 5.8739 - acc: 0.279 - ETA: 2:18 - loss: 5.8722
 - acc: 0.279 - ETA: 2:17 - loss: 5.8699 - acc: 0.279 - ETA: 2:16 - loss: 5.8
729 - acc: 0.279 - ETA: 2:15 - loss: 5.8698 - acc: 0.278 - ETA: 2:14 - loss:
 5.8712 - acc: 0.278 - ETA: 2:13 - loss: 5.8707 - acc: 0.278 - ETA: 2:12 - lo
ss: 5.8725 - acc: 0.278 - ETA: 2:11 - loss: 5.8721 - acc: 0.279 - ETA: 2:10 -
loss: 5.8719 - acc: 0.279 - ETA: 2:09 - loss: 5.8686 - acc: 0.279 - ETA: 2:08
- loss: 5.8700 - acc: 0.279 - ETA: 2:07 - loss: 5.8721 - acc: 0.279 - ETA: 2:
06 - loss: 5.8684 - acc: 0.279 - ETA: 2:05 - loss: 5.8660 - acc: 0.280 - ETA:
2:03 - loss: 5.8667 - acc: 0.279 - ETA: 2:02 - loss: 5.8664 - acc: 0.279 - ET
A: 2:01 - loss: 5.8696 - acc: 0.279 - ETA: 2:00 - loss: 5.8668 - acc: 0.279 -
ETA: 1:59 - loss: 5.8669 - acc: 0.279 - ETA: 1:58 - loss: 5.8701 - acc: 0.279
- ETA: 1:57 - loss: 5.8712 - acc: 0.279 - ETA: 1:56 - loss: 5.8739 - acc: 0.2
79 - ETA: 1:55 - loss: 5.8742 - acc: 0.280 - ETA: 1:54 - loss: 5.8756 - acc:
 0.280 - ETA: 1:53 - loss: 5.8807 - acc: 0.280 - ETA: 1:52 - loss: 5.8795 - a
cc: 0.280 - ETA: 1:51 - loss: 5.8768 - acc: 0.280312/312 [==================
==========] - ETA: 1:50 - loss: 5.8780 - acc: 0.280 - ETA: 1:49 - loss: 5.88
22 - acc: 0.280 - ETA: 1:48 - loss: 5.8821 - acc: 0.280 - ETA: 1:47 - loss:
 5.8833 - acc: 0.281 - ETA: 1:46 - loss: 5.8786 - acc: 0.281 - ETA: 1:45 - lo
ss: 5.8803 - acc: 0.281 - ETA: 1:44 - loss: 5.8847 - acc: 0.281 - ETA: 1:43 -
loss: 5.8889 - acc: 0.281 - ETA: 1:42 - loss: 5.8865 - acc: 0.281 - ETA: 1:41
- loss: 5.8834 - acc: 0.282 - ETA: 1:40 - loss: 5.8865 - acc: 0.281 - ETA: 1:
39 - loss: 5.8937 - acc: 0.281 - ETA: 1:38 - loss: 5.8931 - acc: 0.281 - ETA:
```

```
1:37 - loss: 5.8986 - acc: 0.280 - ETA: 1:36 - loss: 5.8959 - acc: 0.280 - ET
A: 1:35 - loss: 5.8996 - acc: 0.280 - ETA: 1:34 - loss: 5.9004 - acc: 0.280 -
ETA: 1:33 - loss: 5.8975 - acc: 0.281 - ETA: 1:32 - loss: 5.8955 - acc: 0.281
- ETA: 1:31 - loss: 5.8975 - acc: 0.282 - ETA: 1:30 - loss: 5.9003 - acc: 0.2
81 - ETA: 1:29 - loss: 5.8983 - acc: 0.281 - ETA: 1:28 - loss: 5.8980 - acc:
 0.281 - ETA: 1:27 - loss: 5.9010 - acc: 0.281 - ETA: 1:25 - loss: 5.9001 - a
cc: 0.281 - ETA: 1:24 - loss: 5.8991 - acc: 0.281 - ETA: 1:23 - loss: 5.8947
 - acc: 0.282 - ETA: 1:22 - loss: 5.8937 - acc: 0.282 - ETA: 1:21 - loss: 5.8
925 - acc: 0.282 - ETA: 1:20 - loss: 5.8891 - acc: 0.283 - ETA: 1:19 - loss:
 5.8903 - acc: 0.282 - ETA: 1:18 - loss: 5.8858 - acc: 0.283 - ETA: 1:17 - lo
ss: 5.8855 - acc: 0.283 - ETA: 1:16 - loss: 5.8827 - acc: 0.283 - ETA: 1:15 -
loss: 5.8828 - acc: 0.283 - ETA: 1:14 - loss: 5.8854 - acc: 0.283 - ETA: 1:13
- loss: 5.8828 - acc: 0.283 - ETA: 1:12 - loss: 5.8852 - acc: 0.283 - ETA: 1:
11 - loss: 5.8853 - acc: 0.282 - ETA: 1:10 - loss: 5.8833 - acc: 0.283 - ETA:
1:09 - loss: 5.8845 - acc: 0.282 - ETA: 1:08 - loss: 5.8853 - acc: 0.282 - ET
A: 1:07 - loss: 5.8835 - acc: 0.283 - ETA: 1:06 - loss: 5.8835 - acc: 0.283 -
ETA: 1:05 - loss: 5.8854 - acc: 0.282 - ETA: 1:04 - loss: 5.8834 - acc: 0.282
- ETA: 1:03 - loss: 5.8837 - acc: 0.283 - ETA: 1:02 - loss: 5.8843 - acc: 0.2
83 - ETA: 1:01 - loss: 5.8837 - acc: 0.283 - ETA: 1:00 - loss: 5.8837 - acc:
 0.283 - ETA: 59s - loss: 5.8829 - acc: 0.284 - ETA: 58s - loss: 5.8820 - ac
c: 0.28 - ETA: 57s - loss: 5.8818 - acc: 0.28 - ETA: 56s - loss: 5.8822 - ac
c: 0.28 - ETA: 55s - loss: 5.8828 - acc: 0.28 - ETA: 54s - loss: 5.8822 - ac
c: 0.28 - ETA: 53s - loss: 5.8845 - acc: 0.28 - ETA: 52s - loss: 5.8834 - ac
c: 0.28 - ETA: 51s - loss: 5.8838 - acc: 0.28 - ETA: 49s - loss: 5.8861 - ac
c: 0.28 - ETA: 48s - loss: 5.8887 - acc: 0.28 - ETA: 47s - loss: 5.8883 - ac
c: 0.28 - ETA: 46s - loss: 5.8852 - acc: 0.28 - ETA: 45s - loss: 5.8826 - ac
c: 0.28 - ETA: 44s - loss: 5.8864 - acc: 0.28 - ETA: 43s - loss: 5.8855 - ac
c: 0.28 - ETA: 42s - loss: 5.8857 - acc: 0.28 - ETA: 41s - loss: 5.8831 - ac
c: 0.28 - ETA: 40s - loss: 5.8839 - acc: 0.28 - ETA: 39s - loss: 5.8844 - ac
c: 0.28 - ETA: 38s - loss: 5.8850 - acc: 0.28 - ETA: 37s - loss: 5.8842 - ac
c: 0.28 - ETA: 36s - loss: 5.8821 - acc: 0.28 - ETA: 35s - loss: 5.8831 - ac
c: 0.28 - ETA: 34s - loss: 5.8814 - acc: 0.28 - ETA: 33s - loss: 5.8822 - ac
c: 0.28 - ETA: 32s - loss: 5.8824 - acc: 0.28 - ETA: 31s - loss: 5.8806 - ac
c: 0.28 - ETA: 30s - loss: 5.8778 - acc: 0.28 - ETA: 29s - loss: 5.8773 - ac
c: 0.28 - ETA: 28s - loss: 5.8760 - acc: 0.28 - ETA: 27s - loss: 5.8744 - ac
c: 0.28 - ETA: 26s - loss: 5.8742 - acc: 0.28 - ETA: 25s - loss: 5.8768 - ac
c: 0.28 - ETA: 24s - loss: 5.8775 - acc: 0.28 - ETA: 23s - loss: 5.8794 - ac
c: 0.28 - ETA: 22s - loss: 5.8803 - acc: 0.28 - ETA: 21s - loss: 5.8794 - ac
c: 0.28 - ETA: 20s - loss: 5.8784 - acc: 0.28 - ETA: 19s - loss: 5.8790 - ac
c: 0.28 - ETA: 18s - loss: 5.8784 - acc: 0.28 - ETA: 17s - loss: 5.8786 - ac
c: 0.28 - ETA: 16s - loss: 5.8815 - acc: 0.28 - ETA: 15s - loss: 5.8835 - ac
c: 0.28 - ETA: 14s - loss: 5.8845 - acc: 0.28 - ETA: 13s - loss: 5.8871 - ac
c: 0.28 - ETA: 12s - loss: 5.8885 - acc: 0.28 - ETA: 11s - loss: 5.8867 - ac
c: 0.28 - ETA: 10s - loss: 5.8856 - acc: 0.28 - ETA: 9s - loss: 5.8880 - acc:
0.2829 - ETA: 8s - loss: 5.8904 - acc: 0.282 - ETA: 7s - loss: 5.8895 - acc:
 0.282 - ETA: 6s - loss: 5.8869 - acc: 0.283 - ETA: 5s - loss: 5.8845 - acc:
 0.283 - ETA: 4s - loss: 5.8822 - acc: 0.283 - ETA: 3s - loss: 5.8832 - acc:
 0.283 - ETA: 2s - loss: 5.8845 - acc: 0.283 - ETA: 1s - loss: 5.8838 - acc:
 0.283 - 318s 1s/step - loss: 5.8837 - acc: 0.2831
Epoch 1 start at time  2019-08-04 00:37:12.239359
204/312 [==================>...........] - ETA: 6:33 - loss: 5.6182 - acc: 0.
281 - ETA: 6:13 - loss: 5.5358 - acc: 0.281 - ETA: 5:57 - loss: 5.8958 - acc:
0.260 - ETA: 5:52 - loss: 5.7939 - acc: 0.257 - ETA: 5:56 - loss: 5.8704 - ac
c: 0.256 - ETA: 5:58 - loss: 5.8533 - acc: 0.281 - ETA: 5:56 - loss: 5.7417 -
acc: 0.290 - ETA: 5:50 - loss: 5.7065 - acc: 0.293 - ETA: 5:43 - loss: 5.6386
- acc: 0.302 - ETA: 5:38 - loss: 5.6706 - acc: 0.300 - ETA: 5:31 - loss: 5.66
63 - acc: 0.301 - ETA: 5:27 - loss: 5.6768 - acc: 0.299 - ETA: 5:21 - loss:
```

```
 5.6801 - acc: 0.302 - ETA: 5:15 - loss: 5.6522 - acc: 0.305 - ETA: 5:11 - lo
ss: 5.6592 - acc: 0.308 - ETA: 5:08 - loss: 5.7441 - acc: 0.300 - ETA: 5:05 -
loss: 5.7318 - acc: 0.296 - ETA: 5:01 - loss: 5.6930 - acc: 0.296 - ETA: 4:58
- loss: 5.6864 - acc: 0.297 - ETA: 4:57 - loss: 5.6560 - acc: 0.301 - ETA: 4:
54 - loss: 5.6671 - acc: 0.305 - ETA: 4:51 - loss: 5.6817 - acc: 0.304 - ETA:
4:49 - loss: 5.7026 - acc: 0.305 - ETA: 4:47 - loss: 5.7086 - acc: 0.303 - ET
A: 4:44 - loss: 5.7149 - acc: 0.302 - ETA: 4:42 - loss: 5.7048 - acc: 0.302 -
ETA: 4:40 - loss: 5.7150 - acc: 0.304 - ETA: 4:38 - loss: 5.7169 - acc: 0.301
- ETA: 4:37 - loss: 5.7424 - acc: 0.301 - ETA: 4:35 - loss: 5.7189 - acc: 0.3
03 - ETA: 4:34 - loss: 5.7114 - acc: 0.303 - ETA: 4:33 - loss: 5.7136 - acc:
 0.301 - ETA: 4:31 - loss: 5.7291 - acc: 0.301 - ETA: 4:30 - loss: 5.7174 - a
cc: 0.300 - ETA: 4:29 - loss: 5.7189 - acc: 0.302 - ETA: 4:27 - loss: 5.7251
 - acc: 0.303 - ETA: 4:26 - loss: 5.7057 - acc: 0.302 - ETA: 4:25 - loss: 5.7
151 - acc: 0.302 - ETA: 4:23 - loss: 5.7318 - acc: 0.298 - ETA: 4:22 - loss:
 5.7178 - acc: 0.300 - ETA: 4:20 - loss: 5.6962 - acc: 0.301 - ETA: 4:20 - lo
ss: 5.7002 - acc: 0.300 - ETA: 4:18 - loss: 5.7100 - acc: 0.299 - ETA: 4:18 -
loss: 5.7189 - acc: 0.297 - ETA: 4:16 - loss: 5.7199 - acc: 0.295 - ETA: 4:15
- loss: 5.7154 - acc: 0.296 - ETA: 4:13 - loss: 5.7053 - acc: 0.297 - ETA: 4:
12 - loss: 5.7113 - acc: 0.294 - ETA: 4:11 - loss: 5.7201 - acc: 0.293 - ETA:
4:09 - loss: 5.7377 - acc: 0.291 - ETA: 4:08 - loss: 5.7174 - acc: 0.295 - ET
A: 4:07 - loss: 5.6997 - acc: 0.298 - ETA: 4:06 - loss: 5.7102 - acc: 0.297 -
ETA: 4:05 - loss: 5.6943 - acc: 0.300 - ETA: 4:03 - loss: 5.6911 - acc: 0.300
- ETA: 4:02 - loss: 5.6845 - acc: 0.300 - ETA: 4:01 - loss: 5.6707 - acc: 0.3
02 - ETA: 3:59 - loss: 5.6564 - acc: 0.303 - ETA: 3:58 - loss: 5.6626 - acc:
 0.301 - ETA: 3:57 - loss: 5.6628 - acc: 0.301 - ETA: 3:55 - loss: 5.6832 - a
cc: 0.298 - ETA: 3:55 - loss: 5.6835 - acc: 0.301 - ETA: 3:54 - loss: 5.6698
 - acc: 0.303 - ETA: 3:53 - loss: 5.6763 - acc: 0.302 - ETA: 3:51 - loss: 5.6
646 - acc: 0.301 - ETA: 3:50 - loss: 5.6594 - acc: 0.301 - ETA: 3:49 - loss:
 5.6663 - acc: 0.300 - ETA: 3:48 - loss: 5.6718 - acc: 0.300 - ETA: 3:47 - lo
ss: 5.6840 - acc: 0.300 - ETA: 3:46 - loss: 5.6797 - acc: 0.300 - ETA: 3:45 -
loss: 5.6837 - acc: 0.300 - ETA: 3:44 - loss: 5.6887 - acc: 0.299 - ETA: 3:43
- loss: 5.6831 - acc: 0.301 - ETA: 3:41 - loss: 5.6853 - acc: 0.301 - ETA: 3:
40 - loss: 5.6899 - acc: 0.300 - ETA: 3:39 - loss: 5.6959 - acc: 0.300 - ETA:
3:38 - loss: 5.7099 - acc: 0.299 - ETA: 3:37 - loss: 5.7160 - acc: 0.297 - ET
A: 3:36 - loss: 5.7068 - acc: 0.299 - ETA: 3:35 - loss: 5.7005 - acc: 0.298 -
ETA: 3:34 - loss: 5.6966 - acc: 0.298 - ETA: 3:33 - loss: 5.7020 - acc: 0.297
- ETA: 3:32 - loss: 5.6968 - acc: 0.298 - ETA: 3:31 - loss: 5.6954 - acc: 0.2
98 - ETA: 3:30 - loss: 5.6911 - acc: 0.301 - ETA: 3:29 - loss: 5.6903 - acc:
 0.301 - ETA: 3:28 - loss: 5.6973 - acc: 0.301 - ETA: 3:27 - loss: 5.6932 - a
cc: 0.301 - ETA: 3:26 - loss: 5.6970 - acc: 0.300 - ETA: 3:25 - loss: 5.6954
 - acc: 0.300 - ETA: 3:24 - loss: 5.6955 - acc: 0.299 - ETA: 3:23 - loss: 5.6
995 - acc: 0.299 - ETA: 3:22 - loss: 5.6985 - acc: 0.300 - ETA: 3:21 - loss:
 5.7034 - acc: 0.299 - ETA: 3:20 - loss: 5.7060 - acc: 0.299 - ETA: 3:19 - lo
ss: 5.7017 - acc: 0.298 - ETA: 3:18 - loss: 5.7025 - acc: 0.298 - ETA: 3:17 -
loss: 5.6921 - acc: 0.300 - ETA: 3:16 - loss: 5.6909 - acc: 0.299 - ETA: 3:15
- loss: 5.6871 - acc: 0.299 - ETA: 3:14 - loss: 5.6918 - acc: 0.298 - ETA: 3:
13 - loss: 5.6972 - acc: 0.297 - ETA: 3:12 - loss: 5.6965 - acc: 0.297 - ETA:
3:11 - loss: 5.7022 - acc: 0.297 - ETA: 3:10 - loss: 5.7011 - acc: 0.297 - ET
A: 3:09 - loss: 5.7050 - acc: 0.297 - ETA: 3:08 - loss: 5.7032 - acc: 0.297 -
ETA: 3:07 - loss: 5.7030 - acc: 0.298 - ETA: 3:06 - loss: 5.7029 - acc: 0.297
- ETA: 3:05 - loss: 5.7047 - acc: 0.297 - ETA: 3:05 - loss: 5.7050 - acc: 0.2
96 - ETA: 3:04 - loss: 5.7124 - acc: 0.295 - ETA: 3:03 - loss: 5.7143 - acc:
 0.295 - ETA: 3:02 - loss: 5.7074 - acc: 0.296 - ETA: 3:01 - loss: 5.7068 - a
cc: 0.295 - ETA: 3:00 - loss: 5.7144 - acc: 0.295 - ETA: 2:59 - loss: 5.7166
 - acc: 0.295 - ETA: 2:58 - loss: 5.7173 - acc: 0.295 - ETA: 2:57 - loss: 5.7
104 - acc: 0.296 - ETA: 2:56 - loss: 5.7071 - acc: 0.296 - ETA: 2:55 - loss:
 5.7072 - acc: 0.295 - ETA: 2:54 - loss: 5.7076 - acc: 0.295 - ETA: 2:53 - lo
```

```
ss: 5.7094 - acc: 0.295 - ETA: 2:52 - loss: 5.7101 - acc: 0.296 - ETA: 2:51 -
loss: 5.7096 - acc: 0.296 - ETA: 2:50 - loss: 5.7068 - acc: 0.297 - ETA: 2:49
- loss: 5.7090 - acc: 0.298 - ETA: 2:48 - loss: 5.7108 - acc: 0.297 - ETA: 2:
47 - loss: 5.7183 - acc: 0.296 - ETA: 2:47 - loss: 5.7203 - acc: 0.295 - ETA:
2:46 - loss: 5.7279 - acc: 0.294 - ETA: 2:45 - loss: 5.7286 - acc: 0.294 - ET
A: 2:44 - loss: 5.7310 - acc: 0.294 - ETA: 2:43 - loss: 5.7282 - acc: 0.295 -
ETA: 2:42 - loss: 5.7311 - acc: 0.294 - ETA: 2:41 - loss: 5.7350 - acc: 0.294
- ETA: 2:40 - loss: 5.7368 - acc: 0.294 - ETA: 2:39 - loss: 5.7341 - acc: 0.2
93 - ETA: 2:38 - loss: 5.7285 - acc: 0.295 - ETA: 2:37 - loss: 5.7290 - acc:
 0.295 - ETA: 2:36 - loss: 5.7265 - acc: 0.294 - ETA: 2:35 - loss: 5.7232 - a
cc: 0.294 - ETA: 2:34 - loss: 5.7181 - acc: 0.295 - ETA: 2:33 - loss: 5.7178
 - acc: 0.294 - ETA: 2:33 - loss: 5.7170 - acc: 0.294 - ETA: 2:32 - loss: 5.7
210 - acc: 0.294 - ETA: 2:31 - loss: 5.7204 - acc: 0.294 - ETA: 2:30 - loss:
 5.7230 - acc: 0.294 - ETA: 2:29 - loss: 5.7205 - acc: 0.295 - ETA: 2:28 - lo
ss: 5.7269 - acc: 0.295 - ETA: 2:27 - loss: 5.7261 - acc: 0.295 - ETA: 2:26 -
loss: 5.7212 - acc: 0.295 - ETA: 2:25 - loss: 5.7204 - acc: 0.295 - ETA: 2:24
- loss: 5.7194 - acc: 0.295 - ETA: 2:23 - loss: 5.7209 - acc: 0.295 - ETA: 2:
22 - loss: 5.7209 - acc: 0.294 - ETA: 2:21 - loss: 5.7220 - acc: 0.294 - ETA:
2:20 - loss: 5.7267 - acc: 0.294 - ETA: 2:19 - loss: 5.7273 - acc: 0.294 - ET
A: 2:18 - loss: 5.7271 - acc: 0.294 - ETA: 2:17 - loss: 5.7277 - acc: 0.294 -
ETA: 2:17 - loss: 5.7253 - acc: 0.293 - ETA: 2:16 - loss: 5.7274 - acc: 0.293
- ETA: 2:15 - loss: 5.7317 - acc: 0.293 - ETA: 2:14 - loss: 5.7276 - acc: 0.2
93 - ETA: 2:13 - loss: 5.7222 - acc: 0.293 - ETA: 2:12 - loss: 5.7156 - acc:
 0.294 - ETA: 2:11 - loss: 5.7162 - acc: 0.294 - ETA: 2:10 - loss: 5.7153 - a
cc: 0.294 - ETA: 2:09 - loss: 5.7132 - acc: 0.293 - ETA: 2:08 - loss: 5.7102
 - acc: 0.294 - ETA: 2:07 - loss: 5.7123 - acc: 0.294 - ETA: 2:06 - loss: 5.7
135 - acc: 0.293 - ETA: 2:05 - loss: 5.7130 - acc: 0.293 - ETA: 2:04 - loss:
 5.7151 - acc: 0.293 - ETA: 2:04 - loss: 5.7189 - acc: 0.293 - ETA: 2:03 - lo
ss: 5.7179 - acc: 0.292 - ETA: 2:02 - loss: 5.7154 - acc: 0.292 - ETA: 2:01 -
loss: 5.7183 - acc: 0.292 - ETA: 2:00 - loss: 5.7150 - acc: 0.292 - ETA: 1:59
- loss: 5.7160 - acc: 0.292 - ETA: 1:58 - loss: 5.7157 - acc: 0.292 - ETA: 1:
57 - loss: 5.7180 - acc: 0.292 - ETA: 1:56 - loss: 5.7176 - acc: 0.292 - ETA:
1:55 - loss: 5.7175 - acc: 0.293 - ETA: 1:54 - loss: 5.7152 - acc: 0.293 - ET
A: 1:53 - loss: 5.7165 - acc: 0.292 - ETA: 1:52 - loss: 5.7181 - acc: 0.292 -
ETA: 1:52 - loss: 5.7150 - acc: 0.293 - ETA: 1:51 - loss: 5.7121 - acc: 0.294
- ETA: 1:50 - loss: 5.7132 - acc: 0.293 - ETA: 1:49 - loss: 5.7125 - acc: 0.2
94 - ETA: 1:48 - loss: 5.7162 - acc: 0.293 - ETA: 1:47 - loss: 5.7136 - acc:
 0.293 - ETA: 1:46 - loss: 5.7135 - acc: 0.293 - ETA: 1:45 - loss: 5.7170 - a
cc: 0.293 - ETA: 1:44 - loss: 5.7186 - acc: 0.293 - ETA: 1:43 - loss: 5.7215
 - acc: 0.292 - ETA: 1:42 - loss: 5.7211 - acc: 0.293 - ETA: 1:41 - loss: 5.7
225 - acc: 0.293 - ETA: 1:40 - loss: 5.7285 - acc: 0.293 - ETA: 1:39 - loss:
 5.7271 - acc: 0.293 - ETA: 1:39 - loss: 5.7250 - acc: 0.293 - ETA: 1:38 - lo
ss: 5.7261 - acc: 0.2929312/312 [==============================] - ETA: 1:37
 - loss: 5.7304 - acc: 0.292 - ETA: 1:36 - loss: 5.7306 - acc: 0.293 - ETA:
 1:35 - loss: 5.7317 - acc: 0.293 - ETA: 1:34 - loss: 5.7266 - acc: 0.294 - E
TA: 1:33 - loss: 5.7282 - acc: 0.294 - ETA: 1:32 - loss: 5.7321 - acc: 0.294
 - ETA: 1:31 - loss: 5.7369 - acc: 0.293 - ETA: 1:30 - loss: 5.7349 - acc: 0.
293 - ETA: 1:29 - loss: 5.7319 - acc: 0.294 - ETA: 1:28 - loss: 5.7351 - acc:
0.294 - ETA: 1:28 - loss: 5.7418 - acc: 0.293 - ETA: 1:27 - loss: 5.7413 - ac
c: 0.293 - ETA: 1:26 - loss: 5.7472 - acc: 0.292 - ETA: 1:25 - loss: 5.7455 -
acc: 0.292 - ETA: 1:24 - loss: 5.7494 - acc: 0.292 - ETA: 1:23 - loss: 5.7503
- acc: 0.292 - ETA: 1:22 - loss: 5.7476 - acc: 0.293 - ETA: 1:21 - loss: 5.74
56 - acc: 0.293 - ETA: 1:20 - loss: 5.7474 - acc: 0.294 - ETA: 1:19 - loss:
 5.7497 - acc: 0.293 - ETA: 1:18 - loss: 5.7482 - acc: 0.293 - ETA: 1:18 - lo
ss: 5.7474 - acc: 0.294 - ETA: 1:17 - loss: 5.7505 - acc: 0.293 - ETA: 1:16 -
loss: 5.7496 - acc: 0.293 - ETA: 1:15 - loss: 5.7485 - acc: 0.293 - ETA: 1:14
- loss: 5.7444 - acc: 0.294 - ETA: 1:13 - loss: 5.7432 - acc: 0.294 - ETA: 1:
```

```
12 - loss: 5.7415 - acc: 0.294 - ETA: 1:11 - loss: 5.7379 - acc: 0.295 - ETA:
1:10 - loss: 5.7385 - acc: 0.295 - ETA: 1:09 - loss: 5.7345 - acc: 0.295 - ET
A: 1:08 - loss: 5.7339 - acc: 0.296 - ETA: 1:08 - loss: 5.7311 - acc: 0.296 -
ETA: 1:07 - loss: 5.7317 - acc: 0.296 - ETA: 1:06 - loss: 5.7340 - acc: 0.296
- ETA: 1:05 - loss: 5.7317 - acc: 0.296 - ETA: 1:04 - loss: 5.7331 - acc: 0.2
96 - ETA: 1:03 - loss: 5.7329 - acc: 0.295 - ETA: 1:02 - loss: 5.7309 - acc:
 0.295 - ETA: 1:01 - loss: 5.7319 - acc: 0.295 - ETA: 1:00 - loss: 5.7324 - a
cc: 0.295 - ETA: 59s - loss: 5.7307 - acc: 0.296 - ETA: 59s - loss: 5.7301 -
 acc: 0.29 - ETA: 58s - loss: 5.7317 - acc: 0.29 - ETA: 57s - loss: 5.7296 -
 acc: 0.29 - ETA: 56s - loss: 5.7300 - acc: 0.29 - ETA: 55s - loss: 5.7306 -
 acc: 0.29 - ETA: 54s - loss: 5.7300 - acc: 0.29 - ETA: 53s - loss: 5.7299 -
 acc: 0.29 - ETA: 52s - loss: 5.7290 - acc: 0.29 - ETA: 51s - loss: 5.7282 -
 acc: 0.29 - ETA: 50s - loss: 5.7288 - acc: 0.29 - ETA: 49s - loss: 5.7288 -
 acc: 0.29 - ETA: 49s - loss: 5.7298 - acc: 0.29 - ETA: 48s - loss: 5.7296 -
 acc: 0.29 - ETA: 47s - loss: 5.7315 - acc: 0.29 - ETA: 46s - loss: 5.7304 -
 acc: 0.29 - ETA: 45s - loss: 5.7305 - acc: 0.29 - ETA: 44s - loss: 5.7331 -
 acc: 0.29 - ETA: 43s - loss: 5.7353 - acc: 0.29 - ETA: 42s - loss: 5.7349 -
 acc: 0.29 - ETA: 41s - loss: 5.7319 - acc: 0.29 - ETA: 40s - loss: 5.7292 -
 acc: 0.29 - ETA: 39s - loss: 5.7329 - acc: 0.29 - ETA: 39s - loss: 5.7322 -
 acc: 0.29 - ETA: 38s - loss: 5.7325 - acc: 0.29 - ETA: 37s - loss: 5.7298 -
 acc: 0.29 - ETA: 36s - loss: 5.7310 - acc: 0.29 - ETA: 35s - loss: 5.7314 -
 acc: 0.29 - ETA: 34s - loss: 5.7322 - acc: 0.29 - ETA: 33s - loss: 5.7317 -
 acc: 0.29 - ETA: 32s - loss: 5.7295 - acc: 0.29 - ETA: 31s - loss: 5.7303 -
 acc: 0.29 - ETA: 30s - loss: 5.7282 - acc: 0.29 - ETA: 29s - loss: 5.7286 -
 acc: 0.29 - ETA: 29s - loss: 5.7287 - acc: 0.29 - ETA: 28s - loss: 5.7259 -
 acc: 0.29 - ETA: 27s - loss: 5.7231 - acc: 0.29 - ETA: 26s - loss: 5.7218 -
 acc: 0.29 - ETA: 25s - loss: 5.7199 - acc: 0.29 - ETA: 24s - loss: 5.7183 -
 acc: 0.29 - ETA: 23s - loss: 5.7184 - acc: 0.29 - ETA: 22s - loss: 5.7210 -
 acc: 0.29 - ETA: 21s - loss: 5.7219 - acc: 0.29 - ETA: 20s - loss: 5.7242 -
 acc: 0.29 - ETA: 19s - loss: 5.7251 - acc: 0.29 - ETA: 19s - loss: 5.7241 -
 acc: 0.29 - ETA: 18s - loss: 5.7232 - acc: 0.29 - ETA: 17s - loss: 5.7239 -
 acc: 0.29 - ETA: 16s - loss: 5.7227 - acc: 0.29 - ETA: 15s - loss: 5.7224 -
 acc: 0.29 - ETA: 14s - loss: 5.7254 - acc: 0.29 - ETA: 13s - loss: 5.7273 -
 acc: 0.29 - ETA: 12s - loss: 5.7285 - acc: 0.29 - ETA: 11s - loss: 5.7315 -
 acc: 0.29 - ETA: 10s - loss: 5.7332 - acc: 0.29 - ETA: 9s - loss: 5.7314 - a
cc: 0.2973 - ETA: 9s - loss: 5.7302 - acc: 0.297 - ETA: 8s - loss: 5.7323 - a
cc: 0.296 - ETA: 7s - loss: 5.7347 - acc: 0.296 - ETA: 6s - loss: 5.7340 - ac
c: 0.296 - ETA: 5s - loss: 5.7313 - acc: 0.296 - ETA: 4s - loss: 5.7287 - ac
c: 0.297 - ETA: 3s - loss: 5.7269 - acc: 0.297 - ETA: 2s - loss: 5.7277 - ac
c: 0.297 - ETA: 1s - loss: 5.7286 - acc: 0.297 - ETA: 0s - loss: 5.7277 - ac
c: 0.297 - 282s 905ms/step - loss: 5.7273 - acc: 0.2972
Epoch 2 start at time  2019-08-04 01:29:02.412844
204/312 [==================>...........] - ETA: 5:40 - loss: 5.5644 - acc: 0.
281 - ETA: 5:37 - loss: 5.4481 - acc: 0.312 - ETA: 5:35 - loss: 5.8250 - acc:
0.270 - ETA: 5:29 - loss: 5.7160 - acc: 0.257 - ETA: 5:36 - loss: 5.7464 - ac
c: 0.256 - ETA: 5:26 - loss: 5.7299 - acc: 0.281 - ETA: 5:21 - loss: 5.6188 -
acc: 0.290 - ETA: 5:19 - loss: 5.5766 - acc: 0.296 - ETA: 5:21 - loss: 5.4787
- acc: 0.302 - ETA: 5:18 - loss: 5.5243 - acc: 0.296 - ETA: 5:17 - loss: 5.51
82 - acc: 0.298 - ETA: 5:17 - loss: 5.5267 - acc: 0.304 - ETA: 5:16 - loss:
 5.5326 - acc: 0.307 - ETA: 5:12 - loss: 5.5083 - acc: 0.314 - ETA: 5:12 - lo
ss: 5.5198 - acc: 0.316 - ETA: 5:11 - loss: 5.6057 - acc: 0.312 - ETA: 5:08 -
loss: 5.5935 - acc: 0.308 - ETA: 5:07 - loss: 5.5466 - acc: 0.309 - ETA: 5:06
- loss: 5.5414 - acc: 0.310 - ETA: 5:04 - loss: 5.5085 - acc: 0.315 - ETA: 5:
04 - loss: 5.5217 - acc: 0.315 - ETA: 5:03 - loss: 5.5302 - acc: 0.315 - ETA:
5:01 - loss: 5.5517 - acc: 0.317 - ETA: 5:00 - loss: 5.5597 - acc: 0.317 - ET
A: 4:59 - loss: 5.5654 - acc: 0.315 - ETA: 4:57 - loss: 5.5516 - acc: 0.318 -
ETA: 4:56 - loss: 5.5649 - acc: 0.318 - ETA: 4:55 - loss: 5.5664 - acc: 0.315
```

- ETA: 4:54 - loss: 5.5911 - acc: 0.315 - ETA: 4:52 - loss: 5.5650 - acc: 0.318 - ETA: 4:51 - loss: 5.5574 - acc: 0.318 - ETA: 4:50 - loss: 5.5600 - acc: 0.316 - ETA: 4:48 - loss: 5.5737 - acc: 0.314 - ETA: 4:47 - loss: 5.5597 - acc: 0.314 - ETA: 4:45 - loss: 5.5637 - acc: 0.317 - ETA: 4:43 - loss: 5.5702 - acc: 0.316 - ETA: 4:42 - loss: 5.5489 - acc: 0.318 - ETA: 4:41 - loss: 5.5562 - acc: 0.318 - ETA: 4:39 - loss: 5.5755 - acc: 0.313 - ETA: 4:38 - loss: 5.5645 - acc: 0.313 - ETA: 4:37 - loss: 5.5434 - acc: 0.315 - ETA: 4:36 - loss: 5.5438 - acc: 0.315 - ETA: 4:35 - loss: 5.5511 - acc: 0.314 - ETA: 4:34 - loss: 5.5599 - acc: 0.311 - ETA: 4:33 - loss: 5.5589 - acc: 0.309 - ETA: 4:32 - loss: 5.5529 - acc: 0.309 - ETA: 4:31 - loss: 5.5438 - acc: 0.310 - ETA: 4:30 - loss: 5.5511 - acc: 0.307 - ETA: 4:29 - loss: 5.5598 - acc: 0.307 - ETA: 4:28 - loss: 5.5812 - acc: 0.305 - ETA: 4:26 - loss: 5.5613 - acc: 0.309 - ETA: 4:25 - loss: 5.5398 - acc: 0.311 - ETA: 4:24 - loss: 5.5519 - acc: 0.311 - ETA: 4:23 - loss: 5.5324 - acc: 0.314 - ETA: 4:22 - loss: 5.5301 - acc: 0.315 - ETA: 4:22 - loss: 5.5226 - acc: 0.316 - ETA: 4:21 - loss: 5.5083 - acc: 0.318 - ETA: 4:19 - loss: 5.4937 - acc: 0.319 - ETA: 4:19 - loss: 5.5008 - acc: 0.318 - ETA: 4:18 - loss: 5.5017 - acc: 0.318 - ETA: 4:17 - loss: 5.5209 - acc: 0.316 - ETA: 4:16 - loss: 5.5219 - acc: 0.318 - ETA: 4:15 - loss: 5.5091 - acc: 0.320 - ETA: 4:14 - loss: 5.5136 - acc: 0.319 - ETA: 4:13 - loss: 5.5025 - acc: 0.318 - ETA: 4:12 - loss: 5.5000 - acc: 0.317 - ETA: 4:11 - loss: 5.5090 - acc: 0.317 - ETA: 4:10 - loss: 5.5162 - acc: 0.316 - ETA: 4:08 - loss: 5.5266 - acc: 0.316 - ETA: 4:07 - loss: 5.5240 - acc: 0.316 - ETA: 4:06 - loss: 5.5272 - acc: 0.316 - ETA: 4:05 - loss: 5.5299 - acc: 0.316 - ETA: 4:04 - loss: 5.5228 - acc: 0.318 - ETA: 4:03 - loss: 5.5258 - acc: 0.318 - ETA: 4:02 - loss: 5.5316 - acc: 0.317 - ETA: 4:01 - loss: 5.5398 - acc: 0.316 - ETA: 4:00 - loss: 5.5564 - acc: 0.315 - ETA: 3:59 - loss: 5.5606 - acc: 0.314 - ETA: 3:58 - loss: 5.5529 - acc: 0.315 - ETA: 3:56 - loss: 5.5444 - acc: 0.314 - ETA: 3:55 - loss: 5.5409 - acc: 0.315 - ETA: 3:54 - loss: 5.5462 - acc: 0.314 - ETA: 3:53 - loss: 5.5422 - acc: 0.314 - ETA: 3:52 - loss: 5.5402 - acc: 0.314 - ETA: 3:51 - loss: 5.5353 - acc: 0.316 - ETA: 3:50 - loss: 5.5352 - acc: 0.316 - ETA: 3:49 - loss: 5.5449 - acc: 0.315 - ETA: 3:48 - loss: 5.5415 - acc: 0.316 - ETA: 3:47 - loss: 5.5448 - acc: 0.314 - ETA: 3:46 - loss: 5.5434 - acc: 0.315 - ETA: 3:45 - loss: 5.5449 - acc: 0.313 - ETA: 3:44 - loss: 5.5510 - acc: 0.314 - ETA: 3:43 - loss: 5.5511 - acc: 0.315 - ETA: 3:42 - loss: 5.5546 - acc: 0.315 - ETA: 3:41 - loss: 5.5576 - acc: 0.314 - ETA: 3:40 - loss: 5.5529 - acc: 0.314 - ETA: 3:39 - loss: 5.5558 - acc: 0.313 - ETA: 3:38 - loss: 5.5457 - acc: 0.314 - ETA: 3:37 - loss: 5.5454 - acc: 0.314 - ETA: 3:36 - loss: 5.5431 - acc: 0.314 - ETA: 3:35 - loss: 5.5483 - acc: 0.312 - ETA: 3:34 - loss: 5.5555 - acc: 0.311 - ETA: 3:33 - loss: 5.5551 - acc: 0.311 - ETA: 3:31 - loss: 5.5613 - acc: 0.311 - ETA: 3:30 - loss: 5.5584 - acc: 0.312 - ETA: 3:29 - loss: 5.5626 - acc: 0.311 - ETA: 3:28 - loss: 5.5613 - acc: 0.311 - ETA: 3:27 - loss: 5.5610 - acc: 0.311 - ETA: 3:26 - loss: 5.5611 - acc: 0.311 - ETA: 3:25 - loss: 5.5611 - acc: 0.311 - ETA: 3:24 - loss: 5.5617 - acc: 0.310 - ETA: 3:23 - loss: 5.5690 - acc: 0.309 - ETA: 3:22 - loss: 5.5707 - acc: 0.309 - ETA: 3:21 - loss: 5.5638 - acc: 0.310 - ETA: 3:20 - loss: 5.5628 - acc: 0.309 - ETA: 3:19 - loss: 5.5700 - acc: 0.308 - ETA: 3:18 - loss: 5.5740 - acc: 0.309 - ETA: 3:17 - loss: 5.5755 - acc: 0.309 - ETA: 3:16 - loss: 5.5684 - acc: 0.310 - ETA: 3:15 - loss: 5.5637 - acc: 0.310 - ETA: 3:14 - loss: 5.5632 - acc: 0.309 - ETA: 3:13 - loss: 5.5630 - acc: 0.310 - ETA: 3:12 - loss: 5.5641 - acc: 0.310 - ETA: 3:11 - loss: 5.5661 - acc: 0.310 - ETA: 3:10 - loss: 5.5663 - acc: 0.311 - ETA: 3:09 - loss: 5.5640 - acc: 0.311 - ETA: 3:08 - loss: 5.5664 - acc: 0.312 - ETA: 3:07 - loss: 5.5684 - acc: 0.311 - ETA: 3:06 - loss: 5.5759 - acc: 0.309 - ETA: 3:05 - loss: 5.5756 - acc: 0.310 - ETA: 3:04 - loss: 5.5839 - acc: 0.308 - ETA: 3:03 - loss: 5.5845 - acc: 0.308 - ETA: 3:02 - loss: 5.5868 - acc: 0.308 - ETA: 3:01 - loss: 5.5845 - acc: 0.309 - ETA: 3:00 - loss: 5.5881 - acc: 0.308 - ETA: 2:59 - loss: 5.5919 - acc: 0.308 - ETA: 2:58 - loss: 5.5943 - acc: 0.308 - ETA: 2:57 - loss: 5.5916 - acc: 0.3

```
07 - ETA: 2:56 - loss: 5.5861 - acc: 0.308 - ETA: 2:55 - loss: 5.5873 - acc:
 0.308 - ETA: 2:54 - loss: 5.5853 - acc: 0.308 - ETA: 2:53 - loss: 5.5823 - a
cc: 0.308 - ETA: 2:52 - loss: 5.5766 - acc: 0.308 - ETA: 2:51 - loss: 5.5773
 - acc: 0.307 - ETA: 2:50 - loss: 5.5762 - acc: 0.307 - ETA: 2:49 - loss: 5.5
802 - acc: 0.307 - ETA: 2:48 - loss: 5.5791 - acc: 0.306 - ETA: 2:47 - loss:
 5.5816 - acc: 0.306 - ETA: 2:46 - loss: 5.5783 - acc: 0.307 - ETA: 2:45 - lo
ss: 5.5838 - acc: 0.307 - ETA: 2:44 - loss: 5.5834 - acc: 0.307 - ETA: 2:43 -
loss: 5.5784 - acc: 0.308 - ETA: 2:42 - loss: 5.5770 - acc: 0.307 - ETA: 2:41
- loss: 5.5776 - acc: 0.307 - ETA: 2:40 - loss: 5.5794 - acc: 0.308 - ETA: 2:
39 - loss: 5.5783 - acc: 0.307 - ETA: 2:38 - loss: 5.5791 - acc: 0.308 - ETA:
2:37 - loss: 5.5843 - acc: 0.308 - ETA: 2:36 - loss: 5.5849 - acc: 0.308 - ET
A: 2:35 - loss: 5.5850 - acc: 0.309 - ETA: 2:34 - loss: 5.5853 - acc: 0.308 -
ETA: 2:33 - loss: 5.5818 - acc: 0.308 - ETA: 2:32 - loss: 5.5840 - acc: 0.308
- ETA: 2:31 - loss: 5.5879 - acc: 0.308 - ETA: 2:30 - loss: 5.5848 - acc: 0.3
09 - ETA: 2:29 - loss: 5.5795 - acc: 0.309 - ETA: 2:28 - loss: 5.5733 - acc:
 0.310 - ETA: 2:27 - loss: 5.5743 - acc: 0.310 - ETA: 2:26 - loss: 5.5728 - a
cc: 0.311 - ETA: 2:25 - loss: 5.5704 - acc: 0.310 - ETA: 2:24 - loss: 5.5674
 - acc: 0.310 - ETA: 2:23 - loss: 5.5693 - acc: 0.311 - ETA: 2:21 - loss: 5.5
696 - acc: 0.310 - ETA: 2:20 - loss: 5.5697 - acc: 0.310 - ETA: 2:19 - loss:
 5.5729 - acc: 0.310 - ETA: 2:18 - loss: 5.5760 - acc: 0.310 - ETA: 2:17 - lo
ss: 5.5747 - acc: 0.310 - ETA: 2:17 - loss: 5.5722 - acc: 0.310 - ETA: 2:16 -
loss: 5.5750 - acc: 0.309 - ETA: 2:15 - loss: 5.5712 - acc: 0.309 - ETA: 2:14
- loss: 5.5725 - acc: 0.309 - ETA: 2:13 - loss: 5.5723 - acc: 0.309 - ETA: 2:
11 - loss: 5.5746 - acc: 0.309 - ETA: 2:10 - loss: 5.5747 - acc: 0.309 - ETA:
2:09 - loss: 5.5749 - acc: 0.309 - ETA: 2:09 - loss: 5.5718 - acc: 0.310 - ET
A: 2:07 - loss: 5.5728 - acc: 0.310 - ETA: 2:07 - loss: 5.5742 - acc: 0.310 -
ETA: 2:05 - loss: 5.5708 - acc: 0.311 - ETA: 2:04 - loss: 5.5684 - acc: 0.311
- ETA: 2:03 - loss: 5.5695 - acc: 0.311 - ETA: 2:02 - loss: 5.5685 - acc: 0.3
11 - ETA: 2:01 - loss: 5.5735 - acc: 0.310 - ETA: 2:00 - loss: 5.5706 - acc:
 0.311 - ETA: 1:59 - loss: 5.5709 - acc: 0.311 - ETA: 1:58 - loss: 5.5736 - a
cc: 0.310 - ETA: 1:57 - loss: 5.5756 - acc: 0.310 - ETA: 1:56 - loss: 5.5787
 - acc: 0.310 - ETA: 1:55 - loss: 5.5779 - acc: 0.310 - ETA: 1:54 - loss: 5.5
794 - acc: 0.310 - ETA: 1:53 - loss: 5.5853 - acc: 0.310 - ETA: 1:52 - loss:
 5.5851 - acc: 0.310 - ETA: 1:51 - loss: 5.5826 - acc: 0.310 - ETA: 1:50 - lo
ss: 5.5833 - acc: 0.3100312/312 [==============================] - ETA: 1:49
 - loss: 5.5868 - acc: 0.310 - ETA: 1:48 - loss: 5.5874 - acc: 0.311 - ETA:
 1:47 - loss: 5.5884 - acc: 0.311 - ETA: 1:46 - loss: 5.5834 - acc: 0.311 - E
TA: 1:45 - loss: 5.5850 - acc: 0.311 - ETA: 1:44 - loss: 5.5890 - acc: 0.311
 - ETA: 1:43 - loss: 5.5941 - acc: 0.311 - ETA: 1:42 - loss: 5.5929 - acc: 0.
311 - ETA: 1:41 - loss: 5.5904 - acc: 0.312 - ETA: 1:40 - loss: 5.5945 - acc:
0.311 - ETA: 1:39 - loss: 5.6014 - acc: 0.310 - ETA: 1:38 - loss: 5.6001 - ac
c: 0.310 - ETA: 1:37 - loss: 5.6061 - acc: 0.310 - ETA: 1:36 - loss: 5.6046 -
acc: 0.309 - ETA: 1:35 - loss: 5.6082 - acc: 0.309 - ETA: 1:34 - loss: 5.6090
- acc: 0.309 - ETA: 1:33 - loss: 5.6058 - acc: 0.310 - ETA: 1:32 - loss: 5.60
42 - acc: 0.310 - ETA: 1:31 - loss: 5.6065 - acc: 0.310 - ETA: 1:30 - loss:
 5.6088 - acc: 0.310 - ETA: 1:29 - loss: 5.6072 - acc: 0.310 - ETA: 1:28 - lo
ss: 5.6066 - acc: 0.310 - ETA: 1:27 - loss: 5.6091 - acc: 0.310 - ETA: 1:26 -
loss: 5.6081 - acc: 0.309 - ETA: 1:24 - loss: 5.6068 - acc: 0.309 - ETA: 1:23
- loss: 5.6029 - acc: 0.310 - ETA: 1:22 - loss: 5.6008 - acc: 0.310 - ETA: 1:
21 - loss: 5.5991 - acc: 0.310 - ETA: 1:20 - loss: 5.5962 - acc: 0.311 - ETA:
1:19 - loss: 5.5972 - acc: 0.310 - ETA: 1:18 - loss: 5.5932 - acc: 0.311 - ET
A: 1:17 - loss: 5.5923 - acc: 0.312 - ETA: 1:16 - loss: 5.5900 - acc: 0.312 -
ETA: 1:15 - loss: 5.5901 - acc: 0.312 - ETA: 1:14 - loss: 5.5923 - acc: 0.311
- ETA: 1:13 - loss: 5.5897 - acc: 0.312 - ETA: 1:12 - loss: 5.5909 - acc: 0.3
12 - ETA: 1:11 - loss: 5.5905 - acc: 0.312 - ETA: 1:10 - loss: 5.5886 - acc:
 0.312 - ETA: 1:09 - loss: 5.5900 - acc: 0.311 - ETA: 1:08 - loss: 5.5910 - a
cc: 0.311 - ETA: 1:07 - loss: 5.5894 - acc: 0.312 - ETA: 1:06 - loss: 5.5885
```

```
 - acc: 0.311 - ETA: 1:05 - loss: 5.5908 - acc: 0.311 - ETA: 1:04 - loss: 5.5
887 - acc: 0.311 - ETA: 1:03 - loss: 5.5897 - acc: 0.311 - ETA: 1:02 - loss:
 5.5907 - acc: 0.311 - ETA: 1:01 - loss: 5.5901 - acc: 0.311 - ETA: 1:00 - lo
ss: 5.5907 - acc: 0.311 - ETA: 59s - loss: 5.5893 - acc: 0.312 - ETA: 58s - l
oss: 5.5883 - acc: 0.31 - ETA: 57s - loss: 5.5889 - acc: 0.31 - ETA: 56s - lo
ss: 5.5888 - acc: 0.31 - ETA: 55s - loss: 5.5894 - acc: 0.31 - ETA: 54s - los
s: 5.5894 - acc: 0.31 - ETA: 53s - loss: 5.5912 - acc: 0.31 - ETA: 52s - los
s: 5.5901 - acc: 0.31 - ETA: 51s - loss: 5.5894 - acc: 0.31 - ETA: 50s - los
s: 5.5922 - acc: 0.31 - ETA: 49s - loss: 5.5948 - acc: 0.31 - ETA: 48s - los
s: 5.5942 - acc: 0.31 - ETA: 47s - loss: 5.5919 - acc: 0.31 - ETA: 46s - los
s: 5.5894 - acc: 0.31 - ETA: 45s - loss: 5.5929 - acc: 0.31 - ETA: 44s - los
s: 5.5924 - acc: 0.31 - ETA: 43s - loss: 5.5931 - acc: 0.31 - ETA: 42s - los
s: 5.5912 - acc: 0.31 - ETA: 40s - loss: 5.5923 - acc: 0.31 - ETA: 39s - los
s: 5.5921 - acc: 0.31 - ETA: 38s - loss: 5.5933 - acc: 0.31 - ETA: 37s - los
s: 5.5926 - acc: 0.31 - ETA: 36s - loss: 5.5908 - acc: 0.31 - ETA: 35s - los
s: 5.5921 - acc: 0.31 - ETA: 34s - loss: 5.5902 - acc: 0.31 - ETA: 33s - los
s: 5.5901 - acc: 0.31 - ETA: 32s - loss: 5.5901 - acc: 0.31 - ETA: 31s - los
s: 5.5869 - acc: 0.31 - ETA: 30s - loss: 5.5838 - acc: 0.31 - ETA: 29s - los
s: 5.5826 - acc: 0.31 - ETA: 28s - loss: 5.5804 - acc: 0.31 - ETA: 27s - los
s: 5.5788 - acc: 0.31 - ETA: 26s - loss: 5.5792 - acc: 0.31 - ETA: 25s - los
s: 5.5811 - acc: 0.31 - ETA: 24s - loss: 5.5819 - acc: 0.31 - ETA: 23s - los
s: 5.5842 - acc: 0.31 - ETA: 22s - loss: 5.5849 - acc: 0.31 - ETA: 21s - los
s: 5.5843 - acc: 0.31 - ETA: 20s - loss: 5.5834 - acc: 0.31 - ETA: 19s - los
s: 5.5839 - acc: 0.31 - ETA: 18s - loss: 5.5828 - acc: 0.31 - ETA: 17s - los
s: 5.5824 - acc: 0.31 - ETA: 16s - loss: 5.5854 - acc: 0.31 - ETA: 15s - los
s: 5.5871 - acc: 0.31 - ETA: 14s - loss: 5.5885 - acc: 0.31 - ETA: 13s - los
s: 5.5918 - acc: 0.31 - ETA: 12s - loss: 5.5932 - acc: 0.31 - ETA: 11s - los
s: 5.5921 - acc: 0.31 - ETA: 10s - loss: 5.5909 - acc: 0.31 - ETA: 9s - loss:
5.5928 - acc: 0.3120 - ETA: 8s - loss: 5.5952 - acc: 0.311 - ETA: 7s - loss:
 5.5948 - acc: 0.311 - ETA: 6s - loss: 5.5924 - acc: 0.312 - ETA: 5s - loss:
 5.5896 - acc: 0.312 - ETA: 4s - loss: 5.5878 - acc: 0.312 - ETA: 3s - loss:
 5.5883 - acc: 0.312 - ETA: 2s - loss: 5.5899 - acc: 0.312 - ETA: 1s - loss:
 5.5894 - acc: 0.312 - 320s 1s/step - loss: 5.5889 - acc: 0.3125
Epoch 3 start at time  2019-08-04 02:21:03.556801
204/312 [==================>...........] - ETA: 4:46 - loss: 5.4889 - acc: 0.
281 - ETA: 4:35 - loss: 5.2683 - acc: 0.343 - ETA: 4:35 - loss: 5.6493 - acc:
0.291 - ETA: 4:38 - loss: 5.5777 - acc: 0.289 - ETA: 4:35 - loss: 5.6111 - ac
c: 0.293 - ETA: 4:36 - loss: 5.5807 - acc: 0.317 - ETA: 4:34 - loss: 5.4685 -
acc: 0.325 - ETA: 4:31 - loss: 5.4284 - acc: 0.328 - ETA: 4:30 - loss: 5.3222
- acc: 0.336 - ETA: 4:27 - loss: 5.3600 - acc: 0.328 - ETA: 4:26 - loss: 5.35
27 - acc: 0.332 - ETA: 4:24 - loss: 5.3733 - acc: 0.333 - ETA: 4:22 - loss:
 5.3912 - acc: 0.334 - ETA: 4:21 - loss: 5.3632 - acc: 0.339 - ETA: 4:20 - lo
ss: 5.3724 - acc: 0.343 - ETA: 4:20 - loss: 5.4635 - acc: 0.337 - ETA: 4:19 -
loss: 5.4491 - acc: 0.338 - ETA: 4:17 - loss: 5.3970 - acc: 0.338 - ETA: 4:16
- loss: 5.3958 - acc: 0.338 - ETA: 4:16 - loss: 5.3663 - acc: 0.340 - ETA: 4:
14 - loss: 5.3893 - acc: 0.343 - ETA: 4:13 - loss: 5.3938 - acc: 0.342 - ETA:
4:12 - loss: 5.4138 - acc: 0.343 - ETA: 4:12 - loss: 5.4226 - acc: 0.343 - ET
A: 4:11 - loss: 5.4344 - acc: 0.340 - ETA: 4:10 - loss: 5.4160 - acc: 0.346 -
ETA: 4:09 - loss: 5.4275 - acc: 0.346 - ETA: 4:08 - loss: 5.4279 - acc: 0.344
- ETA: 4:07 - loss: 5.4532 - acc: 0.344 - ETA: 4:06 - loss: 5.4250 - acc: 0.3
45 - ETA: 4:07 - loss: 5.4206 - acc: 0.344 - ETA: 4:06 - loss: 5.4227 - acc:
 0.342 - ETA: 4:05 - loss: 5.4343 - acc: 0.340 - ETA: 4:04 - loss: 5.4179 - a
cc: 0.339 - ETA: 4:03 - loss: 5.4193 - acc: 0.340 - ETA: 4:02 - loss: 5.4285
 - acc: 0.340 - ETA: 4:01 - loss: 5.4068 - acc: 0.340 - ETA: 4:00 - loss: 5.4
133 - acc: 0.339 - ETA: 3:59 - loss: 5.4326 - acc: 0.334 - ETA: 3:58 - loss:
 5.4239 - acc: 0.334 - ETA: 3:57 - loss: 5.4042 - acc: 0.336 - ETA: 3:56 - lo
ss: 5.4049 - acc: 0.335 - ETA: 3:54 - loss: 5.4100 - acc: 0.335 - ETA: 3:54 -
```

```
loss: 5.4211 - acc: 0.334 - ETA: 3:53 - loss: 5.4199 - acc: 0.334 - ETA: 3:52
- loss: 5.4136 - acc: 0.334 - ETA: 3:51 - loss: 5.4031 - acc: 0.336 - ETA: 3:
50 - loss: 5.4104 - acc: 0.334 - ETA: 3:49 - loss: 5.4165 - acc: 0.334 - ETA:
3:49 - loss: 5.4375 - acc: 0.331 - ETA: 3:48 - loss: 5.4196 - acc: 0.334 - ET
A: 3:47 - loss: 5.3991 - acc: 0.337 - ETA: 3:46 - loss: 5.4096 - acc: 0.336 -
ETA: 3:45 - loss: 5.3913 - acc: 0.339 - ETA: 3:44 - loss: 5.3865 - acc: 0.340
- ETA: 3:43 - loss: 5.3769 - acc: 0.341 - ETA: 3:42 - loss: 5.3634 - acc: 0.3
43 - ETA: 3:41 - loss: 5.3476 - acc: 0.343 - ETA: 3:40 - loss: 5.3553 - acc:
 0.342 - ETA: 3:39 - loss: 5.3572 - acc: 0.341 - ETA: 3:38 - loss: 5.3789 - a
cc: 0.339 - ETA: 3:38 - loss: 5.3801 - acc: 0.341 - ETA: 3:37 - loss: 5.3669
 - acc: 0.342 - ETA: 3:36 - loss: 5.3693 - acc: 0.340 - ETA: 3:35 - loss: 5.3
607 - acc: 0.340 - ETA: 3:35 - loss: 5.3565 - acc: 0.339 - ETA: 3:34 - loss:
 5.3661 - acc: 0.339 - ETA: 3:33 - loss: 5.3713 - acc: 0.339 - ETA: 3:32 - lo
ss: 5.3812 - acc: 0.338 - ETA: 3:31 - loss: 5.3789 - acc: 0.337 - ETA: 3:31 -
loss: 5.3821 - acc: 0.337 - ETA: 3:30 - loss: 5.3839 - acc: 0.337 - ETA: 3:29
- loss: 5.3748 - acc: 0.339 - ETA: 3:28 - loss: 5.3788 - acc: 0.339 - ETA: 3:
28 - loss: 5.3823 - acc: 0.338 - ETA: 3:27 - loss: 5.3906 - acc: 0.338 - ETA:
3:26 - loss: 5.4066 - acc: 0.335 - ETA: 3:25 - loss: 5.4102 - acc: 0.335 - ET
A: 3:24 - loss: 5.4025 - acc: 0.337 - ETA: 3:23 - loss: 5.3953 - acc: 0.337 -
ETA: 3:23 - loss: 5.3917 - acc: 0.337 - ETA: 3:22 - loss: 5.3980 - acc: 0.336
- ETA: 3:21 - loss: 5.3942 - acc: 0.337 - ETA: 3:20 - loss: 5.3938 - acc: 0.3
35 - ETA: 3:19 - loss: 5.3899 - acc: 0.338 - ETA: 3:18 - loss: 5.3901 - acc:
 0.338 - ETA: 3:17 - loss: 5.3988 - acc: 0.337 - ETA: 3:17 - loss: 5.3972 - a
cc: 0.337 - ETA: 3:16 - loss: 5.3990 - acc: 0.336 - ETA: 3:15 - loss: 5.3995
 - acc: 0.337 - ETA: 3:14 - loss: 5.3998 - acc: 0.335 - ETA: 3:13 - loss: 5.4
072 - acc: 0.336 - ETA: 3:12 - loss: 5.4067 - acc: 0.337 - ETA: 3:11 - loss:
 5.4099 - acc: 0.336 - ETA: 3:10 - loss: 5.4125 - acc: 0.335 - ETA: 3:09 - lo
ss: 5.4069 - acc: 0.335 - ETA: 3:09 - loss: 5.4108 - acc: 0.334 - ETA: 3:08 -
loss: 5.3996 - acc: 0.335 - ETA: 3:07 - loss: 5.3992 - acc: 0.335 - ETA: 3:06
- loss: 5.3975 - acc: 0.335 - ETA: 3:05 - loss: 5.4016 - acc: 0.334 - ETA: 3:
04 - loss: 5.4096 - acc: 0.333 - ETA: 3:03 - loss: 5.4091 - acc: 0.333 - ETA:
3:02 - loss: 5.4164 - acc: 0.333 - ETA: 3:01 - loss: 5.4134 - acc: 0.334 - ET
A: 3:00 - loss: 5.4182 - acc: 0.333 - ETA: 2:59 - loss: 5.4182 - acc: 0.334 -
ETA: 2:59 - loss: 5.4171 - acc: 0.335 - ETA: 2:58 - loss: 5.4165 - acc: 0.334
- ETA: 2:57 - loss: 5.4174 - acc: 0.334 - ETA: 2:56 - loss: 5.4174 - acc: 0.3
34 - ETA: 2:55 - loss: 5.4250 - acc: 0.332 - ETA: 2:54 - loss: 5.4261 - acc:
 0.333 - ETA: 2:53 - loss: 5.4196 - acc: 0.334 - ETA: 2:53 - loss: 5.4176 - a
cc: 0.334 - ETA: 2:52 - loss: 5.4245 - acc: 0.333 - ETA: 2:51 - loss: 5.4286
 - acc: 0.333 - ETA: 2:50 - loss: 5.4293 - acc: 0.332 - ETA: 2:49 - loss: 5.4
229 - acc: 0.333 - ETA: 2:48 - loss: 5.4197 - acc: 0.334 - ETA: 2:47 - loss:
 5.4192 - acc: 0.333 - ETA: 2:46 - loss: 5.4193 - acc: 0.333 - ETA: 2:46 - lo
ss: 5.4192 - acc: 0.333 - ETA: 2:45 - loss: 5.4204 - acc: 0.334 - ETA: 2:44 -
loss: 5.4209 - acc: 0.335 - ETA: 2:43 - loss: 5.4179 - acc: 0.335 - ETA: 2:42
- loss: 5.4206 - acc: 0.335 - ETA: 2:41 - loss: 5.4219 - acc: 0.334 - ETA: 2:
40 - loss: 5.4305 - acc: 0.333 - ETA: 2:39 - loss: 5.4292 - acc: 0.333 - ETA:
2:39 - loss: 5.4371 - acc: 0.332 - ETA: 2:38 - loss: 5.4378 - acc: 0.331 - ET
A: 2:37 - loss: 5.4400 - acc: 0.331 - ETA: 2:36 - loss: 5.4372 - acc: 0.331 -
ETA: 2:35 - loss: 5.4410 - acc: 0.331 - ETA: 2:34 - loss: 5.4451 - acc: 0.330
- ETA: 2:33 - loss: 5.4476 - acc: 0.330 - ETA: 2:32 - loss: 5.4443 - acc: 0.3
30 - ETA: 2:32 - loss: 5.4383 - acc: 0.331 - ETA: 2:31 - loss: 5.4387 - acc:
 0.330 - ETA: 2:30 - loss: 5.4374 - acc: 0.330 - ETA: 2:29 - loss: 5.4348 - a
cc: 0.330 - ETA: 2:28 - loss: 5.4285 - acc: 0.331 - ETA: 2:27 - loss: 5.4287
 - acc: 0.330 - ETA: 2:26 - loss: 5.4271 - acc: 0.330 - ETA: 2:25 - loss: 5.4
309 - acc: 0.329 - ETA: 2:25 - loss: 5.4300 - acc: 0.329 - ETA: 2:24 - loss:
 5.4319 - acc: 0.329 - ETA: 2:23 - loss: 5.4288 - acc: 0.330 - ETA: 2:22 - lo
ss: 5.4352 - acc: 0.329 - ETA: 2:21 - loss: 5.4355 - acc: 0.329 - ETA: 2:20 -
loss: 5.4310 - acc: 0.330 - ETA: 2:19 - loss: 5.4302 - acc: 0.329 - ETA: 2:18
```

```
- loss: 5.4305 - acc: 0.330 - ETA: 2:17 - loss: 5.4321 - acc: 0.330 - ETA: 2:
17 - loss: 5.4307 - acc: 0.330 - ETA: 2:16 - loss: 5.4316 - acc: 0.331 - ETA:
2:15 - loss: 5.4369 - acc: 0.330 - ETA: 2:14 - loss: 5.4372 - acc: 0.330 - ET
A: 2:13 - loss: 5.4377 - acc: 0.330 - ETA: 2:12 - loss: 5.4377 - acc: 0.330 -
ETA: 2:11 - loss: 5.4344 - acc: 0.330 - ETA: 2:11 - loss: 5.4364 - acc: 0.329
- ETA: 2:10 - loss: 5.4403 - acc: 0.329 - ETA: 2:09 - loss: 5.4368 - acc: 0.3
29 - ETA: 2:08 - loss: 5.4315 - acc: 0.330 - ETA: 2:07 - loss: 5.4252 - acc:
 0.331 - ETA: 2:06 - loss: 5.4260 - acc: 0.331 - ETA: 2:05 - loss: 5.4242 - a
cc: 0.331 - ETA: 2:04 - loss: 5.4224 - acc: 0.331 - ETA: 2:03 - loss: 5.4188
 - acc: 0.332 - ETA: 2:03 - loss: 5.4211 - acc: 0.332 - ETA: 2:02 - loss: 5.4
210 - acc: 0.331 - ETA: 2:01 - loss: 5.4205 - acc: 0.331 - ETA: 2:00 - loss:
 5.4239 - acc: 0.331 - ETA: 1:59 - loss: 5.4279 - acc: 0.331 - ETA: 1:58 - lo
ss: 5.4264 - acc: 0.331 - ETA: 1:57 - loss: 5.4243 - acc: 0.330 - ETA: 1:56 -
loss: 5.4265 - acc: 0.330 - ETA: 1:55 - loss: 5.4229 - acc: 0.330 - ETA: 1:55
- loss: 5.4243 - acc: 0.330 - ETA: 1:54 - loss: 5.4247 - acc: 0.330 - ETA: 1:
53 - loss: 5.4266 - acc: 0.330 - ETA: 1:52 - loss: 5.4263 - acc: 0.330 - ETA:
1:51 - loss: 5.4258 - acc: 0.331 - ETA: 1:50 - loss: 5.4236 - acc: 0.331 - ET
A: 1:49 - loss: 5.4244 - acc: 0.331 - ETA: 1:48 - loss: 5.4263 - acc: 0.331 -
ETA: 1:47 - loss: 5.4227 - acc: 0.332 - ETA: 1:47 - loss: 5.4201 - acc: 0.332
- ETA: 1:46 - loss: 5.4206 - acc: 0.332 - ETA: 1:45 - loss: 5.4203 - acc: 0.3
32 - ETA: 1:44 - loss: 5.4254 - acc: 0.331 - ETA: 1:43 - loss: 5.4218 - acc:
 0.331 - ETA: 1:42 - loss: 5.4216 - acc: 0.331 - ETA: 1:41 - loss: 5.4242 - a
cc: 0.331 - ETA: 1:40 - loss: 5.4264 - acc: 0.331 - ETA: 1:40 - loss: 5.4297
 - acc: 0.330 - ETA: 1:39 - loss: 5.4291 - acc: 0.331 - ETA: 1:38 - loss: 5.4
307 - acc: 0.331 - ETA: 1:37 - loss: 5.4371 - acc: 0.331 - ETA: 1:36 - loss:
 5.4371 - acc: 0.331 - ETA: 1:35 - loss: 5.4351 - acc: 0.331 - ETA: 1:34 - lo
ss: 5.4355 - acc: 0.3312312/312 [==============================] - ETA: 1:34
 - loss: 5.4392 - acc: 0.330 - ETA: 1:33 - loss: 5.4402 - acc: 0.331 - ETA:
 1:32 - loss: 5.4413 - acc: 0.331 - ETA: 1:31 - loss: 5.4360 - acc: 0.331 - E
TA: 1:30 - loss: 5.4373 - acc: 0.331 - ETA: 1:29 - loss: 5.4411 - acc: 0.331
 - ETA: 1:28 - loss: 5.4465 - acc: 0.331 - ETA: 1:27 - loss: 5.4457 - acc: 0.
331 - ETA: 1:26 - loss: 5.4432 - acc: 0.332 - ETA: 1:26 - loss: 5.4475 - acc:
0.331 - ETA: 1:25 - loss: 5.4541 - acc: 0.330 - ETA: 1:24 - loss: 5.4533 - ac
c: 0.330 - ETA: 1:23 - loss: 5.4592 - acc: 0.330 - ETA: 1:22 - loss: 5.4581 -
acc: 0.330 - ETA: 1:21 - loss: 5.4620 - acc: 0.329 - ETA: 1:20 - loss: 5.4631
- acc: 0.329 - ETA: 1:19 - loss: 5.4606 - acc: 0.330 - ETA: 1:19 - loss: 5.45
86 - acc: 0.330 - ETA: 1:18 - loss: 5.4606 - acc: 0.330 - ETA: 1:17 - loss:
 5.4626 - acc: 0.330 - ETA: 1:16 - loss: 5.4613 - acc: 0.330 - ETA: 1:15 - lo
ss: 5.4612 - acc: 0.330 - ETA: 1:14 - loss: 5.4630 - acc: 0.330 - ETA: 1:13 -
loss: 5.4624 - acc: 0.329 - ETA: 1:13 - loss: 5.4606 - acc: 0.329 - ETA: 1:12
- loss: 5.4571 - acc: 0.330 - ETA: 1:11 - loss: 5.4554 - acc: 0.330 - ETA: 1:
10 - loss: 5.4537 - acc: 0.330 - ETA: 1:09 - loss: 5.4502 - acc: 0.331 - ETA:
1:08 - loss: 5.4509 - acc: 0.330 - ETA: 1:07 - loss: 5.4468 - acc: 0.331 - ET
A: 1:06 - loss: 5.4462 - acc: 0.331 - ETA: 1:05 - loss: 5.4439 - acc: 0.332 -
ETA: 1:05 - loss: 5.4435 - acc: 0.332 - ETA: 1:04 - loss: 5.4458 - acc: 0.331
- ETA: 1:03 - loss: 5.4432 - acc: 0.332 - ETA: 1:02 - loss: 5.4440 - acc: 0.3
32 - ETA: 1:01 - loss: 5.4434 - acc: 0.332 - ETA: 1:00 - loss: 5.4413 - acc:
 0.332 - ETA: 59s - loss: 5.4429 - acc: 0.331 - ETA: 58s - loss: 5.4439 - ac
c: 0.33 - ETA: 58s - loss: 5.4422 - acc: 0.33 - ETA: 57s - loss: 5.4404 - ac
c: 0.33 - ETA: 56s - loss: 5.4427 - acc: 0.33 - ETA: 55s - loss: 5.4410 - ac
c: 0.33 - ETA: 54s - loss: 5.4418 - acc: 0.33 - ETA: 53s - loss: 5.4427 - ac
c: 0.33 - ETA: 52s - loss: 5.4420 - acc: 0.33 - ETA: 51s - loss: 5.4419 - ac
c: 0.33 - ETA: 51s - loss: 5.4400 - acc: 0.33 - ETA: 50s - loss: 5.4390 - ac
c: 0.33 - ETA: 49s - loss: 5.4397 - acc: 0.33 - ETA: 48s - loss: 5.4396 - ac
c: 0.33 - ETA: 47s - loss: 5.4404 - acc: 0.33 - ETA: 46s - loss: 5.4400 - ac
c: 0.33 - ETA: 45s - loss: 5.4418 - acc: 0.33 - ETA: 44s - loss: 5.4411 - ac
c: 0.33 - ETA: 43s - loss: 5.4403 - acc: 0.33 - ETA: 43s - loss: 5.4437 - ac
```

```
c: 0.33 - ETA: 42s - loss: 5.4457 - acc: 0.33 - ETA: 41s - loss: 5.4449 - ac
c: 0.33 - ETA: 40s - loss: 5.4425 - acc: 0.33 - ETA: 39s - loss: 5.4398 - ac
c: 0.33 - ETA: 38s - loss: 5.4431 - acc: 0.33 - ETA: 37s - loss: 5.4425 - ac
c: 0.33 - ETA: 36s - loss: 5.4431 - acc: 0.33 - ETA: 36s - loss: 5.4409 - ac
c: 0.33 - ETA: 35s - loss: 5.4424 - acc: 0.33 - ETA: 34s - loss: 5.4427 - ac
c: 0.33 - ETA: 33s - loss: 5.4439 - acc: 0.33 - ETA: 32s - loss: 5.4432 - ac
c: 0.33 - ETA: 31s - loss: 5.4413 - acc: 0.33 - ETA: 30s - loss: 5.4424 - ac
c: 0.33 - ETA: 29s - loss: 5.4402 - acc: 0.33 - ETA: 29s - loss: 5.4398 - ac
c: 0.33 - ETA: 28s - loss: 5.4400 - acc: 0.33 - ETA: 27s - loss: 5.4372 - ac
c: 0.33 - ETA: 26s - loss: 5.4344 - acc: 0.33 - ETA: 25s - loss: 5.4327 - ac
c: 0.33 - ETA: 24s - loss: 5.4306 - acc: 0.33 - ETA: 23s - loss: 5.4287 - ac
c: 0.33 - ETA: 22s - loss: 5.4287 - acc: 0.33 - ETA: 22s - loss: 5.4305 - ac
c: 0.33 - ETA: 21s - loss: 5.4315 - acc: 0.33 - ETA: 20s - loss: 5.4336 - ac
c: 0.33 - ETA: 19s - loss: 5.4350 - acc: 0.33 - ETA: 18s - loss: 5.4337 - ac
c: 0.33 - ETA: 17s - loss: 5.4326 - acc: 0.33 - ETA: 16s - loss: 5.4335 - ac
c: 0.33 - ETA: 15s - loss: 5.4324 - acc: 0.33 - ETA: 14s - loss: 5.4321 - ac
c: 0.33 - ETA: 14s - loss: 5.4348 - acc: 0.33 - ETA: 13s - loss: 5.4364 - ac
c: 0.33 - ETA: 12s - loss: 5.4378 - acc: 0.33 - ETA: 11s - loss: 5.4412 - ac
c: 0.33 - ETA: 10s - loss: 5.4429 - acc: 0.33 - ETA: 9s - loss: 5.4418 - acc:
0.3312 - ETA: 8s - loss: 5.4410 - acc: 0.331 - ETA: 7s - loss: 5.4426 - acc:
 0.331 - ETA: 7s - loss: 5.4449 - acc: 0.330 - ETA: 6s - loss: 5.4444 - acc:
 0.330 - ETA: 5s - loss: 5.4421 - acc: 0.330 - ETA: 4s - loss: 5.4390 - acc:
 0.331 - ETA: 3s - loss: 5.4376 - acc: 0.331 - ETA: 2s - loss: 5.4380 - acc:
 0.331 - ETA: 1s - loss: 5.4395 - acc: 0.331 - ETA: 0s - loss: 5.4391 - acc:
 0.331 - 274s 879ms/step - loss: 5.4383 - acc: 0.3314
Epoch 4 start at time  2019-08-04 03:13:08.305536
204/312 [==================>...........] - ETA: 5:59 - loss: 5.3163 - acc: 0.
343 - ETA: 5:34 - loss: 5.1218 - acc: 0.375 - ETA: 5:30 - loss: 5.4895 - acc:
0.343 - ETA: 5:32 - loss: 5.4250 - acc: 0.328 - ETA: 5:25 - loss: 5.4549 - ac
c: 0.318 - ETA: 5:27 - loss: 5.4394 - acc: 0.338 - ETA: 5:26 - loss: 5.3170 -
acc: 0.348 - ETA: 5:22 - loss: 5.2742 - acc: 0.347 - ETA: 5:21 - loss: 5.1668
- acc: 0.361 - ETA: 5:21 - loss: 5.2096 - acc: 0.353 - ETA: 5:21 - loss: 5.19
89 - acc: 0.355 - ETA: 5:20 - loss: 5.2251 - acc: 0.349 - ETA: 5:17 - loss:
 5.2433 - acc: 0.348 - ETA: 5:15 - loss: 5.2265 - acc: 0.352 - ETA: 5:15 - lo
ss: 5.2352 - acc: 0.354 - ETA: 5:13 - loss: 5.3354 - acc: 0.345 - ETA: 5:12 -
loss: 5.3292 - acc: 0.345 - ETA: 5:09 - loss: 5.2750 - acc: 0.349 - ETA: 5:07
- loss: 5.2642 - acc: 0.350 - ETA: 5:04 - loss: 5.2323 - acc: 0.354 - ETA: 5:
04 - loss: 5.2532 - acc: 0.357 - ETA: 5:04 - loss: 5.2580 - acc: 0.353 - ETA:
5:04 - loss: 5.2767 - acc: 0.354 - ETA: 5:02 - loss: 5.2833 - acc: 0.355 - ET
A: 5:01 - loss: 5.2895 - acc: 0.352 - ETA: 5:00 - loss: 5.2762 - acc: 0.358 -
ETA: 4:59 - loss: 5.2892 - acc: 0.356 - ETA: 4:58 - loss: 5.2908 - acc: 0.356
- ETA: 4:56 - loss: 5.3176 - acc: 0.353 - ETA: 4:55 - loss: 5.2915 - acc: 0.3
54 - ETA: 4:55 - loss: 5.2875 - acc: 0.354 - ETA: 4:54 - loss: 5.2843 - acc:
 0.352 - ETA: 4:53 - loss: 5.2971 - acc: 0.352 - ETA: 4:52 - loss: 5.2819 - a
cc: 0.351 - ETA: 4:51 - loss: 5.2834 - acc: 0.350 - ETA: 4:50 - loss: 5.2881
 - acc: 0.351 - ETA: 4:49 - loss: 5.2667 - acc: 0.352 - ETA: 4:48 - loss: 5.2
745 - acc: 0.351 - ETA: 4:47 - loss: 5.2964 - acc: 0.345 - ETA: 4:46 - loss:
 5.2883 - acc: 0.346 - ETA: 4:45 - loss: 5.2694 - acc: 0.346 - ETA: 4:43 - lo
ss: 5.2736 - acc: 0.346 - ETA: 4:43 - loss: 5.2785 - acc: 0.346 - ETA: 4:42 -
loss: 5.2892 - acc: 0.345 - ETA: 4:41 - loss: 5.2874 - acc: 0.343 - ETA: 4:41
- loss: 5.2839 - acc: 0.344 - ETA: 4:40 - loss: 5.2759 - acc: 0.346 - ETA: 4:
39 - loss: 5.2823 - acc: 0.344 - ETA: 4:38 - loss: 5.2888 - acc: 0.344 - ETA:
4:37 - loss: 5.3113 - acc: 0.341 - ETA: 4:36 - loss: 5.2924 - acc: 0.345 - ET
A: 4:35 - loss: 5.2699 - acc: 0.348 - ETA: 4:34 - loss: 5.2791 - acc: 0.347 -
ETA: 4:34 - loss: 5.2602 - acc: 0.350 - ETA: 4:33 - loss: 5.2567 - acc: 0.352
- ETA: 4:32 - loss: 5.2480 - acc: 0.352 - ETA: 4:31 - loss: 5.2342 - acc: 0.3
55 - ETA: 4:30 - loss: 5.2214 - acc: 0.357 - ETA: 4:29 - loss: 5.2314 - acc:
```

```
 0.355 - ETA: 4:27 - loss: 5.2335 - acc: 0.354 - ETA: 4:26 - loss: 5.2548 - a
cc: 0.352 - ETA: 4:25 - loss: 5.2550 - acc: 0.354 - ETA: 4:24 - loss: 5.2422
 - acc: 0.356 - ETA: 4:23 - loss: 5.2454 - acc: 0.354 - ETA: 4:22 - loss: 5.2
374 - acc: 0.354 - ETA: 4:21 - loss: 5.2330 - acc: 0.353 - ETA: 4:19 - loss:
 5.2428 - acc: 0.352 - ETA: 4:18 - loss: 5.2482 - acc: 0.352 - ETA: 4:17 - lo
ss: 5.2578 - acc: 0.352 - ETA: 4:16 - loss: 5.2561 - acc: 0.350 - ETA: 4:14 -
loss: 5.2588 - acc: 0.349 - ETA: 4:14 - loss: 5.2590 - acc: 0.350 - ETA: 4:12
- loss: 5.2495 - acc: 0.352 - ETA: 4:11 - loss: 5.2541 - acc: 0.351 - ETA: 4:
10 - loss: 5.2581 - acc: 0.351 - ETA: 4:09 - loss: 5.2674 - acc: 0.349 - ETA:
4:08 - loss: 5.2853 - acc: 0.348 - ETA: 4:07 - loss: 5.2870 - acc: 0.348 - ET
A: 4:06 - loss: 5.2805 - acc: 0.349 - ETA: 4:05 - loss: 5.2731 - acc: 0.349 -
ETA: 4:03 - loss: 5.2698 - acc: 0.349 - ETA: 4:02 - loss: 5.2763 - acc: 0.348
- ETA: 4:01 - loss: 5.2724 - acc: 0.349 - ETA: 4:00 - loss: 5.2717 - acc: 0.3
47 - ETA: 3:59 - loss: 5.2676 - acc: 0.350 - ETA: 3:58 - loss: 5.2664 - acc:
 0.350 - ETA: 3:57 - loss: 5.2756 - acc: 0.349 - ETA: 3:56 - loss: 5.2741 - a
cc: 0.348 - ETA: 3:55 - loss: 5.2751 - acc: 0.347 - ETA: 3:54 - loss: 5.2757
 - acc: 0.347 - ETA: 3:53 - loss: 5.2767 - acc: 0.346 - ETA: 3:52 - loss: 5.2
851 - acc: 0.346 - ETA: 3:51 - loss: 5.2857 - acc: 0.347 - ETA: 3:50 - loss:
 5.2889 - acc: 0.347 - ETA: 3:49 - loss: 5.2910 - acc: 0.346 - ETA: 3:48 - lo
ss: 5.2846 - acc: 0.345 - ETA: 3:47 - loss: 5.2884 - acc: 0.344 - ETA: 3:46 -
loss: 5.2765 - acc: 0.346 - ETA: 3:45 - loss: 5.2757 - acc: 0.346 - ETA: 3:44
- loss: 5.2743 - acc: 0.346 - ETA: 3:43 - loss: 5.2784 - acc: 0.345 - ETA: 3:
41 - loss: 5.2871 - acc: 0.344 - ETA: 3:40 - loss: 5.2876 - acc: 0.344 - ETA:
3:39 - loss: 5.2948 - acc: 0.344 - ETA: 3:38 - loss: 5.2922 - acc: 0.344 - ET
A: 3:37 - loss: 5.2973 - acc: 0.344 - ETA: 3:36 - loss: 5.2971 - acc: 0.344 -
ETA: 3:35 - loss: 5.2968 - acc: 0.345 - ETA: 3:34 - loss: 5.2952 - acc: 0.344
- ETA: 3:33 - loss: 5.2959 - acc: 0.344 - ETA: 3:32 - loss: 5.2960 - acc: 0.3
43 - ETA: 3:31 - loss: 5.3031 - acc: 0.342 - ETA: 3:30 - loss: 5.3044 - acc:
 0.342 - ETA: 3:29 - loss: 5.2976 - acc: 0.343 - ETA: 3:28 - loss: 5.2956 - a
cc: 0.342 - ETA: 3:27 - loss: 5.3021 - acc: 0.342 - ETA: 3:26 - loss: 5.3068
 - acc: 0.342 - ETA: 3:25 - loss: 5.3085 - acc: 0.342 - ETA: 3:24 - loss: 5.3
026 - acc: 0.343 - ETA: 3:23 - loss: 5.2983 - acc: 0.343 - ETA: 3:22 - loss:
 5.2975 - acc: 0.342 - ETA: 3:21 - loss: 5.2991 - acc: 0.343 - ETA: 3:20 - lo
ss: 5.2978 - acc: 0.343 - ETA: 3:18 - loss: 5.2994 - acc: 0.344 - ETA: 3:18 -
loss: 5.3008 - acc: 0.344 - ETA: 3:16 - loss: 5.2979 - acc: 0.344 - ETA: 3:15
- loss: 5.3002 - acc: 0.344 - ETA: 3:14 - loss: 5.3021 - acc: 0.344 - ETA: 3:
13 - loss: 5.3102 - acc: 0.343 - ETA: 3:12 - loss: 5.3085 - acc: 0.344 - ETA:
3:11 - loss: 5.3160 - acc: 0.343 - ETA: 3:10 - loss: 5.3172 - acc: 0.343 - ET
A: 3:08 - loss: 5.3194 - acc: 0.342 - ETA: 3:07 - loss: 5.3162 - acc: 0.342 -
ETA: 3:06 - loss: 5.3203 - acc: 0.342 - ETA: 3:05 - loss: 5.3248 - acc: 0.342
- ETA: 3:04 - loss: 5.3275 - acc: 0.341 - ETA: 3:03 - loss: 5.3236 - acc: 0.3
41 - ETA: 3:02 - loss: 5.3186 - acc: 0.341 - ETA: 3:01 - loss: 5.3186 - acc:
 0.341 - ETA: 3:00 - loss: 5.3168 - acc: 0.340 - ETA: 2:59 - loss: 5.3149 - a
cc: 0.341 - ETA: 2:58 - loss: 5.3085 - acc: 0.341 - ETA: 2:57 - loss: 5.3089
 - acc: 0.340 - ETA: 2:56 - loss: 5.3081 - acc: 0.340 - ETA: 2:54 - loss: 5.3
119 - acc: 0.339 - ETA: 2:53 - loss: 5.3106 - acc: 0.339 - ETA: 2:52 - loss:
 5.3130 - acc: 0.339 - ETA: 2:51 - loss: 5.3102 - acc: 0.340 - ETA: 2:50 - lo
ss: 5.3161 - acc: 0.340 - ETA: 2:49 - loss: 5.3166 - acc: 0.340 - ETA: 2:48 -
loss: 5.3116 - acc: 0.341 - ETA: 2:47 - loss: 5.3115 - acc: 0.340 - ETA: 2:46
- loss: 5.3118 - acc: 0.340 - ETA: 2:45 - loss: 5.3135 - acc: 0.341 - ETA: 2:
44 - loss: 5.3117 - acc: 0.340 - ETA: 2:43 - loss: 5.3120 - acc: 0.341 - ETA:
2:41 - loss: 5.3167 - acc: 0.341 - ETA: 2:41 - loss: 5.3171 - acc: 0.341 - ET
A: 2:39 - loss: 5.3181 - acc: 0.341 - ETA: 2:38 - loss: 5.3182 - acc: 0.340 -
ETA: 2:38 - loss: 5.3153 - acc: 0.340 - ETA: 2:37 - loss: 5.3170 - acc: 0.339
- ETA: 2:36 - loss: 5.3208 - acc: 0.339 - ETA: 2:35 - loss: 5.3179 - acc: 0.3
40 - ETA: 2:33 - loss: 5.3125 - acc: 0.340 - ETA: 2:33 - loss: 5.3062 - acc:
 0.341 - ETA: 2:32 - loss: 5.3080 - acc: 0.341 - ETA: 2:31 - loss: 5.3054 - a
```

```
cc: 0.341 - ETA: 2:30 - loss: 5.3029 - acc: 0.342 - ETA: 2:29 - loss: 5.2991
 - acc: 0.343 - ETA: 2:27 - loss: 5.3016 - acc: 0.343 - ETA: 2:26 - loss: 5.3
020 - acc: 0.342 - ETA: 2:25 - loss: 5.3015 - acc: 0.342 - ETA: 2:24 - loss:
 5.3048 - acc: 0.342 - ETA: 2:23 - loss: 5.3096 - acc: 0.342 - ETA: 2:22 - lo
ss: 5.3089 - acc: 0.342 - ETA: 2:21 - loss: 5.3069 - acc: 0.342 - ETA: 2:20 -
loss: 5.3086 - acc: 0.341 - ETA: 2:19 - loss: 5.3052 - acc: 0.341 - ETA: 2:18
- loss: 5.3072 - acc: 0.341 - ETA: 2:17 - loss: 5.3077 - acc: 0.341 - ETA: 2:
16 - loss: 5.3098 - acc: 0.341 - ETA: 2:15 - loss: 5.3099 - acc: 0.342 - ETA:
2:13 - loss: 5.3095 - acc: 0.342 - ETA: 2:12 - loss: 5.3070 - acc: 0.342 - ET
A: 2:11 - loss: 5.3069 - acc: 0.342 - ETA: 2:10 - loss: 5.3085 - acc: 0.342 -
ETA: 2:09 - loss: 5.3041 - acc: 0.342 - ETA: 2:08 - loss: 5.3022 - acc: 0.343
- ETA: 2:07 - loss: 5.3026 - acc: 0.343 - ETA: 2:06 - loss: 5.3023 - acc: 0.3
43 - ETA: 2:05 - loss: 5.3068 - acc: 0.342 - ETA: 2:04 - loss: 5.3031 - acc:
 0.342 - ETA: 2:03 - loss: 5.3030 - acc: 0.342 - ETA: 2:02 - loss: 5.3050 - a
cc: 0.341 - ETA: 2:01 - loss: 5.3075 - acc: 0.342 - ETA: 1:59 - loss: 5.3111
 - acc: 0.341 - ETA: 1:58 - loss: 5.3101 - acc: 0.341 - ETA: 1:57 - loss: 5.3
113 - acc: 0.341 - ETA: 1:56 - loss: 5.3183 - acc: 0.341 - ETA: 1:55 - loss:
 5.3184 - acc: 0.342 - ETA: 1:54 - loss: 5.3162 - acc: 0.341 - ETA: 1:53 - lo
ss: 5.3165 - acc: 0.3418312/312 [==============================] - ETA: 1:52
 - loss: 5.3207 - acc: 0.341 - ETA: 1:51 - loss: 5.3218 - acc: 0.342 - ETA:
 1:50 - loss: 5.3227 - acc: 0.342 - ETA: 1:49 - loss: 5.3178 - acc: 0.342 - E
TA: 1:48 - loss: 5.3188 - acc: 0.342 - ETA: 1:47 - loss: 5.3226 - acc: 0.342
 - ETA: 1:46 - loss: 5.3283 - acc: 0.341 - ETA: 1:45 - loss: 5.3279 - acc: 0.
342 - ETA: 1:44 - loss: 5.3258 - acc: 0.342 - ETA: 1:43 - loss: 5.3304 - acc:
0.341 - ETA: 1:41 - loss: 5.3373 - acc: 0.341 - ETA: 1:40 - loss: 5.3361 - ac
c: 0.340 - ETA: 1:39 - loss: 5.3422 - acc: 0.340 - ETA: 1:38 - loss: 5.3408 -
acc: 0.340 - ETA: 1:37 - loss: 5.3457 - acc: 0.339 - ETA: 1:36 - loss: 5.3467
- acc: 0.339 - ETA: 1:35 - loss: 5.3445 - acc: 0.340 - ETA: 1:34 - loss: 5.34
26 - acc: 0.341 - ETA: 1:33 - loss: 5.3448 - acc: 0.340 - ETA: 1:32 - loss:
 5.3468 - acc: 0.340 - ETA: 1:31 - loss: 5.3454 - acc: 0.340 - ETA: 1:30 - lo
ss: 5.3451 - acc: 0.340 - ETA: 1:29 - loss: 5.3465 - acc: 0.339 - ETA: 1:28 -
loss: 5.3459 - acc: 0.339 - ETA: 1:27 - loss: 5.3443 - acc: 0.339 - ETA: 1:26
- loss: 5.3407 - acc: 0.340 - ETA: 1:25 - loss: 5.3386 - acc: 0.340 - ETA: 1:
23 - loss: 5.3372 - acc: 0.340 - ETA: 1:22 - loss: 5.3338 - acc: 0.341 - ETA:
1:21 - loss: 5.3342 - acc: 0.341 - ETA: 1:20 - loss: 5.3299 - acc: 0.341 - ET
A: 1:19 - loss: 5.3288 - acc: 0.342 - ETA: 1:18 - loss: 5.3267 - acc: 0.342 -
ETA: 1:17 - loss: 5.3270 - acc: 0.342 - ETA: 1:16 - loss: 5.3294 - acc: 0.342
- ETA: 1:15 - loss: 5.3272 - acc: 0.343 - ETA: 1:14 - loss: 5.3276 - acc: 0.3
43 - ETA: 1:13 - loss: 5.3269 - acc: 0.343 - ETA: 1:12 - loss: 5.3244 - acc:
 0.343 - ETA: 1:11 - loss: 5.3258 - acc: 0.342 - ETA: 1:10 - loss: 5.3277 - a
cc: 0.342 - ETA: 1:09 - loss: 5.3261 - acc: 0.343 - ETA: 1:08 - loss: 5.3239
 - acc: 0.343 - ETA: 1:07 - loss: 5.3262 - acc: 0.342 - ETA: 1:06 - loss: 5.3
247 - acc: 0.342 - ETA: 1:05 - loss: 5.3257 - acc: 0.342 - ETA: 1:03 - loss:
 5.3268 - acc: 0.343 - ETA: 1:02 - loss: 5.3266 - acc: 0.343 - ETA: 1:01 - lo
ss: 5.3264 - acc: 0.343 - ETA: 1:00 - loss: 5.3240 - acc: 0.344 - ETA: 59s -
 loss: 5.3234 - acc: 0.344 - ETA: 58s - loss: 5.3246 - acc: 0.34 - ETA: 57s -
loss: 5.3248 - acc: 0.34 - ETA: 56s - loss: 5.3257 - acc: 0.34 - ETA: 55s - l
oss: 5.3248 - acc: 0.34 - ETA: 54s - loss: 5.3265 - acc: 0.34 - ETA: 53s - lo
ss: 5.3261 - acc: 0.34 - ETA: 52s - loss: 5.3256 - acc: 0.34 - ETA: 51s - los
s: 5.3290 - acc: 0.34 - ETA: 50s - loss: 5.3310 - acc: 0.34 - ETA: 49s - los
s: 5.3303 - acc: 0.34 - ETA: 48s - loss: 5.3276 - acc: 0.34 - ETA: 47s - los
s: 5.3254 - acc: 0.34 - ETA: 46s - loss: 5.3292 - acc: 0.34 - ETA: 45s - los
s: 5.3289 - acc: 0.34 - ETA: 44s - loss: 5.3297 - acc: 0.34 - ETA: 42s - los
s: 5.3284 - acc: 0.34 - ETA: 41s - loss: 5.3298 - acc: 0.34 - ETA: 40s - los
s: 5.3304 - acc: 0.34 - ETA: 39s - loss: 5.3315 - acc: 0.34 - ETA: 38s - los
s: 5.3314 - acc: 0.34 - ETA: 37s - loss: 5.3298 - acc: 0.34 - ETA: 36s - los
s: 5.3312 - acc: 0.34 - ETA: 35s - loss: 5.3286 - acc: 0.34 - ETA: 34s - los
```

```
s: 5.3275 - acc: 0.34 - ETA: 33s - loss: 5.3273 - acc: 0.34 - ETA: 32s - los
s: 5.3238 - acc: 0.34 - ETA: 31s - loss: 5.3209 - acc: 0.34 - ETA: 30s - los
s: 5.3190 - acc: 0.34 - ETA: 29s - loss: 5.3167 - acc: 0.34 - ETA: 28s - los
s: 5.3148 - acc: 0.34 - ETA: 27s - loss: 5.3151 - acc: 0.34 - ETA: 26s - los
s: 5.3175 - acc: 0.34 - ETA: 25s - loss: 5.3182 - acc: 0.34 - ETA: 24s - los
s: 5.3199 - acc: 0.34 - ETA: 23s - loss: 5.3216 - acc: 0.34 - ETA: 22s - los
s: 5.3209 - acc: 0.34 - ETA: 20s - loss: 5.3199 - acc: 0.34 - ETA: 19s - los
s: 5.3208 - acc: 0.34 - ETA: 18s - loss: 5.3193 - acc: 0.34 - ETA: 17s - los
s: 5.3186 - acc: 0.34 - ETA: 16s - loss: 5.3213 - acc: 0.34 - ETA: 15s - los
s: 5.3225 - acc: 0.34 - ETA: 14s - loss: 5.3241 - acc: 0.34 - ETA: 13s - los
s: 5.3276 - acc: 0.34 - ETA: 12s - loss: 5.3292 - acc: 0.34 - ETA: 11s - los
s: 5.3284 - acc: 0.34 - ETA: 10s - loss: 5.3272 - acc: 0.34 - ETA: 9s - loss:
5.3288 - acc: 0.3420 - ETA: 8s - loss: 5.3309 - acc: 0.341 - ETA: 7s - loss:
 5.3308 - acc: 0.341 - ETA: 6s - loss: 5.3283 - acc: 0.341 - ETA: 5s - loss:
 5.3255 - acc: 0.342 - ETA: 4s - loss: 5.3243 - acc: 0.342 - ETA: 3s - loss:
 5.3248 - acc: 0.342 - ETA: 2s - loss: 5.3265 - acc: 0.342 - ETA: 1s - loss:
 5.3261 - acc: 0.342 - 327s 1s/step - loss: 5.3250 - acc: 0.3426
Epoch 5 start at time  2019-08-04 04:05:50.085794
204/312 [==================>...........] - ETA: 6:33 - loss: 5.1686 - acc: 0.
312 - ETA: 5:35 - loss: 4.9958 - acc: 0.375 - ETA: 5:06 - loss: 5.3534 - acc:
0.343 - ETA: 5:01 - loss: 5.3126 - acc: 0.328 - ETA: 4:51 - loss: 5.3400 - ac
c: 0.325 - ETA: 4:45 - loss: 5.2908 - acc: 0.349 - ETA: 4:41 - loss: 5.1722 -
acc: 0.357 - ETA: 4:38 - loss: 5.1386 - acc: 0.351 - ETA: 4:34 - loss: 5.0164
- acc: 0.368 - ETA: 4:30 - loss: 5.0430 - acc: 0.362 - ETA: 4:29 - loss: 5.03
24 - acc: 0.366 - ETA: 4:28 - loss: 5.0661 - acc: 0.364 - ETA: 4:26 - loss:
 5.0911 - acc: 0.365 - ETA: 4:24 - loss: 5.0748 - acc: 0.368 - ETA: 4:24 - lo
ss: 5.0818 - acc: 0.368 - ETA: 4:24 - loss: 5.1806 - acc: 0.361 - ETA: 4:23 -
loss: 5.1694 - acc: 0.358 - ETA: 4:23 - loss: 5.1200 - acc: 0.362 - ETA: 4:21
- loss: 5.1136 - acc: 0.361 - ETA: 4:19 - loss: 5.0821 - acc: 0.364 - ETA: 4:
18 - loss: 5.1137 - acc: 0.363 - ETA: 4:16 - loss: 5.1135 - acc: 0.360 - ETA:
4:16 - loss: 5.1321 - acc: 0.362 - ETA: 4:14 - loss: 5.1399 - acc: 0.365 - ET
A: 4:12 - loss: 5.1526 - acc: 0.361 - ETA: 4:11 - loss: 5.1361 - acc: 0.365 -
ETA: 4:10 - loss: 5.1458 - acc: 0.364 - ETA: 4:09 - loss: 5.1486 - acc: 0.363
- ETA: 4:08 - loss: 5.1741 - acc: 0.363 - ETA: 4:07 - loss: 5.1473 - acc: 0.3
65 - ETA: 4:07 - loss: 5.1443 - acc: 0.365 - ETA: 4:05 - loss: 5.1430 - acc:
 0.365 - ETA: 4:05 - loss: 5.1564 - acc: 0.363 - ETA: 4:04 - loss: 5.1358 - a
cc: 0.362 - ETA: 4:03 - loss: 5.1352 - acc: 0.364 - ETA: 4:02 - loss: 5.1401
 - acc: 0.365 - ETA: 4:01 - loss: 5.1201 - acc: 0.365 - ETA: 4:00 - loss: 5.1
295 - acc: 0.364 - ETA: 4:00 - loss: 5.1514 - acc: 0.359 - ETA: 3:59 - loss:
 5.1452 - acc: 0.360 - ETA: 3:59 - loss: 5.1266 - acc: 0.362 - ETA: 3:58 - lo
ss: 5.1299 - acc: 0.360 - ETA: 3:57 - loss: 5.1326 - acc: 0.359 - ETA: 3:56 -
loss: 5.1423 - acc: 0.356 - ETA: 3:55 - loss: 5.1396 - acc: 0.354 - ETA: 3:54
- loss: 5.1371 - acc: 0.355 - ETA: 3:53 - loss: 5.1283 - acc: 0.357 - ETA: 3:
52 - loss: 5.1338 - acc: 0.355 - ETA: 3:51 - loss: 5.1371 - acc: 0.355 - ETA:
3:50 - loss: 5.1597 - acc: 0.352 - ETA: 3:49 - loss: 5.1413 - acc: 0.355 - ET
A: 3:49 - loss: 5.1168 - acc: 0.358 - ETA: 3:48 - loss: 5.1261 - acc: 0.356 -
ETA: 3:48 - loss: 5.1063 - acc: 0.358 - ETA: 3:47 - loss: 5.1021 - acc: 0.359
- ETA: 3:46 - loss: 5.0914 - acc: 0.359 - ETA: 3:45 - loss: 5.0781 - acc: 0.3
62 - ETA: 3:44 - loss: 5.0635 - acc: 0.364 - ETA: 3:44 - loss: 5.0731 - acc:
 0.363 - ETA: 3:43 - loss: 5.0773 - acc: 0.363 - ETA: 3:42 - loss: 5.1007 - a
cc: 0.360 - ETA: 3:41 - loss: 5.1032 - acc: 0.362 - ETA: 3:40 - loss: 5.0892
 - acc: 0.364 - ETA: 3:39 - loss: 5.0914 - acc: 0.363 - ETA: 3:38 - loss: 5.0
850 - acc: 0.362 - ETA: 3:38 - loss: 5.0816 - acc: 0.361 - ETA: 3:37 - loss:
 5.0912 - acc: 0.359 - ETA: 3:36 - loss: 5.0955 - acc: 0.359 - ETA: 3:35 - lo
ss: 5.1054 - acc: 0.359 - ETA: 3:34 - loss: 5.1031 - acc: 0.358 - ETA: 3:33 -
loss: 5.1075 - acc: 0.357 - ETA: 3:32 - loss: 5.1075 - acc: 0.358 - ETA: 3:31
- loss: 5.0979 - acc: 0.360 - ETA: 3:30 - loss: 5.1021 - acc: 0.360 - ETA: 3:
```

```
29 - loss: 5.1075 - acc: 0.359 - ETA: 3:28 - loss: 5.1164 - acc: 0.357 - ETA:
3:27 - loss: 5.1337 - acc: 0.356 - ETA: 3:26 - loss: 5.1372 - acc: 0.355 - ET
A: 3:25 - loss: 5.1298 - acc: 0.356 - ETA: 3:24 - loss: 5.1222 - acc: 0.356 -
ETA: 3:23 - loss: 5.1179 - acc: 0.357 - ETA: 3:22 - loss: 5.1247 - acc: 0.356
- ETA: 3:22 - loss: 5.1220 - acc: 0.356 - ETA: 3:21 - loss: 5.1218 - acc: 0.3
55 - ETA: 3:20 - loss: 5.1173 - acc: 0.357 - ETA: 3:18 - loss: 5.1169 - acc:
 0.357 - ETA: 3:17 - loss: 5.1253 - acc: 0.356 - ETA: 3:16 - loss: 5.1246 - a
cc: 0.355 - ETA: 3:16 - loss: 5.1251 - acc: 0.354 - ETA: 3:15 - loss: 5.1244
 - acc: 0.354 - ETA: 3:14 - loss: 5.1254 - acc: 0.353 - ETA: 3:13 - loss: 5.1
347 - acc: 0.353 - ETA: 3:12 - loss: 5.1348 - acc: 0.354 - ETA: 3:11 - loss:
 5.1382 - acc: 0.354 - ETA: 3:10 - loss: 5.1401 - acc: 0.353 - ETA: 3:09 - lo
ss: 5.1341 - acc: 0.353 - ETA: 3:08 - loss: 5.1387 - acc: 0.352 - ETA: 3:08 -
loss: 5.1270 - acc: 0.354 - ETA: 3:07 - loss: 5.1271 - acc: 0.354 - ETA: 3:06
- loss: 5.1259 - acc: 0.354 - ETA: 3:05 - loss: 5.1292 - acc: 0.353 - ETA: 3:
04 - loss: 5.1357 - acc: 0.352 - ETA: 3:03 - loss: 5.1357 - acc: 0.352 - ETA:
3:02 - loss: 5.1422 - acc: 0.352 - ETA: 3:01 - loss: 5.1387 - acc: 0.353 - ET
A: 3:00 - loss: 5.1443 - acc: 0.353 - ETA: 2:59 - loss: 5.1441 - acc: 0.354 -
ETA: 2:59 - loss: 5.1439 - acc: 0.354 - ETA: 2:58 - loss: 5.1436 - acc: 0.354
- ETA: 2:57 - loss: 5.1446 - acc: 0.353 - ETA: 2:56 - loss: 5.1444 - acc: 0.3
53 - ETA: 2:55 - loss: 5.1523 - acc: 0.352 - ETA: 2:54 - loss: 5.1532 - acc:
 0.352 - ETA: 2:54 - loss: 5.1468 - acc: 0.354 - ETA: 2:53 - loss: 5.1446 - a
cc: 0.353 - ETA: 2:52 - loss: 5.1507 - acc: 0.352 - ETA: 2:51 - loss: 5.1556
 - acc: 0.352 - ETA: 2:50 - loss: 5.1572 - acc: 0.352 - ETA: 2:49 - loss: 5.1
515 - acc: 0.353 - ETA: 2:49 - loss: 5.1486 - acc: 0.354 - ETA: 2:48 - loss:
 5.1484 - acc: 0.353 - ETA: 2:47 - loss: 5.1493 - acc: 0.354 - ETA: 2:46 - lo
ss: 5.1480 - acc: 0.354 - ETA: 2:45 - loss: 5.1497 - acc: 0.355 - ETA: 2:44 -
loss: 5.1501 - acc: 0.355 - ETA: 2:43 - loss: 5.1464 - acc: 0.355 - ETA: 2:42
- loss: 5.1495 - acc: 0.355 - ETA: 2:41 - loss: 5.1501 - acc: 0.355 - ETA: 2:
40 - loss: 5.1586 - acc: 0.354 - ETA: 2:40 - loss: 5.1573 - acc: 0.354 - ETA:
2:39 - loss: 5.1643 - acc: 0.352 - ETA: 2:38 - loss: 5.1649 - acc: 0.353 - ET
A: 2:37 - loss: 5.1657 - acc: 0.352 - ETA: 2:36 - loss: 5.1633 - acc: 0.353 -
ETA: 2:35 - loss: 5.1681 - acc: 0.352 - ETA: 2:34 - loss: 5.1723 - acc: 0.351
- ETA: 2:33 - loss: 5.1759 - acc: 0.350 - ETA: 2:32 - loss: 5.1714 - acc: 0.3
50 - ETA: 2:32 - loss: 5.1662 - acc: 0.351 - ETA: 2:31 - loss: 5.1657 - acc:
 0.350 - ETA: 2:30 - loss: 5.1646 - acc: 0.350 - ETA: 2:29 - loss: 5.1619 - a
cc: 0.350 - ETA: 2:28 - loss: 5.1557 - acc: 0.351 - ETA: 2:27 - loss: 5.1568
 - acc: 0.350 - ETA: 2:26 - loss: 5.1554 - acc: 0.350 - ETA: 2:25 - loss: 5.1
595 - acc: 0.350 - ETA: 2:24 - loss: 5.1589 - acc: 0.350 - ETA: 2:23 - loss:
 5.1617 - acc: 0.350 - ETA: 2:23 - loss: 5.1583 - acc: 0.351 - ETA: 2:22 - lo
ss: 5.1638 - acc: 0.351 - ETA: 2:21 - loss: 5.1641 - acc: 0.351 - ETA: 2:20 -
loss: 5.1589 - acc: 0.352 - ETA: 2:19 - loss: 5.1586 - acc: 0.352 - ETA: 2:18
- loss: 5.1588 - acc: 0.352 - ETA: 2:17 - loss: 5.1600 - acc: 0.352 - ETA: 2:
16 - loss: 5.1587 - acc: 0.352 - ETA: 2:15 - loss: 5.1586 - acc: 0.352 - ETA:
2:15 - loss: 5.1631 - acc: 0.352 - ETA: 2:14 - loss: 5.1632 - acc: 0.352 - ET
A: 2:13 - loss: 5.1644 - acc: 0.352 - ETA: 2:12 - loss: 5.1641 - acc: 0.352 -
ETA: 2:11 - loss: 5.1608 - acc: 0.352 - ETA: 2:10 - loss: 5.1631 - acc: 0.352
- ETA: 2:09 - loss: 5.1670 - acc: 0.351 - ETA: 2:09 - loss: 5.1646 - acc: 0.3
52 - ETA: 2:08 - loss: 5.1588 - acc: 0.353 - ETA: 2:07 - loss: 5.1527 - acc:
 0.354 - ETA: 2:06 - loss: 5.1546 - acc: 0.354 - ETA: 2:05 - loss: 5.1522 - a
cc: 0.354 - ETA: 2:04 - loss: 5.1504 - acc: 0.355 - ETA: 2:03 - loss: 5.1460
 - acc: 0.355 - ETA: 2:02 - loss: 5.1485 - acc: 0.355 - ETA: 2:02 - loss: 5.1
491 - acc: 0.355 - ETA: 2:01 - loss: 5.1479 - acc: 0.355 - ETA: 2:00 - loss:
 5.1517 - acc: 0.355 - ETA: 1:59 - loss: 5.1571 - acc: 0.354 - ETA: 1:58 - lo
ss: 5.1562 - acc: 0.354 - ETA: 1:57 - loss: 5.1538 - acc: 0.354 - ETA: 1:56 -
loss: 5.1556 - acc: 0.354 - ETA: 1:55 - loss: 5.1519 - acc: 0.354 - ETA: 1:54
- loss: 5.1531 - acc: 0.353 - ETA: 1:54 - loss: 5.1539 - acc: 0.353 - ETA: 1:
53 - loss: 5.1558 - acc: 0.353 - ETA: 1:52 - loss: 5.1549 - acc: 0.353 - ETA:
```

```
1:51 - loss: 5.1547 - acc: 0.354 - ETA: 1:50 - loss: 5.1528 - acc: 0.354 - ET
A: 1:49 - loss: 5.1528 - acc: 0.354 - ETA: 1:48 - loss: 5.1550 - acc: 0.353 -
ETA: 1:47 - loss: 5.1508 - acc: 0.354 - ETA: 1:46 - loss: 5.1482 - acc: 0.354
 - ETA: 1:46 - loss: 5.1494 - acc: 0.354 - ETA: 1:45 - loss: 5.1497 - acc: 0.3
54 - ETA: 1:44 - loss: 5.1547 - acc: 0.353 - ETA: 1:43 - loss: 5.1510 - acc:
 0.353 - ETA: 1:42 - loss: 5.1512 - acc: 0.353 - ETA: 1:41 - loss: 5.1520 - a
cc: 0.353 - ETA: 1:40 - loss: 5.1542 - acc: 0.353 - ETA: 1:39 - loss: 5.1576
 - acc: 0.352 - ETA: 1:39 - loss: 5.1566 - acc: 0.353 - ETA: 1:38 - loss: 5.1
589 - acc: 0.353 - ETA: 1:37 - loss: 5.1655 - acc: 0.353 - ETA: 1:36 - loss:
 5.1661 - acc: 0.353 - ETA: 1:35 - loss: 5.1644 - acc: 0.353 - ETA: 1:34 - lo
ss: 5.1646 - acc: 0.3529312/312 [==============================] - ETA: 1:33
 - loss: 5.1687 - acc: 0.352 - ETA: 1:32 - loss: 5.1704 - acc: 0.353 - ETA:
 1:31 - loss: 5.1712 - acc: 0.353 - ETA: 1:31 - loss: 5.1660 - acc: 0.353 - E
TA: 1:30 - loss: 5.1671 - acc: 0.353 - ETA: 1:29 - loss: 5.1708 - acc: 0.353
 - ETA: 1:28 - loss: 5.1768 - acc: 0.353 - ETA: 1:27 - loss: 5.1764 - acc: 0.
353 - ETA: 1:26 - loss: 5.1743 - acc: 0.353 - ETA: 1:25 - loss: 5.1788 - acc:
0.352 - ETA: 1:25 - loss: 5.1857 - acc: 0.352 - ETA: 1:24 - loss: 5.1841 - ac
c: 0.352 - ETA: 1:23 - loss: 5.1898 - acc: 0.352 - ETA: 1:22 - loss: 5.1887 -
acc: 0.351 - ETA: 1:21 - loss: 5.1937 - acc: 0.351 - ETA: 1:20 - loss: 5.1950
 - acc: 0.351 - ETA: 1:19 - loss: 5.1925 - acc: 0.352 - ETA: 1:18 - loss: 5.19
05 - acc: 0.352 - ETA: 1:17 - loss: 5.1928 - acc: 0.352 - ETA: 1:17 - loss:
 5.1947 - acc: 0.352 - ETA: 1:16 - loss: 5.1935 - acc: 0.351 - ETA: 1:15 - lo
ss: 5.1929 - acc: 0.351 - ETA: 1:14 - loss: 5.1939 - acc: 0.351 - ETA: 1:13 -
loss: 5.1936 - acc: 0.351 - ETA: 1:12 - loss: 5.1917 - acc: 0.351 - ETA: 1:11
 - loss: 5.1884 - acc: 0.351 - ETA: 1:10 - loss: 5.1864 - acc: 0.351 - ETA: 1:
10 - loss: 5.1852 - acc: 0.352 - ETA: 1:09 - loss: 5.1816 - acc: 0.352 - ETA:
1:08 - loss: 5.1820 - acc: 0.352 - ETA: 1:07 - loss: 5.1779 - acc: 0.352 - ET
A: 1:06 - loss: 5.1768 - acc: 0.352 - ETA: 1:05 - loss: 5.1748 - acc: 0.353 -
ETA: 1:04 - loss: 5.1745 - acc: 0.353 - ETA: 1:03 - loss: 5.1767 - acc: 0.353
 - ETA: 1:02 - loss: 5.1739 - acc: 0.354 - ETA: 1:02 - loss: 5.1741 - acc: 0.3
54 - ETA: 1:01 - loss: 5.1738 - acc: 0.354 - ETA: 1:00 - loss: 5.1713 - acc:
 0.354 - ETA: 59s - loss: 5.1726 - acc: 0.354 - ETA: 58s - loss: 5.1746 - ac
c: 0.35 - ETA: 57s - loss: 5.1728 - acc: 0.35 - ETA: 56s - loss: 5.1703 - ac
c: 0.35 - ETA: 55s - loss: 5.1733 - acc: 0.35 - ETA: 55s - loss: 5.1718 - ac
c: 0.35 - ETA: 54s - loss: 5.1730 - acc: 0.35 - ETA: 53s - loss: 5.1742 - ac
c: 0.35 - ETA: 52s - loss: 5.1736 - acc: 0.35 - ETA: 51s - loss: 5.1734 - ac
c: 0.35 - ETA: 50s - loss: 5.1713 - acc: 0.35 - ETA: 49s - loss: 5.1705 - ac
c: 0.35 - ETA: 48s - loss: 5.1715 - acc: 0.35 - ETA: 48s - loss: 5.1717 - ac
c: 0.35 - ETA: 47s - loss: 5.1725 - acc: 0.35 - ETA: 46s - loss: 5.1714 - ac
c: 0.35 - ETA: 45s - loss: 5.1726 - acc: 0.35 - ETA: 44s - loss: 5.1721 - ac
c: 0.35 - ETA: 43s - loss: 5.1712 - acc: 0.35 - ETA: 42s - loss: 5.1740 - ac
c: 0.35 - ETA: 41s - loss: 5.1759 - acc: 0.35 - ETA: 41s - loss: 5.1749 - ac
c: 0.35 - ETA: 40s - loss: 5.1723 - acc: 0.35 - ETA: 39s - loss: 5.1693 - ac
c: 0.35 - ETA: 38s - loss: 5.1724 - acc: 0.35 - ETA: 37s - loss: 5.1719 - ac
c: 0.35 - ETA: 36s - loss: 5.1732 - acc: 0.35 - ETA: 35s - loss: 5.1715 - ac
c: 0.35 - ETA: 34s - loss: 5.1730 - acc: 0.35 - ETA: 34s - loss: 5.1736 - ac
c: 0.35 - ETA: 33s - loss: 5.1747 - acc: 0.35 - ETA: 32s - loss: 5.1745 - ac
c: 0.35 - ETA: 31s - loss: 5.1734 - acc: 0.35 - ETA: 30s - loss: 5.1746 - ac
c: 0.35 - ETA: 29s - loss: 5.1714 - acc: 0.35 - ETA: 28s - loss: 5.1699 - ac
c: 0.35 - ETA: 27s - loss: 5.1695 - acc: 0.35 - ETA: 27s - loss: 5.1662 - ac
c: 0.35 - ETA: 26s - loss: 5.1632 - acc: 0.35 - ETA: 25s - loss: 5.1613 - ac
c: 0.35 - ETA: 24s - loss: 5.1590 - acc: 0.35 - ETA: 23s - loss: 5.1569 - ac
c: 0.35 - ETA: 22s - loss: 5.1569 - acc: 0.35 - ETA: 21s - loss: 5.1595 - ac
c: 0.35 - ETA: 20s - loss: 5.1603 - acc: 0.35 - ETA: 20s - loss: 5.1621 - ac
c: 0.35 - ETA: 19s - loss: 5.1639 - acc: 0.35 - ETA: 18s - loss: 5.1627 - ac
c: 0.35 - ETA: 17s - loss: 5.1614 - acc: 0.35 - ETA: 16s - loss: 5.1628 - ac
c: 0.35 - ETA: 15s - loss: 5.1614 - acc: 0.35 - ETA: 14s - loss: 5.1610 - ac
```

```
c: 0.35 - ETA: 13s - loss: 5.1632 - acc: 0.35 - ETA: 13s - loss: 5.1647 - ac
c: 0.35 - ETA: 12s - loss: 5.1661 - acc: 0.35 - ETA: 11s - loss: 5.1695 - ac
c: 0.35 - ETA: 10s - loss: 5.1710 - acc: 0.35 - ETA: 9s - loss: 5.1704 - acc:
0.3550 - ETA: 8s - loss: 5.1692 - acc: 0.355 - ETA: 7s - loss: 5.1706 - acc:
 0.354 - ETA: 6s - loss: 5.1724 - acc: 0.354 - ETA: 6s - loss: 5.1723 - acc:
 0.354 - ETA: 5s - loss: 5.1702 - acc: 0.354 - ETA: 4s - loss: 5.1676 - acc:
 0.354 - ETA: 3s - loss: 5.1664 - acc: 0.355 - ETA: 2s - loss: 5.1667 - acc:
 0.355 - ETA: 1s - loss: 5.1683 - acc: 0.354 - ETA: 0s - loss: 5.1677 - acc:
 0.354 - 272s 872ms/step - loss: 5.1670 - acc: 0.3550
Epoch 6 start at time  2019-08-04 04:57:43.108128
204/312 [==================>.....] - ETA: 7:07 - loss: 5.0474 - acc: 0.
375 - ETA: 6:42 - loss: 4.8010 - acc: 0.421 - ETA: 6:29 - loss: 5.1799 - acc:
0.375 - ETA: 6:20 - loss: 5.1897 - acc: 0.351 - ETA: 6:18 - loss: 5.2352 - ac
c: 0.343 - ETA: 6:18 - loss: 5.2168 - acc: 0.359 - ETA: 6:21 - loss: 5.0903 -
acc: 0.361 - ETA: 6:23 - loss: 5.0519 - acc: 0.355 - ETA: 6:26 - loss: 4.9322
- acc: 0.371 - ETA: 6:20 - loss: 4.9448 - acc: 0.371 - ETA: 6:12 - loss: 4.92
38 - acc: 0.372 - ETA: 6:07 - loss: 4.9723 - acc: 0.364 - ETA: 6:01 - loss:
 4.9869 - acc: 0.365 - ETA: 5:54 - loss: 4.9699 - acc: 0.370 - ETA: 5:49 - lo
ss: 4.9822 - acc: 0.370 - ETA: 5:44 - loss: 5.0864 - acc: 0.363 - ETA: 5:39 -
loss: 5.0662 - acc: 0.362 - ETA: 5:36 - loss: 5.0148 - acc: 0.366 - ETA: 5:33
- loss: 5.0020 - acc: 0.368 - ETA: 5:31 - loss: 4.9739 - acc: 0.373 - ETA: 5:
28 - loss: 5.0045 - acc: 0.375 - ETA: 5:26 - loss: 5.0001 - acc: 0.377 - ETA:
5:23 - loss: 5.0267 - acc: 0.379 - ETA: 5:21 - loss: 5.0357 - acc: 0.382 - ET
A: 5:18 - loss: 5.0421 - acc: 0.378 - ETA: 5:16 - loss: 5.0242 - acc: 0.385 -
ETA: 5:14 - loss: 5.0316 - acc: 0.386 - ETA: 5:12 - loss: 5.0352 - acc: 0.385
- ETA: 5:10 - loss: 5.0643 - acc: 0.384 - ETA: 5:08 - loss: 5.0327 - acc: 0.3
88 - ETA: 5:06 - loss: 5.0282 - acc: 0.388 - ETA: 5:04 - loss: 5.0254 - acc:
 0.386 - ETA: 5:03 - loss: 5.0361 - acc: 0.384 - ETA: 5:01 - loss: 5.0163 - a
cc: 0.382 - ETA: 5:00 - loss: 5.0169 - acc: 0.383 - ETA: 4:58 - loss: 5.0232
 - acc: 0.382 - ETA: 4:56 - loss: 5.0003 - acc: 0.382 - ETA: 4:55 - loss: 5.0
111 - acc: 0.380 - ETA: 4:53 - loss: 5.0348 - acc: 0.374 - ETA: 4:52 - loss:
 5.0282 - acc: 0.374 - ETA: 4:50 - loss: 5.0091 - acc: 0.377 - ETA: 4:49 - lo
ss: 5.0136 - acc: 0.375 - ETA: 4:48 - loss: 5.0162 - acc: 0.375 - ETA: 4:47 -
loss: 5.0233 - acc: 0.373 - ETA: 4:46 - loss: 5.0182 - acc: 0.372 - ETA: 4:44
- loss: 5.0165 - acc: 0.372 - ETA: 4:43 - loss: 5.0090 - acc: 0.373 - ETA: 4:
42 - loss: 5.0163 - acc: 0.371 - ETA: 4:40 - loss: 5.0177 - acc: 0.371 - ETA:
4:39 - loss: 5.0423 - acc: 0.368 - ETA: 4:38 - loss: 5.0239 - acc: 0.370 - ET
A: 4:37 - loss: 4.9996 - acc: 0.373 - ETA: 4:36 - loss: 5.0078 - acc: 0.372 -
ETA: 4:35 - loss: 4.9891 - acc: 0.373 - ETA: 4:33 - loss: 4.9853 - acc: 0.375
- ETA: 4:32 - loss: 4.9738 - acc: 0.374 - ETA: 4:30 - loss: 4.9613 - acc: 0.3
77 - ETA: 4:29 - loss: 4.9485 - acc: 0.377 - ETA: 4:28 - loss: 4.9588 - acc:
 0.376 - ETA: 4:27 - loss: 4.9621 - acc: 0.376 - ETA: 4:25 - loss: 4.9858 - a
cc: 0.374 - ETA: 4:24 - loss: 4.9881 - acc: 0.376 - ETA: 4:23 - loss: 4.9732
 - acc: 0.379 - ETA: 4:21 - loss: 4.9746 - acc: 0.377 - ETA: 4:20 - loss: 4.9
660 - acc: 0.377 - ETA: 4:19 - loss: 4.9626 - acc: 0.376 - ETA: 4:17 - loss:
 4.9711 - acc: 0.376 - ETA: 4:16 - loss: 4.9762 - acc: 0.376 - ETA: 4:15 - lo
ss: 4.9854 - acc: 0.376 - ETA: 4:13 - loss: 4.9787 - acc: 0.375 - ETA: 4:12 -
loss: 4.9846 - acc: 0.375 - ETA: 4:11 - loss: 4.9860 - acc: 0.375 - ETA: 4:10
- loss: 4.9764 - acc: 0.378 - ETA: 4:09 - loss: 4.9809 - acc: 0.377 - ETA: 4:
08 - loss: 4.9854 - acc: 0.376 - ETA: 4:06 - loss: 4.9949 - acc: 0.375 - ETA:
4:05 - loss: 5.0131 - acc: 0.373 - ETA: 4:04 - loss: 5.0160 - acc: 0.372 - ET
A: 4:03 - loss: 5.0101 - acc: 0.374 - ETA: 4:02 - loss: 5.0019 - acc: 0.374 -
ETA: 4:01 - loss: 4.9979 - acc: 0.374 - ETA: 4:00 - loss: 5.0044 - acc: 0.373
- ETA: 3:58 - loss: 5.0018 - acc: 0.374 - ETA: 3:57 - loss: 5.0023 - acc: 0.3
72 - ETA: 3:56 - loss: 4.9986 - acc: 0.375 - ETA: 3:55 - loss: 4.9986 - acc:
 0.374 - ETA: 3:54 - loss: 5.0076 - acc: 0.373 - ETA: 3:53 - loss: 5.0080 - a
cc: 0.372 - ETA: 3:52 - loss: 5.0076 - acc: 0.370 - ETA: 3:50 - loss: 5.0080
```

```
 - acc: 0.370 - ETA: 3:49 - loss: 5.0085 - acc: 0.369 - ETA: 3:48 - loss: 5.0
173 - acc: 0.369 - ETA: 3:47 - loss: 5.0178 - acc: 0.370 - ETA: 3:46 - loss:
 5.0211 - acc: 0.369 - ETA: 3:45 - loss: 5.0231 - acc: 0.368 - ETA: 3:44 - lo
ss: 5.0154 - acc: 0.368 - ETA: 3:43 - loss: 5.0204 - acc: 0.367 - ETA: 3:42 -
loss: 5.0089 - acc: 0.369 - ETA: 3:41 - loss: 5.0106 - acc: 0.369 - ETA: 3:40
- loss: 5.0089 - acc: 0.368 - ETA: 3:39 - loss: 5.0123 - acc: 0.368 - ETA: 3:
38 - loss: 5.0187 - acc: 0.367 - ETA: 3:36 - loss: 5.0193 - acc: 0.366 - ETA:
3:35 - loss: 5.0263 - acc: 0.366 - ETA: 3:34 - loss: 5.0219 - acc: 0.367 - ET
A: 3:33 - loss: 5.0270 - acc: 0.366 - ETA: 3:32 - loss: 5.0269 - acc: 0.367 -
ETA: 3:31 - loss: 5.0266 - acc: 0.367 - ETA: 3:30 - loss: 5.0258 - acc: 0.367
- ETA: 3:29 - loss: 5.0284 - acc: 0.366 - ETA: 3:28 - loss: 5.0270 - acc: 0.3
66 - ETA: 3:27 - loss: 5.0352 - acc: 0.365 - ETA: 3:26 - loss: 5.0369 - acc:
 0.365 - ETA: 3:24 - loss: 5.0299 - acc: 0.366 - ETA: 3:23 - loss: 5.0273 - a
cc: 0.366 - ETA: 3:23 - loss: 5.0337 - acc: 0.365 - ETA: 3:22 - loss: 5.0386
 - acc: 0.364 - ETA: 3:21 - loss: 5.0408 - acc: 0.364 - ETA: 3:20 - loss: 5.0
356 - acc: 0.365 - ETA: 3:19 - loss: 5.0335 - acc: 0.366 - ETA: 3:18 - loss:
 5.0330 - acc: 0.365 - ETA: 3:17 - loss: 5.0347 - acc: 0.365 - ETA: 3:15 - lo
ss: 5.0325 - acc: 0.366 - ETA: 3:14 - loss: 5.0333 - acc: 0.366 - ETA: 3:14 -
loss: 5.0331 - acc: 0.367 - ETA: 3:13 - loss: 5.0285 - acc: 0.367 - ETA: 3:12
- loss: 5.0321 - acc: 0.367 - ETA: 3:11 - loss: 5.0320 - acc: 0.366 - ETA: 3:
10 - loss: 5.0407 - acc: 0.365 - ETA: 3:09 - loss: 5.0402 - acc: 0.366 - ETA:
3:07 - loss: 5.0475 - acc: 0.364 - ETA: 3:07 - loss: 5.0486 - acc: 0.365 - ET
A: 3:05 - loss: 5.0497 - acc: 0.364 - ETA: 3:04 - loss: 5.0468 - acc: 0.364 -
ETA: 3:03 - loss: 5.0519 - acc: 0.363 - ETA: 3:02 - loss: 5.0566 - acc: 0.363
- ETA: 3:01 - loss: 5.0604 - acc: 0.362 - ETA: 3:00 - loss: 5.0566 - acc: 0.3
61 - ETA: 2:59 - loss: 5.0516 - acc: 0.363 - ETA: 2:58 - loss: 5.0507 - acc:
 0.362 - ETA: 2:57 - loss: 5.0496 - acc: 0.362 - ETA: 2:56 - loss: 5.0463 - a
cc: 0.362 - ETA: 2:55 - loss: 5.0401 - acc: 0.363 - ETA: 2:54 - loss: 5.0423
 - acc: 0.361 - ETA: 2:53 - loss: 5.0426 - acc: 0.361 - ETA: 2:52 - loss: 5.0
470 - acc: 0.361 - ETA: 2:51 - loss: 5.0463 - acc: 0.361 - ETA: 2:49 - loss:
 5.0479 - acc: 0.360 - ETA: 2:48 - loss: 5.0447 - acc: 0.361 - ETA: 2:47 - lo
ss: 5.0506 - acc: 0.361 - ETA: 2:46 - loss: 5.0510 - acc: 0.361 - ETA: 2:45 -
loss: 5.0453 - acc: 0.362 - ETA: 2:44 - loss: 5.0459 - acc: 0.362 - ETA: 2:43
- loss: 5.0458 - acc: 0.362 - ETA: 2:42 - loss: 5.0469 - acc: 0.362 - ETA: 2:
41 - loss: 5.0458 - acc: 0.362 - ETA: 2:40 - loss: 5.0466 - acc: 0.363 - ETA:
2:39 - loss: 5.0514 - acc: 0.363 - ETA: 2:38 - loss: 5.0516 - acc: 0.362 - ET
A: 2:37 - loss: 5.0531 - acc: 0.362 - ETA: 2:36 - loss: 5.0517 - acc: 0.362 -
ETA: 2:35 - loss: 5.0486 - acc: 0.362 - ETA: 2:34 - loss: 5.0512 - acc: 0.362
- ETA: 2:33 - loss: 5.0557 - acc: 0.361 - ETA: 2:31 - loss: 5.0528 - acc: 0.3
62 - ETA: 2:30 - loss: 5.0471 - acc: 0.362 - ETA: 2:29 - loss: 5.0409 - acc:
 0.363 - ETA: 2:28 - loss: 5.0422 - acc: 0.363 - ETA: 2:27 - loss: 5.0402 - a
cc: 0.363 - ETA: 2:26 - loss: 5.0386 - acc: 0.363 - ETA: 2:25 - loss: 5.0340
 - acc: 0.364 - ETA: 2:24 - loss: 5.0369 - acc: 0.364 - ETA: 2:23 - loss: 5.0
371 - acc: 0.364 - ETA: 2:22 - loss: 5.0358 - acc: 0.363 - ETA: 2:21 - loss:
 5.0396 - acc: 0.363 - ETA: 2:20 - loss: 5.0450 - acc: 0.363 - ETA: 2:19 - lo
ss: 5.0439 - acc: 0.363 - ETA: 2:18 - loss: 5.0420 - acc: 0.363 - ETA: 2:17 -
loss: 5.0438 - acc: 0.363 - ETA: 2:16 - loss: 5.0408 - acc: 0.363 - ETA: 2:15
- loss: 5.0427 - acc: 0.363 - ETA: 2:14 - loss: 5.0433 - acc: 0.363 - ETA: 2:
13 - loss: 5.0455 - acc: 0.363 - ETA: 2:12 - loss: 5.0442 - acc: 0.363 - ETA:
2:11 - loss: 5.0436 - acc: 0.363 - ETA: 2:10 - loss: 5.0416 - acc: 0.363 - ET
A: 2:09 - loss: 5.0416 - acc: 0.363 - ETA: 2:08 - loss: 5.0438 - acc: 0.363 -
ETA: 2:07 - loss: 5.0386 - acc: 0.363 - ETA: 2:06 - loss: 5.0359 - acc: 0.364
- ETA: 2:05 - loss: 5.0371 - acc: 0.363 - ETA: 2:04 - loss: 5.0376 - acc: 0.3
63 - ETA: 2:03 - loss: 5.0422 - acc: 0.363 - ETA: 2:01 - loss: 5.0386 - acc:
 0.363 - ETA: 2:00 - loss: 5.0386 - acc: 0.363 - ETA: 1:59 - loss: 5.0391 - a
cc: 0.363 - ETA: 1:58 - loss: 5.0414 - acc: 0.363 - ETA: 1:57 - loss: 5.0448
 - acc: 0.363 - ETA: 1:56 - loss: 5.0430 - acc: 0.363 - ETA: 1:55 - loss: 5.0
```

```
449 - acc: 0.363 - ETA: 1:54 - loss: 5.0521 - acc: 0.363 - ETA: 1:53 - loss:
 5.0528 - acc: 0.363 - ETA: 1:52 - loss: 5.0503 - acc: 0.363 - ETA: 1:51 - lo
ss: 5.0504 - acc: 0.3631312/312 [==============================] - ETA: 1:50
 - loss: 5.0545 - acc: 0.363 - ETA: 1:49 - loss: 5.0568 - acc: 0.363 - ETA:
 1:48 - loss: 5.0573 - acc: 0.363 - ETA: 1:47 - loss: 5.0517 - acc: 0.364 - E
TA: 1:46 - loss: 5.0521 - acc: 0.363 - ETA: 1:45 - loss: 5.0555 - acc: 0.364
 - ETA: 1:44 - loss: 5.0615 - acc: 0.363 - ETA: 1:43 - loss: 5.0612 - acc: 0.
363 - ETA: 1:42 - loss: 5.0592 - acc: 0.364 - ETA: 1:41 - loss: 5.0638 - acc:
0.363 - ETA: 1:40 - loss: 5.0714 - acc: 0.362 - ETA: 1:39 - loss: 5.0695 - ac
c: 0.362 - ETA: 1:38 - loss: 5.0754 - acc: 0.362 - ETA: 1:36 - loss: 5.0737 -
acc: 0.362 - ETA: 1:35 - loss: 5.0785 - acc: 0.361 - ETA: 1:34 - loss: 5.0799
- acc: 0.361 - ETA: 1:33 - loss: 5.0765 - acc: 0.362 - ETA: 1:32 - loss: 5.07
45 - acc: 0.362 - ETA: 1:31 - loss: 5.0769 - acc: 0.362 - ETA: 1:30 - loss:
 5.0792 - acc: 0.362 - ETA: 1:29 - loss: 5.0782 - acc: 0.361 - ETA: 1:28 - lo
ss: 5.0785 - acc: 0.361 - ETA: 1:27 - loss: 5.0803 - acc: 0.361 - ETA: 1:26 -
loss: 5.0801 - acc: 0.361 - ETA: 1:25 - loss: 5.0781 - acc: 0.361 - ETA: 1:24
- loss: 5.0747 - acc: 0.362 - ETA: 1:23 - loss: 5.0729 - acc: 0.362 - ETA: 1:
22 - loss: 5.0717 - acc: 0.362 - ETA: 1:21 - loss: 5.0678 - acc: 0.363 - ETA:
1:20 - loss: 5.0677 - acc: 0.363 - ETA: 1:19 - loss: 5.0636 - acc: 0.363 - ET
A: 1:18 - loss: 5.0622 - acc: 0.364 - ETA: 1:17 - loss: 5.0603 - acc: 0.364 -
ETA: 1:16 - loss: 5.0600 - acc: 0.364 - ETA: 1:15 - loss: 5.0620 - acc: 0.364
- ETA: 1:14 - loss: 5.0592 - acc: 0.364 - ETA: 1:13 - loss: 5.0592 - acc: 0.3
64 - ETA: 1:12 - loss: 5.0587 - acc: 0.364 - ETA: 1:11 - loss: 5.0560 - acc:
 0.365 - ETA: 1:10 - loss: 5.0570 - acc: 0.364 - ETA: 1:09 - loss: 5.0593 - a
cc: 0.364 - ETA: 1:08 - loss: 5.0574 - acc: 0.365 - ETA: 1:07 - loss: 5.0552
 - acc: 0.365 - ETA: 1:05 - loss: 5.0586 - acc: 0.364 - ETA: 1:04 - loss: 5.0
568 - acc: 0.364 - ETA: 1:03 - loss: 5.0577 - acc: 0.364 - ETA: 1:02 - loss:
 5.0589 - acc: 0.364 - ETA: 1:01 - loss: 5.0584 - acc: 0.364 - ETA: 1:00 - lo
ss: 5.0583 - acc: 0.364 - ETA: 59s - loss: 5.0560 - acc: 0.365 - ETA: 58s - l
oss: 5.0550 - acc: 0.36 - ETA: 57s - loss: 5.0557 - acc: 0.36 - ETA: 56s - lo
ss: 5.0555 - acc: 0.36 - ETA: 55s - loss: 5.0562 - acc: 0.36 - ETA: 54s - los
s: 5.0550 - acc: 0.36 - ETA: 53s - loss: 5.0567 - acc: 0.36 - ETA: 52s - los
s: 5.0561 - acc: 0.36 - ETA: 51s - loss: 5.0553 - acc: 0.36 - ETA: 50s - los
s: 5.0584 - acc: 0.36 - ETA: 49s - loss: 5.0596 - acc: 0.36 - ETA: 48s - los
s: 5.0589 - acc: 0.36 - ETA: 47s - loss: 5.0559 - acc: 0.36 - ETA: 46s - los
s: 5.0529 - acc: 0.36 - ETA: 45s - loss: 5.0561 - acc: 0.36 - ETA: 44s - los
s: 5.0553 - acc: 0.36 - ETA: 43s - loss: 5.0563 - acc: 0.36 - ETA: 42s - los
s: 5.0547 - acc: 0.36 - ETA: 41s - loss: 5.0562 - acc: 0.36 - ETA: 40s - los
s: 5.0570 - acc: 0.36 - ETA: 39s - loss: 5.0583 - acc: 0.36 - ETA: 38s - los
s: 5.0581 - acc: 0.36 - ETA: 37s - loss: 5.0565 - acc: 0.36 - ETA: 35s - los
s: 5.0577 - acc: 0.36 - ETA: 34s - loss: 5.0537 - acc: 0.36 - ETA: 33s - los
s: 5.0522 - acc: 0.36 - ETA: 32s - loss: 5.0519 - acc: 0.36 - ETA: 31s - los
s: 5.0481 - acc: 0.36 - ETA: 30s - loss: 5.0454 - acc: 0.36 - ETA: 29s - los
s: 5.0429 - acc: 0.36 - ETA: 28s - loss: 5.0402 - acc: 0.36 - ETA: 27s - los
s: 5.0381 - acc: 0.36 - ETA: 26s - loss: 5.0382 - acc: 0.36 - ETA: 25s - los
s: 5.0408 - acc: 0.36 - ETA: 24s - loss: 5.0414 - acc: 0.36 - ETA: 23s - los
s: 5.0434 - acc: 0.36 - ETA: 22s - loss: 5.0456 - acc: 0.36 - ETA: 21s - los
s: 5.0440 - acc: 0.36 - ETA: 20s - loss: 5.0424 - acc: 0.36 - ETA: 19s - los
s: 5.0433 - acc: 0.36 - ETA: 18s - loss: 5.0416 - acc: 0.36 - ETA: 17s - los
s: 5.0415 - acc: 0.36 - ETA: 16s - loss: 5.0436 - acc: 0.36 - ETA: 15s - los
s: 5.0446 - acc: 0.36 - ETA: 14s - loss: 5.0461 - acc: 0.36 - ETA: 13s - los
s: 5.0496 - acc: 0.36 - ETA: 12s - loss: 5.0512 - acc: 0.36 - ETA: 11s - los
s: 5.0500 - acc: 0.36 - ETA: 10s - loss: 5.0486 - acc: 0.36 - ETA: 9s - loss:
5.0496 - acc: 0.3650 - ETA: 8s - loss: 5.0522 - acc: 0.364 - ETA: 7s - loss:
 5.0524 - acc: 0.364 - ETA: 6s - loss: 5.0501 - acc: 0.364 - ETA: 5s - loss:
 5.0479 - acc: 0.364 - ETA: 4s - loss: 5.0467 - acc: 0.365 - ETA: 3s - loss:
 5.0475 - acc: 0.365 - ETA: 2s - loss: 5.0491 - acc: 0.365 - ETA: 1s - loss:
```

```
 5.0485 - acc: 0.365 - 321s 1s/step - loss: 5.0474 - acc: 0.3656
Epoch 7 start at time  2019-08-04 05:50:02.592364
204/312 [==================>...........] - ETA: 5:35 - loss: 4.8525 - acc: 0.
437 - ETA: 5:10 - loss: 4.6185 - acc: 0.453 - ETA: 5:01 - loss: 4.9479 - acc:
0.427 - ETA: 5:03 - loss: 4.9672 - acc: 0.398 - ETA: 5:00 - loss: 5.0262 - ac
c: 0.381 - ETA: 4:59 - loss: 5.0191 - acc: 0.380 - ETA: 4:51 - loss: 4.9026 -
acc: 0.379 - ETA: 4:49 - loss: 4.8720 - acc: 0.378 - ETA: 4:45 - loss: 4.7478
- acc: 0.392 - ETA: 4:43 - loss: 4.7621 - acc: 0.393 - ETA: 4:42 - loss: 4.73
54 - acc: 0.406 - ETA: 4:39 - loss: 4.7974 - acc: 0.403 - ETA: 4:38 - loss:
 4.8196 - acc: 0.399 - ETA: 4:39 - loss: 4.8197 - acc: 0.397 - ETA: 4:37 - lo
ss: 4.8378 - acc: 0.397 - ETA: 4:34 - loss: 4.9406 - acc: 0.388 - ETA: 4:34 -
loss: 4.9252 - acc: 0.387 - ETA: 4:33 - loss: 4.8749 - acc: 0.392 - ETA: 4:33
- loss: 4.8663 - acc: 0.393 - ETA: 4:34 - loss: 4.8349 - acc: 0.398 - ETA: 4:
32 - loss: 4.8748 - acc: 0.397 - ETA: 4:30 - loss: 4.8770 - acc: 0.397 - ETA:
4:29 - loss: 4.9014 - acc: 0.396 - ETA: 4:28 - loss: 4.9156 - acc: 0.398 - ET
A: 4:27 - loss: 4.9245 - acc: 0.393 - ETA: 4:25 - loss: 4.9129 - acc: 0.399 -
ETA: 4:24 - loss: 4.9208 - acc: 0.398 - ETA: 4:23 - loss: 4.9231 - acc: 0.399
- ETA: 4:21 - loss: 4.9515 - acc: 0.397 - ETA: 4:20 - loss: 4.9179 - acc: 0.4
01 - ETA: 4:19 - loss: 4.9163 - acc: 0.400 - ETA: 4:19 - loss: 4.9130 - acc:
 0.400 - ETA: 4:17 - loss: 4.9237 - acc: 0.398 - ETA: 4:16 - loss: 4.9034 - a
cc: 0.396 - ETA: 4:15 - loss: 4.9027 - acc: 0.397 - ETA: 4:15 - loss: 4.9062
 - acc: 0.397 - ETA: 4:14 - loss: 4.8840 - acc: 0.397 - ETA: 4:13 - loss: 4.8
912 - acc: 0.395 - ETA: 4:12 - loss: 4.9161 - acc: 0.389 - ETA: 4:11 - loss:
 4.9111 - acc: 0.389 - ETA: 4:10 - loss: 4.8925 - acc: 0.392 - ETA: 4:09 - lo
ss: 4.8985 - acc: 0.390 - ETA: 4:08 - loss: 4.8997 - acc: 0.391 - ETA: 4:07 -
loss: 4.9106 - acc: 0.388 - ETA: 4:06 - loss: 4.9069 - acc: 0.386 - ETA: 4:05
- loss: 4.9029 - acc: 0.386 - ETA: 4:04 - loss: 4.8958 - acc: 0.389 - ETA: 4:
03 - loss: 4.9030 - acc: 0.386 - ETA: 4:02 - loss: 4.9036 - acc: 0.386 - ETA:
4:02 - loss: 4.9262 - acc: 0.383 - ETA: 4:01 - loss: 4.9107 - acc: 0.385 - ET
A: 4:00 - loss: 4.8859 - acc: 0.387 - ETA: 3:59 - loss: 4.8929 - acc: 0.386 -
ETA: 3:58 - loss: 4.8728 - acc: 0.388 - ETA: 3:58 - loss: 4.8697 - acc: 0.389
- ETA: 3:57 - loss: 4.8587 - acc: 0.389 - ETA: 3:55 - loss: 4.8454 - acc: 0.3
92 - ETA: 3:54 - loss: 4.8327 - acc: 0.393 - ETA: 3:53 - loss: 4.8417 - acc:
 0.391 - ETA: 3:52 - loss: 4.8473 - acc: 0.391 - ETA: 3:51 - loss: 4.8737 - a
cc: 0.387 - ETA: 3:51 - loss: 4.8762 - acc: 0.389 - ETA: 3:50 - loss: 4.8614
 - acc: 0.390 - ETA: 3:49 - loss: 4.8643 - acc: 0.389 - ETA: 3:48 - loss: 4.8
572 - acc: 0.388 - ETA: 3:48 - loss: 4.8539 - acc: 0.388 - ETA: 3:47 - loss:
 4.8633 - acc: 0.387 - ETA: 3:45 - loss: 4.8676 - acc: 0.387 - ETA: 3:44 - lo
ss: 4.8762 - acc: 0.388 - ETA: 3:44 - loss: 4.8691 - acc: 0.386 - ETA: 3:43 -
loss: 4.8756 - acc: 0.385 - ETA: 3:42 - loss: 4.8755 - acc: 0.385 - ETA: 3:41
- loss: 4.8658 - acc: 0.387 - ETA: 3:40 - loss: 4.8711 - acc: 0.386 - ETA: 3:
40 - loss: 4.8743 - acc: 0.386 - ETA: 3:39 - loss: 4.8846 - acc: 0.384 - ETA:
3:38 - loss: 4.9052 - acc: 0.383 - ETA: 3:38 - loss: 4.9082 - acc: 0.382 - ET
A: 3:37 - loss: 4.9027 - acc: 0.383 - ETA: 3:35 - loss: 4.8951 - acc: 0.383 -
ETA: 3:34 - loss: 4.8911 - acc: 0.383 - ETA: 3:33 - loss: 4.8975 - acc: 0.382
- ETA: 3:32 - loss: 4.8937 - acc: 0.382 - ETA: 3:31 - loss: 4.8937 - acc: 0.3
81 - ETA: 3:30 - loss: 4.8910 - acc: 0.383 - ETA: 3:29 - loss: 4.8904 - acc:
 0.383 - ETA: 3:28 - loss: 4.8979 - acc: 0.382 - ETA: 3:27 - loss: 4.8980 - a
cc: 0.382 - ETA: 3:26 - loss: 4.8968 - acc: 0.381 - ETA: 3:26 - loss: 4.8962
 - acc: 0.381 - ETA: 3:25 - loss: 4.8969 - acc: 0.379 - ETA: 3:23 - loss: 4.9
065 - acc: 0.379 - ETA: 3:23 - loss: 4.9075 - acc: 0.380 - ETA: 3:21 - loss:
 4.9106 - acc: 0.379 - ETA: 3:21 - loss: 4.9115 - acc: 0.378 - ETA: 3:20 - lo
ss: 4.9044 - acc: 0.378 - ETA: 3:19 - loss: 4.9096 - acc: 0.378 - ETA: 3:18 -
loss: 4.8979 - acc: 0.380 - ETA: 3:17 - loss: 4.8996 - acc: 0.380 - ETA: 3:16
- loss: 4.8984 - acc: 0.380 - ETA: 3:15 - loss: 4.9014 - acc: 0.379 - ETA: 3:
14 - loss: 4.9080 - acc: 0.379 - ETA: 3:14 - loss: 4.9074 - acc: 0.378 - ETA:
3:13 - loss: 4.9135 - acc: 0.378 - ETA: 3:12 - loss: 4.9085 - acc: 0.379 - ET
```

```
A: 3:11 - loss: 4.9136 - acc: 0.379 - ETA: 3:10 - loss: 4.9130 - acc: 0.379 -
ETA: 3:09 - loss: 4.9131 - acc: 0.379 - ETA: 3:08 - loss: 4.9129 - acc: 0.378
- ETA: 3:07 - loss: 4.9142 - acc: 0.378 - ETA: 3:06 - loss: 4.9114 - acc: 0.3
78 - ETA: 3:05 - loss: 4.9209 - acc: 0.377 - ETA: 3:04 - loss: 4.9229 - acc:
 0.377 - ETA: 3:03 - loss: 4.9157 - acc: 0.379 - ETA: 3:02 - loss: 4.9132 - a
cc: 0.378 - ETA: 3:01 - loss: 4.9194 - acc: 0.378 - ETA: 3:00 - loss: 4.9244
 - acc: 0.377 - ETA: 2:59 - loss: 4.9266 - acc: 0.377 - ETA: 2:58 - loss: 4.9
217 - acc: 0.378 - ETA: 2:57 - loss: 4.9179 - acc: 0.379 - ETA: 2:56 - loss:
 4.9173 - acc: 0.378 - ETA: 2:56 - loss: 4.9195 - acc: 0.378 - ETA: 2:55 - lo
ss: 4.9168 - acc: 0.378 - ETA: 2:54 - loss: 4.9180 - acc: 0.379 - ETA: 2:53 -
loss: 4.9176 - acc: 0.379 - ETA: 2:52 - loss: 4.9130 - acc: 0.379 - ETA: 2:51
- loss: 4.9170 - acc: 0.379 - ETA: 2:50 - loss: 4.9168 - acc: 0.378 - ETA: 2:
49 - loss: 4.9257 - acc: 0.377 - ETA: 2:48 - loss: 4.9245 - acc: 0.378 - ETA:
2:47 - loss: 4.9316 - acc: 0.376 - ETA: 2:46 - loss: 4.9325 - acc: 0.376 - ET
A: 2:45 - loss: 4.9334 - acc: 0.376 - ETA: 2:45 - loss: 4.9304 - acc: 0.376 -
ETA: 2:44 - loss: 4.9351 - acc: 0.375 - ETA: 2:43 - loss: 4.9387 - acc: 0.375
- ETA: 2:42 - loss: 4.9420 - acc: 0.374 - ETA: 2:41 - loss: 4.9385 - acc: 0.3
74 - ETA: 2:40 - loss: 4.9336 - acc: 0.375 - ETA: 2:39 - loss: 4.9312 - acc:
 0.375 - ETA: 2:38 - loss: 4.9308 - acc: 0.374 - ETA: 2:37 - loss: 4.9285 - a
cc: 0.374 - ETA: 2:36 - loss: 4.9223 - acc: 0.375 - ETA: 2:36 - loss: 4.9240
 - acc: 0.373 - ETA: 2:35 - loss: 4.9237 - acc: 0.373 - ETA: 2:34 - loss: 4.9
277 - acc: 0.373 - ETA: 2:33 - loss: 4.9273 - acc: 0.373 - ETA: 2:32 - loss:
 4.9290 - acc: 0.373 - ETA: 2:31 - loss: 4.9253 - acc: 0.374 - ETA: 2:30 - lo
ss: 4.9313 - acc: 0.374 - ETA: 2:29 - loss: 4.9314 - acc: 0.374 - ETA: 2:28 -
loss: 4.9253 - acc: 0.374 - ETA: 2:27 - loss: 4.9263 - acc: 0.374 - ETA: 2:26
- loss: 4.9265 - acc: 0.373 - ETA: 2:25 - loss: 4.9268 - acc: 0.374 - ETA: 2:
24 - loss: 4.9248 - acc: 0.373 - ETA: 2:24 - loss: 4.9256 - acc: 0.374 - ETA:
2:23 - loss: 4.9299 - acc: 0.374 - ETA: 2:22 - loss: 4.9301 - acc: 0.374 - ET
A: 2:21 - loss: 4.9323 - acc: 0.373 - ETA: 2:20 - loss: 4.9311 - acc: 0.373 -
ETA: 2:19 - loss: 4.9282 - acc: 0.373 - ETA: 2:18 - loss: 4.9307 - acc: 0.373
- ETA: 2:17 - loss: 4.9354 - acc: 0.372 - ETA: 2:16 - loss: 4.9327 - acc: 0.3
73 - ETA: 2:15 - loss: 4.9270 - acc: 0.374 - ETA: 2:14 - loss: 4.9214 - acc:
 0.374 - ETA: 2:13 - loss: 4.9227 - acc: 0.374 - ETA: 2:12 - loss: 4.9201 - a
cc: 0.375 - ETA: 2:12 - loss: 4.9181 - acc: 0.375 - ETA: 2:11 - loss: 4.9134
 - acc: 0.376 - ETA: 2:10 - loss: 4.9158 - acc: 0.375 - ETA: 2:09 - loss: 4.9
168 - acc: 0.375 - ETA: 2:08 - loss: 4.9158 - acc: 0.375 - ETA: 2:07 - loss:
 4.9195 - acc: 0.374 - ETA: 2:06 - loss: 4.9252 - acc: 0.375 - ETA: 2:05 - lo
ss: 4.9245 - acc: 0.375 - ETA: 2:04 - loss: 4.9226 - acc: 0.375 - ETA: 2:03 -
loss: 4.9243 - acc: 0.374 - ETA: 2:02 - loss: 4.9208 - acc: 0.374 - ETA: 2:01
- loss: 4.9225 - acc: 0.374 - ETA: 2:00 - loss: 4.9239 - acc: 0.373 - ETA: 1:
59 - loss: 4.9261 - acc: 0.373 - ETA: 1:58 - loss: 4.9246 - acc: 0.373 - ETA:
1:57 - loss: 4.9243 - acc: 0.374 - ETA: 1:57 - loss: 4.9227 - acc: 0.374 - ET
A: 1:56 - loss: 4.9221 - acc: 0.374 - ETA: 1:55 - loss: 4.9244 - acc: 0.374 -
ETA: 1:54 - loss: 4.9190 - acc: 0.374 - ETA: 1:53 - loss: 4.9166 - acc: 0.375
- ETA: 1:52 - loss: 4.9174 - acc: 0.374 - ETA: 1:51 - loss: 4.9182 - acc: 0.3
74 - ETA: 1:50 - loss: 4.9231 - acc: 0.374 - ETA: 1:49 - loss: 4.9197 - acc:
 0.374 - ETA: 1:48 - loss: 4.9197 - acc: 0.374 - ETA: 1:47 - loss: 4.9204 - a
cc: 0.374 - ETA: 1:46 - loss: 4.9229 - acc: 0.374 - ETA: 1:45 - loss: 4.9264
 - acc: 0.373 - ETA: 1:44 - loss: 4.9246 - acc: 0.374 - ETA: 1:43 - loss: 4.9
268 - acc: 0.374 - ETA: 1:43 - loss: 4.9336 - acc: 0.374 - ETA: 1:42 - loss:
 4.9345 - acc: 0.374 - ETA: 1:41 - loss: 4.9324 - acc: 0.373 - ETA: 1:40 - lo
ss: 4.9329 - acc: 0.3738312/312 [==============================] - ETA: 1:39
 - loss: 4.9370 - acc: 0.373 - ETA: 1:38 - loss: 4.9395 - acc: 0.374 - ETA:
 1:37 - loss: 4.9399 - acc: 0.374 - ETA: 1:36 - loss: 4.9343 - acc: 0.374 - E
TA: 1:35 - loss: 4.9345 - acc: 0.374 - ETA: 1:34 - loss: 4.9379 - acc: 0.374
 - ETA: 1:33 - loss: 4.9442 - acc: 0.374 - ETA: 1:32 - loss: 4.9446 - acc: 0.
374 - ETA: 1:31 - loss: 4.9432 - acc: 0.374 - ETA: 1:30 - loss: 4.9473 - acc:
```

```
0.374 - ETA: 1:29 - loss: 4.9544 - acc: 0.373 - ETA: 1:29 - loss: 4.9526 - ac
c: 0.373 - ETA: 1:28 - loss: 4.9586 - acc: 0.373 - ETA: 1:27 - loss: 4.9575 -
acc: 0.373 - ETA: 1:26 - loss: 4.9628 - acc: 0.372 - ETA: 1:25 - loss: 4.9641
- acc: 0.372 - ETA: 1:24 - loss: 4.9613 - acc: 0.373 - ETA: 1:23 - loss: 4.95
93 - acc: 0.374 - ETA: 1:22 - loss: 4.9616 - acc: 0.373 - ETA: 1:21 - loss:
 4.9632 - acc: 0.373 - ETA: 1:21 - loss: 4.9622 - acc: 0.373 - ETA: 1:20 - lo
ss: 4.9629 - acc: 0.372 - ETA: 1:19 - loss: 4.9643 - acc: 0.372 - ETA: 1:18 -
loss: 4.9639 - acc: 0.372 - ETA: 1:17 - loss: 4.9616 - acc: 0.372 - ETA: 1:16
- loss: 4.9586 - acc: 0.373 - ETA: 1:15 - loss: 4.9573 - acc: 0.373 - ETA: 1:
14 - loss: 4.9567 - acc: 0.373 - ETA: 1:13 - loss: 4.9532 - acc: 0.374 - ETA:
1:12 - loss: 4.9531 - acc: 0.374 - ETA: 1:11 - loss: 4.9490 - acc: 0.374 - ET
A: 1:10 - loss: 4.9469 - acc: 0.374 - ETA: 1:09 - loss: 4.9448 - acc: 0.375 -
ETA: 1:08 - loss: 4.9443 - acc: 0.375 - ETA: 1:07 - loss: 4.9461 - acc: 0.375
- ETA: 1:06 - loss: 4.9430 - acc: 0.376 - ETA: 1:06 - loss: 4.9431 - acc: 0.3
75 - ETA: 1:05 - loss: 4.9424 - acc: 0.375 - ETA: 1:04 - loss: 4.9400 - acc:
 0.375 - ETA: 1:03 - loss: 4.9412 - acc: 0.375 - ETA: 1:02 - loss: 4.9438 - a
cc: 0.375 - ETA: 1:01 - loss: 4.9418 - acc: 0.375 - ETA: 1:00 - loss: 4.9390
 - acc: 0.376 - ETA: 59s - loss: 4.9424 - acc: 0.375 - ETA: 58s - loss: 4.941
4 - acc: 0.37 - ETA: 57s - loss: 4.9426 - acc: 0.37 - ETA: 56s - loss: 4.9435
- acc: 0.37 - ETA: 55s - loss: 4.9435 - acc: 0.37 - ETA: 54s - loss: 4.9430 -
acc: 0.37 - ETA: 53s - loss: 4.9403 - acc: 0.37 - ETA: 52s - loss: 4.9394 - a
cc: 0.37 - ETA: 51s - loss: 4.9405 - acc: 0.37 - ETA: 51s - loss: 4.9409 - ac
c: 0.37 - ETA: 50s - loss: 4.9420 - acc: 0.37 - ETA: 49s - loss: 4.9399 - ac
c: 0.37 - ETA: 48s - loss: 4.9415 - acc: 0.37 - ETA: 47s - loss: 4.9410 - ac
c: 0.37 - ETA: 46s - loss: 4.9398 - acc: 0.37 - ETA: 45s - loss: 4.9429 - ac
c: 0.37 - ETA: 44s - loss: 4.9442 - acc: 0.37 - ETA: 43s - loss: 4.9433 - ac
c: 0.37 - ETA: 42s - loss: 4.9404 - acc: 0.37 - ETA: 41s - loss: 4.9377 - ac
c: 0.37 - ETA: 40s - loss: 4.9412 - acc: 0.37 - ETA: 39s - loss: 4.9405 - ac
c: 0.37 - ETA: 38s - loss: 4.9414 - acc: 0.37 - ETA: 38s - loss: 4.9401 - ac
c: 0.37 - ETA: 37s - loss: 4.9420 - acc: 0.37 - ETA: 36s - loss: 4.9428 - ac
c: 0.37 - ETA: 35s - loss: 4.9439 - acc: 0.37 - ETA: 34s - loss: 4.9438 - ac
c: 0.37 - ETA: 33s - loss: 4.9423 - acc: 0.37 - ETA: 32s - loss: 4.9435 - ac
c: 0.37 - ETA: 31s - loss: 4.9393 - acc: 0.37 - ETA: 30s - loss: 4.9374 - ac
c: 0.37 - ETA: 29s - loss: 4.9372 - acc: 0.37 - ETA: 28s - loss: 4.9335 - ac
c: 0.37 - ETA: 27s - loss: 4.9311 - acc: 0.37 - ETA: 26s - loss: 4.9289 - ac
c: 0.37 - ETA: 25s - loss: 4.9264 - acc: 0.37 - ETA: 25s - loss: 4.9246 - ac
c: 0.37 - ETA: 24s - loss: 4.9248 - acc: 0.37 - ETA: 23s - loss: 4.9277 - ac
c: 0.37 - ETA: 22s - loss: 4.9282 - acc: 0.37 - ETA: 21s - loss: 4.9299 - ac
c: 0.37 - ETA: 20s - loss: 4.9323 - acc: 0.37 - ETA: 19s - loss: 4.9308 - ac
c: 0.37 - ETA: 18s - loss: 4.9298 - acc: 0.37 - ETA: 17s - loss: 4.9308 - ac
c: 0.37 - ETA: 16s - loss: 4.9290 - acc: 0.37 - ETA: 15s - loss: 4.9290 - ac
c: 0.37 - ETA: 14s - loss: 4.9308 - acc: 0.37 - ETA: 13s - loss: 4.9325 - ac
c: 0.37 - ETA: 12s - loss: 4.9341 - acc: 0.37 - ETA: 12s - loss: 4.9375 - ac
c: 0.37 - ETA: 11s - loss: 4.9396 - acc: 0.37 - ETA: 10s - loss: 4.9385 - ac
c: 0.37 - ETA: 9s - loss: 4.9371 - acc: 0.3754 - ETA: 8s - loss: 4.9378 - ac
c: 0.375 - ETA: 7s - loss: 4.9398 - acc: 0.374 - ETA: 6s - loss: 4.9400 - ac
c: 0.374 - ETA: 5s - loss: 4.9380 - acc: 0.374 - ETA: 4s - loss: 4.9358 - ac
c: 0.375 - ETA: 3s - loss: 4.9346 - acc: 0.375 - ETA: 2s - loss: 4.9351 - ac
c: 0.375 - ETA: 1s - loss: 4.9367 - acc: 0.374 - ETA: 0s - loss: 4.9364 - ac
c: 0.375 - 289s 927ms/step - loss: 4.9353 - acc: 0.3753
Epoch 8 start at time  2019-08-04 06:42:03.231385
204/312 [==================>...........] - ETA: 6:09 - loss: 4.7660 - acc: 0.
343 - ETA: 6:01 - loss: 4.4930 - acc: 0.406 - ETA: 6:20 - loss: 4.8515 - acc:
0.375 - ETA: 6:24 - loss: 4.8563 - acc: 0.351 - ETA: 6:19 - loss: 4.9229 - ac
c: 0.350 - ETA: 6:12 - loss: 4.9134 - acc: 0.359 - ETA: 5:59 - loss: 4.7963 -
acc: 0.370 - ETA: 5:51 - loss: 4.7619 - acc: 0.371 - ETA: 5:47 - loss: 4.6412
- acc: 0.385 - ETA: 5:45 - loss: 4.6472 - acc: 0.387 - ETA: 5:41 - loss: 4.61
```

```
92 - acc: 0.400 - ETA: 5:40 - loss: 4.6786 - acc: 0.398 - ETA: 5:37 - loss:
 4.6961 - acc: 0.399 - ETA: 5:35 - loss: 4.6939 - acc: 0.397 - ETA: 5:33 - lo
ss: 4.7175 - acc: 0.397 - ETA: 5:30 - loss: 4.8252 - acc: 0.388 - ETA: 5:28 -
loss: 4.8125 - acc: 0.389 - ETA: 5:27 - loss: 4.7682 - acc: 0.394 - ETA: 5:26
- loss: 4.7548 - acc: 0.394 - ETA: 5:24 - loss: 4.7222 - acc: 0.400 - ETA: 5:
22 - loss: 4.7657 - acc: 0.398 - ETA: 5:20 - loss: 4.7641 - acc: 0.400 - ETA:
5:18 - loss: 4.7948 - acc: 0.399 - ETA: 5:17 - loss: 4.8036 - acc: 0.402 - ET
A: 5:15 - loss: 4.8148 - acc: 0.397 - ETA: 5:12 - loss: 4.8043 - acc: 0.401 -
ETA: 5:11 - loss: 4.8138 - acc: 0.401 - ETA: 5:09 - loss: 4.8173 - acc: 0.400
- ETA: 5:07 - loss: 4.8473 - acc: 0.398 - ETA: 5:06 - loss: 4.8144 - acc: 0.4
02 - ETA: 5:04 - loss: 4.8100 - acc: 0.401 - ETA: 5:03 - loss: 4.8079 - acc:
 0.401 - ETA: 5:01 - loss: 4.8159 - acc: 0.398 - ETA: 5:00 - loss: 4.7921 - a
cc: 0.398 - ETA: 4:59 - loss: 4.7945 - acc: 0.400 - ETA: 4:57 - loss: 4.7992
 - acc: 0.399 - ETA: 4:55 - loss: 4.7776 - acc: 0.399 - ETA: 4:54 - loss: 4.7
891 - acc: 0.396 - ETA: 4:54 - loss: 4.8167 - acc: 0.390 - ETA: 4:52 - loss:
 4.8077 - acc: 0.391 - ETA: 4:51 - loss: 4.7879 - acc: 0.394 - ETA: 4:50 - lo
ss: 4.7925 - acc: 0.391 - ETA: 4:48 - loss: 4.7947 - acc: 0.391 - ETA: 4:46 -
loss: 4.8025 - acc: 0.389 - ETA: 4:45 - loss: 4.7997 - acc: 0.388 - ETA: 4:43
- loss: 4.7931 - acc: 0.389 - ETA: 4:42 - loss: 4.7886 - acc: 0.391 - ETA: 4:
40 - loss: 4.7944 - acc: 0.389 - ETA: 4:40 - loss: 4.7931 - acc: 0.389 - ETA:
4:38 - loss: 4.8136 - acc: 0.386 - ETA: 4:37 - loss: 4.7998 - acc: 0.388 - ET
A: 4:36 - loss: 4.7723 - acc: 0.391 - ETA: 4:35 - loss: 4.7812 - acc: 0.390 -
ETA: 4:34 - loss: 4.7640 - acc: 0.392 - ETA: 4:33 - loss: 4.7580 - acc: 0.393
- ETA: 4:32 - loss: 4.7443 - acc: 0.393 - ETA: 4:30 - loss: 4.7335 - acc: 0.3
95 - ETA: 4:29 - loss: 4.7216 - acc: 0.396 - ETA: 4:28 - loss: 4.7319 - acc:
 0.394 - ETA: 4:26 - loss: 4.7370 - acc: 0.393 - ETA: 4:25 - loss: 4.7624 - a
cc: 0.391 - ETA: 4:23 - loss: 4.7641 - acc: 0.394 - ETA: 4:22 - loss: 4.7482
 - acc: 0.395 - ETA: 4:21 - loss: 4.7517 - acc: 0.394 - ETA: 4:20 - loss: 4.7
453 - acc: 0.393 - ETA: 4:19 - loss: 4.7428 - acc: 0.393 - ETA: 4:17 - loss:
 4.7530 - acc: 0.391 - ETA: 4:16 - loss: 4.7574 - acc: 0.391 - ETA: 4:15 - lo
ss: 4.7673 - acc: 0.391 - ETA: 4:14 - loss: 4.7597 - acc: 0.390 - ETA: 4:13 -
loss: 4.7661 - acc: 0.390 - ETA: 4:12 - loss: 4.7659 - acc: 0.391 - ETA: 4:11
- loss: 4.7575 - acc: 0.393 - ETA: 4:10 - loss: 4.7621 - acc: 0.393 - ETA: 4:
09 - loss: 4.7657 - acc: 0.392 - ETA: 4:08 - loss: 4.7742 - acc: 0.391 - ETA:
4:07 - loss: 4.7926 - acc: 0.389 - ETA: 4:06 - loss: 4.7945 - acc: 0.388 - ET
A: 4:05 - loss: 4.7892 - acc: 0.389 - ETA: 4:03 - loss: 4.7819 - acc: 0.389 -
ETA: 4:02 - loss: 4.7776 - acc: 0.390 - ETA: 4:01 - loss: 4.7852 - acc: 0.388
- ETA: 4:00 - loss: 4.7825 - acc: 0.388 - ETA: 3:59 - loss: 4.7835 - acc: 0.3
86 - ETA: 3:58 - loss: 4.7806 - acc: 0.389 - ETA: 3:57 - loss: 4.7813 - acc:
 0.388 - ETA: 3:56 - loss: 4.7886 - acc: 0.387 - ETA: 3:54 - loss: 4.7884 - a
cc: 0.388 - ETA: 3:53 - loss: 4.7873 - acc: 0.386 - ETA: 3:52 - loss: 4.7867
 - acc: 0.386 - ETA: 3:51 - loss: 4.7881 - acc: 0.385 - ETA: 3:50 - loss: 4.7
978 - acc: 0.385 - ETA: 3:48 - loss: 4.7999 - acc: 0.385 - ETA: 3:47 - loss:
 4.8027 - acc: 0.384 - ETA: 3:46 - loss: 4.8029 - acc: 0.383 - ETA: 3:45 - lo
ss: 4.7956 - acc: 0.383 - ETA: 3:44 - loss: 4.8013 - acc: 0.381 - ETA: 3:42 -
loss: 4.7905 - acc: 0.383 - ETA: 3:42 - loss: 4.7916 - acc: 0.383 - ETA: 3:41
- loss: 4.7906 - acc: 0.383 - ETA: 3:40 - loss: 4.7934 - acc: 0.383 - ETA: 3:
38 - loss: 4.8003 - acc: 0.383 - ETA: 3:37 - loss: 4.8008 - acc: 0.382 - ETA:
3:36 - loss: 4.8072 - acc: 0.382 - ETA: 3:35 - loss: 4.8020 - acc: 0.382 - ET
A: 3:34 - loss: 4.8076 - acc: 0.382 - ETA: 3:33 - loss: 4.8080 - acc: 0.382 -
ETA: 3:32 - loss: 4.8078 - acc: 0.382 - ETA: 3:31 - loss: 4.8083 - acc: 0.382
- ETA: 3:30 - loss: 4.8083 - acc: 0.381 - ETA: 3:29 - loss: 4.8058 - acc: 0.3
82 - ETA: 3:28 - loss: 4.8151 - acc: 0.380 - ETA: 3:27 - loss: 4.8155 - acc:
 0.381 - ETA: 3:25 - loss: 4.8094 - acc: 0.382 - ETA: 3:24 - loss: 4.8070 - a
cc: 0.382 - ETA: 3:23 - loss: 4.8135 - acc: 0.381 - ETA: 3:22 - loss: 4.8184
 - acc: 0.381 - ETA: 3:21 - loss: 4.8197 - acc: 0.381 - ETA: 3:20 - loss: 4.8
151 - acc: 0.382 - ETA: 3:19 - loss: 4.8113 - acc: 0.382 - ETA: 3:18 - loss:
```

```
 4.8111 - acc: 0.382 - ETA: 3:17 - loss: 4.8133 - acc: 0.382 - ETA: 3:16 - lo
ss: 4.8103 - acc: 0.382 - ETA: 3:14 - loss: 4.8110 - acc: 0.382 - ETA: 3:13 -
loss: 4.8094 - acc: 0.383 - ETA: 3:12 - loss: 4.8053 - acc: 0.384 - ETA: 3:11
- loss: 4.8095 - acc: 0.384 - ETA: 3:10 - loss: 4.8086 - acc: 0.383 - ETA: 3:
09 - loss: 4.8180 - acc: 0.382 - ETA: 3:08 - loss: 4.8169 - acc: 0.383 - ETA:
3:06 - loss: 4.8240 - acc: 0.381 - ETA: 3:05 - loss: 4.8257 - acc: 0.382 - ET
A: 3:04 - loss: 4.8256 - acc: 0.381 - ETA: 3:03 - loss: 4.8228 - acc: 0.382 -
ETA: 3:02 - loss: 4.8276 - acc: 0.381 - ETA: 3:01 - loss: 4.8321 - acc: 0.380
- ETA: 3:00 - loss: 4.8367 - acc: 0.380 - ETA: 2:59 - loss: 4.8321 - acc: 0.3
80 - ETA: 2:58 - loss: 4.8275 - acc: 0.381 - ETA: 2:57 - loss: 4.8255 - acc:
 0.381 - ETA: 2:56 - loss: 4.8247 - acc: 0.381 - ETA: 2:55 - loss: 4.8222 - a
cc: 0.382 - ETA: 2:54 - loss: 4.8159 - acc: 0.383 - ETA: 2:53 - loss: 4.8183
 - acc: 0.381 - ETA: 2:52 - loss: 4.8175 - acc: 0.381 - ETA: 2:51 - loss: 4.8
213 - acc: 0.381 - ETA: 2:50 - loss: 4.8211 - acc: 0.381 - ETA: 2:49 - loss:
 4.8236 - acc: 0.380 - ETA: 2:48 - loss: 4.8207 - acc: 0.380 - ETA: 2:47 - lo
ss: 4.8256 - acc: 0.380 - ETA: 2:46 - loss: 4.8259 - acc: 0.380 - ETA: 2:45 -
loss: 4.8206 - acc: 0.381 - ETA: 2:44 - loss: 4.8223 - acc: 0.380 - ETA: 2:43
- loss: 4.8221 - acc: 0.380 - ETA: 2:42 - loss: 4.8230 - acc: 0.381 - ETA: 2:
41 - loss: 4.8218 - acc: 0.380 - ETA: 2:40 - loss: 4.8220 - acc: 0.381 - ETA:
2:39 - loss: 4.8258 - acc: 0.381 - ETA: 2:38 - loss: 4.8257 - acc: 0.380 - ET
A: 2:36 - loss: 4.8280 - acc: 0.380 - ETA: 2:35 - loss: 4.8264 - acc: 0.380 -
ETA: 2:34 - loss: 4.8238 - acc: 0.380 - ETA: 2:33 - loss: 4.8267 - acc: 0.380
- ETA: 2:32 - loss: 4.8314 - acc: 0.379 - ETA: 2:31 - loss: 4.8290 - acc: 0.3
80 - ETA: 2:30 - loss: 4.8235 - acc: 0.380 - ETA: 2:29 - loss: 4.8172 - acc:
 0.381 - ETA: 2:28 - loss: 4.8185 - acc: 0.381 - ETA: 2:27 - loss: 4.8162 - a
cc: 0.381 - ETA: 2:26 - loss: 4.8146 - acc: 0.381 - ETA: 2:25 - loss: 4.8096
 - acc: 0.382 - ETA: 2:24 - loss: 4.8120 - acc: 0.382 - ETA: 2:23 - loss: 4.8
125 - acc: 0.382 - ETA: 2:22 - loss: 4.8114 - acc: 0.382 - ETA: 2:21 - loss:
 4.8153 - acc: 0.382 - ETA: 2:19 - loss: 4.8217 - acc: 0.382 - ETA: 2:18 - lo
ss: 4.8214 - acc: 0.382 - ETA: 2:17 - loss: 4.8196 - acc: 0.382 - ETA: 2:16 -
loss: 4.8218 - acc: 0.381 - ETA: 2:15 - loss: 4.8184 - acc: 0.382 - ETA: 2:14
- loss: 4.8201 - acc: 0.381 - ETA: 2:13 - loss: 4.8217 - acc: 0.381 - ETA: 2:
12 - loss: 4.8244 - acc: 0.381 - ETA: 2:11 - loss: 4.8225 - acc: 0.381 - ETA:
2:10 - loss: 4.8220 - acc: 0.382 - ETA: 2:09 - loss: 4.8207 - acc: 0.382 - ET
A: 2:08 - loss: 4.8204 - acc: 0.382 - ETA: 2:07 - loss: 4.8229 - acc: 0.382 -
ETA: 2:06 - loss: 4.8175 - acc: 0.382 - ETA: 2:05 - loss: 4.8151 - acc: 0.383
- ETA: 2:04 - loss: 4.8153 - acc: 0.382 - ETA: 2:03 - loss: 4.8169 - acc: 0.3
83 - ETA: 2:02 - loss: 4.8224 - acc: 0.381 - ETA: 2:01 - loss: 4.8197 - acc:
 0.381 - ETA: 2:00 - loss: 4.8199 - acc: 0.381 - ETA: 1:59 - loss: 4.8203 - a
cc: 0.381 - ETA: 1:58 - loss: 4.8223 - acc: 0.382 - ETA: 1:57 - loss: 4.8260
 - acc: 0.381 - ETA: 1:56 - loss: 4.8241 - acc: 0.381 - ETA: 1:55 - loss: 4.8
275 - acc: 0.381 - ETA: 1:54 - loss: 4.8352 - acc: 0.381 - ETA: 1:53 - loss:
 4.8359 - acc: 0.381 - ETA: 1:52 - loss: 4.8333 - acc: 0.381 - ETA: 1:51 - lo
ss: 4.8331 - acc: 0.3814312/312 [==============================] - ETA: 1:49
 - loss: 4.8370 - acc: 0.381 - ETA: 1:48 - loss: 4.8395 - acc: 0.382 - ETA:
 1:47 - loss: 4.8400 - acc: 0.382 - ETA: 1:46 - loss: 4.8344 - acc: 0.382 - E
TA: 1:45 - loss: 4.8352 - acc: 0.382 - ETA: 1:44 - loss: 4.8390 - acc: 0.382
 - ETA: 1:43 - loss: 4.8459 - acc: 0.382 - ETA: 1:42 - loss: 4.8465 - acc: 0.
382 - ETA: 1:41 - loss: 4.8449 - acc: 0.382 - ETA: 1:40 - loss: 4.8487 - acc:
0.381 - ETA: 1:39 - loss: 4.8565 - acc: 0.381 - ETA: 1:38 - loss: 4.8551 - ac
c: 0.381 - ETA: 1:37 - loss: 4.8611 - acc: 0.380 - ETA: 1:36 - loss: 4.8597 -
acc: 0.380 - ETA: 1:35 - loss: 4.8652 - acc: 0.380 - ETA: 1:34 - loss: 4.8662
- acc: 0.380 - ETA: 1:33 - loss: 4.8633 - acc: 0.381 - ETA: 1:32 - loss: 4.86
17 - acc: 0.381 - ETA: 1:31 - loss: 4.8641 - acc: 0.381 - ETA: 1:30 - loss:
 4.8656 - acc: 0.381 - ETA: 1:29 - loss: 4.8647 - acc: 0.381 - ETA: 1:28 - lo
ss: 4.8655 - acc: 0.380 - ETA: 1:27 - loss: 4.8664 - acc: 0.380 - ETA: 1:26 -
loss: 4.8662 - acc: 0.380 - ETA: 1:25 - loss: 4.8639 - acc: 0.380 - ETA: 1:24
```

```
- loss: 4.8611 - acc: 0.381 - ETA: 1:23 - loss: 4.8600 - acc: 0.381 - ETA: 1:
22 - loss: 4.8594 - acc: 0.381 - ETA: 1:21 - loss: 4.8559 - acc: 0.382 - ETA:
1:20 - loss: 4.8564 - acc: 0.381 - ETA: 1:19 - loss: 4.8531 - acc: 0.382 - ET
A: 1:18 - loss: 4.8506 - acc: 0.382 - ETA: 1:17 - loss: 4.8484 - acc: 0.383 -
ETA: 1:16 - loss: 4.8479 - acc: 0.383 - ETA: 1:15 - loss: 4.8497 - acc: 0.383
- ETA: 1:14 - loss: 4.8466 - acc: 0.383 - ETA: 1:12 - loss: 4.8464 - acc: 0.3
83 - ETA: 1:11 - loss: 4.8458 - acc: 0.383 - ETA: 1:10 - loss: 4.8434 - acc:
 0.384 - ETA: 1:09 - loss: 4.8445 - acc: 0.383 - ETA: 1:08 - loss: 4.8466 - a
cc: 0.383 - ETA: 1:07 - loss: 4.8449 - acc: 0.384 - ETA: 1:06 - loss: 4.8419
 - acc: 0.384 - ETA: 1:05 - loss: 4.8456 - acc: 0.383 - ETA: 1:04 - loss: 4.8
441 - acc: 0.383 - ETA: 1:03 - loss: 4.8449 - acc: 0.383 - ETA: 1:02 - loss:
 4.8455 - acc: 0.383 - ETA: 1:01 - loss: 4.8456 - acc: 0.383 - ETA: 1:00 - lo
ss: 4.8453 - acc: 0.383 - ETA: 59s - loss: 4.8427 - acc: 0.384 - ETA: 58s - l
oss: 4.8417 - acc: 0.38 - ETA: 57s - loss: 4.8430 - acc: 0.38 - ETA: 56s - lo
ss: 4.8426 - acc: 0.38 - ETA: 55s - loss: 4.8438 - acc: 0.38 - ETA: 54s - los
s: 4.8416 - acc: 0.38 - ETA: 53s - loss: 4.8428 - acc: 0.38 - ETA: 52s - los
s: 4.8426 - acc: 0.38 - ETA: 51s - loss: 4.8415 - acc: 0.38 - ETA: 50s - los
s: 4.8444 - acc: 0.38 - ETA: 49s - loss: 4.8454 - acc: 0.38 - ETA: 48s - los
s: 4.8442 - acc: 0.38 - ETA: 47s - loss: 4.8415 - acc: 0.38 - ETA: 46s - los
s: 4.8387 - acc: 0.38 - ETA: 45s - loss: 4.8422 - acc: 0.38 - ETA: 44s - los
s: 4.8415 - acc: 0.38 - ETA: 43s - loss: 4.8426 - acc: 0.38 - ETA: 42s - los
s: 4.8414 - acc: 0.38 - ETA: 41s - loss: 4.8428 - acc: 0.38 - ETA: 40s - los
s: 4.8432 - acc: 0.38 - ETA: 38s - loss: 4.8446 - acc: 0.38 - ETA: 37s - los
s: 4.8443 - acc: 0.38 - ETA: 36s - loss: 4.8427 - acc: 0.38 - ETA: 35s - los
s: 4.8441 - acc: 0.38 - ETA: 34s - loss: 4.8400 - acc: 0.38 - ETA: 33s - los
s: 4.8378 - acc: 0.38 - ETA: 32s - loss: 4.8371 - acc: 0.38 - ETA: 31s - los
s: 4.8332 - acc: 0.38 - ETA: 30s - loss: 4.8308 - acc: 0.38 - ETA: 29s - los
s: 4.8283 - acc: 0.38 - ETA: 28s - loss: 4.8259 - acc: 0.38 - ETA: 27s - los
s: 4.8234 - acc: 0.38 - ETA: 26s - loss: 4.8235 - acc: 0.38 - ETA: 25s - los
s: 4.8263 - acc: 0.38 - ETA: 24s - loss: 4.8266 - acc: 0.38 - ETA: 23s - los
s: 4.8282 - acc: 0.38 - ETA: 22s - loss: 4.8304 - acc: 0.38 - ETA: 21s - los
s: 4.8291 - acc: 0.38 - ETA: 20s - loss: 4.8278 - acc: 0.38 - ETA: 19s - los
s: 4.8285 - acc: 0.38 - ETA: 18s - loss: 4.8268 - acc: 0.38 - ETA: 17s - los
s: 4.8270 - acc: 0.38 - ETA: 16s - loss: 4.8282 - acc: 0.38 - ETA: 15s - los
s: 4.8297 - acc: 0.38 - ETA: 14s - loss: 4.8311 - acc: 0.38 - ETA: 13s - los
s: 4.8339 - acc: 0.38 - ETA: 12s - loss: 4.8357 - acc: 0.38 - ETA: 11s - los
s: 4.8346 - acc: 0.38 - ETA: 10s - loss: 4.8331 - acc: 0.38 - ETA: 9s - loss:
4.8336 - acc: 0.3846 - ETA: 8s - loss: 4.8359 - acc: 0.384 - ETA: 7s - loss:
 4.8364 - acc: 0.383 - ETA: 6s - loss: 4.8342 - acc: 0.384 - ETA: 5s - loss:
 4.8323 - acc: 0.384 - ETA: 4s - loss: 4.8311 - acc: 0.384 - ETA: 3s - loss:
 4.8317 - acc: 0.384 - ETA: 2s - loss: 4.8333 - acc: 0.384 - ETA: 1s - loss:
 4.8327 - acc: 0.384 - 319s 1s/step - loss: 4.8315 - acc: 0.3845
Epoch 9 start at time  2019-08-04 07:34:00.938980
204/312 [==================>.....] - ETA: 4:37 - loss: 4.6187 - acc: 0.
343 - ETA: 4:40 - loss: 4.3527 - acc: 0.406 - ETA: 4:42 - loss: 4.6953 - acc:
0.395 - ETA: 4:39 - loss: 4.7458 - acc: 0.382 - ETA: 4:34 - loss: 4.7935 - ac
c: 0.381 - ETA: 4:33 - loss: 4.8104 - acc: 0.395 - ETA: 4:35 - loss: 4.7006 -
acc: 0.397 - ETA: 4:31 - loss: 4.6740 - acc: 0.398 - ETA: 4:28 - loss: 4.5494
- acc: 0.416 - ETA: 4:26 - loss: 4.5532 - acc: 0.415 - ETA: 4:27 - loss: 4.52
62 - acc: 0.429 - ETA: 4:25 - loss: 4.5754 - acc: 0.427 - ETA: 4:25 - loss:
 4.5985 - acc: 0.425 - ETA: 4:23 - loss: 4.6018 - acc: 0.424 - ETA: 4:22 - lo
ss: 4.6193 - acc: 0.420 - ETA: 4:21 - loss: 4.7187 - acc: 0.414 - ETA: 4:21 -
loss: 4.7043 - acc: 0.413 - ETA: 4:20 - loss: 4.6626 - acc: 0.414 - ETA: 4:20
- loss: 4.6484 - acc: 0.412 - ETA: 4:19 - loss: 4.6151 - acc: 0.417 - ETA: 4:
19 - loss: 4.6566 - acc: 0.413 - ETA: 4:18 - loss: 4.6550 - acc: 0.411 - ETA:
4:17 - loss: 4.6864 - acc: 0.413 - ETA: 4:17 - loss: 4.7006 - acc: 0.416 - ET
A: 4:16 - loss: 4.7090 - acc: 0.411 - ETA: 4:15 - loss: 4.7025 - acc: 0.415 -
```

ETA: 4:15 - loss: 4.7131 - acc: 0.415 - ETA: 4:14 - loss: 4.7195 - acc: 0.414 - ETA: 4:13 - loss: 4.7471 - acc: 0.411 - ETA: 4:13 - loss: 4.7153 - acc: 0.416 - ETA: 4:11 - loss: 4.7117 - acc: 0.416 - ETA: 4:10 - loss: 4.7093 - acc: 0.416 - ETA: 4:09 - loss: 4.7208 - acc: 0.412 - ETA: 4:08 - loss: 4.6970 - acc: 0.413 - ETA: 4:08 - loss: 4.6967 - acc: 0.413 - ETA: 4:08 - loss: 4.6977 - acc: 0.413 - ETA: 4:07 - loss: 4.6737 - acc: 0.413 - ETA: 4:06 - loss: 4.6829 - acc: 0.411 - ETA: 4:05 - loss: 4.7083 - acc: 0.403 - ETA: 4:04 - loss: 4.6993 - acc: 0.404 - ETA: 4:04 - loss: 4.6808 - acc: 0.407 - ETA: 4:02 - loss: 4.6854 - acc: 0.406 - ETA: 4:01 - loss: 4.6863 - acc: 0.406 - ETA: 4:00 - loss: 4.6964 - acc: 0.404 - ETA: 4:00 - loss: 4.6922 - acc: 0.403 - ETA: 3:59 - loss: 4.6879 - acc: 0.405 - ETA: 3:59 - loss: 4.6822 - acc: 0.407 - ETA: 3:58 - loss: 4.6856 - acc: 0.406 - ETA: 3:57 - loss: 4.6848 - acc: 0.406 - ETA: 3:56 - loss: 4.7039 - acc: 0.404 - ETA: 3:55 - loss: 4.6905 - acc: 0.407 - ETA: 3:54 - loss: 4.6662 - acc: 0.409 - ETA: 3:53 - loss: 4.6720 - acc: 0.408 - ETA: 3:52 - loss: 4.6542 - acc: 0.409 - ETA: 3:51 - loss: 4.6501 - acc: 0.409 - ETA: 3:50 - loss: 4.6380 - acc: 0.409 - ETA: 3:49 - loss: 4.6266 - acc: 0.411 - ETA: 3:48 - loss: 4.6168 - acc: 0.411 - ETA: 3:47 - loss: 4.6273 - acc: 0.411 - ETA: 3:46 - loss: 4.6331 - acc: 0.408 - ETA: 3:45 - loss: 4.6617 - acc: 0.405 - ETA: 3:44 - loss: 4.6632 - acc: 0.407 - ETA: 3:43 - loss: 4.6483 - acc: 0.409 - ETA: 3:43 - loss: 4.6498 - acc: 0.407 - ETA: 3:42 - loss: 4.6433 - acc: 0.406 - ETA: 3:41 - loss: 4.6411 - acc: 0.404 - ETA: 3:40 - loss: 4.6503 - acc: 0.403 - ETA: 3:39 - loss: 4.6532 - acc: 0.404 - ETA: 3:38 - loss: 4.6638 - acc: 0.404 - ETA: 3:37 - loss: 4.6558 - acc: 0.403 - ETA: 3:36 - loss: 4.6619 - acc: 0.403 - ETA: 3:35 - loss: 4.6614 - acc: 0.403 - ETA: 3:34 - loss: 4.6517 - acc: 0.405 - ETA: 3:33 - loss: 4.6586 - acc: 0.405 - ETA: 3:32 - loss: 4.6627 - acc: 0.404 - ETA: 3:31 - loss: 4.6743 - acc: 0.402 - ETA: 3:30 - loss: 4.6955 - acc: 0.400 - ETA: 3:29 - loss: 4.6966 - acc: 0.400 - ETA: 3:28 - loss: 4.6911 - acc: 0.401 - ETA: 3:28 - loss: 4.6831 - acc: 0.402 - ETA: 3:27 - loss: 4.6782 - acc: 0.402 - ETA: 3:26 - loss: 4.6840 - acc: 0.400 - ETA: 3:25 - loss: 4.6788 - acc: 0.401 - ETA: 3:24 - loss: 4.6798 - acc: 0.399 - ETA: 3:23 - loss: 4.6751 - acc: 0.401 - ETA: 3:22 - loss: 4.6747 - acc: 0.401 - ETA: 3:21 - loss: 4.6839 - acc: 0.400 - ETA: 3:20 - loss: 4.6838 - acc: 0.401 - ETA: 3:20 - loss: 4.6816 - acc: 0.400 - ETA: 3:19 - loss: 4.6802 - acc: 0.400 - ETA: 3:18 - loss: 4.6803 - acc: 0.398 - ETA: 3:17 - loss: 4.6903 - acc: 0.398 - ETA: 3:16 - loss: 4.6918 - acc: 0.398 - ETA: 3:15 - loss: 4.6944 - acc: 0.398 - ETA: 3:14 - loss: 4.6946 - acc: 0.398 - ETA: 3:13 - loss: 4.6871 - acc: 0.399 - ETA: 3:12 - loss: 4.6940 - acc: 0.397 - ETA: 3:11 - loss: 4.6838 - acc: 0.399 - ETA: 3:10 - loss: 4.6861 - acc: 0.399 - ETA: 3:09 - loss: 4.6853 - acc: 0.399 - ETA: 3:09 - loss: 4.6880 - acc: 0.399 - ETA: 3:08 - loss: 4.6962 - acc: 0.398 - ETA: 3:07 - loss: 4.6966 - acc: 0.398 - ETA: 3:06 - loss: 4.7025 - acc: 0.399 - ETA: 3:05 - loss: 4.6973 - acc: 0.399 - ETA: 3:04 - loss: 4.7035 - acc: 0.398 - ETA: 3:04 - loss: 4.7041 - acc: 0.398 - ETA: 3:03 - loss: 4.7038 - acc: 0.399 - ETA: 3:02 - loss: 4.7027 - acc: 0.398 - ETA: 3:01 - loss: 4.7030 - acc: 0.397 - ETA: 3:00 - loss: 4.7007 - acc: 0.398 - ETA: 3:00 - loss: 4.7121 - acc: 0.397 - ETA: 2:59 - loss: 4.7137 - acc: 0.398 - ETA: 2:58 - loss: 4.7071 - acc: 0.398 - ETA: 2:57 - loss: 4.7037 - acc: 0.398 - ETA: 2:56 - loss: 4.7102 - acc: 0.397 - ETA: 2:55 - loss: 4.7149 - acc: 0.397 - ETA: 2:54 - loss: 4.7170 - acc: 0.396 - ETA: 2:53 - loss: 4.7117 - acc: 0.397 - ETA: 2:52 - loss: 4.7082 - acc: 0.397 - ETA: 2:52 - loss: 4.7076 - acc: 0.396 - ETA: 2:51 - loss: 4.7098 - acc: 0.397 - ETA: 2:50 - loss: 4.7061 - acc: 0.397 - ETA: 2:49 - loss: 4.7071 - acc: 0.397 - ETA: 2:48 - loss: 4.7065 - acc: 0.398 - ETA: 2:47 - loss: 4.7028 - acc: 0.399 - ETA: 2:46 - loss: 4.7069 - acc: 0.399 - ETA: 2:45 - loss: 4.7062 - acc: 0.398 - ETA: 2:44 - loss: 4.7154 - acc: 0.397 - ETA: 2:43 - loss: 4.7139 - acc: 0.398 - ETA: 2:43 - loss: 4.7217 - acc: 0.396 - ETA: 2:42 - loss: 4.7221 - acc: 0.397 - ETA: 2:41 - loss: 4.7215 - acc: 0.396 - ETA: 2:40 - loss: 4.7191 - acc: 0.396 - ETA: 2:39 - loss: 4.7247 - acc: 0.395 - ETA: 2:38 - loss: 4.7282 - acc: 0.395

```
- ETA: 2:37 - loss: 4.7319 - acc: 0.394 - ETA: 2:36 - loss: 4.7281 - acc: 0.3
94 - ETA: 2:35 - loss: 4.7231 - acc: 0.395 - ETA: 2:34 - loss: 4.7205 - acc:
 0.395 - ETA: 2:34 - loss: 4.7202 - acc: 0.394 - ETA: 2:33 - loss: 4.7184 - a
cc: 0.395 - ETA: 2:32 - loss: 4.7124 - acc: 0.396 - ETA: 2:31 - loss: 4.7148
 - acc: 0.394 - ETA: 2:30 - loss: 4.7144 - acc: 0.394 - ETA: 2:29 - loss: 4.7
182 - acc: 0.393 - ETA: 2:28 - loss: 4.7176 - acc: 0.393 - ETA: 2:27 - loss:
 4.7195 - acc: 0.393 - ETA: 2:27 - loss: 4.7158 - acc: 0.394 - ETA: 2:26 - lo
ss: 4.7208 - acc: 0.394 - ETA: 2:25 - loss: 4.7211 - acc: 0.394 - ETA: 2:24 -
loss: 4.7162 - acc: 0.394 - ETA: 2:23 - loss: 4.7177 - acc: 0.394 - ETA: 2:22
- loss: 4.7181 - acc: 0.394 - ETA: 2:21 - loss: 4.7185 - acc: 0.394 - ETA: 2:
20 - loss: 4.7173 - acc: 0.394 - ETA: 2:19 - loss: 4.7175 - acc: 0.394 - ETA:
2:18 - loss: 4.7225 - acc: 0.394 - ETA: 2:17 - loss: 4.7220 - acc: 0.394 - ET
A: 2:16 - loss: 4.7251 - acc: 0.393 - ETA: 2:16 - loss: 4.7232 - acc: 0.394 -
ETA: 2:15 - loss: 4.7206 - acc: 0.394 - ETA: 2:14 - loss: 4.7236 - acc: 0.393
- ETA: 2:13 - loss: 4.7281 - acc: 0.393 - ETA: 2:12 - loss: 4.7245 - acc: 0.3
93 - ETA: 2:11 - loss: 4.7185 - acc: 0.394 - ETA: 2:10 - loss: 4.7122 - acc:
 0.394 - ETA: 2:09 - loss: 4.7136 - acc: 0.394 - ETA: 2:08 - loss: 4.7112 - a
cc: 0.394 - ETA: 2:08 - loss: 4.7095 - acc: 0.394 - ETA: 2:07 - loss: 4.7040
 - acc: 0.395 - ETA: 2:06 - loss: 4.7058 - acc: 0.395 - ETA: 2:05 - loss: 4.7
061 - acc: 0.395 - ETA: 2:04 - loss: 4.7047 - acc: 0.395 - ETA: 2:03 - loss:
 4.7079 - acc: 0.394 - ETA: 2:02 - loss: 4.7145 - acc: 0.395 - ETA: 2:01 - lo
ss: 4.7146 - acc: 0.395 - ETA: 2:00 - loss: 4.7121 - acc: 0.394 - ETA: 1:59 -
loss: 4.7139 - acc: 0.394 - ETA: 1:58 - loss: 4.7101 - acc: 0.394 - ETA: 1:58
- loss: 4.7117 - acc: 0.394 - ETA: 1:57 - loss: 4.7128 - acc: 0.393 - ETA: 1:
56 - loss: 4.7152 - acc: 0.393 - ETA: 1:55 - loss: 4.7139 - acc: 0.393 - ETA:
1:54 - loss: 4.7133 - acc: 0.394 - ETA: 1:53 - loss: 4.7117 - acc: 0.394 - ET
A: 1:52 - loss: 4.7105 - acc: 0.394 - ETA: 1:51 - loss: 4.7131 - acc: 0.393 -
ETA: 1:50 - loss: 4.7082 - acc: 0.394 - ETA: 1:49 - loss: 4.7062 - acc: 0.394
- ETA: 1:49 - loss: 4.7069 - acc: 0.394 - ETA: 1:48 - loss: 4.7077 - acc: 0.3
94 - ETA: 1:47 - loss: 4.7122 - acc: 0.393 - ETA: 1:46 - loss: 4.7091 - acc:
 0.393 - ETA: 1:45 - loss: 4.7089 - acc: 0.393 - ETA: 1:44 - loss: 4.7092 - a
cc: 0.393 - ETA: 1:43 - loss: 4.7123 - acc: 0.393 - ETA: 1:42 - loss: 4.7154
 - acc: 0.392 - ETA: 1:42 - loss: 4.7136 - acc: 0.393 - ETA: 1:41 - loss: 4.7
165 - acc: 0.393 - ETA: 1:40 - loss: 4.7242 - acc: 0.393 - ETA: 1:39 - loss:
 4.7247 - acc: 0.393 - ETA: 1:38 - loss: 4.7219 - acc: 0.393 - ETA: 1:37 - lo
ss: 4.7219 - acc: 0.3934312/312 [==============================] - ETA: 1:36
 - loss: 4.7257 - acc: 0.393 - ETA: 1:35 - loss: 4.7286 - acc: 0.393 - ETA:
 1:34 - loss: 4.7294 - acc: 0.394 - ETA: 1:34 - loss: 4.7239 - acc: 0.394 - E
TA: 1:33 - loss: 4.7250 - acc: 0.394 - ETA: 1:32 - loss: 4.7286 - acc: 0.394
 - ETA: 1:31 - loss: 4.7348 - acc: 0.394 - ETA: 1:30 - loss: 4.7353 - acc: 0.
394 - ETA: 1:29 - loss: 4.7340 - acc: 0.394 - ETA: 1:28 - loss: 4.7381 - acc:
0.393 - ETA: 1:27 - loss: 4.7454 - acc: 0.393 - ETA: 1:26 - loss: 4.7433 - ac
c: 0.393 - ETA: 1:25 - loss: 4.7491 - acc: 0.392 - ETA: 1:24 - loss: 4.7475 -
acc: 0.392 - ETA: 1:24 - loss: 4.7537 - acc: 0.392 - ETA: 1:23 - loss: 4.7546
- acc: 0.392 - ETA: 1:22 - loss: 4.7517 - acc: 0.393 - ETA: 1:21 - loss: 4.75
01 - acc: 0.393 - ETA: 1:20 - loss: 4.7528 - acc: 0.392 - ETA: 1:19 - loss:
 4.7548 - acc: 0.392 - ETA: 1:18 - loss: 4.7534 - acc: 0.392 - ETA: 1:17 - lo
ss: 4.7542 - acc: 0.392 - ETA: 1:16 - loss: 4.7549 - acc: 0.392 - ETA: 1:15 -
loss: 4.7550 - acc: 0.392 - ETA: 1:15 - loss: 4.7524 - acc: 0.392 - ETA: 1:14
- loss: 4.7499 - acc: 0.393 - ETA: 1:13 - loss: 4.7485 - acc: 0.393 - ETA: 1:
12 - loss: 4.7482 - acc: 0.393 - ETA: 1:11 - loss: 4.7444 - acc: 0.393 - ETA:
1:10 - loss: 4.7444 - acc: 0.393 - ETA: 1:09 - loss: 4.7407 - acc: 0.394 - ET
A: 1:08 - loss: 4.7376 - acc: 0.394 - ETA: 1:07 - loss: 4.7357 - acc: 0.394 -
ETA: 1:06 - loss: 4.7349 - acc: 0.395 - ETA: 1:05 - loss: 4.7371 - acc: 0.395
- ETA: 1:05 - loss: 4.7338 - acc: 0.395 - ETA: 1:04 - loss: 4.7338 - acc: 0.3
95 - ETA: 1:03 - loss: 4.7331 - acc: 0.395 - ETA: 1:02 - loss: 4.7301 - acc:
 0.395 - ETA: 1:01 - loss: 4.7312 - acc: 0.395 - ETA: 1:00 - loss: 4.7337 - a
```

```
cc: 0.395 - ETA: 59s - loss: 4.7316 - acc: 0.396 - ETA: 58s - loss: 4.7287 -
 acc: 0.39 - ETA: 57s - loss: 4.7328 - acc: 0.39 - ETA: 56s - loss: 4.7313 -
 acc: 0.39 - ETA: 56s - loss: 4.7327 - acc: 0.39 - ETA: 55s - loss: 4.7334 -
 acc: 0.39 - ETA: 54s - loss: 4.7335 - acc: 0.39 - ETA: 53s - loss: 4.7329 -
 acc: 0.39 - ETA: 52s - loss: 4.7306 - acc: 0.39 - ETA: 51s - loss: 4.7287 -
 acc: 0.39 - ETA: 50s - loss: 4.7297 - acc: 0.39 - ETA: 49s - loss: 4.7294 -
 acc: 0.39 - ETA: 48s - loss: 4.7308 - acc: 0.39 - ETA: 48s - loss: 4.7287 -
 acc: 0.39 - ETA: 47s - loss: 4.7305 - acc: 0.39 - ETA: 46s - loss: 4.7302 -
 acc: 0.39 - ETA: 45s - loss: 4.7287 - acc: 0.39 - ETA: 44s - loss: 4.7314 -
 acc: 0.39 - ETA: 43s - loss: 4.7318 - acc: 0.39 - ETA: 42s - loss: 4.7308 -
 acc: 0.39 - ETA: 41s - loss: 4.7278 - acc: 0.39 - ETA: 40s - loss: 4.7251 -
 acc: 0.39 - ETA: 39s - loss: 4.7289 - acc: 0.39 - ETA: 39s - loss: 4.7281 -
 acc: 0.39 - ETA: 38s - loss: 4.7292 - acc: 0.39 - ETA: 37s - loss: 4.7281 -
 acc: 0.39 - ETA: 36s - loss: 4.7297 - acc: 0.39 - ETA: 35s - loss: 4.7301 -
 acc: 0.39 - ETA: 34s - loss: 4.7316 - acc: 0.39 - ETA: 33s - loss: 4.7312 -
 acc: 0.39 - ETA: 32s - loss: 4.7295 - acc: 0.39 - ETA: 31s - loss: 4.7310 -
 acc: 0.39 - ETA: 30s - loss: 4.7268 - acc: 0.39 - ETA: 29s - loss: 4.7244 -
 acc: 0.39 - ETA: 29s - loss: 4.7238 - acc: 0.39 - ETA: 28s - loss: 4.7199 -
 acc: 0.39 - ETA: 27s - loss: 4.7175 - acc: 0.39 - ETA: 26s - loss: 4.7145 -
 acc: 0.39 - ETA: 25s - loss: 4.7119 - acc: 0.40 - ETA: 24s - loss: 4.7095 -
 acc: 0.40 - ETA: 23s - loss: 4.7097 - acc: 0.39 - ETA: 22s - loss: 4.7129 -
 acc: 0.39 - ETA: 21s - loss: 4.7133 - acc: 0.39 - ETA: 20s - loss: 4.7145 -
 acc: 0.39 - ETA: 20s - loss: 4.7171 - acc: 0.39 - ETA: 19s - loss: 4.7162 -
 acc: 0.39 - ETA: 18s - loss: 4.7152 - acc: 0.39 - ETA: 17s - loss: 4.7158 -
 acc: 0.39 - ETA: 16s - loss: 4.7142 - acc: 0.39 - ETA: 15s - loss: 4.7144 -
 acc: 0.39 - ETA: 14s - loss: 4.7161 - acc: 0.39 - ETA: 13s - loss: 4.7179 -
 acc: 0.39 - ETA: 12s - loss: 4.7194 - acc: 0.39 - ETA: 11s - loss: 4.7222 -
 acc: 0.39 - ETA: 10s - loss: 4.7241 - acc: 0.39 - ETA: 10s - loss: 4.7229 -
 acc: 0.39 - ETA: 9s - loss: 4.7211 - acc: 0.3980 - ETA: 8s - loss: 4.7216 -
 acc: 0.397 - ETA: 7s - loss: 4.7234 - acc: 0.397 - ETA: 6s - loss: 4.7233 -
 acc: 0.396 - ETA: 5s - loss: 4.7214 - acc: 0.397 - ETA: 4s - loss: 4.7193 -
 acc: 0.397 - ETA: 3s - loss: 4.7178 - acc: 0.397 - ETA: 2s - loss: 4.7182 -
 acc: 0.397 - ETA: 1s - loss: 4.7202 - acc: 0.396 - ETA: 0s - loss: 4.7196 -
 acc: 0.396 - 285s 912ms/step - loss: 4.7191 - acc: 0.3971
Epoch 10 start at time  2019-08-04 08:25:50.587550
204/312 [==================>...........] - ETA: 6:52 - loss: 4.5537 - acc: 0.
406 - ETA: 6:42 - loss: 4.2756 - acc: 0.421 - ETA: 6:43 - loss: 4.6449 - acc:
0.416 - ETA: 6:38 - loss: 4.6801 - acc: 0.390 - ETA: 6:38 - loss: 4.7169 - ac
c: 0.387 - ETA: 6:29 - loss: 4.7070 - acc: 0.406 - ETA: 6:20 - loss: 4.6071 -
acc: 0.410 - ETA: 6:09 - loss: 4.5684 - acc: 0.414 - ETA: 5:58 - loss: 4.4405
- acc: 0.427 - ETA: 5:50 - loss: 4.4369 - acc: 0.428 - ETA: 5:45 - loss: 4.41
11 - acc: 0.446 - ETA: 5:44 - loss: 4.4617 - acc: 0.445 - ETA: 5:39 - loss:
 4.4735 - acc: 0.447 - ETA: 5:35 - loss: 4.4700 - acc: 0.448 - ETA: 5:31 - lo
ss: 4.4960 - acc: 0.445 - ETA: 5:27 - loss: 4.5992 - acc: 0.433 - ETA: 5:24 -
loss: 4.5787 - acc: 0.430 - ETA: 5:21 - loss: 4.5390 - acc: 0.430 - ETA: 5:19
- loss: 4.5259 - acc: 0.432 - ETA: 5:16 - loss: 4.4990 - acc: 0.439 - ETA: 5:
15 - loss: 4.5454 - acc: 0.434 - ETA: 5:13 - loss: 4.5390 - acc: 0.431 - ETA:
5:12 - loss: 4.5695 - acc: 0.432 - ETA: 5:10 - loss: 4.5822 - acc: 0.434 - ET
A: 5:08 - loss: 4.5968 - acc: 0.430 - ETA: 5:07 - loss: 4.5890 - acc: 0.433 -
ETA: 5:05 - loss: 4.5971 - acc: 0.431 - ETA: 5:03 - loss: 4.5992 - acc: 0.429
- ETA: 5:01 - loss: 4.6236 - acc: 0.426 - ETA: 5:00 - loss: 4.5914 - acc: 0.4
32 - ETA: 4:58 - loss: 4.5926 - acc: 0.429 - ETA: 4:56 - loss: 4.5925 - acc:
 0.428 - ETA: 4:55 - loss: 4.5997 - acc: 0.425 - ETA: 4:54 - loss: 4.5741 - a
cc: 0.425 - ETA: 4:53 - loss: 4.5739 - acc: 0.425 - ETA: 4:52 - loss: 4.5759
 - acc: 0.425 - ETA: 4:50 - loss: 4.5552 - acc: 0.425 - ETA: 4:48 - loss: 4.5
636 - acc: 0.422 - ETA: 4:47 - loss: 4.5914 - acc: 0.416 - ETA: 4:45 - loss:
 4.5795 - acc: 0.419 - ETA: 4:43 - loss: 4.5618 - acc: 0.421 - ETA: 4:42 - lo
```

```
ss: 4.5647 - acc: 0.419 - ETA: 4:40 - loss: 4.5688 - acc: 0.419 - ETA: 4:39 -
loss: 4.5792 - acc: 0.418 - ETA: 4:37 - loss: 4.5733 - acc: 0.416 - ETA: 4:37
- loss: 4.5680 - acc: 0.417 - ETA: 4:35 - loss: 4.5630 - acc: 0.419 - ETA: 4:
34 - loss: 4.5692 - acc: 0.418 - ETA: 4:33 - loss: 4.5689 - acc: 0.417 - ETA:
4:32 - loss: 4.5858 - acc: 0.416 - ETA: 4:30 - loss: 4.5738 - acc: 0.418 - ET
A: 4:29 - loss: 4.5492 - acc: 0.421 - ETA: 4:28 - loss: 4.5552 - acc: 0.420 -
ETA: 4:27 - loss: 4.5362 - acc: 0.421 - ETA: 4:26 - loss: 4.5271 - acc: 0.422
- ETA: 4:24 - loss: 4.5153 - acc: 0.422 - ETA: 4:24 - loss: 4.5041 - acc: 0.4
24 - ETA: 4:22 - loss: 4.4939 - acc: 0.425 - ETA: 4:22 - loss: 4.5042 - acc:
 0.423 - ETA: 4:21 - loss: 4.5106 - acc: 0.421 - ETA: 4:20 - loss: 4.5395 - a
cc: 0.420 - ETA: 4:18 - loss: 4.5398 - acc: 0.422 - ETA: 4:17 - loss: 4.5267
 - acc: 0.423 - ETA: 4:16 - loss: 4.5292 - acc: 0.422 - ETA: 4:14 - loss: 4.5
214 - acc: 0.421 - ETA: 4:13 - loss: 4.5180 - acc: 0.420 - ETA: 4:12 - loss:
 4.5275 - acc: 0.418 - ETA: 4:11 - loss: 4.5314 - acc: 0.419 - ETA: 4:10 - lo
ss: 4.5419 - acc: 0.419 - ETA: 4:09 - loss: 4.5345 - acc: 0.418 - ETA: 4:07 -
loss: 4.5401 - acc: 0.418 - ETA: 4:06 - loss: 4.5395 - acc: 0.418 - ETA: 4:05
- loss: 4.5291 - acc: 0.420 - ETA: 4:04 - loss: 4.5363 - acc: 0.420 - ETA: 4:
03 - loss: 4.5390 - acc: 0.419 - ETA: 4:02 - loss: 4.5498 - acc: 0.418 - ETA:
4:01 - loss: 4.5719 - acc: 0.416 - ETA: 4:00 - loss: 4.5745 - acc: 0.416 - ET
A: 3:59 - loss: 4.5695 - acc: 0.417 - ETA: 3:58 - loss: 4.5624 - acc: 0.418 -
ETA: 3:56 - loss: 4.5568 - acc: 0.418 - ETA: 3:55 - loss: 4.5629 - acc: 0.416
- ETA: 3:54 - loss: 4.5599 - acc: 0.417 - ETA: 3:53 - loss: 4.5612 - acc: 0.4
15 - ETA: 3:52 - loss: 4.5579 - acc: 0.417 - ETA: 3:51 - loss: 4.5566 - acc:
 0.417 - ETA: 3:50 - loss: 4.5644 - acc: 0.416 - ETA: 3:49 - loss: 4.5642 - a
cc: 0.417 - ETA: 3:48 - loss: 4.5628 - acc: 0.415 - ETA: 3:47 - loss: 4.5614
 - acc: 0.415 - ETA: 3:46 - loss: 4.5612 - acc: 0.413 - ETA: 3:45 - loss: 4.5
710 - acc: 0.413 - ETA: 3:44 - loss: 4.5728 - acc: 0.414 - ETA: 3:43 - loss:
 4.5757 - acc: 0.412 - ETA: 3:42 - loss: 4.5766 - acc: 0.412 - ETA: 3:41 - lo
ss: 4.5689 - acc: 0.412 - ETA: 3:40 - loss: 4.5763 - acc: 0.411 - ETA: 3:39 -
loss: 4.5670 - acc: 0.412 - ETA: 3:38 - loss: 4.5689 - acc: 0.412 - ETA: 3:37
- loss: 4.5683 - acc: 0.412 - ETA: 3:35 - loss: 4.5716 - acc: 0.413 - ETA: 3:
34 - loss: 4.5780 - acc: 0.412 - ETA: 3:33 - loss: 4.5793 - acc: 0.412 - ETA:
3:32 - loss: 4.5857 - acc: 0.412 - ETA: 3:31 - loss: 4.5791 - acc: 0.412 - ET
A: 3:30 - loss: 4.5851 - acc: 0.411 - ETA: 3:29 - loss: 4.5853 - acc: 0.411 -
ETA: 3:28 - loss: 4.5848 - acc: 0.411 - ETA: 3:27 - loss: 4.5837 - acc: 0.410
- ETA: 3:26 - loss: 4.5837 - acc: 0.409 - ETA: 3:25 - loss: 4.5815 - acc: 0.4
10 - ETA: 3:24 - loss: 4.5921 - acc: 0.409 - ETA: 3:23 - loss: 4.5936 - acc:
 0.409 - ETA: 3:22 - loss: 4.5883 - acc: 0.411 - ETA: 3:21 - loss: 4.5858 - a
cc: 0.410 - ETA: 3:20 - loss: 4.5922 - acc: 0.410 - ETA: 3:19 - loss: 4.5962
 - acc: 0.409 - ETA: 3:18 - loss: 4.5972 - acc: 0.408 - ETA: 3:17 - loss: 4.5
924 - acc: 0.409 - ETA: 3:16 - loss: 4.5882 - acc: 0.410 - ETA: 3:15 - loss:
 4.5871 - acc: 0.409 - ETA: 3:14 - loss: 4.5884 - acc: 0.410 - ETA: 3:13 - lo
ss: 4.5854 - acc: 0.410 - ETA: 3:12 - loss: 4.5861 - acc: 0.410 - ETA: 3:10 -
loss: 4.5853 - acc: 0.411 - ETA: 3:09 - loss: 4.5807 - acc: 0.412 - ETA: 3:08
- loss: 4.5860 - acc: 0.412 - ETA: 3:07 - loss: 4.5851 - acc: 0.411 - ETA: 3:
06 - loss: 4.5933 - acc: 0.410 - ETA: 3:05 - loss: 4.5917 - acc: 0.411 - ETA:
3:04 - loss: 4.5984 - acc: 0.410 - ETA: 3:03 - loss: 4.5998 - acc: 0.410 - ET
A: 3:02 - loss: 4.5987 - acc: 0.410 - ETA: 3:01 - loss: 4.5966 - acc: 0.410 -
ETA: 3:00 - loss: 4.6025 - acc: 0.410 - ETA: 2:59 - loss: 4.6061 - acc: 0.409
- ETA: 2:58 - loss: 4.6100 - acc: 0.408 - ETA: 2:57 - loss: 4.6056 - acc: 0.4
08 - ETA: 2:56 - loss: 4.6001 - acc: 0.409 - ETA: 2:55 - loss: 4.5974 - acc:
 0.409 - ETA: 2:53 - loss: 4.5974 - acc: 0.408 - ETA: 2:53 - loss: 4.5952 - a
cc: 0.409 - ETA: 2:52 - loss: 4.5899 - acc: 0.410 - ETA: 2:51 - loss: 4.5925
 - acc: 0.408 - ETA: 2:50 - loss: 4.5915 - acc: 0.408 - ETA: 2:49 - loss: 4.5
958 - acc: 0.408 - ETA: 2:48 - loss: 4.5947 - acc: 0.408 - ETA: 2:47 - loss:
 4.5964 - acc: 0.407 - ETA: 2:46 - loss: 4.5935 - acc: 0.408 - ETA: 2:45 - lo
ss: 4.5984 - acc: 0.408 - ETA: 2:44 - loss: 4.5982 - acc: 0.408 - ETA: 2:43 -
```

```
loss: 4.5925 - acc: 0.408 - ETA: 2:42 - loss: 4.5939 - acc: 0.409 - ETA: 2:41
- loss: 4.5941 - acc: 0.408 - ETA: 2:40 - loss: 4.5944 - acc: 0.408 - ETA: 2:
39 - loss: 4.5926 - acc: 0.408 - ETA: 2:38 - loss: 4.5939 - acc: 0.409 - ETA:
2:37 - loss: 4.5984 - acc: 0.408 - ETA: 2:35 - loss: 4.5984 - acc: 0.408 - ET
A: 2:34 - loss: 4.6020 - acc: 0.408 - ETA: 2:34 - loss: 4.6003 - acc: 0.408 -
ETA: 2:32 - loss: 4.5977 - acc: 0.408 - ETA: 2:31 - loss: 4.6021 - acc: 0.407
- ETA: 2:30 - loss: 4.6065 - acc: 0.407 - ETA: 2:29 - loss: 4.6031 - acc: 0.4
08 - ETA: 2:28 - loss: 4.5974 - acc: 0.408 - ETA: 2:27 - loss: 4.5909 - acc:
 0.409 - ETA: 2:26 - loss: 4.5923 - acc: 0.408 - ETA: 2:25 - loss: 4.5905 - a
cc: 0.408 - ETA: 2:24 - loss: 4.5894 - acc: 0.408 - ETA: 2:23 - loss: 4.5844
 - acc: 0.409 - ETA: 2:22 - loss: 4.5863 - acc: 0.409 - ETA: 2:21 - loss: 4.5
872 - acc: 0.409 - ETA: 2:20 - loss: 4.5858 - acc: 0.408 - ETA: 2:19 - loss:
 4.5891 - acc: 0.408 - ETA: 2:18 - loss: 4.5956 - acc: 0.408 - ETA: 2:17 - lo
ss: 4.5959 - acc: 0.408 - ETA: 2:16 - loss: 4.5942 - acc: 0.408 - ETA: 2:15 -
loss: 4.5963 - acc: 0.408 - ETA: 2:14 - loss: 4.5927 - acc: 0.408 - ETA: 2:13
- loss: 4.5942 - acc: 0.408 - ETA: 2:12 - loss: 4.5957 - acc: 0.408 - ETA: 2:
11 - loss: 4.5985 - acc: 0.407 - ETA: 2:10 - loss: 4.5971 - acc: 0.407 - ETA:
2:08 - loss: 4.5968 - acc: 0.408 - ETA: 2:08 - loss: 4.5955 - acc: 0.408 - ET
A: 2:06 - loss: 4.5942 - acc: 0.408 - ETA: 2:05 - loss: 4.5961 - acc: 0.408 -
ETA: 2:04 - loss: 4.5909 - acc: 0.408 - ETA: 2:03 - loss: 4.5890 - acc: 0.409
- ETA: 2:02 - loss: 4.5888 - acc: 0.409 - ETA: 2:01 - loss: 4.5899 - acc: 0.4
09 - ETA: 2:00 - loss: 4.5942 - acc: 0.408 - ETA: 1:59 - loss: 4.5917 - acc:
 0.408 - ETA: 1:58 - loss: 4.5918 - acc: 0.408 - ETA: 1:57 - loss: 4.5916 - a
cc: 0.407 - ETA: 1:56 - loss: 4.5939 - acc: 0.407 - ETA: 1:55 - loss: 4.5980
 - acc: 0.407 - ETA: 1:54 - loss: 4.5957 - acc: 0.407 - ETA: 1:53 - loss: 4.5
985 - acc: 0.408 - ETA: 1:52 - loss: 4.6060 - acc: 0.407 - ETA: 1:51 - loss:
 4.6062 - acc: 0.407 - ETA: 1:50 - loss: 4.6033 - acc: 0.407 - ETA: 1:49 - lo
ss: 4.6034 - acc: 0.4076312/312 [==============================] - ETA: 1:48
 - loss: 4.6069 - acc: 0.407 - ETA: 1:47 - loss: 4.6109 - acc: 0.407 - ETA:
 1:46 - loss: 4.6113 - acc: 0.407 - ETA: 1:45 - loss: 4.6057 - acc: 0.408 - E
TA: 1:44 - loss: 4.6062 - acc: 0.408 - ETA: 1:43 - loss: 4.6096 - acc: 0.408
 - ETA: 1:42 - loss: 4.6156 - acc: 0.407 - ETA: 1:41 - loss: 4.6169 - acc: 0.
407 - ETA: 1:40 - loss: 4.6158 - acc: 0.407 - ETA: 1:39 - loss: 4.6196 - acc:
0.407 - ETA: 1:38 - loss: 4.6267 - acc: 0.406 - ETA: 1:37 - loss: 4.6247 - ac
c: 0.406 - ETA: 1:36 - loss: 4.6301 - acc: 0.406 - ETA: 1:35 - loss: 4.6282 -
acc: 0.405 - ETA: 1:34 - loss: 4.6350 - acc: 0.404 - ETA: 1:33 - loss: 4.6358
- acc: 0.405 - ETA: 1:32 - loss: 4.6331 - acc: 0.405 - ETA: 1:31 - loss: 4.63
13 - acc: 0.406 - ETA: 1:30 - loss: 4.6345 - acc: 0.406 - ETA: 1:29 - loss:
 4.6363 - acc: 0.405 - ETA: 1:28 - loss: 4.6349 - acc: 0.405 - ETA: 1:27 - lo
ss: 4.6360 - acc: 0.405 - ETA: 1:26 - loss: 4.6362 - acc: 0.405 - ETA: 1:25 -
loss: 4.6359 - acc: 0.405 - ETA: 1:24 - loss: 4.6330 - acc: 0.405 - ETA: 1:23
- loss: 4.6309 - acc: 0.405 - ETA: 1:22 - loss: 4.6302 - acc: 0.405 - ETA: 1:
21 - loss: 4.6301 - acc: 0.405 - ETA: 1:20 - loss: 4.6263 - acc: 0.406 - ETA:
1:19 - loss: 4.6265 - acc: 0.405 - ETA: 1:18 - loss: 4.6227 - acc: 0.406 - ET
A: 1:17 - loss: 4.6196 - acc: 0.406 - ETA: 1:16 - loss: 4.6178 - acc: 0.407 -
ETA: 1:15 - loss: 4.6166 - acc: 0.407 - ETA: 1:14 - loss: 4.6180 - acc: 0.406
- ETA: 1:13 - loss: 4.6142 - acc: 0.407 - ETA: 1:12 - loss: 4.6137 - acc: 0.4
07 - ETA: 1:11 - loss: 4.6126 - acc: 0.407 - ETA: 1:10 - loss: 4.6103 - acc:
 0.407 - ETA: 1:09 - loss: 4.6116 - acc: 0.407 - ETA: 1:08 - loss: 4.6144 - a
cc: 0.407 - ETA: 1:07 - loss: 4.6131 - acc: 0.407 - ETA: 1:06 - loss: 4.6100
 - acc: 0.408 - ETA: 1:05 - loss: 4.6143 - acc: 0.407 - ETA: 1:04 - loss: 4.6
125 - acc: 0.407 - ETA: 1:03 - loss: 4.6137 - acc: 0.407 - ETA: 1:02 - loss:
 4.6147 - acc: 0.407 - ETA: 1:01 - loss: 4.6149 - acc: 0.407 - ETA: 1:01 - lo
ss: 4.6146 - acc: 0.407 - ETA: 1:00 - loss: 4.6121 - acc: 0.407 - ETA: 1:00 -
loss: 4.6097 - acc: 0.408 - ETA: 59s - loss: 4.6111 - acc: 0.408 - ETA: 58s -
loss: 4.6109 - acc: 0.40 - ETA: 57s - loss: 4.6123 - acc: 0.40 - ETA: 57s - l
oss: 4.6095 - acc: 0.40 - ETA: 56s - loss: 4.6117 - acc: 0.40 - ETA: 55s - lo
```

```
ss: 4.6113 - acc: 0.40 - ETA: 54s - loss: 4.6097 - acc: 0.40 - ETA: 53s - los
s: 4.6120 - acc: 0.40 - ETA: 52s - loss: 4.6121 - acc: 0.40 - ETA: 50s - los
s: 4.6106 - acc: 0.40 - ETA: 49s - loss: 4.6081 - acc: 0.40 - ETA: 48s - los
s: 4.6052 - acc: 0.41 - ETA: 47s - loss: 4.6090 - acc: 0.40 - ETA: 46s - los
s: 4.6080 - acc: 0.40 - ETA: 45s - loss: 4.6090 - acc: 0.40 - ETA: 44s - los
s: 4.6081 - acc: 0.40 - ETA: 43s - loss: 4.6101 - acc: 0.40 - ETA: 42s - los
s: 4.6110 - acc: 0.40 - ETA: 41s - loss: 4.6122 - acc: 0.40 - ETA: 40s - los
s: 4.6115 - acc: 0.40 - ETA: 38s - loss: 4.6106 - acc: 0.40 - ETA: 37s - los
s: 4.6119 - acc: 0.40 - ETA: 36s - loss: 4.6076 - acc: 0.40 - ETA: 35s - los
s: 4.6050 - acc: 0.40 - ETA: 34s - loss: 4.6048 - acc: 0.40 - ETA: 33s - los
s: 4.6008 - acc: 0.41 - ETA: 32s - loss: 4.5986 - acc: 0.41 - ETA: 31s - los
s: 4.5956 - acc: 0.41 - ETA: 30s - loss: 4.5938 - acc: 0.41 - ETA: 29s - los
s: 4.5918 - acc: 0.41 - ETA: 28s - loss: 4.5917 - acc: 0.41 - ETA: 27s - los
s: 4.5945 - acc: 0.41 - ETA: 25s - loss: 4.5949 - acc: 0.41 - ETA: 24s - los
s: 4.5963 - acc: 0.41 - ETA: 23s - loss: 4.5989 - acc: 0.41 - ETA: 22s - los
s: 4.5979 - acc: 0.41 - ETA: 21s - loss: 4.5972 - acc: 0.41 - ETA: 20s - los
s: 4.5975 - acc: 0.41 - ETA: 19s - loss: 4.5960 - acc: 0.41 - ETA: 18s - los
s: 4.5960 - acc: 0.41 - ETA: 17s - loss: 4.5974 - acc: 0.41 - ETA: 16s - los
s: 4.5992 - acc: 0.41 - ETA: 15s - loss: 4.6005 - acc: 0.40 - ETA: 14s - los
s: 4.6031 - acc: 0.40 - ETA: 12s - loss: 4.6051 - acc: 0.40 - ETA: 11s - los
s: 4.6037 - acc: 0.40 - ETA: 10s - loss: 4.6021 - acc: 0.40 - ETA: 9s - loss:
4.6021 - acc: 0.4090 - ETA: 8s - loss: 4.6044 - acc: 0.408 - ETA: 7s - loss:
 4.6044 - acc: 0.408 - ETA: 6s - loss: 4.6026 - acc: 0.408 - ETA: 5s - loss:
 4.6005 - acc: 0.408 - ETA: 4s - loss: 4.5987 - acc: 0.408 - ETA: 3s - loss:
 4.5992 - acc: 0.408 - ETA: 2s - loss: 4.6012 - acc: 0.408 - ETA: 1s - loss:
 4.6009 - acc: 0.408 - 337s 1s/step - loss: 4.6002 - acc: 0.4087
Epoch 11 start at time  2019-08-04 09:18:41.804714
204/312 [==================>...........] - ETA: 5:56 - loss: 4.3777 - acc: 0.
406 - ETA: 6:00 - loss: 4.1499 - acc: 0.421 - ETA: 5:43 - loss: 4.5173 - acc:
0.416 - ETA: 5:24 - loss: 4.5714 - acc: 0.375 - ETA: 5:11 - loss: 4.6341 - ac
c: 0.381 - ETA: 5:03 - loss: 4.6489 - acc: 0.395 - ETA: 5:04 - loss: 4.5392 -
acc: 0.401 - ETA: 5:01 - loss: 4.4983 - acc: 0.402 - ETA: 4:58 - loss: 4.3692
- acc: 0.420 - ETA: 4:54 - loss: 4.3561 - acc: 0.421 - ETA: 4:50 - loss: 4.31
01 - acc: 0.437 - ETA: 4:48 - loss: 4.3620 - acc: 0.437 - ETA: 4:46 - loss:
 4.3676 - acc: 0.435 - ETA: 4:45 - loss: 4.3706 - acc: 0.435 - ETA: 4:42 - lo
ss: 4.3976 - acc: 0.429 - ETA: 4:42 - loss: 4.4922 - acc: 0.423 - ETA: 4:41 -
loss: 4.4739 - acc: 0.422 - ETA: 4:38 - loss: 4.4366 - acc: 0.423 - ETA: 4:36
- loss: 4.4117 - acc: 0.424 - ETA: 4:34 - loss: 4.3844 - acc: 0.428 - ETA: 4:
32 - loss: 4.4343 - acc: 0.424 - ETA: 4:31 - loss: 4.4279 - acc: 0.423 - ETA:
4:29 - loss: 4.4581 - acc: 0.423 - ETA: 4:29 - loss: 4.4699 - acc: 0.425 - ET
A: 4:28 - loss: 4.4793 - acc: 0.423 - ETA: 4:27 - loss: 4.4762 - acc: 0.426 -
ETA: 4:26 - loss: 4.4800 - acc: 0.425 - ETA: 4:24 - loss: 4.4855 - acc: 0.425
- ETA: 4:23 - loss: 4.5130 - acc: 0.422 - ETA: 4:22 - loss: 4.4788 - acc: 0.4
30 - ETA: 4:20 - loss: 4.4789 - acc: 0.430 - ETA: 4:19 - loss: 4.4794 - acc:
 0.429 - ETA: 4:19 - loss: 4.4852 - acc: 0.427 - ETA: 4:18 - loss: 4.4616 - a
cc: 0.427 - ETA: 4:18 - loss: 4.4589 - acc: 0.428 - ETA: 4:17 - loss: 4.4630
 - acc: 0.428 - ETA: 4:15 - loss: 4.4409 - acc: 0.428 - ETA: 4:14 - loss: 4.4
490 - acc: 0.425 - ETA: 4:13 - loss: 4.4725 - acc: 0.418 - ETA: 4:12 - loss:
 4.4586 - acc: 0.420 - ETA: 4:10 - loss: 4.4397 - acc: 0.423 - ETA: 4:09 - lo
ss: 4.4454 - acc: 0.422 - ETA: 4:08 - loss: 4.4464 - acc: 0.424 - ETA: 4:08 -
loss: 4.4572 - acc: 0.423 - ETA: 4:07 - loss: 4.4522 - acc: 0.422 - ETA: 4:06
- loss: 4.4454 - acc: 0.423 - ETA: 4:05 - loss: 4.4414 - acc: 0.424 - ETA: 4:
04 - loss: 4.4467 - acc: 0.423 - ETA: 4:03 - loss: 4.4491 - acc: 0.424 - ETA:
4:02 - loss: 4.4654 - acc: 0.422 - ETA: 4:01 - loss: 4.4523 - acc: 0.424 - ET
A: 4:00 - loss: 4.4268 - acc: 0.427 - ETA: 3:59 - loss: 4.4331 - acc: 0.425 -
ETA: 3:58 - loss: 4.4149 - acc: 0.427 - ETA: 3:58 - loss: 4.4053 - acc: 0.429
- ETA: 3:57 - loss: 4.3924 - acc: 0.430 - ETA: 3:56 - loss: 4.3822 - acc: 0.4
```

```
32 - ETA: 3:55 - loss: 4.3716 - acc: 0.432 - ETA: 3:53 - loss: 4.3819 - acc:
 0.431 - ETA: 3:52 - loss: 4.3874 - acc: 0.430 - ETA: 3:51 - loss: 4.4163 - a
cc: 0.428 - ETA: 3:50 - loss: 4.4176 - acc: 0.430 - ETA: 3:50 - loss: 4.4048
 - acc: 0.432 - ETA: 3:49 - loss: 4.4066 - acc: 0.430 - ETA: 3:48 - loss: 4.4
005 - acc: 0.429 - ETA: 3:47 - loss: 4.4006 - acc: 0.428 - ETA: 3:46 - loss:
 4.4112 - acc: 0.428 - ETA: 3:46 - loss: 4.4131 - acc: 0.427 - ETA: 3:45 - lo
ss: 4.4228 - acc: 0.427 - ETA: 3:44 - loss: 4.4145 - acc: 0.426 - ETA: 3:43 -
loss: 4.4205 - acc: 0.426 - ETA: 3:42 - loss: 4.4196 - acc: 0.427 - ETA: 3:41
- loss: 4.4086 - acc: 0.428 - ETA: 3:41 - loss: 4.4149 - acc: 0.429 - ETA: 3:
40 - loss: 4.4170 - acc: 0.428 - ETA: 3:39 - loss: 4.4274 - acc: 0.428 - ETA:
3:38 - loss: 4.4487 - acc: 0.426 - ETA: 3:36 - loss: 4.4517 - acc: 0.426 - ET
A: 3:36 - loss: 4.4463 - acc: 0.427 - ETA: 3:35 - loss: 4.4381 - acc: 0.427 -
ETA: 3:34 - loss: 4.4325 - acc: 0.427 - ETA: 3:34 - loss: 4.4388 - acc: 0.427
- ETA: 3:33 - loss: 4.4344 - acc: 0.428 - ETA: 3:32 - loss: 4.4362 - acc: 0.4
26 - ETA: 3:31 - loss: 4.4329 - acc: 0.427 - ETA: 3:30 - loss: 4.4316 - acc:
 0.427 - ETA: 3:30 - loss: 4.4390 - acc: 0.426 - ETA: 3:29 - loss: 4.4391 - a
cc: 0.427 - ETA: 3:28 - loss: 4.4373 - acc: 0.425 - ETA: 3:27 - loss: 4.4358
 - acc: 0.425 - ETA: 3:26 - loss: 4.4370 - acc: 0.423 - ETA: 3:25 - loss: 4.4
478 - acc: 0.422 - ETA: 3:24 - loss: 4.4498 - acc: 0.423 - ETA: 3:23 - loss:
 4.4537 - acc: 0.423 - ETA: 3:22 - loss: 4.4553 - acc: 0.421 - ETA: 3:22 - lo
ss: 4.4483 - acc: 0.422 - ETA: 3:21 - loss: 4.4557 - acc: 0.421 - ETA: 3:20 -
loss: 4.4469 - acc: 0.422 - ETA: 3:20 - loss: 4.4489 - acc: 0.422 - ETA: 3:19
- loss: 4.4488 - acc: 0.423 - ETA: 3:19 - loss: 4.4521 - acc: 0.423 - ETA: 3:
18 - loss: 4.4595 - acc: 0.421 - ETA: 3:17 - loss: 4.4603 - acc: 0.421 - ETA:
3:16 - loss: 4.4662 - acc: 0.421 - ETA: 3:15 - loss: 4.4613 - acc: 0.421 - ET
A: 3:15 - loss: 4.4675 - acc: 0.421 - ETA: 3:14 - loss: 4.4686 - acc: 0.421 -
ETA: 3:13 - loss: 4.4680 - acc: 0.421 - ETA: 3:12 - loss: 4.4673 - acc: 0.420
- ETA: 3:11 - loss: 4.4677 - acc: 0.419 - ETA: 3:10 - loss: 4.4643 - acc: 0.4
20 - ETA: 3:09 - loss: 4.4751 - acc: 0.419 - ETA: 3:08 - loss: 4.4761 - acc:
 0.419 - ETA: 3:07 - loss: 4.4713 - acc: 0.420 - ETA: 3:06 - loss: 4.4686 - a
cc: 0.419 - ETA: 3:05 - loss: 4.4751 - acc: 0.418 - ETA: 3:05 - loss: 4.4800
 - acc: 0.418 - ETA: 3:04 - loss: 4.4818 - acc: 0.417 - ETA: 3:03 - loss: 4.4
775 - acc: 0.419 - ETA: 3:03 - loss: 4.4727 - acc: 0.419 - ETA: 3:02 - loss:
 4.4712 - acc: 0.418 - ETA: 3:01 - loss: 4.4730 - acc: 0.419 - ETA: 3:00 - lo
ss: 4.4693 - acc: 0.420 - ETA: 2:59 - loss: 4.4696 - acc: 0.420 - ETA: 2:58 -
loss: 4.4689 - acc: 0.421 - ETA: 2:57 - loss: 4.4655 - acc: 0.421 - ETA: 2:57
- loss: 4.4704 - acc: 0.421 - ETA: 2:56 - loss: 4.4689 - acc: 0.420 - ETA: 2:
55 - loss: 4.4767 - acc: 0.420 - ETA: 2:54 - loss: 4.4758 - acc: 0.420 - ETA:
2:53 - loss: 4.4838 - acc: 0.419 - ETA: 2:52 - loss: 4.4847 - acc: 0.420 - ET
A: 2:51 - loss: 4.4836 - acc: 0.420 - ETA: 2:50 - loss: 4.4811 - acc: 0.420 -
ETA: 2:49 - loss: 4.4875 - acc: 0.419 - ETA: 2:48 - loss: 4.4908 - acc: 0.419
- ETA: 2:47 - loss: 4.4956 - acc: 0.418 - ETA: 2:46 - loss: 4.4912 - acc: 0.4
18 - ETA: 2:45 - loss: 4.4858 - acc: 0.418 - ETA: 2:44 - loss: 4.4826 - acc:
 0.419 - ETA: 2:43 - loss: 4.4832 - acc: 0.418 - ETA: 2:42 - loss: 4.4809 - a
cc: 0.418 - ETA: 2:41 - loss: 4.4764 - acc: 0.419 - ETA: 2:41 - loss: 4.4805
 - acc: 0.418 - ETA: 2:40 - loss: 4.4797 - acc: 0.417 - ETA: 2:39 - loss: 4.4
840 - acc: 0.417 - ETA: 2:38 - loss: 4.4835 - acc: 0.417 - ETA: 2:37 - loss:
 4.4847 - acc: 0.416 - ETA: 2:36 - loss: 4.4819 - acc: 0.417 - ETA: 2:35 - lo
ss: 4.4875 - acc: 0.417 - ETA: 2:34 - loss: 4.4878 - acc: 0.417 - ETA: 2:33 -
loss: 4.4817 - acc: 0.418 - ETA: 2:32 - loss: 4.4830 - acc: 0.418 - ETA: 2:31
- loss: 4.4827 - acc: 0.418 - ETA: 2:30 - loss: 4.4833 - acc: 0.418 - ETA: 2:
29 - loss: 4.4819 - acc: 0.418 - ETA: 2:29 - loss: 4.4825 - acc: 0.418 - ETA:
2:28 - loss: 4.4876 - acc: 0.418 - ETA: 2:27 - loss: 4.4873 - acc: 0.417 - ET
A: 2:26 - loss: 4.4912 - acc: 0.417 - ETA: 2:25 - loss: 4.4887 - acc: 0.417 -
ETA: 2:24 - loss: 4.4851 - acc: 0.417 - ETA: 2:23 - loss: 4.4902 - acc: 0.416
- ETA: 2:22 - loss: 4.4951 - acc: 0.416 - ETA: 2:21 - loss: 4.4927 - acc: 0.4
16 - ETA: 2:20 - loss: 4.4868 - acc: 0.417 - ETA: 2:19 - loss: 4.4804 - acc:
```

```
 0.417 - ETA: 2:18 - loss: 4.4820 - acc: 0.417 - ETA: 2:17 - loss: 4.4804 - a
cc: 0.417 - ETA: 2:16 - loss: 4.4794 - acc: 0.417 - ETA: 2:15 - loss: 4.4746
 - acc: 0.418 - ETA: 2:14 - loss: 4.4755 - acc: 0.418 - ETA: 2:13 - loss: 4.4
763 - acc: 0.418 - ETA: 2:12 - loss: 4.4746 - acc: 0.418 - ETA: 2:11 - loss:
 4.4775 - acc: 0.417 - ETA: 2:10 - loss: 4.4845 - acc: 0.418 - ETA: 2:09 - lo
ss: 4.4846 - acc: 0.417 - ETA: 2:08 - loss: 4.4830 - acc: 0.418 - ETA: 2:08 -
loss: 4.4857 - acc: 0.417 - ETA: 2:07 - loss: 4.4815 - acc: 0.417 - ETA: 2:06
- loss: 4.4823 - acc: 0.417 - ETA: 2:05 - loss: 4.4843 - acc: 0.417 - ETA: 2:
04 - loss: 4.4867 - acc: 0.417 - ETA: 2:03 - loss: 4.4851 - acc: 0.417 - ETA:
2:02 - loss: 4.4852 - acc: 0.417 - ETA: 2:01 - loss: 4.4836 - acc: 0.418 - ET
A: 2:00 - loss: 4.4829 - acc: 0.418 - ETA: 1:59 - loss: 4.4851 - acc: 0.418 -
ETA: 1:58 - loss: 4.4794 - acc: 0.419 - ETA: 1:57 - loss: 4.4778 - acc: 0.419
- ETA: 1:56 - loss: 4.4785 - acc: 0.419 - ETA: 1:55 - loss: 4.4797 - acc: 0.4
19 - ETA: 1:54 - loss: 4.4839 - acc: 0.418 - ETA: 1:53 - loss: 4.4810 - acc:
 0.418 - ETA: 1:52 - loss: 4.4813 - acc: 0.418 - ETA: 1:51 - loss: 4.4802 - a
cc: 0.418 - ETA: 1:51 - loss: 4.4822 - acc: 0.418 - ETA: 1:50 - loss: 4.4858
 - acc: 0.418 - ETA: 1:49 - loss: 4.4837 - acc: 0.418 - ETA: 1:48 - loss: 4.4
870 - acc: 0.418 - ETA: 1:47 - loss: 4.4937 - acc: 0.418 - ETA: 1:46 - loss:
 4.4941 - acc: 0.418 - ETA: 1:45 - loss: 4.4914 - acc: 0.418 - ETA: 1:44 - lo
ss: 4.4921 - acc: 0.4187312/312 [==============================] - ETA: 1:43
 - loss: 4.4950 - acc: 0.418 - ETA: 1:43 - loss: 4.4990 - acc: 0.419 - ETA:
 1:42 - loss: 4.4997 - acc: 0.419 - ETA: 1:41 - loss: 4.4942 - acc: 0.419 - E
TA: 1:40 - loss: 4.4951 - acc: 0.419 - ETA: 1:39 - loss: 4.4985 - acc: 0.419
 - ETA: 1:38 - loss: 4.5042 - acc: 0.418 - ETA: 1:37 - loss: 4.5053 - acc: 0.
419 - ETA: 1:36 - loss: 4.5045 - acc: 0.419 - ETA: 1:35 - loss: 4.5089 - acc:
0.418 - ETA: 1:34 - loss: 4.5160 - acc: 0.418 - ETA: 1:33 - loss: 4.5139 - ac
c: 0.418 - ETA: 1:32 - loss: 4.5188 - acc: 0.418 - ETA: 1:31 - loss: 4.5163 -
acc: 0.418 - ETA: 1:31 - loss: 4.5223 - acc: 0.417 - ETA: 1:30 - loss: 4.5234
- acc: 0.417 - ETA: 1:29 - loss: 4.5204 - acc: 0.418 - ETA: 1:28 - loss: 4.51
85 - acc: 0.418 - ETA: 1:27 - loss: 4.5218 - acc: 0.418 - ETA: 1:26 - loss:
 4.5239 - acc: 0.418 - ETA: 1:25 - loss: 4.5220 - acc: 0.418 - ETA: 1:24 - lo
ss: 4.5241 - acc: 0.418 - ETA: 1:23 - loss: 4.5246 - acc: 0.418 - ETA: 1:22 -
loss: 4.5250 - acc: 0.418 - ETA: 1:21 - loss: 4.5225 - acc: 0.418 - ETA: 1:20
- loss: 4.5201 - acc: 0.418 - ETA: 1:19 - loss: 4.5194 - acc: 0.418 - ETA: 1:
18 - loss: 4.5193 - acc: 0.418 - ETA: 1:17 - loss: 4.5159 - acc: 0.419 - ETA:
1:16 - loss: 4.5160 - acc: 0.418 - ETA: 1:15 - loss: 4.5126 - acc: 0.419 - ET
A: 1:14 - loss: 4.5097 - acc: 0.419 - ETA: 1:13 - loss: 4.5085 - acc: 0.420 -
ETA: 1:12 - loss: 4.5072 - acc: 0.420 - ETA: 1:11 - loss: 4.5086 - acc: 0.419
- ETA: 1:11 - loss: 4.5049 - acc: 0.420 - ETA: 1:10 - loss: 4.5046 - acc: 0.4
20 - ETA: 1:09 - loss: 4.5038 - acc: 0.420 - ETA: 1:08 - loss: 4.5012 - acc:
 0.420 - ETA: 1:07 - loss: 4.5029 - acc: 0.420 - ETA: 1:06 - loss: 4.5057 - a
cc: 0.420 - ETA: 1:05 - loss: 4.5050 - acc: 0.420 - ETA: 1:04 - loss: 4.5022
 - acc: 0.420 - ETA: 1:03 - loss: 4.5064 - acc: 0.419 - ETA: 1:02 - loss: 4.5
055 - acc: 0.419 - ETA: 1:01 - loss: 4.5066 - acc: 0.419 - ETA: 1:00 - loss:
 4.5075 - acc: 0.419 - ETA: 59s - loss: 4.5073 - acc: 0.419 - ETA: 58s - los
s: 4.5070 - acc: 0.41 - ETA: 57s - loss: 4.5052 - acc: 0.41 - ETA: 56s - los
s: 4.5026 - acc: 0.42 - ETA: 55s - loss: 4.5038 - acc: 0.42 - ETA: 54s - los
s: 4.5037 - acc: 0.42 - ETA: 53s - loss: 4.5055 - acc: 0.42 - ETA: 52s - los
s: 4.5022 - acc: 0.42 - ETA: 51s - loss: 4.5040 - acc: 0.42 - ETA: 50s - los
s: 4.5038 - acc: 0.42 - ETA: 49s - loss: 4.5026 - acc: 0.42 - ETA: 48s - los
s: 4.5053 - acc: 0.42 - ETA: 47s - loss: 4.5050 - acc: 0.42 - ETA: 46s - los
s: 4.5035 - acc: 0.42 - ETA: 45s - loss: 4.5007 - acc: 0.42 - ETA: 44s - los
s: 4.4978 - acc: 0.42 - ETA: 43s - loss: 4.5021 - acc: 0.42 - ETA: 42s - los
s: 4.5013 - acc: 0.42 - ETA: 41s - loss: 4.5024 - acc: 0.42 - ETA: 40s - los
s: 4.5016 - acc: 0.42 - ETA: 39s - loss: 4.5029 - acc: 0.42 - ETA: 38s - los
s: 4.5032 - acc: 0.42 - ETA: 37s - loss: 4.5048 - acc: 0.42 - ETA: 36s - los
s: 4.5038 - acc: 0.42 - ETA: 35s - loss: 4.5028 - acc: 0.42 - ETA: 34s - los
```

```
s: 4.5041 - acc: 0.42 - ETA: 33s - loss: 4.5001 - acc: 0.42 - ETA: 32s - los
s: 4.4976 - acc: 0.42 - ETA: 31s - loss: 4.4978 - acc: 0.42 - ETA: 30s - los
s: 4.4937 - acc: 0.42 - ETA: 29s - loss: 4.4913 - acc: 0.42 - ETA: 28s - los
s: 4.4885 - acc: 0.42 - ETA: 27s - loss: 4.4867 - acc: 0.42 - ETA: 26s - los
s: 4.4846 - acc: 0.42 - ETA: 25s - loss: 4.4851 - acc: 0.42 - ETA: 24s - los
s: 4.4879 - acc: 0.42 - ETA: 23s - loss: 4.4882 - acc: 0.42 - ETA: 22s - los
s: 4.4896 - acc: 0.42 - ETA: 21s - loss: 4.4922 - acc: 0.42 - ETA: 20s - los
s: 4.4910 - acc: 0.42 - ETA: 19s - loss: 4.4900 - acc: 0.42 - ETA: 18s - los
s: 4.4902 - acc: 0.42 - ETA: 17s - loss: 4.4888 - acc: 0.42 - ETA: 16s - los
s: 4.4893 - acc: 0.42 - ETA: 15s - loss: 4.4910 - acc: 0.42 - ETA: 14s - los
s: 4.4933 - acc: 0.42 - ETA: 13s - loss: 4.4950 - acc: 0.42 - ETA: 12s - los
s: 4.4977 - acc: 0.42 - ETA: 11s - loss: 4.4998 - acc: 0.42 - ETA: 10s - los
s: 4.4986 - acc: 0.42 - ETA: 9s - loss: 4.4968 - acc: 0.4218 - ETA: 8s - los
s: 4.4967 - acc: 0.421 - ETA: 7s - loss: 4.4988 - acc: 0.421 - ETA: 6s - los
s: 4.4988 - acc: 0.420 - ETA: 5s - loss: 4.4967 - acc: 0.421 - ETA: 4s - los
s: 4.4952 - acc: 0.421 - ETA: 3s - loss: 4.4930 - acc: 0.421 - ETA: 2s - los
s: 4.4937 - acc: 0.421 - ETA: 1s - loss: 4.4963 - acc: 0.420 - ETA: 0s - los
s: 4.4958 - acc: 0.420 - 310s 994ms/step - loss: 4.4948 - acc: 0.4210
Epoch 12 start at time  2019-08-04 10:11:19.028138
204/312 [==================>.....] - ETA: 5:56 - loss: 4.1893 - acc: 0.
500 - ETA: 5:36 - loss: 4.0231 - acc: 0.484 - ETA: 5:39 - loss: 4.3965 - acc:
0.458 - ETA: 5:33 - loss: 4.4243 - acc: 0.445 - ETA: 5:23 - loss: 4.5001 - ac
c: 0.431 - ETA: 5:24 - loss: 4.5019 - acc: 0.442 - ETA: 5:26 - loss: 4.4054 -
acc: 0.442 - ETA: 5:23 - loss: 4.3596 - acc: 0.441 - ETA: 5:20 - loss: 4.2369
- acc: 0.461 - ETA: 5:18 - loss: 4.2226 - acc: 0.462 - ETA: 5:17 - loss: 4.19
32 - acc: 0.474 - ETA: 5:15 - loss: 4.2434 - acc: 0.466 - ETA: 5:15 - loss:
 4.2571 - acc: 0.459 - ETA: 5:13 - loss: 4.2654 - acc: 0.453 - ETA: 5:11 - lo
ss: 4.3106 - acc: 0.447 - ETA: 5:11 - loss: 4.4047 - acc: 0.439 - ETA: 5:11 -
loss: 4.3874 - acc: 0.437 - ETA: 5:11 - loss: 4.3517 - acc: 0.435 - ETA: 5:11
- loss: 4.3264 - acc: 0.437 - ETA: 5:13 - loss: 4.2950 - acc: 0.443 - ETA: 5:
14 - loss: 4.3473 - acc: 0.440 - ETA: 5:14 - loss: 4.3386 - acc: 0.440 - ETA:
5:13 - loss: 4.3656 - acc: 0.441 - ETA: 5:12 - loss: 4.3830 - acc: 0.445 - ET
A: 5:09 - loss: 4.3978 - acc: 0.441 - ETA: 5:07 - loss: 4.3911 - acc: 0.443 -
ETA: 5:05 - loss: 4.3959 - acc: 0.442 - ETA: 5:03 - loss: 4.4001 - acc: 0.443
- ETA: 5:02 - loss: 4.4249 - acc: 0.440 - ETA: 5:01 - loss: 4.3944 - acc: 0.4
45 - ETA: 5:01 - loss: 4.4018 - acc: 0.444 - ETA: 5:00 - loss: 4.4021 - acc:
 0.443 - ETA: 4:59 - loss: 4.4082 - acc: 0.439 - ETA: 4:57 - loss: 4.3800 - a
cc: 0.439 - ETA: 4:56 - loss: 4.3762 - acc: 0.438 - ETA: 4:56 - loss: 4.3786
 - acc: 0.439 - ETA: 4:55 - loss: 4.3589 - acc: 0.440 - ETA: 4:53 - loss: 4.3
645 - acc: 0.435 - ETA: 4:52 - loss: 4.3875 - acc: 0.430 - ETA: 4:50 - loss:
 4.3746 - acc: 0.432 - ETA: 4:50 - loss: 4.3583 - acc: 0.434 - ETA: 4:49 - lo
ss: 4.3592 - acc: 0.433 - ETA: 4:48 - loss: 4.3635 - acc: 0.433 - ETA: 4:46 -
loss: 4.3728 - acc: 0.432 - ETA: 4:44 - loss: 4.3672 - acc: 0.431 - ETA: 4:43
- loss: 4.3591 - acc: 0.431 - ETA: 4:41 - loss: 4.3551 - acc: 0.432 - ETA: 4:
40 - loss: 4.3616 - acc: 0.432 - ETA: 4:38 - loss: 4.3599 - acc: 0.432 - ETA:
4:37 - loss: 4.3762 - acc: 0.430 - ETA: 4:36 - loss: 4.3635 - acc: 0.430 - ET
A: 4:35 - loss: 4.3385 - acc: 0.433 - ETA: 4:33 - loss: 4.3450 - acc: 0.432 -
ETA: 4:32 - loss: 4.3272 - acc: 0.433 - ETA: 4:31 - loss: 4.3168 - acc: 0.435
- ETA: 4:30 - loss: 4.3035 - acc: 0.435 - ETA: 4:29 - loss: 4.2941 - acc: 0.4
38 - ETA: 4:27 - loss: 4.2842 - acc: 0.438 - ETA: 4:26 - loss: 4.2919 - acc:
 0.437 - ETA: 4:25 - loss: 4.2978 - acc: 0.436 - ETA: 4:24 - loss: 4.3249 - a
cc: 0.434 - ETA: 4:23 - loss: 4.3258 - acc: 0.437 - ETA: 4:22 - loss: 4.3142
 - acc: 0.439 - ETA: 4:21 - loss: 4.3176 - acc: 0.438 - ETA: 4:19 - loss: 4.3
132 - acc: 0.436 - ETA: 4:19 - loss: 4.3115 - acc: 0.435 - ETA: 4:17 - loss:
 4.3215 - acc: 0.434 - ETA: 4:16 - loss: 4.3225 - acc: 0.433 - ETA: 4:15 - lo
ss: 4.3307 - acc: 0.433 - ETA: 4:14 - loss: 4.3234 - acc: 0.432 - ETA: 4:13 -
loss: 4.3291 - acc: 0.433 - ETA: 4:12 - loss: 4.3266 - acc: 0.433 - ETA: 4:11
```

```
- loss: 4.3165 - acc: 0.434 - ETA: 4:10 - loss: 4.3229 - acc: 0.434 - ETA: 4:
09 - loss: 4.3242 - acc: 0.433 - ETA: 4:08 - loss: 4.3339 - acc: 0.431 - ETA:
4:07 - loss: 4.3576 - acc: 0.429 - ETA: 4:06 - loss: 4.3610 - acc: 0.430 - ET
A: 4:05 - loss: 4.3554 - acc: 0.432 - ETA: 4:04 - loss: 4.3481 - acc: 0.432 -
ETA: 4:03 - loss: 4.3419 - acc: 0.432 - ETA: 4:02 - loss: 4.3471 - acc: 0.431
- ETA: 4:01 - loss: 4.3436 - acc: 0.432 - ETA: 4:00 - loss: 4.3460 - acc: 0.4
31 - ETA: 3:59 - loss: 4.3420 - acc: 0.433 - ETA: 3:58 - loss: 4.3416 - acc:
 0.434 - ETA: 3:57 - loss: 4.3496 - acc: 0.433 - ETA: 3:56 - loss: 4.3506 - a
cc: 0.434 - ETA: 3:55 - loss: 4.3470 - acc: 0.433 - ETA: 3:53 - loss: 4.3457
 - acc: 0.433 - ETA: 3:52 - loss: 4.3464 - acc: 0.432 - ETA: 3:51 - loss: 4.3
572 - acc: 0.432 - ETA: 3:50 - loss: 4.3580 - acc: 0.432 - ETA: 3:49 - loss:
 4.3617 - acc: 0.432 - ETA: 3:48 - loss: 4.3626 - acc: 0.431 - ETA: 3:47 - lo
ss: 4.3555 - acc: 0.431 - ETA: 3:46 - loss: 4.3623 - acc: 0.431 - ETA: 3:45 -
loss: 4.3540 - acc: 0.432 - ETA: 3:44 - loss: 4.3566 - acc: 0.431 - ETA: 3:43
- loss: 4.3561 - acc: 0.432 - ETA: 3:42 - loss: 4.3591 - acc: 0.431 - ETA: 3:
41 - loss: 4.3657 - acc: 0.431 - ETA: 3:40 - loss: 4.3666 - acc: 0.430 - ETA:
3:39 - loss: 4.3720 - acc: 0.430 - ETA: 3:38 - loss: 4.3665 - acc: 0.430 - ET
A: 3:37 - loss: 4.3730 - acc: 0.430 - ETA: 3:36 - loss: 4.3748 - acc: 0.430 -
ETA: 3:35 - loss: 4.3737 - acc: 0.430 - ETA: 3:34 - loss: 4.3724 - acc: 0.429
- ETA: 3:33 - loss: 4.3714 - acc: 0.428 - ETA: 3:32 - loss: 4.3680 - acc: 0.4
28 - ETA: 3:31 - loss: 4.3790 - acc: 0.428 - ETA: 3:30 - loss: 4.3813 - acc:
 0.428 - ETA: 3:29 - loss: 4.3754 - acc: 0.429 - ETA: 3:28 - loss: 4.3734 - a
cc: 0.428 - ETA: 3:27 - loss: 4.3799 - acc: 0.427 - ETA: 3:25 - loss: 4.3852
 - acc: 0.426 - ETA: 3:24 - loss: 4.3860 - acc: 0.426 - ETA: 3:24 - loss: 4.3
815 - acc: 0.427 - ETA: 3:22 - loss: 4.3771 - acc: 0.427 - ETA: 3:21 - loss:
 4.3756 - acc: 0.426 - ETA: 3:20 - loss: 4.3754 - acc: 0.428 - ETA: 3:19 - lo
ss: 4.3720 - acc: 0.428 - ETA: 3:18 - loss: 4.3732 - acc: 0.428 - ETA: 3:17 -
loss: 4.3722 - acc: 0.430 - ETA: 3:16 - loss: 4.3679 - acc: 0.430 - ETA: 3:15
- loss: 4.3711 - acc: 0.430 - ETA: 3:14 - loss: 4.3697 - acc: 0.430 - ETA: 3:
13 - loss: 4.3783 - acc: 0.429 - ETA: 3:12 - loss: 4.3774 - acc: 0.429 - ETA:
3:11 - loss: 4.3850 - acc: 0.428 - ETA: 3:10 - loss: 4.3864 - acc: 0.428 - ET
A: 3:09 - loss: 4.3845 - acc: 0.428 - ETA: 3:08 - loss: 4.3822 - acc: 0.428 -
ETA: 3:07 - loss: 4.3883 - acc: 0.427 - ETA: 3:06 - loss: 4.3915 - acc: 0.426
- ETA: 3:05 - loss: 4.3953 - acc: 0.426 - ETA: 3:04 - loss: 4.3908 - acc: 0.4
26 - ETA: 3:02 - loss: 4.3863 - acc: 0.427 - ETA: 3:01 - loss: 4.3825 - acc:
 0.427 - ETA: 3:00 - loss: 4.3837 - acc: 0.426 - ETA: 2:59 - loss: 4.3820 - a
cc: 0.427 - ETA: 2:58 - loss: 4.3771 - acc: 0.427 - ETA: 2:57 - loss: 4.3809
 - acc: 0.426 - ETA: 2:56 - loss: 4.3790 - acc: 0.425 - ETA: 2:55 - loss: 4.3
828 - acc: 0.425 - ETA: 2:54 - loss: 4.3819 - acc: 0.425 - ETA: 2:53 - loss:
 4.3831 - acc: 0.425 - ETA: 2:52 - loss: 4.3798 - acc: 0.426 - ETA: 2:51 - lo
ss: 4.3845 - acc: 0.426 - ETA: 2:50 - loss: 4.3847 - acc: 0.426 - ETA: 2:48 -
loss: 4.3790 - acc: 0.427 - ETA: 2:47 - loss: 4.3795 - acc: 0.427 - ETA: 2:46
- loss: 4.3796 - acc: 0.427 - ETA: 2:45 - loss: 4.3797 - acc: 0.427 - ETA: 2:
44 - loss: 4.3780 - acc: 0.427 - ETA: 2:43 - loss: 4.3781 - acc: 0.427 - ETA:
2:42 - loss: 4.3833 - acc: 0.427 - ETA: 2:41 - loss: 4.3833 - acc: 0.427 - ET
A: 2:40 - loss: 4.3878 - acc: 0.427 - ETA: 2:39 - loss: 4.3863 - acc: 0.426 -
ETA: 2:37 - loss: 4.3834 - acc: 0.426 - ETA: 2:36 - loss: 4.3879 - acc: 0.425
- ETA: 2:35 - loss: 4.3920 - acc: 0.425 - ETA: 2:34 - loss: 4.3891 - acc: 0.4
26 - ETA: 2:33 - loss: 4.3828 - acc: 0.426 - ETA: 2:32 - loss: 4.3765 - acc:
 0.427 - ETA: 2:31 - loss: 4.3788 - acc: 0.426 - ETA: 2:30 - loss: 4.3768 - a
cc: 0.427 - ETA: 2:29 - loss: 4.3758 - acc: 0.427 - ETA: 2:28 - loss: 4.3715
 - acc: 0.428 - ETA: 2:27 - loss: 4.3727 - acc: 0.428 - ETA: 2:26 - loss: 4.3
730 - acc: 0.427 - ETA: 2:25 - loss: 4.3722 - acc: 0.427 - ETA: 2:24 - loss:
 4.3752 - acc: 0.427 - ETA: 2:23 - loss: 4.3819 - acc: 0.426 - ETA: 2:22 - lo
ss: 4.3823 - acc: 0.426 - ETA: 2:21 - loss: 4.3804 - acc: 0.426 - ETA: 2:20 -
loss: 4.3832 - acc: 0.425 - ETA: 2:19 - loss: 4.3787 - acc: 0.426 - ETA: 2:18
- loss: 4.3798 - acc: 0.426 - ETA: 2:16 - loss: 4.3810 - acc: 0.426 - ETA: 2:
```

```
15 - loss: 4.3841 - acc: 0.425 - ETA: 2:14 - loss: 4.3838 - acc: 0.426 - ETA:
2:13 - loss: 4.3841 - acc: 0.426 - ETA: 2:12 - loss: 4.3824 - acc: 0.427 - ET
A: 2:11 - loss: 4.3805 - acc: 0.427 - ETA: 2:10 - loss: 4.3827 - acc: 0.426 -
ETA: 2:09 - loss: 4.3777 - acc: 0.426 - ETA: 2:08 - loss: 4.3762 - acc: 0.427
- ETA: 2:07 - loss: 4.3761 - acc: 0.426 - ETA: 2:06 - loss: 4.3777 - acc: 0.4
26 - ETA: 2:05 - loss: 4.3823 - acc: 0.425 - ETA: 2:04 - loss: 4.3799 - acc:
 0.425 - ETA: 2:03 - loss: 4.3802 - acc: 0.425 - ETA: 2:02 - loss: 4.3798 - a
cc: 0.425 - ETA: 2:01 - loss: 4.3821 - acc: 0.425 - ETA: 2:00 - loss: 4.3858
 - acc: 0.425 - ETA: 1:59 - loss: 4.3836 - acc: 0.426 - ETA: 1:58 - loss: 4.3
868 - acc: 0.426 - ETA: 1:57 - loss: 4.3930 - acc: 0.426 - ETA: 1:56 - loss:
 4.3934 - acc: 0.426 - ETA: 1:55 - loss: 4.3913 - acc: 0.426 - ETA: 1:54 - lo
ss: 4.3921 - acc: 0.4259312/312 [==============================] - ETA: 1:53
 - loss: 4.3951 - acc: 0.425 - ETA: 1:51 - loss: 4.3995 - acc: 0.426 - ETA:
 1:50 - loss: 4.3999 - acc: 0.426 - ETA: 1:49 - loss: 4.3944 - acc: 0.427 - E
TA: 1:48 - loss: 4.3951 - acc: 0.426 - ETA: 1:47 - loss: 4.3981 - acc: 0.426
 - ETA: 1:46 - loss: 4.4039 - acc: 0.426 - ETA: 1:45 - loss: 4.4045 - acc: 0.
426 - ETA: 1:44 - loss: 4.4045 - acc: 0.425 - ETA: 1:43 - loss: 4.4083 - acc:
0.425 - ETA: 1:42 - loss: 4.4157 - acc: 0.425 - ETA: 1:41 - loss: 4.4137 - ac
c: 0.425 - ETA: 1:40 - loss: 4.4191 - acc: 0.424 - ETA: 1:39 - loss: 4.4168 -
acc: 0.424 - ETA: 1:38 - loss: 4.4228 - acc: 0.423 - ETA: 1:37 - loss: 4.4243
- acc: 0.424 - ETA: 1:36 - loss: 4.4212 - acc: 0.424 - ETA: 1:35 - loss: 4.41
90 - acc: 0.425 - ETA: 1:34 - loss: 4.4228 - acc: 0.425 - ETA: 1:33 - loss:
 4.4245 - acc: 0.424 - ETA: 1:32 - loss: 4.4229 - acc: 0.424 - ETA: 1:31 - lo
ss: 4.4255 - acc: 0.424 - ETA: 1:30 - loss: 4.4253 - acc: 0.424 - ETA: 1:28 -
loss: 4.4254 - acc: 0.424 - ETA: 1:27 - loss: 4.4232 - acc: 0.424 - ETA: 1:26
- loss: 4.4214 - acc: 0.424 - ETA: 1:25 - loss: 4.4210 - acc: 0.424 - ETA: 1:
24 - loss: 4.4212 - acc: 0.424 - ETA: 1:23 - loss: 4.4180 - acc: 0.424 - ETA:
1:22 - loss: 4.4177 - acc: 0.424 - ETA: 1:21 - loss: 4.4146 - acc: 0.425 - ET
A: 1:20 - loss: 4.4113 - acc: 0.425 - ETA: 1:19 - loss: 4.4101 - acc: 0.426 -
ETA: 1:18 - loss: 4.4084 - acc: 0.426 - ETA: 1:17 - loss: 4.4094 - acc: 0.426
- ETA: 1:16 - loss: 4.4052 - acc: 0.426 - ETA: 1:15 - loss: 4.4046 - acc: 0.4
26 - ETA: 1:14 - loss: 4.4043 - acc: 0.426 - ETA: 1:13 - loss: 4.4018 - acc:
 0.426 - ETA: 1:11 - loss: 4.4035 - acc: 0.426 - ETA: 1:10 - loss: 4.4064 - a
cc: 0.426 - ETA: 1:09 - loss: 4.4052 - acc: 0.426 - ETA: 1:08 - loss: 4.4019
 - acc: 0.426 - ETA: 1:07 - loss: 4.4065 - acc: 0.425 - ETA: 1:06 - loss: 4.4
056 - acc: 0.425 - ETA: 1:05 - loss: 4.4075 - acc: 0.425 - ETA: 1:04 - loss:
 4.4087 - acc: 0.425 - ETA: 1:03 - loss: 4.4085 - acc: 0.425 - ETA: 1:02 - lo
ss: 4.4081 - acc: 0.426 - ETA: 1:01 - loss: 4.4057 - acc: 0.426 - ETA: 1:00 -
loss: 4.4033 - acc: 0.427 - ETA: 59s - loss: 4.4043 - acc: 0.427 - ETA: 58s -
loss: 4.4043 - acc: 0.42 - ETA: 57s - loss: 4.4064 - acc: 0.42 - ETA: 56s - l
oss: 4.4028 - acc: 0.42 - ETA: 54s - loss: 4.4046 - acc: 0.42 - ETA: 53s - lo
ss: 4.4043 - acc: 0.42 - ETA: 52s - loss: 4.4031 - acc: 0.42 - ETA: 51s - los
s: 4.4049 - acc: 0.42 - ETA: 50s - loss: 4.4048 - acc: 0.42 - ETA: 49s - los
s: 4.4030 - acc: 0.42 - ETA: 48s - loss: 4.4006 - acc: 0.42 - ETA: 47s - los
s: 4.3976 - acc: 0.42 - ETA: 46s - loss: 4.4017 - acc: 0.42 - ETA: 45s - los
s: 4.4009 - acc: 0.42 - ETA: 44s - loss: 4.4019 - acc: 0.42 - ETA: 43s - los
s: 4.4009 - acc: 0.42 - ETA: 42s - loss: 4.4019 - acc: 0.42 - ETA: 41s - los
s: 4.4025 - acc: 0.42 - ETA: 40s - loss: 4.4040 - acc: 0.42 - ETA: 39s - los
s: 4.4028 - acc: 0.42 - ETA: 37s - loss: 4.4022 - acc: 0.42 - ETA: 36s - los
s: 4.4036 - acc: 0.42 - ETA: 35s - loss: 4.3993 - acc: 0.42 - ETA: 34s - los
s: 4.3970 - acc: 0.42 - ETA: 33s - loss: 4.3972 - acc: 0.42 - ETA: 32s - los
s: 4.3934 - acc: 0.42 - ETA: 31s - loss: 4.3908 - acc: 0.42 - ETA: 30s - los
s: 4.3879 - acc: 0.43 - ETA: 29s - loss: 4.3864 - acc: 0.43 - ETA: 28s - los
s: 4.3844 - acc: 0.43 - ETA: 27s - loss: 4.3846 - acc: 0.43 - ETA: 26s - los
s: 4.3872 - acc: 0.42 - ETA: 25s - loss: 4.3880 - acc: 0.42 - ETA: 24s - los
s: 4.3890 - acc: 0.42 - ETA: 23s - loss: 4.3917 - acc: 0.42 - ETA: 22s - los
s: 4.3906 - acc: 0.42 - ETA: 21s - loss: 4.3901 - acc: 0.42 - ETA: 20s - los
```

```
s: 4.3898 - acc: 0.42 - ETA: 19s - loss: 4.3883 - acc: 0.43 - ETA: 17s - los
s: 4.3889 - acc: 0.43 - ETA: 16s - loss: 4.3903 - acc: 0.42 - ETA: 15s - los
s: 4.3921 - acc: 0.42 - ETA: 14s - loss: 4.3936 - acc: 0.42 - ETA: 13s - los
s: 4.3964 - acc: 0.42 - ETA: 12s - loss: 4.3986 - acc: 0.42 - ETA: 11s - los
s: 4.3972 - acc: 0.42 - ETA: 10s - loss: 4.3958 - acc: 0.42 - ETA: 9s - loss:
4.3957 - acc: 0.4283 - ETA: 8s - loss: 4.3975 - acc: 0.427 - ETA: 7s - loss:
 4.3975 - acc: 0.427 - ETA: 6s - loss: 4.3959 - acc: 0.427 - ETA: 5s - loss:
 4.3941 - acc: 0.427 - ETA: 4s - loss: 4.3919 - acc: 0.428 - ETA: 3s - loss:
 4.3926 - acc: 0.428 - ETA: 2s - loss: 4.3950 - acc: 0.427 - ETA: 1s - loss:
 4.3951 - acc: 0.428 - 329s 1s/step - loss: 4.3944 - acc: 0.4282
Epoch 13 start at time  2019-08-04 11:05:33.530653
204/312 [==================>...........] - ETA: 5:23 - loss: 4.2166 - acc: 0.
500 - ETA: 5:27 - loss: 3.9053 - acc: 0.484 - ETA: 5:22 - loss: 4.2176 - acc:
0.468 - ETA: 5:13 - loss: 4.3161 - acc: 0.421 - ETA: 5:07 - loss: 4.4026 - ac
c: 0.418 - ETA: 5:02 - loss: 4.4104 - acc: 0.437 - ETA: 4:56 - loss: 4.2991 -
acc: 0.446 - ETA: 4:50 - loss: 4.2661 - acc: 0.445 - ETA: 4:49 - loss: 4.1519
- acc: 0.458 - ETA: 4:48 - loss: 4.1363 - acc: 0.456 - ETA: 4:44 - loss: 4.11
96 - acc: 0.463 - ETA: 4:43 - loss: 4.1609 - acc: 0.460 - ETA: 4:41 - loss:
 4.1717 - acc: 0.461 - ETA: 4:42 - loss: 4.1667 - acc: 0.457 - ETA: 4:41 - lo
ss: 4.2115 - acc: 0.454 - ETA: 4:39 - loss: 4.3058 - acc: 0.447 - ETA: 4:38 -
loss: 4.2876 - acc: 0.446 - ETA: 4:38 - loss: 4.2527 - acc: 0.447 - ETA: 4:39
- loss: 4.2393 - acc: 0.444 - ETA: 4:40 - loss: 4.2041 - acc: 0.450 - ETA: 4:
38 - loss: 4.2554 - acc: 0.447 - ETA: 4:37 - loss: 4.2518 - acc: 0.446 - ETA:
4:36 - loss: 4.2791 - acc: 0.448 - ETA: 4:36 - loss: 4.3027 - acc: 0.449 - ET
A: 4:36 - loss: 4.3204 - acc: 0.447 - ETA: 4:34 - loss: 4.3187 - acc: 0.450 -
ETA: 4:34 - loss: 4.3248 - acc: 0.449 - ETA: 4:34 - loss: 4.3319 - acc: 0.453
- ETA: 4:33 - loss: 4.3568 - acc: 0.451 - ETA: 4:32 - loss: 4.3219 - acc: 0.4
57 - ETA: 4:30 - loss: 4.3218 - acc: 0.455 - ETA: 4:28 - loss: 4.3222 - acc:
 0.454 - ETA: 4:26 - loss: 4.3232 - acc: 0.450 - ETA: 4:26 - loss: 4.2954 - a
cc: 0.450 - ETA: 4:25 - loss: 4.2947 - acc: 0.448 - ETA: 4:24 - loss: 4.2951
 - acc: 0.448 - ETA: 4:24 - loss: 4.2699 - acc: 0.449 - ETA: 4:22 - loss: 4.2
782 - acc: 0.445 - ETA: 4:22 - loss: 4.3016 - acc: 0.439 - ETA: 4:21 - loss:
 4.2900 - acc: 0.442 - ETA: 4:20 - loss: 4.2723 - acc: 0.445 - ETA: 4:18 - lo
ss: 4.2787 - acc: 0.443 - ETA: 4:17 - loss: 4.2812 - acc: 0.444 - ETA: 4:16 -
loss: 4.2879 - acc: 0.443 - ETA: 4:14 - loss: 4.2837 - acc: 0.442 - ETA: 4:12
- loss: 4.2754 - acc: 0.442 - ETA: 4:11 - loss: 4.2727 - acc: 0.444 - ETA: 4:
10 - loss: 4.2776 - acc: 0.442 - ETA: 4:09 - loss: 4.2749 - acc: 0.442 - ETA:
4:08 - loss: 4.2915 - acc: 0.440 - ETA: 4:07 - loss: 4.2811 - acc: 0.441 - ET
A: 4:06 - loss: 4.2573 - acc: 0.445 - ETA: 4:05 - loss: 4.2615 - acc: 0.443 -
ETA: 4:03 - loss: 4.2437 - acc: 0.444 - ETA: 4:02 - loss: 4.2330 - acc: 0.445
- ETA: 4:01 - loss: 4.2196 - acc: 0.445 - ETA: 4:00 - loss: 4.2117 - acc: 0.4
47 - ETA: 3:59 - loss: 4.2009 - acc: 0.449 - ETA: 3:58 - loss: 4.2099 - acc:
 0.448 - ETA: 3:56 - loss: 4.2153 - acc: 0.447 - ETA: 3:55 - loss: 4.2433 - a
cc: 0.445 - ETA: 3:54 - loss: 4.2429 - acc: 0.447 - ETA: 3:54 - loss: 4.2308
 - acc: 0.448 - ETA: 3:53 - loss: 4.2333 - acc: 0.447 - ETA: 3:53 - loss: 4.2
286 - acc: 0.446 - ETA: 3:52 - loss: 4.2234 - acc: 0.444 - ETA: 3:51 - loss:
 4.2349 - acc: 0.444 - ETA: 3:50 - loss: 4.2373 - acc: 0.443 - ETA: 3:49 - lo
ss: 4.2462 - acc: 0.443 - ETA: 3:48 - loss: 4.2401 - acc: 0.442 - ETA: 3:47 -
loss: 4.2465 - acc: 0.442 - ETA: 3:46 - loss: 4.2453 - acc: 0.442 - ETA: 3:45
- loss: 4.2360 - acc: 0.443 - ETA: 3:44 - loss: 4.2440 - acc: 0.443 - ETA: 3:
43 - loss: 4.2458 - acc: 0.441 - ETA: 3:42 - loss: 4.2564 - acc: 0.441 - ETA:
3:41 - loss: 4.2810 - acc: 0.439 - ETA: 3:40 - loss: 4.2839 - acc: 0.439 - ET
A: 3:39 - loss: 4.2794 - acc: 0.441 - ETA: 3:38 - loss: 4.2732 - acc: 0.441 -
ETA: 3:37 - loss: 4.2670 - acc: 0.442 - ETA: 3:36 - loss: 4.2728 - acc: 0.442
- ETA: 3:36 - loss: 4.2694 - acc: 0.443 - ETA: 3:35 - loss: 4.2702 - acc: 0.4
42 - ETA: 3:34 - loss: 4.2665 - acc: 0.444 - ETA: 3:33 - loss: 4.2665 - acc:
 0.444 - ETA: 3:32 - loss: 4.2768 - acc: 0.442 - ETA: 3:32 - loss: 4.2776 - a
```

```
cc: 0.444 - ETA: 3:31 - loss: 4.2745 - acc: 0.443 - ETA: 3:30 - loss: 4.2714
 - acc: 0.443 - ETA: 3:29 - loss: 4.2715 - acc: 0.441 - ETA: 3:29 - loss: 4.2
824 - acc: 0.441 - ETA: 3:28 - loss: 4.2833 - acc: 0.441 - ETA: 3:27 - loss:
 4.2878 - acc: 0.440 - ETA: 3:26 - loss: 4.2877 - acc: 0.439 - ETA: 3:25 - lo
ss: 4.2796 - acc: 0.440 - ETA: 3:24 - loss: 4.2876 - acc: 0.440 - ETA: 3:23 -
loss: 4.2789 - acc: 0.441 - ETA: 3:22 - loss: 4.2818 - acc: 0.441 - ETA: 3:21
- loss: 4.2821 - acc: 0.441 - ETA: 3:20 - loss: 4.2850 - acc: 0.441 - ETA: 3:
19 - loss: 4.2926 - acc: 0.441 - ETA: 3:19 - loss: 4.2948 - acc: 0.440 - ETA:
3:18 - loss: 4.3007 - acc: 0.440 - ETA: 3:16 - loss: 4.2955 - acc: 0.440 - ET
A: 3:15 - loss: 4.3031 - acc: 0.439 - ETA: 3:14 - loss: 4.3034 - acc: 0.439 -
ETA: 3:13 - loss: 4.3024 - acc: 0.439 - ETA: 3:12 - loss: 4.3032 - acc: 0.438
- ETA: 3:11 - loss: 4.3019 - acc: 0.438 - ETA: 3:10 - loss: 4.2979 - acc: 0.4
38 - ETA: 3:09 - loss: 4.3087 - acc: 0.438 - ETA: 3:08 - loss: 4.3119 - acc:
 0.437 - ETA: 3:07 - loss: 4.3065 - acc: 0.438 - ETA: 3:06 - loss: 4.3039 - a
cc: 0.438 - ETA: 3:05 - loss: 4.3096 - acc: 0.437 - ETA: 3:04 - loss: 4.3132
 - acc: 0.436 - ETA: 3:04 - loss: 4.3137 - acc: 0.436 - ETA: 3:03 - loss: 4.3
103 - acc: 0.437 - ETA: 3:02 - loss: 4.3059 - acc: 0.437 - ETA: 3:01 - loss:
 4.3036 - acc: 0.436 - ETA: 3:00 - loss: 4.3044 - acc: 0.437 - ETA: 2:59 - lo
ss: 4.3011 - acc: 0.437 - ETA: 2:58 - loss: 4.3015 - acc: 0.437 - ETA: 2:57 -
loss: 4.3014 - acc: 0.438 - ETA: 2:57 - loss: 4.2970 - acc: 0.439 - ETA: 2:56
- loss: 4.3022 - acc: 0.439 - ETA: 2:55 - loss: 4.3005 - acc: 0.438 - ETA: 2:
54 - loss: 4.3104 - acc: 0.437 - ETA: 2:53 - loss: 4.3091 - acc: 0.437 - ETA:
2:52 - loss: 4.3171 - acc: 0.436 - ETA: 2:51 - loss: 4.3184 - acc: 0.436 - ET
A: 2:51 - loss: 4.3167 - acc: 0.436 - ETA: 2:50 - loss: 4.3145 - acc: 0.436 -
ETA: 2:49 - loss: 4.3207 - acc: 0.435 - ETA: 2:48 - loss: 4.3231 - acc: 0.435
- ETA: 2:47 - loss: 4.3269 - acc: 0.434 - ETA: 2:46 - loss: 4.3227 - acc: 0.4
35 - ETA: 2:45 - loss: 4.3181 - acc: 0.435 - ETA: 2:45 - loss: 4.3135 - acc:
 0.435 - ETA: 2:44 - loss: 4.3139 - acc: 0.434 - ETA: 2:43 - loss: 4.3111 - a
cc: 0.435 - ETA: 2:42 - loss: 4.3070 - acc: 0.435 - ETA: 2:41 - loss: 4.3102
 - acc: 0.434 - ETA: 2:40 - loss: 4.3089 - acc: 0.433 - ETA: 2:40 - loss: 4.3
133 - acc: 0.433 - ETA: 2:38 - loss: 4.3127 - acc: 0.433 - ETA: 2:37 - loss:
 4.3143 - acc: 0.432 - ETA: 2:36 - loss: 4.3117 - acc: 0.433 - ETA: 2:35 - lo
ss: 4.3166 - acc: 0.433 - ETA: 2:34 - loss: 4.3169 - acc: 0.433 - ETA: 2:33 -
loss: 4.3108 - acc: 0.433 - ETA: 2:33 - loss: 4.3118 - acc: 0.433 - ETA: 2:32
- loss: 4.3114 - acc: 0.433 - ETA: 2:31 - loss: 4.3118 - acc: 0.433 - ETA: 2:
30 - loss: 4.3111 - acc: 0.432 - ETA: 2:29 - loss: 4.3111 - acc: 0.433 - ETA:
2:28 - loss: 4.3171 - acc: 0.433 - ETA: 2:27 - loss: 4.3166 - acc: 0.432 - ET
A: 2:26 - loss: 4.3205 - acc: 0.432 - ETA: 2:25 - loss: 4.3177 - acc: 0.431 -
ETA: 2:24 - loss: 4.3150 - acc: 0.431 - ETA: 2:23 - loss: 4.3196 - acc: 0.430
- ETA: 2:22 - loss: 4.3243 - acc: 0.430 - ETA: 2:21 - loss: 4.3203 - acc: 0.4
31 - ETA: 2:20 - loss: 4.3143 - acc: 0.431 - ETA: 2:19 - loss: 4.3085 - acc:
 0.432 - ETA: 2:18 - loss: 4.3103 - acc: 0.431 - ETA: 2:17 - loss: 4.3090 - a
cc: 0.432 - ETA: 2:17 - loss: 4.3085 - acc: 0.431 - ETA: 2:16 - loss: 4.3034
 - acc: 0.432 - ETA: 2:15 - loss: 4.3050 - acc: 0.432 - ETA: 2:14 - loss: 4.3
056 - acc: 0.432 - ETA: 2:13 - loss: 4.3045 - acc: 0.431 - ETA: 2:12 - loss:
 4.3070 - acc: 0.431 - ETA: 2:11 - loss: 4.3140 - acc: 0.431 - ETA: 2:10 - lo
ss: 4.3143 - acc: 0.431 - ETA: 2:09 - loss: 4.3124 - acc: 0.431 - ETA: 2:08 -
loss: 4.3150 - acc: 0.430 - ETA: 2:07 - loss: 4.3110 - acc: 0.431 - ETA: 2:06
- loss: 4.3120 - acc: 0.430 - ETA: 2:05 - loss: 4.3124 - acc: 0.430 - ETA: 2:
04 - loss: 4.3158 - acc: 0.430 - ETA: 2:03 - loss: 4.3143 - acc: 0.430 - ETA:
2:02 - loss: 4.3141 - acc: 0.430 - ETA: 2:01 - loss: 4.3131 - acc: 0.430 - ET
A: 2:00 - loss: 4.3114 - acc: 0.431 - ETA: 1:59 - loss: 4.3141 - acc: 0.430 -
ETA: 1:58 - loss: 4.3089 - acc: 0.431 - ETA: 1:57 - loss: 4.3072 - acc: 0.431
- ETA: 1:56 - loss: 4.3072 - acc: 0.431 - ETA: 1:55 - loss: 4.3085 - acc: 0.4
32 - ETA: 1:54 - loss: 4.3133 - acc: 0.430 - ETA: 1:53 - loss: 4.3109 - acc:
 0.430 - ETA: 1:52 - loss: 4.3105 - acc: 0.430 - ETA: 1:51 - loss: 4.3097 - a
cc: 0.430 - ETA: 1:50 - loss: 4.3119 - acc: 0.430 - ETA: 1:49 - loss: 4.3156
```

```
 - acc: 0.430 - ETA: 1:48 - loss: 4.3138 - acc: 0.431 - ETA: 1:47 - loss: 4.3
167 - acc: 0.431 - ETA: 1:46 - loss: 4.3235 - acc: 0.431 - ETA: 1:45 - loss:
 4.3229 - acc: 0.431 - ETA: 1:44 - loss: 4.3213 - acc: 0.431 - ETA: 1:43 - lo
ss: 4.3214 - acc: 0.4314312/312 [==============================] - ETA: 1:42
 - loss: 4.3244 - acc: 0.431 - ETA: 1:41 - loss: 4.3287 - acc: 0.431 - ETA:
 1:40 - loss: 4.3292 - acc: 0.431 - ETA: 1:39 - loss: 4.3238 - acc: 0.432 - E
TA: 1:38 - loss: 4.3245 - acc: 0.432 - ETA: 1:37 - loss: 4.3280 - acc: 0.432
 - ETA: 1:36 - loss: 4.3346 - acc: 0.431 - ETA: 1:35 - loss: 4.3353 - acc: 0.
431 - ETA: 1:34 - loss: 4.3347 - acc: 0.431 - ETA: 1:33 - loss: 4.3388 - acc:
0.431 - ETA: 1:32 - loss: 4.3465 - acc: 0.431 - ETA: 1:31 - loss: 4.3445 - ac
c: 0.431 - ETA: 1:30 - loss: 4.3501 - acc: 0.431 - ETA: 1:29 - loss: 4.3475 -
acc: 0.431 - ETA: 1:28 - loss: 4.3537 - acc: 0.430 - ETA: 1:27 - loss: 4.3555
- acc: 0.430 - ETA: 1:26 - loss: 4.3530 - acc: 0.431 - ETA: 1:25 - loss: 4.35
12 - acc: 0.431 - ETA: 1:24 - loss: 4.3548 - acc: 0.431 - ETA: 1:24 - loss:
 4.3565 - acc: 0.431 - ETA: 1:23 - loss: 4.3546 - acc: 0.431 - ETA: 1:22 - lo
ss: 4.3568 - acc: 0.431 - ETA: 1:21 - loss: 4.3571 - acc: 0.431 - ETA: 1:20 -
loss: 4.3569 - acc: 0.431 - ETA: 1:19 - loss: 4.3544 - acc: 0.430 - ETA: 1:18
- loss: 4.3519 - acc: 0.431 - ETA: 1:17 - loss: 4.3509 - acc: 0.431 - ETA: 1:
16 - loss: 4.3510 - acc: 0.431 - ETA: 1:15 - loss: 4.3477 - acc: 0.431 - ETA:
1:14 - loss: 4.3475 - acc: 0.431 - ETA: 1:13 - loss: 4.3439 - acc: 0.431 - ET
A: 1:12 - loss: 4.3409 - acc: 0.432 - ETA: 1:11 - loss: 4.3398 - acc: 0.432 -
ETA: 1:10 - loss: 4.3383 - acc: 0.432 - ETA: 1:09 - loss: 4.3396 - acc: 0.432
- ETA: 1:08 - loss: 4.3355 - acc: 0.433 - ETA: 1:07 - loss: 4.3350 - acc: 0.4
33 - ETA: 1:06 - loss: 4.3342 - acc: 0.433 - ETA: 1:05 - loss: 4.3319 - acc:
 0.433 - ETA: 1:04 - loss: 4.3336 - acc: 0.433 - ETA: 1:03 - loss: 4.3363 - a
cc: 0.433 - ETA: 1:02 - loss: 4.3352 - acc: 0.433 - ETA: 1:01 - loss: 4.3319
 - acc: 0.433 - ETA: 1:00 - loss: 4.3365 - acc: 0.432 - ETA: 1:00 - loss: 4.3
354 - acc: 0.432 - ETA: 59s - loss: 4.3367 - acc: 0.432 - ETA: 58s - loss: 4.
3379 - acc: 0.43 - ETA: 57s - loss: 4.3379 - acc: 0.43 - ETA: 56s - loss: 4.3
375 - acc: 0.43 - ETA: 55s - loss: 4.3358 - acc: 0.43 - ETA: 54s - loss: 4.33
36 - acc: 0.43 - ETA: 53s - loss: 4.3342 - acc: 0.43 - ETA: 52s - loss: 4.333
8 - acc: 0.43 - ETA: 51s - loss: 4.3354 - acc: 0.43 - ETA: 50s - loss: 4.3315
- acc: 0.43 - ETA: 49s - loss: 4.3332 - acc: 0.43 - ETA: 48s - loss: 4.3334 -
acc: 0.43 - ETA: 47s - loss: 4.3320 - acc: 0.43 - ETA: 46s - loss: 4.3345 - a
cc: 0.43 - ETA: 45s - loss: 4.3343 - acc: 0.43 - ETA: 44s - loss: 4.3326 - ac
c: 0.43 - ETA: 43s - loss: 4.3297 - acc: 0.43 - ETA: 42s - loss: 4.3267 - ac
c: 0.43 - ETA: 41s - loss: 4.3307 - acc: 0.43 - ETA: 40s - loss: 4.3301 - ac
c: 0.43 - ETA: 39s - loss: 4.3310 - acc: 0.43 - ETA: 38s - loss: 4.3302 - ac
c: 0.43 - ETA: 37s - loss: 4.3314 - acc: 0.43 - ETA: 36s - loss: 4.3316 - ac
c: 0.43 - ETA: 35s - loss: 4.3335 - acc: 0.43 - ETA: 35s - loss: 4.3331 - ac
c: 0.43 - ETA: 34s - loss: 4.3321 - acc: 0.43 - ETA: 33s - loss: 4.3333 - ac
c: 0.43 - ETA: 32s - loss: 4.3293 - acc: 0.43 - ETA: 31s - loss: 4.3270 - ac
c: 0.43 - ETA: 30s - loss: 4.3271 - acc: 0.43 - ETA: 29s - loss: 4.3228 - ac
c: 0.43 - ETA: 28s - loss: 4.3211 - acc: 0.43 - ETA: 27s - loss: 4.3179 - ac
c: 0.43 - ETA: 26s - loss: 4.3168 - acc: 0.43 - ETA: 25s - loss: 4.3145 - ac
c: 0.43 - ETA: 24s - loss: 4.3143 - acc: 0.43 - ETA: 23s - loss: 4.3173 - ac
c: 0.43 - ETA: 22s - loss: 4.3175 - acc: 0.43 - ETA: 21s - loss: 4.3186 - ac
c: 0.43 - ETA: 20s - loss: 4.3214 - acc: 0.43 - ETA: 19s - loss: 4.3207 - ac
c: 0.43 - ETA: 18s - loss: 4.3201 - acc: 0.43 - ETA: 18s - loss: 4.3201 - ac
c: 0.43 - ETA: 17s - loss: 4.3183 - acc: 0.43 - ETA: 16s - loss: 4.3188 - ac
c: 0.43 - ETA: 15s - loss: 4.3202 - acc: 0.43 - ETA: 14s - loss: 4.3221 - ac
c: 0.43 - ETA: 13s - loss: 4.3237 - acc: 0.43 - ETA: 12s - loss: 4.3269 - ac
c: 0.43 - ETA: 11s - loss: 4.3286 - acc: 0.43 - ETA: 10s - loss: 4.3270 - ac
c: 0.43 - ETA: 9s - loss: 4.3250 - acc: 0.4351 - ETA: 8s - loss: 4.3251 - ac
c: 0.435 - ETA: 7s - loss: 4.3271 - acc: 0.434 - ETA: 6s - loss: 4.3268 - ac
c: 0.434 - ETA: 5s - loss: 4.3253 - acc: 0.434 - ETA: 4s - loss: 4.3234 - ac
c: 0.434 - ETA: 3s - loss: 4.3213 - acc: 0.434 - ETA: 2s - loss: 4.3222 - ac
```

```
c: 0.434 - ETA: 1s - loss: 4.3248 - acc: 0.434 - ETA: 0s - loss: 4.3244 - ac
c: 0.434 - 296s 948ms/step - loss: 4.3236 - acc: 0.4346
Epoch 14 start at time  2019-08-04 11:57:27.985265
204/312 [==================>...........] - ETA: 5:32 - loss: 3.9557 - acc: 0.
437 - ETA: 5:12 - loss: 3.8440 - acc: 0.453 - ETA: 5:15 - loss: 4.1419 - acc:
0.447 - ETA: 5:07 - loss: 4.2686 - acc: 0.398 - ETA: 5:15 - loss: 4.3727 - ac
c: 0.393 - ETA: 5:18 - loss: 4.3601 - acc: 0.427 - ETA: 5:16 - loss: 4.2564 -
acc: 0.437 - ETA: 5:14 - loss: 4.2081 - acc: 0.445 - ETA: 5:15 - loss: 4.0920
- acc: 0.465 - ETA: 5:11 - loss: 4.0774 - acc: 0.456 - ETA: 5:10 - loss: 4.03
31 - acc: 0.468 - ETA: 5:12 - loss: 4.0747 - acc: 0.468 - ETA: 5:13 - loss:
 4.0749 - acc: 0.463 - ETA: 5:14 - loss: 4.0783 - acc: 0.466 - ETA: 5:16 - lo
ss: 4.1173 - acc: 0.460 - ETA: 5:20 - loss: 4.1996 - acc: 0.455 - ETA: 5:21 -
loss: 4.1777 - acc: 0.452 - ETA: 5:22 - loss: 4.1441 - acc: 0.454 - ETA: 5:25
- loss: 4.1242 - acc: 0.453 - ETA: 5:24 - loss: 4.0939 - acc: 0.459 - ETA: 5:
25 - loss: 4.1520 - acc: 0.453 - ETA: 5:28 - loss: 4.1500 - acc: 0.451 - ETA:
5:28 - loss: 4.1795 - acc: 0.452 - ETA: 5:27 - loss: 4.1934 - acc: 0.454 - ET
A: 5:28 - loss: 4.2128 - acc: 0.453 - ETA: 5:27 - loss: 4.2053 - acc: 0.456 -
ETA: 5:27 - loss: 4.2125 - acc: 0.454 - ETA: 5:27 - loss: 4.2210 - acc: 0.455
- ETA: 5:27 - loss: 4.2442 - acc: 0.452 - ETA: 5:25 - loss: 4.2116 - acc: 0.4
58 - ETA: 5:24 - loss: 4.2160 - acc: 0.456 - ETA: 5:23 - loss: 4.2210 - acc:
 0.455 - ETA: 5:23 - loss: 4.2265 - acc: 0.450 - ETA: 5:21 - loss: 4.2028 - a
cc: 0.451 - ETA: 5:21 - loss: 4.2008 - acc: 0.451 - ETA: 5:21 - loss: 4.1972
 - acc: 0.451 - ETA: 5:19 - loss: 4.1742 - acc: 0.451 - ETA: 5:17 - loss: 4.1
791 - acc: 0.448 - ETA: 5:15 - loss: 4.2014 - acc: 0.441 - ETA: 5:13 - loss:
 4.1842 - acc: 0.445 - ETA: 5:10 - loss: 4.1686 - acc: 0.446 - ETA: 5:09 - lo
ss: 4.1706 - acc: 0.444 - ETA: 5:07 - loss: 4.1732 - acc: 0.445 - ETA: 5:05 -
loss: 4.1789 - acc: 0.445 - ETA: 5:04 - loss: 4.1757 - acc: 0.443 - ETA: 5:02
- loss: 4.1655 - acc: 0.445 - ETA: 5:02 - loss: 4.1629 - acc: 0.446 - ETA: 5:
00 - loss: 4.1676 - acc: 0.446 - ETA: 4:59 - loss: 4.1639 - acc: 0.447 - ETA:
4:57 - loss: 4.1808 - acc: 0.445 - ETA: 4:55 - loss: 4.1680 - acc: 0.447 - ET
A: 4:53 - loss: 4.1427 - acc: 0.449 - ETA: 4:52 - loss: 4.1484 - acc: 0.449 -
ETA: 4:50 - loss: 4.1322 - acc: 0.450 - ETA: 4:49 - loss: 4.1200 - acc: 0.451
- ETA: 4:48 - loss: 4.1042 - acc: 0.452 - ETA: 4:47 - loss: 4.0972 - acc: 0.4
54 - ETA: 4:45 - loss: 4.0866 - acc: 0.453 - ETA: 4:44 - loss: 4.0959 - acc:
 0.454 - ETA: 4:42 - loss: 4.1022 - acc: 0.453 - ETA: 4:40 - loss: 4.1314 - a
cc: 0.452 - ETA: 4:39 - loss: 4.1311 - acc: 0.454 - ETA: 4:37 - loss: 4.1183
 - acc: 0.456 - ETA: 4:36 - loss: 4.1215 - acc: 0.455 - ETA: 4:35 - loss: 4.1
175 - acc: 0.453 - ETA: 4:34 - loss: 4.1113 - acc: 0.451 - ETA: 4:32 - loss:
 4.1209 - acc: 0.450 - ETA: 4:32 - loss: 4.1237 - acc: 0.450 - ETA: 4:30 - lo
ss: 4.1330 - acc: 0.450 - ETA: 4:29 - loss: 4.1251 - acc: 0.450 - ETA: 4:27 -
loss: 4.1318 - acc: 0.449 - ETA: 4:25 - loss: 4.1315 - acc: 0.449 - ETA: 4:24
- loss: 4.1216 - acc: 0.451 - ETA: 4:22 - loss: 4.1294 - acc: 0.450 - ETA: 4:
21 - loss: 4.1324 - acc: 0.449 - ETA: 4:19 - loss: 4.1429 - acc: 0.449 - ETA:
4:18 - loss: 4.1679 - acc: 0.447 - ETA: 4:16 - loss: 4.1720 - acc: 0.447 - ET
A: 4:15 - loss: 4.1669 - acc: 0.449 - ETA: 4:14 - loss: 4.1593 - acc: 0.449 -
ETA: 4:13 - loss: 4.1533 - acc: 0.449 - ETA: 4:12 - loss: 4.1571 - acc: 0.448
- ETA: 4:10 - loss: 4.1533 - acc: 0.450 - ETA: 4:09 - loss: 4.1529 - acc: 0.4
49 - ETA: 4:08 - loss: 4.1491 - acc: 0.450 - ETA: 4:07 - loss: 4.1480 - acc:
 0.451 - ETA: 4:06 - loss: 4.1557 - acc: 0.450 - ETA: 4:05 - loss: 4.1585 - a
cc: 0.452 - ETA: 4:04 - loss: 4.1551 - acc: 0.451 - ETA: 4:03 - loss: 4.1532
 - acc: 0.451 - ETA: 4:02 - loss: 4.1538 - acc: 0.449 - ETA: 4:00 - loss: 4.1
650 - acc: 0.450 - ETA: 3:59 - loss: 4.1654 - acc: 0.450 - ETA: 3:58 - loss:
 4.1692 - acc: 0.450 - ETA: 3:57 - loss: 4.1695 - acc: 0.449 - ETA: 3:56 - lo
ss: 4.1625 - acc: 0.450 - ETA: 3:55 - loss: 4.1719 - acc: 0.449 - ETA: 3:54 -
loss: 4.1655 - acc: 0.450 - ETA: 3:53 - loss: 4.1690 - acc: 0.449 - ETA: 3:52
- loss: 4.1696 - acc: 0.450 - ETA: 3:51 - loss: 4.1722 - acc: 0.450 - ETA: 3:
49 - loss: 4.1781 - acc: 0.449 - ETA: 3:48 - loss: 4.1799 - acc: 0.448 - ETA:
```

```
3:47 - loss: 4.1858 - acc: 0.448 - ETA: 3:46 - loss: 4.1814 - acc: 0.448 - ET
A: 3:45 - loss: 4.1883 - acc: 0.448 - ETA: 3:44 - loss: 4.1895 - acc: 0.448 -
ETA: 3:42 - loss: 4.1883 - acc: 0.447 - ETA: 3:41 - loss: 4.1877 - acc: 0.446
- ETA: 3:40 - loss: 4.1874 - acc: 0.445 - ETA: 3:39 - loss: 4.1831 - acc: 0.4
46 - ETA: 3:37 - loss: 4.1928 - acc: 0.445 - ETA: 3:36 - loss: 4.1964 - acc:
 0.445 - ETA: 3:35 - loss: 4.1922 - acc: 0.446 - ETA: 3:34 - loss: 4.1906 - a
cc: 0.445 - ETA: 3:33 - loss: 4.1963 - acc: 0.444 - ETA: 3:32 - loss: 4.2011
 - acc: 0.444 - ETA: 3:31 - loss: 4.2014 - acc: 0.443 - ETA: 3:29 - loss: 4.1
981 - acc: 0.444 - ETA: 3:28 - loss: 4.1932 - acc: 0.445 - ETA: 3:27 - loss:
 4.1913 - acc: 0.444 - ETA: 3:26 - loss: 4.1927 - acc: 0.444 - ETA: 3:24 - lo
ss: 4.1892 - acc: 0.444 - ETA: 3:23 - loss: 4.1916 - acc: 0.444 - ETA: 3:22 -
loss: 4.1916 - acc: 0.445 - ETA: 3:21 - loss: 4.1881 - acc: 0.445 - ETA: 3:20
- loss: 4.1921 - acc: 0.446 - ETA: 3:19 - loss: 4.1911 - acc: 0.445 - ETA: 3:
18 - loss: 4.2013 - acc: 0.444 - ETA: 3:17 - loss: 4.2002 - acc: 0.444 - ETA:
3:15 - loss: 4.2085 - acc: 0.442 - ETA: 3:15 - loss: 4.2101 - acc: 0.442 - ET
A: 3:13 - loss: 4.2081 - acc: 0.442 - ETA: 3:12 - loss: 4.2064 - acc: 0.442 -
ETA: 3:11 - loss: 4.2123 - acc: 0.441 - ETA: 3:10 - loss: 4.2147 - acc: 0.441
- ETA: 3:09 - loss: 4.2189 - acc: 0.440 - ETA: 3:08 - loss: 4.2148 - acc: 0.4
41 - ETA: 3:07 - loss: 4.2097 - acc: 0.442 - ETA: 3:06 - loss: 4.2046 - acc:
 0.442 - ETA: 3:05 - loss: 4.2050 - acc: 0.441 - ETA: 3:04 - loss: 4.2023 - a
cc: 0.442 - ETA: 3:02 - loss: 4.1974 - acc: 0.442 - ETA: 3:01 - loss: 4.2019
 - acc: 0.440 - ETA: 3:00 - loss: 4.2005 - acc: 0.440 - ETA: 2:59 - loss: 4.2
047 - acc: 0.440 - ETA: 2:58 - loss: 4.2054 - acc: 0.440 - ETA: 2:57 - loss:
 4.2071 - acc: 0.439 - ETA: 2:56 - loss: 4.2042 - acc: 0.441 - ETA: 2:55 - lo
ss: 4.2090 - acc: 0.441 - ETA: 2:53 - loss: 4.2089 - acc: 0.441 - ETA: 2:52 -
loss: 4.2032 - acc: 0.442 - ETA: 2:51 - loss: 4.2041 - acc: 0.442 - ETA: 2:50
- loss: 4.2044 - acc: 0.442 - ETA: 2:49 - loss: 4.2049 - acc: 0.442 - ETA: 2:
48 - loss: 4.2037 - acc: 0.442 - ETA: 2:47 - loss: 4.2036 - acc: 0.442 - ETA:
2:45 - loss: 4.2087 - acc: 0.441 - ETA: 2:44 - loss: 4.2084 - acc: 0.441 - ET
A: 2:43 - loss: 4.2127 - acc: 0.441 - ETA: 2:42 - loss: 4.2095 - acc: 0.440 -
ETA: 2:41 - loss: 4.2064 - acc: 0.440 - ETA: 2:40 - loss: 4.2112 - acc: 0.439
- ETA: 2:39 - loss: 4.2156 - acc: 0.439 - ETA: 2:38 - loss: 4.2121 - acc: 0.4
40 - ETA: 2:37 - loss: 4.2054 - acc: 0.441 - ETA: 2:35 - loss: 4.1988 - acc:
 0.442 - ETA: 2:34 - loss: 4.2003 - acc: 0.441 - ETA: 2:33 - loss: 4.1984 - a
cc: 0.441 - ETA: 2:32 - loss: 4.1979 - acc: 0.441 - ETA: 2:31 - loss: 4.1930
 - acc: 0.442 - ETA: 2:30 - loss: 4.1943 - acc: 0.442 - ETA: 2:29 - loss: 4.1
925 - acc: 0.442 - ETA: 2:28 - loss: 4.1909 - acc: 0.443 - ETA: 2:27 - loss:
 4.1928 - acc: 0.442 - ETA: 2:26 - loss: 4.1998 - acc: 0.442 - ETA: 2:25 - lo
ss: 4.2004 - acc: 0.442 - ETA: 2:23 - loss: 4.1982 - acc: 0.442 - ETA: 2:22 -
loss: 4.2013 - acc: 0.441 - ETA: 2:21 - loss: 4.1967 - acc: 0.442 - ETA: 2:20
- loss: 4.1979 - acc: 0.442 - ETA: 2:19 - loss: 4.2002 - acc: 0.441 - ETA: 2:
18 - loss: 4.2033 - acc: 0.441 - ETA: 2:17 - loss: 4.2015 - acc: 0.441 - ETA:
2:16 - loss: 4.2019 - acc: 0.441 - ETA: 2:15 - loss: 4.2003 - acc: 0.442 - ET
A: 2:14 - loss: 4.1983 - acc: 0.442 - ETA: 2:13 - loss: 4.2012 - acc: 0.442 -
ETA: 2:12 - loss: 4.1961 - acc: 0.443 - ETA: 2:10 - loss: 4.1946 - acc: 0.443
- ETA: 2:09 - loss: 4.1944 - acc: 0.443 - ETA: 2:08 - loss: 4.1962 - acc: 0.4
43 - ETA: 2:07 - loss: 4.2009 - acc: 0.442 - ETA: 2:06 - loss: 4.1986 - acc:
 0.442 - ETA: 2:05 - loss: 4.1990 - acc: 0.442 - ETA: 2:04 - loss: 4.1979 - a
cc: 0.442 - ETA: 2:03 - loss: 4.1999 - acc: 0.442 - ETA: 2:02 - loss: 4.2031
 - acc: 0.442 - ETA: 2:01 - loss: 4.2006 - acc: 0.443 - ETA: 1:59 - loss: 4.2
039 - acc: 0.443 - ETA: 1:58 - loss: 4.2102 - acc: 0.443 - ETA: 1:57 - loss:
 4.2101 - acc: 0.443 - ETA: 1:56 - loss: 4.2086 - acc: 0.443 - ETA: 1:55 - lo
ss: 4.2088 - acc: 0.4433312/312 [==============================] - ETA: 1:54
 - loss: 4.2117 - acc: 0.443 - ETA: 1:53 - loss: 4.2166 - acc: 0.443 - ETA:
 1:52 - loss: 4.2167 - acc: 0.443 - ETA: 1:51 - loss: 4.2112 - acc: 0.444 - E
TA: 1:50 - loss: 4.2125 - acc: 0.443 - ETA: 1:49 - loss: 4.2161 - acc: 0.443
 - ETA: 1:48 - loss: 4.2220 - acc: 0.443 - ETA: 1:47 - loss: 4.2224 - acc: 0.
```

```
443 - ETA: 1:46 - loss: 4.2217 - acc: 0.443 - ETA: 1:45 - loss: 4.2252 - acc:
0.443 - ETA: 1:44 - loss: 4.2336 - acc: 0.443 - ETA: 1:42 - loss: 4.2319 - ac
c: 0.443 - ETA: 1:41 - loss: 4.2374 - acc: 0.442 - ETA: 1:40 - loss: 4.2339 -
acc: 0.442 - ETA: 1:39 - loss: 4.2395 - acc: 0.442 - ETA: 1:38 - loss: 4.2414
- acc: 0.442 - ETA: 1:37 - loss: 4.2380 - acc: 0.443 - ETA: 1:36 - loss: 4.23
60 - acc: 0.443 - ETA: 1:35 - loss: 4.2402 - acc: 0.442 - ETA: 1:34 - loss:
 4.2422 - acc: 0.442 - ETA: 1:33 - loss: 4.2407 - acc: 0.442 - ETA: 1:32 - lo
ss: 4.2431 - acc: 0.441 - ETA: 1:30 - loss: 4.2431 - acc: 0.441 - ETA: 1:29 -
loss: 4.2433 - acc: 0.441 - ETA: 1:28 - loss: 4.2407 - acc: 0.441 - ETA: 1:27
- loss: 4.2390 - acc: 0.442 - ETA: 1:26 - loss: 4.2378 - acc: 0.442 - ETA: 1:
25 - loss: 4.2384 - acc: 0.442 - ETA: 1:24 - loss: 4.2352 - acc: 0.442 - ETA:
1:23 - loss: 4.2350 - acc: 0.441 - ETA: 1:22 - loss: 4.2318 - acc: 0.442 - ET
A: 1:21 - loss: 4.2289 - acc: 0.442 - ETA: 1:20 - loss: 4.2279 - acc: 0.443 -
ETA: 1:19 - loss: 4.2258 - acc: 0.443 - ETA: 1:17 - loss: 4.2269 - acc: 0.442
- ETA: 1:16 - loss: 4.2227 - acc: 0.443 - ETA: 1:15 - loss: 4.2221 - acc: 0.4
43 - ETA: 1:14 - loss: 4.2218 - acc: 0.443 - ETA: 1:13 - loss: 4.2192 - acc:
 0.443 - ETA: 1:12 - loss: 4.2202 - acc: 0.443 - ETA: 1:11 - loss: 4.2226 - a
cc: 0.443 - ETA: 1:10 - loss: 4.2213 - acc: 0.443 - ETA: 1:09 - loss: 4.2178
 - acc: 0.444 - ETA: 1:08 - loss: 4.2220 - acc: 0.443 - ETA: 1:07 - loss: 4.2
213 - acc: 0.443 - ETA: 1:06 - loss: 4.2224 - acc: 0.442 - ETA: 1:05 - loss:
 4.2231 - acc: 0.442 - ETA: 1:03 - loss: 4.2230 - acc: 0.442 - ETA: 1:02 - lo
ss: 4.2229 - acc: 0.442 - ETA: 1:01 - loss: 4.2213 - acc: 0.442 - ETA: 1:00 -
loss: 4.2190 - acc: 0.443 - ETA: 59s - loss: 4.2193 - acc: 0.444 - ETA: 58s -
loss: 4.2186 - acc: 0.44 - ETA: 57s - loss: 4.2207 - acc: 0.44 - ETA: 56s - l
oss: 4.2173 - acc: 0.44 - ETA: 55s - loss: 4.2186 - acc: 0.44 - ETA: 54s - lo
ss: 4.2181 - acc: 0.44 - ETA: 53s - loss: 4.2161 - acc: 0.44 - ETA: 52s - los
s: 4.2184 - acc: 0.44 - ETA: 51s - loss: 4.2185 - acc: 0.44 - ETA: 49s - los
s: 4.2162 - acc: 0.44 - ETA: 48s - loss: 4.2134 - acc: 0.44 - ETA: 47s - los
s: 4.2103 - acc: 0.44 - ETA: 46s - loss: 4.2148 - acc: 0.44 - ETA: 45s - los
s: 4.2141 - acc: 0.44 - ETA: 44s - loss: 4.2155 - acc: 0.44 - ETA: 43s - los
s: 4.2142 - acc: 0.44 - ETA: 42s - loss: 4.2155 - acc: 0.44 - ETA: 41s - los
s: 4.2159 - acc: 0.44 - ETA: 40s - loss: 4.2175 - acc: 0.44 - ETA: 39s - los
s: 4.2168 - acc: 0.44 - ETA: 38s - loss: 4.2159 - acc: 0.44 - ETA: 37s - los
s: 4.2170 - acc: 0.44 - ETA: 36s - loss: 4.2128 - acc: 0.44 - ETA: 34s - los
s: 4.2103 - acc: 0.44 - ETA: 33s - loss: 4.2102 - acc: 0.44 - ETA: 32s - los
s: 4.2061 - acc: 0.44 - ETA: 31s - loss: 4.2037 - acc: 0.44 - ETA: 30s - los
s: 4.2007 - acc: 0.44 - ETA: 29s - loss: 4.1990 - acc: 0.44 - ETA: 28s - los
s: 4.1969 - acc: 0.44 - ETA: 27s - loss: 4.1974 - acc: 0.44 - ETA: 26s - los
s: 4.2003 - acc: 0.44 - ETA: 25s - loss: 4.2011 - acc: 0.44 - ETA: 24s - los
s: 4.2024 - acc: 0.44 - ETA: 23s - loss: 4.2055 - acc: 0.44 - ETA: 22s - los
s: 4.2044 - acc: 0.44 - ETA: 21s - loss: 4.2039 - acc: 0.44 - ETA: 20s - los
s: 4.2044 - acc: 0.44 - ETA: 19s - loss: 4.2027 - acc: 0.44 - ETA: 17s - los
s: 4.2036 - acc: 0.44 - ETA: 16s - loss: 4.2048 - acc: 0.44 - ETA: 15s - los
s: 4.2069 - acc: 0.44 - ETA: 14s - loss: 4.2086 - acc: 0.44 - ETA: 13s - los
s: 4.2115 - acc: 0.44 - ETA: 12s - loss: 4.2131 - acc: 0.44 - ETA: 11s - los
s: 4.2111 - acc: 0.44 - ETA: 10s - loss: 4.2093 - acc: 0.44 - ETA: 9s - loss:
4.2091 - acc: 0.4451 - ETA: 8s - loss: 4.2110 - acc: 0.444 - ETA: 7s - loss:
 4.2104 - acc: 0.444 - ETA: 6s - loss: 4.2091 - acc: 0.445 - ETA: 5s - loss:
 4.2076 - acc: 0.445 - ETA: 4s - loss: 4.2052 - acc: 0.445 - ETA: 3s - loss:
 4.2060 - acc: 0.444 - ETA: 2s - loss: 4.2087 - acc: 0.444 - ETA: 1s - loss:
 4.2086 - acc: 0.444 - 329s 1s/step - loss: 4.2079 - acc: 0.4448
Epoch 15 start at time  2019-08-04 12:52:02.470259
204/312 [==================>.....] - ETA: 6:25 - loss: 3.7982 - acc: 0.
406 - ETA: 5:57 - loss: 3.6529 - acc: 0.453 - ETA: 5:44 - loss: 3.9764 - acc:
0.458 - ETA: 5:21 - loss: 4.0874 - acc: 0.429 - ETA: 5:10 - loss: 4.1936 - ac
c: 0.431 - ETA: 5:03 - loss: 4.2159 - acc: 0.453 - ETA: 5:00 - loss: 4.1005 -
acc: 0.464 - ETA: 4:53 - loss: 4.0585 - acc: 0.468 - ETA: 4:48 - loss: 3.9489
```

```
- acc: 0.482 - ETA: 4:45 - loss: 3.9398 - acc: 0.478 - ETA: 4:40 - loss: 3.90
24 - acc: 0.485 - ETA: 4:39 - loss: 3.9532 - acc: 0.481 - ETA: 4:37 - loss:
 3.9581 - acc: 0.478 - ETA: 4:35 - loss: 3.9645 - acc: 0.475 - ETA: 4:34 - lo
ss: 4.0089 - acc: 0.470 - ETA: 4:31 - loss: 4.0883 - acc: 0.466 - ETA: 4:29 -
loss: 4.0708 - acc: 0.463 - ETA: 4:27 - loss: 4.0411 - acc: 0.465 - ETA: 4:25
- loss: 4.0164 - acc: 0.468 - ETA: 4:23 - loss: 3.9775 - acc: 0.475 - ETA: 4:
21 - loss: 4.0345 - acc: 0.471 - ETA: 4:21 - loss: 4.0339 - acc: 0.468 - ETA:
4:20 - loss: 4.0613 - acc: 0.468 - ETA: 4:20 - loss: 4.0776 - acc: 0.470 - ET
A: 4:19 - loss: 4.0942 - acc: 0.470 - ETA: 4:18 - loss: 4.0968 - acc: 0.471 -
ETA: 4:16 - loss: 4.1028 - acc: 0.469 - ETA: 4:16 - loss: 4.1080 - acc: 0.469
- ETA: 4:14 - loss: 4.1302 - acc: 0.466 - ETA: 4:13 - loss: 4.0971 - acc: 0.4
72 - ETA: 4:12 - loss: 4.1025 - acc: 0.468 - ETA: 4:12 - loss: 4.1101 - acc:
 0.467 - ETA: 4:11 - loss: 4.1164 - acc: 0.463 - ETA: 4:10 - loss: 4.0929 - a
cc: 0.463 - ETA: 4:08 - loss: 4.0891 - acc: 0.464 - ETA: 4:07 - loss: 4.0883
 - acc: 0.463 - ETA: 4:06 - loss: 4.0644 - acc: 0.463 - ETA: 4:06 - loss: 4.0
706 - acc: 0.462 - ETA: 4:05 - loss: 4.0896 - acc: 0.457 - ETA: 4:04 - loss:
 4.0731 - acc: 0.460 - ETA: 4:03 - loss: 4.0599 - acc: 0.461 - ETA: 4:02 - lo
ss: 4.0632 - acc: 0.459 - ETA: 4:02 - loss: 4.0641 - acc: 0.460 - ETA: 4:01 -
loss: 4.0710 - acc: 0.459 - ETA: 4:00 - loss: 4.0696 - acc: 0.457 - ETA: 3:59
- loss: 4.0585 - acc: 0.457 - ETA: 3:58 - loss: 4.0578 - acc: 0.460 - ETA: 3:
57 - loss: 4.0624 - acc: 0.458 - ETA: 3:56 - loss: 4.0574 - acc: 0.459 - ETA:
3:55 - loss: 4.0704 - acc: 0.458 - ETA: 3:54 - loss: 4.0590 - acc: 0.460 - ET
A: 3:53 - loss: 4.0348 - acc: 0.461 - ETA: 3:52 - loss: 4.0391 - acc: 0.461 -
ETA: 3:51 - loss: 4.0240 - acc: 0.462 - ETA: 3:50 - loss: 4.0090 - acc: 0.464
- ETA: 3:50 - loss: 3.9940 - acc: 0.465 - ETA: 3:49 - loss: 3.9884 - acc: 0.4
67 - ETA: 3:48 - loss: 3.9768 - acc: 0.467 - ETA: 3:47 - loss: 3.9857 - acc:
 0.466 - ETA: 3:46 - loss: 3.9931 - acc: 0.467 - ETA: 3:45 - loss: 4.0221 - a
cc: 0.465 - ETA: 3:44 - loss: 4.0212 - acc: 0.466 - ETA: 3:43 - loss: 4.0093
 - acc: 0.467 - ETA: 3:42 - loss: 4.0114 - acc: 0.466 - ETA: 3:41 - loss: 4.0
105 - acc: 0.464 - ETA: 3:41 - loss: 4.0066 - acc: 0.462 - ETA: 3:39 - loss:
 4.0175 - acc: 0.461 - ETA: 3:38 - loss: 4.0198 - acc: 0.460 - ETA: 3:37 - lo
ss: 4.0283 - acc: 0.460 - ETA: 3:37 - loss: 4.0222 - acc: 0.459 - ETA: 3:36 -
loss: 4.0282 - acc: 0.459 - ETA: 3:35 - loss: 4.0272 - acc: 0.459 - ETA: 3:34
- loss: 4.0184 - acc: 0.460 - ETA: 3:33 - loss: 4.0248 - acc: 0.459 - ETA: 3:
32 - loss: 4.0275 - acc: 0.459 - ETA: 3:31 - loss: 4.0360 - acc: 0.459 - ETA:
3:30 - loss: 4.0583 - acc: 0.457 - ETA: 3:30 - loss: 4.0628 - acc: 0.457 - ET
A: 3:29 - loss: 4.0566 - acc: 0.458 - ETA: 3:28 - loss: 4.0492 - acc: 0.458 -
ETA: 3:27 - loss: 4.0441 - acc: 0.458 - ETA: 3:27 - loss: 4.0473 - acc: 0.457
- ETA: 3:26 - loss: 4.0437 - acc: 0.459 - ETA: 3:25 - loss: 4.0443 - acc: 0.4
57 - ETA: 3:25 - loss: 4.0408 - acc: 0.459 - ETA: 3:24 - loss: 4.0409 - acc:
 0.459 - ETA: 3:23 - loss: 4.0467 - acc: 0.459 - ETA: 3:22 - loss: 4.0503 - a
cc: 0.460 - ETA: 3:22 - loss: 4.0465 - acc: 0.459 - ETA: 3:21 - loss: 4.0439
 - acc: 0.459 - ETA: 3:20 - loss: 4.0448 - acc: 0.458 - ETA: 3:20 - loss: 4.0
558 - acc: 0.458 - ETA: 3:19 - loss: 4.0568 - acc: 0.459 - ETA: 3:18 - loss:
 4.0616 - acc: 0.458 - ETA: 3:17 - loss: 4.0612 - acc: 0.456 - ETA: 3:17 - lo
ss: 4.0541 - acc: 0.457 - ETA: 3:16 - loss: 4.0636 - acc: 0.456 - ETA: 3:15 -
loss: 4.0574 - acc: 0.457 - ETA: 3:14 - loss: 4.0588 - acc: 0.457 - ETA: 3:13
- loss: 4.0593 - acc: 0.458 - ETA: 3:13 - loss: 4.0620 - acc: 0.458 - ETA: 3:
12 - loss: 4.0683 - acc: 0.457 - ETA: 3:11 - loss: 4.0703 - acc: 0.457 - ETA:
3:10 - loss: 4.0755 - acc: 0.457 - ETA: 3:10 - loss: 4.0706 - acc: 0.457 - ET
A: 3:09 - loss: 4.0783 - acc: 0.457 - ETA: 3:08 - loss: 4.0789 - acc: 0.457 -
ETA: 3:07 - loss: 4.0784 - acc: 0.456 - ETA: 3:06 - loss: 4.0785 - acc: 0.455
- ETA: 3:06 - loss: 4.0775 - acc: 0.454 - ETA: 3:05 - loss: 4.0725 - acc: 0.4
55 - ETA: 3:04 - loss: 4.0825 - acc: 0.454 - ETA: 3:04 - loss: 4.0851 - acc:
 0.453 - ETA: 3:03 - loss: 4.0812 - acc: 0.454 - ETA: 3:02 - loss: 4.0805 - a
cc: 0.454 - ETA: 3:01 - loss: 4.0851 - acc: 0.453 - ETA: 3:00 - loss: 4.0907
 - acc: 0.453 - ETA: 2:59 - loss: 4.0909 - acc: 0.452 - ETA: 2:58 - loss: 4.0
```

```
883 - acc: 0.453 - ETA: 2:57 - loss: 4.0831 - acc: 0.454 - ETA: 2:56 - loss:
 4.0805 - acc: 0.453 - ETA: 2:56 - loss: 4.0808 - acc: 0.453 - ETA: 2:55 - lo
ss: 4.0768 - acc: 0.454 - ETA: 2:54 - loss: 4.0784 - acc: 0.453 - ETA: 2:53 -
loss: 4.0771 - acc: 0.454 - ETA: 2:52 - loss: 4.0729 - acc: 0.455 - ETA: 2:51
- loss: 4.0764 - acc: 0.455 - ETA: 2:50 - loss: 4.0750 - acc: 0.455 - ETA: 2:
49 - loss: 4.0843 - acc: 0.454 - ETA: 2:48 - loss: 4.0840 - acc: 0.454 - ETA:
2:47 - loss: 4.0933 - acc: 0.453 - ETA: 2:46 - loss: 4.0942 - acc: 0.452 - ET
A: 2:46 - loss: 4.0919 - acc: 0.452 - ETA: 2:45 - loss: 4.0901 - acc: 0.453 -
ETA: 2:44 - loss: 4.0972 - acc: 0.451 - ETA: 2:43 - loss: 4.0992 - acc: 0.451
- ETA: 2:42 - loss: 4.1035 - acc: 0.451 - ETA: 2:41 - loss: 4.0998 - acc: 0.4
51 - ETA: 2:41 - loss: 4.0946 - acc: 0.451 - ETA: 2:40 - loss: 4.0890 - acc:
 0.452 - ETA: 2:39 - loss: 4.0900 - acc: 0.452 - ETA: 2:38 - loss: 4.0877 - a
cc: 0.452 - ETA: 2:37 - loss: 4.0823 - acc: 0.453 - ETA: 2:36 - loss: 4.0869
 - acc: 0.452 - ETA: 2:35 - loss: 4.0861 - acc: 0.451 - ETA: 2:35 - loss: 4.0
908 - acc: 0.451 - ETA: 2:34 - loss: 4.0911 - acc: 0.450 - ETA: 2:33 - loss:
 4.0930 - acc: 0.450 - ETA: 2:32 - loss: 4.0895 - acc: 0.451 - ETA: 2:31 - lo
ss: 4.0940 - acc: 0.451 - ETA: 2:30 - loss: 4.0942 - acc: 0.451 - ETA: 2:29 -
loss: 4.0876 - acc: 0.451 - ETA: 2:28 - loss: 4.0881 - acc: 0.451 - ETA: 2:27
- loss: 4.0882 - acc: 0.451 - ETA: 2:26 - loss: 4.0891 - acc: 0.452 - ETA: 2:
25 - loss: 4.0876 - acc: 0.451 - ETA: 2:24 - loss: 4.0874 - acc: 0.452 - ETA:
2:23 - loss: 4.0925 - acc: 0.451 - ETA: 2:22 - loss: 4.0918 - acc: 0.451 - ET
A: 2:21 - loss: 4.0959 - acc: 0.451 - ETA: 2:20 - loss: 4.0928 - acc: 0.451 -
ETA: 2:19 - loss: 4.0892 - acc: 0.451 - ETA: 2:19 - loss: 4.0945 - acc: 0.450
- ETA: 2:18 - loss: 4.0990 - acc: 0.450 - ETA: 2:17 - loss: 4.0958 - acc: 0.4
50 - ETA: 2:16 - loss: 4.0896 - acc: 0.451 - ETA: 2:15 - loss: 4.0838 - acc:
 0.451 - ETA: 2:14 - loss: 4.0858 - acc: 0.451 - ETA: 2:13 - loss: 4.0838 - a
cc: 0.452 - ETA: 2:12 - loss: 4.0834 - acc: 0.452 - ETA: 2:12 - loss: 4.0787
 - acc: 0.453 - ETA: 2:11 - loss: 4.0805 - acc: 0.453 - ETA: 2:10 - loss: 4.0
792 - acc: 0.453 - ETA: 2:09 - loss: 4.0770 - acc: 0.453 - ETA: 2:08 - loss:
 4.0789 - acc: 0.453 - ETA: 2:07 - loss: 4.0863 - acc: 0.452 - ETA: 2:06 - lo
ss: 4.0862 - acc: 0.452 - ETA: 2:05 - loss: 4.0837 - acc: 0.452 - ETA: 2:05 -
loss: 4.0866 - acc: 0.452 - ETA: 2:04 - loss: 4.0826 - acc: 0.452 - ETA: 2:03
- loss: 4.0841 - acc: 0.452 - ETA: 2:02 - loss: 4.0856 - acc: 0.452 - ETA: 2:
01 - loss: 4.0889 - acc: 0.451 - ETA: 2:00 - loss: 4.0870 - acc: 0.452 - ETA:
1:59 - loss: 4.0872 - acc: 0.452 - ETA: 1:58 - loss: 4.0855 - acc: 0.453 - ET
A: 1:57 - loss: 4.0836 - acc: 0.453 - ETA: 1:56 - loss: 4.0865 - acc: 0.453 -
ETA: 1:55 - loss: 4.0815 - acc: 0.453 - ETA: 1:55 - loss: 4.0802 - acc: 0.454
- ETA: 1:54 - loss: 4.0803 - acc: 0.453 - ETA: 1:53 - loss: 4.0823 - acc: 0.4
54 - ETA: 1:52 - loss: 4.0870 - acc: 0.452 - ETA: 1:51 - loss: 4.0848 - acc:
 0.452 - ETA: 1:50 - loss: 4.0847 - acc: 0.452 - ETA: 1:49 - loss: 4.0839 - a
cc: 0.452 - ETA: 1:48 - loss: 4.0857 - acc: 0.452 - ETA: 1:47 - loss: 4.0890
 - acc: 0.452 - ETA: 1:46 - loss: 4.0867 - acc: 0.453 - ETA: 1:45 - loss: 4.0
895 - acc: 0.453 - ETA: 1:44 - loss: 4.0958 - acc: 0.453 - ETA: 1:43 - loss:
 4.0963 - acc: 0.453 - ETA: 1:42 - loss: 4.0944 - acc: 0.454 - ETA: 1:41 - lo
ss: 4.0951 - acc: 0.4537312/312 [==============================] - ETA: 1:40
 - loss: 4.0979 - acc: 0.453 - ETA: 1:40 - loss: 4.1026 - acc: 0.453 - ETA:
 1:39 - loss: 4.1031 - acc: 0.453 - ETA: 1:38 - loss: 4.0975 - acc: 0.454 - E
TA: 1:37 - loss: 4.0981 - acc: 0.453 - ETA: 1:36 - loss: 4.1015 - acc: 0.453
 - ETA: 1:35 - loss: 4.1075 - acc: 0.453 - ETA: 1:34 - loss: 4.1078 - acc: 0.
453 - ETA: 1:33 - loss: 4.1074 - acc: 0.453 - ETA: 1:32 - loss: 4.1108 - acc:
0.453 - ETA: 1:31 - loss: 4.1191 - acc: 0.452 - ETA: 1:30 - loss: 4.1170 - ac
c: 0.452 - ETA: 1:29 - loss: 4.1224 - acc: 0.451 - ETA: 1:28 - loss: 4.1192 -
acc: 0.451 - ETA: 1:27 - loss: 4.1248 - acc: 0.451 - ETA: 1:26 - loss: 4.1264
- acc: 0.451 - ETA: 1:25 - loss: 4.1232 - acc: 0.452 - ETA: 1:24 - loss: 4.12
18 - acc: 0.452 - ETA: 1:23 - loss: 4.1257 - acc: 0.451 - ETA: 1:22 - loss:
 4.1273 - acc: 0.451 - ETA: 1:21 - loss: 4.1259 - acc: 0.451 - ETA: 1:21 - lo
ss: 4.1285 - acc: 0.451 - ETA: 1:20 - loss: 4.1282 - acc: 0.451 - ETA: 1:19 -
```

```
loss: 4.1284 - acc: 0.450 - ETA: 1:18 - loss: 4.1258 - acc: 0.450 - ETA: 1:17
- loss: 4.1242 - acc: 0.451 - ETA: 1:16 - loss: 4.1235 - acc: 0.451 - ETA: 1:
15 - loss: 4.1241 - acc: 0.451 - ETA: 1:14 - loss: 4.1210 - acc: 0.452 - ETA:
1:13 - loss: 4.1210 - acc: 0.451 - ETA: 1:12 - loss: 4.1182 - acc: 0.452 - ET
A: 1:11 - loss: 4.1151 - acc: 0.453 - ETA: 1:10 - loss: 4.1142 - acc: 0.453 -
ETA: 1:09 - loss: 4.1120 - acc: 0.453 - ETA: 1:08 - loss: 4.1129 - acc: 0.453
- ETA: 1:07 - loss: 4.1091 - acc: 0.454 - ETA: 1:07 - loss: 4.1088 - acc: 0.4
54 - ETA: 1:06 - loss: 4.1083 - acc: 0.454 - ETA: 1:05 - loss: 4.1057 - acc:
 0.454 - ETA: 1:04 - loss: 4.1074 - acc: 0.454 - ETA: 1:03 - loss: 4.1096 - a
cc: 0.453 - ETA: 1:02 - loss: 4.1089 - acc: 0.453 - ETA: 1:01 - loss: 4.1053
 - acc: 0.454 - ETA: 1:00 - loss: 4.1097 - acc: 0.453 - ETA: 59s - loss: 4.10
89 - acc: 0.453 - ETA: 58s - loss: 4.1099 - acc: 0.45 - ETA: 57s - loss: 4.11
03 - acc: 0.45 - ETA: 56s - loss: 4.1103 - acc: 0.45 - ETA: 55s - loss: 4.110
1 - acc: 0.45 - ETA: 54s - loss: 4.1086 - acc: 0.45 - ETA: 53s - loss: 4.1063
- acc: 0.45 - ETA: 52s - loss: 4.1069 - acc: 0.45 - ETA: 51s - loss: 4.1065 -
acc: 0.45 - ETA: 50s - loss: 4.1088 - acc: 0.45 - ETA: 49s - loss: 4.1051 - a
cc: 0.45 - ETA: 49s - loss: 4.1067 - acc: 0.45 - ETA: 48s - loss: 4.1065 - ac
c: 0.45 - ETA: 47s - loss: 4.1046 - acc: 0.45 - ETA: 46s - loss: 4.1065 - ac
c: 0.45 - ETA: 45s - loss: 4.1063 - acc: 0.45 - ETA: 44s - loss: 4.1041 - ac
c: 0.45 - ETA: 43s - loss: 4.1011 - acc: 0.45 - ETA: 42s - loss: 4.0981 - ac
c: 0.45 - ETA: 41s - loss: 4.1023 - acc: 0.45 - ETA: 40s - loss: 4.1018 - ac
c: 0.45 - ETA: 39s - loss: 4.1033 - acc: 0.45 - ETA: 38s - loss: 4.1021 - ac
c: 0.45 - ETA: 37s - loss: 4.1031 - acc: 0.45 - ETA: 36s - loss: 4.1038 - ac
c: 0.45 - ETA: 36s - loss: 4.1052 - acc: 0.45 - ETA: 35s - loss: 4.1044 - ac
c: 0.45 - ETA: 34s - loss: 4.1033 - acc: 0.45 - ETA: 33s - loss: 4.1046 - ac
c: 0.45 - ETA: 32s - loss: 4.1008 - acc: 0.45 - ETA: 31s - loss: 4.0980 - ac
c: 0.45 - ETA: 30s - loss: 4.0978 - acc: 0.45 - ETA: 29s - loss: 4.0938 - ac
c: 0.45 - ETA: 28s - loss: 4.0917 - acc: 0.45 - ETA: 27s - loss: 4.0887 - ac
c: 0.45 - ETA: 26s - loss: 4.0872 - acc: 0.45 - ETA: 25s - loss: 4.0852 - ac
c: 0.45 - ETA: 24s - loss: 4.0853 - acc: 0.45 - ETA: 23s - loss: 4.0883 - ac
c: 0.45 - ETA: 22s - loss: 4.0889 - acc: 0.45 - ETA: 21s - loss: 4.0900 - ac
c: 0.45 - ETA: 20s - loss: 4.0924 - acc: 0.45 - ETA: 19s - loss: 4.0914 - ac
c: 0.45 - ETA: 19s - loss: 4.0911 - acc: 0.45 - ETA: 18s - loss: 4.0916 - ac
c: 0.45 - ETA: 17s - loss: 4.0900 - acc: 0.45 - ETA: 16s - loss: 4.0909 - ac
c: 0.45 - ETA: 15s - loss: 4.0919 - acc: 0.45 - ETA: 14s - loss: 4.0936 - ac
c: 0.45 - ETA: 13s - loss: 4.0950 - acc: 0.45 - ETA: 12s - loss: 4.0976 - ac
c: 0.45 - ETA: 11s - loss: 4.0994 - acc: 0.45 - ETA: 10s - loss: 4.0976 - ac
c: 0.45 - ETA: 9s - loss: 4.0961 - acc: 0.4548 - ETA: 8s - loss: 4.0960 - ac
c: 0.454 - ETA: 7s - loss: 4.0974 - acc: 0.454 - ETA: 6s - loss: 4.0971 - ac
c: 0.454 - ETA: 5s - loss: 4.0956 - acc: 0.455 - ETA: 4s - loss: 4.0945 - ac
c: 0.455 - ETA: 3s - loss: 4.0919 - acc: 0.455 - ETA: 2s - loss: 4.0926 - ac
c: 0.454 - ETA: 1s - loss: 4.0953 - acc: 0.454 - ETA: 0s - loss: 4.0953 - ac
c: 0.454 - 298s 955ms/step - loss: 4.0945 - acc: 0.4549
Epoch 16 start at time  2019-08-04 13:44:30.796746
204/312 [==================>...........] - ETA: 5:11 - loss: 3.7437 - acc: 0.
531 - ETA: 5:10 - loss: 3.6109 - acc: 0.500 - ETA: 5:07 - loss: 3.8986 - acc:
0.468 - ETA: 5:09 - loss: 4.0377 - acc: 0.445 - ETA: 5:04 - loss: 4.1367 - ac
c: 0.437 - ETA: 5:07 - loss: 4.1621 - acc: 0.458 - ETA: 5:09 - loss: 4.0543 -
acc: 0.459 - ETA: 5:06 - loss: 3.9992 - acc: 0.464 - ETA: 5:02 - loss: 3.8809
- acc: 0.479 - ETA: 5:00 - loss: 3.8676 - acc: 0.475 - ETA: 4:58 - loss: 3.82
91 - acc: 0.485 - ETA: 4:55 - loss: 3.8685 - acc: 0.487 - ETA: 4:53 - loss:
 3.8665 - acc: 0.485 - ETA: 4:52 - loss: 3.8676 - acc: 0.486 - ETA: 4:54 - lo
ss: 3.9130 - acc: 0.479 - ETA: 4:52 - loss: 3.9960 - acc: 0.472 - ETA: 4:50 -
loss: 3.9709 - acc: 0.468 - ETA: 4:48 - loss: 3.9406 - acc: 0.470 - ETA: 4:47
- loss: 3.9151 - acc: 0.473 - ETA: 4:47 - loss: 3.8820 - acc: 0.481 - ETA: 4:
45 - loss: 3.9422 - acc: 0.476 - ETA: 4:43 - loss: 3.9452 - acc: 0.471 - ETA:
4:42 - loss: 3.9661 - acc: 0.472 - ETA: 4:41 - loss: 3.9794 - acc: 0.477 - ET
```

```
A: 4:42 - loss: 4.0009 - acc: 0.477 - ETA: 4:41 - loss: 3.9964 - acc: 0.479 -
ETA: 4:40 - loss: 4.0032 - acc: 0.476 - ETA: 4:39 - loss: 4.0078 - acc: 0.476
- ETA: 4:39 - loss: 4.0333 - acc: 0.474 - ETA: 4:38 - loss: 4.0002 - acc: 0.4
80 - ETA: 4:36 - loss: 4.0027 - acc: 0.479 - ETA: 4:35 - loss: 4.0097 - acc:
 0.477 - ETA: 4:34 - loss: 4.0133 - acc: 0.474 - ETA: 4:33 - loss: 3.9915 - a
cc: 0.474 - ETA: 4:33 - loss: 3.9894 - acc: 0.475 - ETA: 4:33 - loss: 3.9862
 - acc: 0.474 - ETA: 4:32 - loss: 3.9650 - acc: 0.476 - ETA: 4:31 - loss: 3.9
690 - acc: 0.473 - ETA: 4:30 - loss: 3.9914 - acc: 0.467 - ETA: 4:29 - loss:
 3.9748 - acc: 0.471 - ETA: 4:28 - loss: 3.9599 - acc: 0.474 - ETA: 4:27 - lo
ss: 3.9617 - acc: 0.471 - ETA: 4:26 - loss: 3.9629 - acc: 0.470 - ETA: 4:26 -
loss: 3.9691 - acc: 0.470 - ETA: 4:25 - loss: 3.9649 - acc: 0.469 - ETA: 4:24
- loss: 3.9528 - acc: 0.470 - ETA: 4:24 - loss: 3.9542 - acc: 0.471 - ETA: 4:
23 - loss: 3.9580 - acc: 0.470 - ETA: 4:21 - loss: 3.9531 - acc: 0.472 - ETA:
4:20 - loss: 3.9667 - acc: 0.468 - ETA: 4:19 - loss: 3.9535 - acc: 0.470 - ET
A: 4:18 - loss: 3.9286 - acc: 0.474 - ETA: 4:18 - loss: 3.9340 - acc: 0.473 -
ETA: 4:17 - loss: 3.9205 - acc: 0.474 - ETA: 4:15 - loss: 3.9073 - acc: 0.475
- ETA: 4:14 - loss: 3.8943 - acc: 0.476 - ETA: 4:13 - loss: 3.8878 - acc: 0.4
78 - ETA: 4:12 - loss: 3.8780 - acc: 0.477 - ETA: 4:11 - loss: 3.8873 - acc:
 0.477 - ETA: 4:10 - loss: 3.8933 - acc: 0.476 - ETA: 4:09 - loss: 3.9231 - a
cc: 0.474 - ETA: 4:08 - loss: 3.9234 - acc: 0.476 - ETA: 4:07 - loss: 3.9106
 - acc: 0.478 - ETA: 4:06 - loss: 3.9109 - acc: 0.477 - ETA: 4:05 - loss: 3.9
078 - acc: 0.475 - ETA: 4:04 - loss: 3.9049 - acc: 0.473 - ETA: 4:03 - loss:
 3.9160 - acc: 0.472 - ETA: 4:02 - loss: 3.9191 - acc: 0.471 - ETA: 4:01 - lo
ss: 3.9286 - acc: 0.471 - ETA: 4:00 - loss: 3.9247 - acc: 0.470 - ETA: 3:59 -
loss: 3.9313 - acc: 0.470 - ETA: 3:58 - loss: 3.9322 - acc: 0.469 - ETA: 3:57
- loss: 3.9234 - acc: 0.470 - ETA: 3:56 - loss: 3.9310 - acc: 0.470 - ETA: 3:
55 - loss: 3.9331 - acc: 0.470 - ETA: 3:54 - loss: 3.9433 - acc: 0.469 - ETA:
3:54 - loss: 3.9662 - acc: 0.467 - ETA: 3:53 - loss: 3.9716 - acc: 0.467 - ET
A: 3:51 - loss: 3.9661 - acc: 0.468 - ETA: 3:50 - loss: 3.9615 - acc: 0.468 -
ETA: 3:49 - loss: 3.9567 - acc: 0.468 - ETA: 3:48 - loss: 3.9622 - acc: 0.467
- ETA: 3:47 - loss: 3.9599 - acc: 0.468 - ETA: 3:46 - loss: 3.9606 - acc: 0.4
66 - ETA: 3:45 - loss: 3.9577 - acc: 0.468 - ETA: 3:44 - loss: 3.9583 - acc:
 0.468 - ETA: 3:43 - loss: 3.9656 - acc: 0.468 - ETA: 3:42 - loss: 3.9690 - a
cc: 0.470 - ETA: 3:41 - loss: 3.9655 - acc: 0.469 - ETA: 3:40 - loss: 3.9618
 - acc: 0.470 - ETA: 3:39 - loss: 3.9623 - acc: 0.468 - ETA: 3:38 - loss: 3.9
730 - acc: 0.468 - ETA: 3:37 - loss: 3.9738 - acc: 0.468 - ETA: 3:36 - loss:
 3.9775 - acc: 0.468 - ETA: 3:35 - loss: 3.9769 - acc: 0.467 - ETA: 3:35 - lo
ss: 3.9698 - acc: 0.468 - ETA: 3:33 - loss: 3.9784 - acc: 0.466 - ETA: 3:32 -
loss: 3.9728 - acc: 0.468 - ETA: 3:31 - loss: 3.9740 - acc: 0.467 - ETA: 3:30
- loss: 3.9754 - acc: 0.468 - ETA: 3:29 - loss: 3.9775 - acc: 0.468 - ETA: 3:
28 - loss: 3.9826 - acc: 0.467 - ETA: 3:27 - loss: 3.9849 - acc: 0.468 - ETA:
3:26 - loss: 3.9910 - acc: 0.468 - ETA: 3:25 - loss: 3.9854 - acc: 0.467 - ET
A: 3:24 - loss: 3.9928 - acc: 0.467 - ETA: 3:24 - loss: 3.9921 - acc: 0.467 -
ETA: 3:23 - loss: 3.9906 - acc: 0.466 - ETA: 3:22 - loss: 3.9913 - acc: 0.465
- ETA: 3:21 - loss: 3.9897 - acc: 0.464 - ETA: 3:20 - loss: 3.9841 - acc: 0.4
65 - ETA: 3:19 - loss: 3.9943 - acc: 0.464 - ETA: 3:18 - loss: 3.9974 - acc:
 0.464 - ETA: 3:17 - loss: 3.9942 - acc: 0.465 - ETA: 3:16 - loss: 3.9924 - a
cc: 0.464 - ETA: 3:15 - loss: 3.9980 - acc: 0.463 - ETA: 3:14 - loss: 4.0032
 - acc: 0.462 - ETA: 3:13 - loss: 4.0029 - acc: 0.462 - ETA: 3:12 - loss: 4.0
005 - acc: 0.464 - ETA: 3:11 - loss: 3.9964 - acc: 0.464 - ETA: 3:10 - loss:
 3.9945 - acc: 0.463 - ETA: 3:09 - loss: 3.9954 - acc: 0.463 - ETA: 3:08 - lo
ss: 3.9909 - acc: 0.463 - ETA: 3:07 - loss: 3.9921 - acc: 0.464 - ETA: 3:06 -
loss: 3.9906 - acc: 0.464 - ETA: 3:05 - loss: 3.9871 - acc: 0.465 - ETA: 3:04
- loss: 3.9913 - acc: 0.465 - ETA: 3:03 - loss: 3.9894 - acc: 0.464 - ETA: 3:
02 - loss: 3.9990 - acc: 0.463 - ETA: 3:01 - loss: 3.9978 - acc: 0.463 - ETA:
3:00 - loss: 4.0056 - acc: 0.462 - ETA: 2:59 - loss: 4.0067 - acc: 0.462 - ET
A: 2:58 - loss: 4.0039 - acc: 0.462 - ETA: 2:57 - loss: 4.0020 - acc: 0.463 -
```

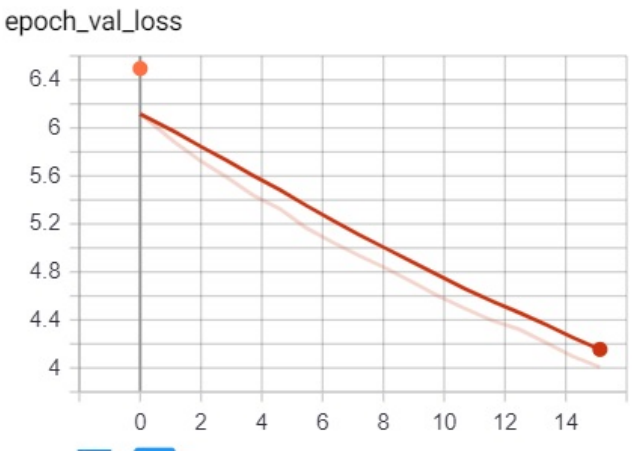
```
ETA: 2:56 - loss: 4.0089 - acc: 0.462 - ETA: 2:55 - loss: 4.0104 - acc: 0.461
- ETA: 2:54 - loss: 4.0148 - acc: 0.461 - ETA: 2:53 - loss: 4.0108 - acc: 0.4
62 - ETA: 2:52 - loss: 4.0058 - acc: 0.462 - ETA: 2:51 - loss: 4.0005 - acc:
 0.462 - ETA: 2:50 - loss: 4.0016 - acc: 0.462 - ETA: 2:49 - loss: 3.9988 - a
cc: 0.462 - ETA: 2:48 - loss: 3.9941 - acc: 0.462 - ETA: 2:47 - loss: 3.9995
 - acc: 0.461 - ETA: 2:46 - loss: 3.9985 - acc: 0.460 - ETA: 2:45 - loss: 4.0
032 - acc: 0.461 - ETA: 2:44 - loss: 4.0035 - acc: 0.460 - ETA: 2:43 - loss:
 4.0046 - acc: 0.460 - ETA: 2:42 - loss: 4.0016 - acc: 0.461 - ETA: 2:41 - lo
ss: 4.0064 - acc: 0.461 - ETA: 2:40 - loss: 4.0075 - acc: 0.461 - ETA: 2:39 -
loss: 4.0015 - acc: 0.461 - ETA: 2:38 - loss: 4.0030 - acc: 0.461 - ETA: 2:37
- loss: 4.0033 - acc: 0.461 - ETA: 2:36 - loss: 4.0045 - acc: 0.461 - ETA: 2:
35 - loss: 4.0024 - acc: 0.461 - ETA: 2:34 - loss: 4.0028 - acc: 0.461 - ETA:
2:33 - loss: 4.0074 - acc: 0.461 - ETA: 2:32 - loss: 4.0071 - acc: 0.461 - ET
A: 2:31 - loss: 4.0110 - acc: 0.461 - ETA: 2:30 - loss: 4.0079 - acc: 0.461 -
ETA: 2:29 - loss: 4.0050 - acc: 0.461 - ETA: 2:28 - loss: 4.0100 - acc: 0.460
- ETA: 2:27 - loss: 4.0146 - acc: 0.460 - ETA: 2:26 - loss: 4.0106 - acc: 0.4
61 - ETA: 2:25 - loss: 4.0045 - acc: 0.461 - ETA: 2:24 - loss: 3.9980 - acc:
 0.462 - ETA: 2:23 - loss: 3.9995 - acc: 0.461 - ETA: 2:22 - loss: 3.9983 - a
cc: 0.462 - ETA: 2:21 - loss: 3.9973 - acc: 0.461 - ETA: 2:20 - loss: 3.9930
 - acc: 0.462 - ETA: 2:19 - loss: 3.9947 - acc: 0.462 - ETA: 2:18 - loss: 3.9
946 - acc: 0.461 - ETA: 2:17 - loss: 3.9926 - acc: 0.462 - ETA: 2:16 - loss:
 3.9946 - acc: 0.462 - ETA: 2:15 - loss: 4.0018 - acc: 0.461 - ETA: 2:14 - lo
ss: 4.0015 - acc: 0.461 - ETA: 2:13 - loss: 3.9999 - acc: 0.461 - ETA: 2:12 -
loss: 4.0026 - acc: 0.460 - ETA: 2:11 - loss: 3.9982 - acc: 0.460 - ETA: 2:10
- loss: 3.9998 - acc: 0.460 - ETA: 2:09 - loss: 4.0011 - acc: 0.460 - ETA: 2:
08 - loss: 4.0048 - acc: 0.459 - ETA: 2:07 - loss: 4.0034 - acc: 0.459 - ETA:
2:06 - loss: 4.0043 - acc: 0.460 - ETA: 2:05 - loss: 4.0032 - acc: 0.460 - ET
A: 2:04 - loss: 4.0004 - acc: 0.460 - ETA: 2:03 - loss: 4.0032 - acc: 0.460 -
ETA: 2:02 - loss: 3.9979 - acc: 0.461 - ETA: 2:01 - loss: 3.9967 - acc: 0.461
- ETA: 2:00 - loss: 3.9970 - acc: 0.461 - ETA: 1:59 - loss: 3.9990 - acc: 0.4
61 - ETA: 1:58 - loss: 4.0034 - acc: 0.459 - ETA: 1:57 - loss: 4.0015 - acc:
 0.459 - ETA: 1:56 - loss: 4.0013 - acc: 0.459 - ETA: 1:55 - loss: 4.0004 - a
cc: 0.459 - ETA: 1:54 - loss: 4.0016 - acc: 0.459 - ETA: 1:53 - loss: 4.0048
 - acc: 0.459 - ETA: 1:52 - loss: 4.0020 - acc: 0.460 - ETA: 1:51 - loss: 4.0
050 - acc: 0.460 - ETA: 1:50 - loss: 4.0115 - acc: 0.460 - ETA: 1:49 - loss:
 4.0107 - acc: 0.460 - ETA: 1:48 - loss: 4.0092 - acc: 0.460 - ETA: 1:47 - lo
ss: 4.0098 - acc: 0.4602312/312 [==============================] - ETA: 1:46
 - loss: 4.0125 - acc: 0.460 - ETA: 1:45 - loss: 4.0173 - acc: 0.460 - ETA:
 1:44 - loss: 4.0185 - acc: 0.460 - ETA: 1:43 - loss: 4.0132 - acc: 0.460 - E
TA: 1:42 - loss: 4.0136 - acc: 0.460 - ETA: 1:41 - loss: 4.0172 - acc: 0.460
 - ETA: 1:40 - loss: 4.0231 - acc: 0.460 - ETA: 1:39 - loss: 4.0232 - acc: 0.
460 - ETA: 1:38 - loss: 4.0225 - acc: 0.460 - ETA: 1:37 - loss: 4.0256 - acc:
0.460 - ETA: 1:36 - loss: 4.0340 - acc: 0.459 - ETA: 1:35 - loss: 4.0323 - ac
c: 0.459 - ETA: 1:34 - loss: 4.0380 - acc: 0.459 - ETA: 1:33 - loss: 4.0347 -
acc: 0.459 - ETA: 1:32 - loss: 4.0403 - acc: 0.458 - ETA: 1:31 - loss: 4.0420
- acc: 0.458 - ETA: 1:30 - loss: 4.0392 - acc: 0.459 - ETA: 1:29 - loss: 4.03
74 - acc: 0.459 - ETA: 1:28 - loss: 4.0411 - acc: 0.459 - ETA: 1:27 - loss:
 4.0425 - acc: 0.459 - ETA: 1:26 - loss: 4.0406 - acc: 0.458 - ETA: 1:25 - lo
ss: 4.0426 - acc: 0.458 - ETA: 1:24 - loss: 4.0425 - acc: 0.459 - ETA: 1:23 -
loss: 4.0424 - acc: 0.458 - ETA: 1:22 - loss: 4.0401 - acc: 0.458 - ETA: 1:21
- loss: 4.0381 - acc: 0.459 - ETA: 1:20 - loss: 4.0375 - acc: 0.459 - ETA: 1:
19 - loss: 4.0384 - acc: 0.458 - ETA: 1:18 - loss: 4.0352 - acc: 0.459 - ETA:
1:17 - loss: 4.0354 - acc: 0.458 - ETA: 1:16 - loss: 4.0325 - acc: 0.459 - ET
A: 1:15 - loss: 4.0295 - acc: 0.459 - ETA: 1:14 - loss: 4.0285 - acc: 0.460 -
ETA: 1:13 - loss: 4.0262 - acc: 0.460 - ETA: 1:12 - loss: 4.0278 - acc: 0.460
- ETA: 1:11 - loss: 4.0236 - acc: 0.461 - ETA: 1:10 - loss: 4.0227 - acc: 0.4
61 - ETA: 1:09 - loss: 4.0218 - acc: 0.461 - ETA: 1:08 - loss: 4.0193 - acc:
```

```
 0.461 - ETA: 1:07 - loss: 4.0208 - acc: 0.460 - ETA: 1:06 - loss: 4.0232 - a
cc: 0.460 - ETA: 1:05 - loss: 4.0221 - acc: 0.461 - ETA: 1:04 - loss: 4.0190
 - acc: 0.461 - ETA: 1:03 - loss: 4.0235 - acc: 0.460 - ETA: 1:02 - loss: 4.0
226 - acc: 0.460 - ETA: 1:01 - loss: 4.0236 - acc: 0.459 - ETA: 1:00 - loss:
 4.0239 - acc: 0.459 - ETA: 59s - loss: 4.0242 - acc: 0.459 - ETA: 58s - los
s: 4.0238 - acc: 0.46 - ETA: 57s - loss: 4.0222 - acc: 0.46 - ETA: 56s - los
s: 4.0200 - acc: 0.46 - ETA: 55s - loss: 4.0206 - acc: 0.46 - ETA: 54s - los
s: 4.0201 - acc: 0.46 - ETA: 53s - loss: 4.0223 - acc: 0.46 - ETA: 52s - los
s: 4.0187 - acc: 0.46 - ETA: 51s - loss: 4.0203 - acc: 0.46 - ETA: 50s - los
s: 4.0199 - acc: 0.46 - ETA: 49s - loss: 4.0180 - acc: 0.46 - ETA: 48s - los
s: 4.0197 - acc: 0.46 - ETA: 47s - loss: 4.0196 - acc: 0.46 - ETA: 46s - los
s: 4.0172 - acc: 0.46 - ETA: 45s - loss: 4.0144 - acc: 0.46 - ETA: 44s - los
s: 4.0117 - acc: 0.46 - ETA: 43s - loss: 4.0162 - acc: 0.46 - ETA: 42s - los
s: 4.0158 - acc: 0.46 - ETA: 41s - loss: 4.0174 - acc: 0.46 - ETA: 40s - los
s: 4.0161 - acc: 0.46 - ETA: 39s - loss: 4.0176 - acc: 0.46 - ETA: 38s - los
s: 4.0180 - acc: 0.46 - ETA: 37s - loss: 4.0193 - acc: 0.46 - ETA: 36s - los
s: 4.0185 - acc: 0.46 - ETA: 35s - loss: 4.0171 - acc: 0.46 - ETA: 34s - los
s: 4.0183 - acc: 0.46 - ETA: 33s - loss: 4.0142 - acc: 0.46 - ETA: 32s - los
s: 4.0114 - acc: 0.46 - ETA: 31s - loss: 4.0113 - acc: 0.46 - ETA: 30s - los
s: 4.0070 - acc: 0.46 - ETA: 29s - loss: 4.0049 - acc: 0.46 - ETA: 28s - los
s: 4.0016 - acc: 0.46 - ETA: 27s - loss: 4.0004 - acc: 0.46 - ETA: 26s - los
s: 3.9983 - acc: 0.46 - ETA: 25s - loss: 3.9981 - acc: 0.46 - ETA: 24s - los
s: 4.0012 - acc: 0.46 - ETA: 23s - loss: 4.0016 - acc: 0.46 - ETA: 22s - los
s: 4.0026 - acc: 0.46 - ETA: 21s - loss: 4.0054 - acc: 0.46 - ETA: 20s - los
s: 4.0047 - acc: 0.46 - ETA: 19s - loss: 4.0045 - acc: 0.46 - ETA: 18s - los
s: 4.0047 - acc: 0.46 - ETA: 17s - loss: 4.0029 - acc: 0.46 - ETA: 16s - los
s: 4.0033 - acc: 0.46 - ETA: 15s - loss: 4.0043 - acc: 0.46 - ETA: 14s - los
s: 4.0065 - acc: 0.46 - ETA: 13s - loss: 4.0075 - acc: 0.46 - ETA: 12s - los
s: 4.0102 - acc: 0.46 - ETA: 11s - loss: 4.0118 - acc: 0.46 - ETA: 10s - los
s: 4.0099 - acc: 0.46 - ETA: 9s - loss: 4.0082 - acc: 0.4638 - ETA: 8s - los
s: 4.0082 - acc: 0.463 - ETA: 7s - loss: 4.0099 - acc: 0.463 - ETA: 6s - los
s: 4.0092 - acc: 0.463 - ETA: 5s - loss: 4.0080 - acc: 0.463 - ETA: 4s - los
s: 4.0065 - acc: 0.463 - ETA: 3s - loss: 4.0038 - acc: 0.463 - ETA: 2s - los
s: 4.0046 - acc: 0.463 - ETA: 1s - loss: 4.0071 - acc: 0.463 - ETA: 0s - los
s: 4.0068 - acc: 0.463 - 312s 1000ms/step - loss: 4.0059 - acc: 0.4639
Epoch 17 start at time  2019-08-04 14:37:38.830766
```

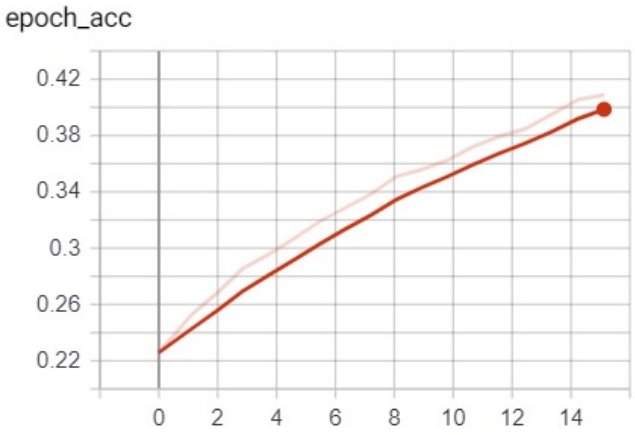
```
---------------------------------------------------------------------------
KeyboardInterrupt                         Traceback (most recent call last)
<ipython-input-189-b9f99572e944> in <module>
      3     generator = generator_function(train_length,batch_size)
      4     cv_generator = generator_function(cv_length,32,"cv")
----> 5     model.fit_generator(generator, epochs=1, steps_per_epoch=train_st
eps,verbose=0,callbacks=[tensorboard],validation_data=cv_generator,validation
_steps=cv_steps)
      6     model.save_weights("model_epoch_{}.h5".format(i))

~\AppData\Local\Continuum\anaconda3\lib\site-packages\tensorflow\python\keras
\engine\training.py in fit_generator(self, generator, steps_per_epoch, epoch
s, verbose, callbacks, validation_data, validation_steps, class_weight, max_q
ueue_size, workers, use_multiprocessing, shuffle, initial_epoch)
   1424         use_multiprocessing=use_multiprocessing,
   1425         shuffle=shuffle,
-> 1426         initial_epoch=initial_epoch)
   1427
   1428   def evaluate_generator(self,

~\AppData\Local\Continuum\anaconda3\lib\site-packages\tensorflow\python\keras
\engine\training_generator.py in model_iteration(model, data, steps_per_epoc
h, epochs, verbose, callbacks, validation_data, validation_steps, class_weigh
t, max_queue_size, workers, use_multiprocessing, shuffle, initial_epoch, mod
e, batch_size, **kwargs)
    189       progbar.on_batch_begin(step, batch_logs)
    190
--> 191       batch_outs = batch_function(*batch_data)
    192       if not isinstance(batch_outs, list):
    193         batch_outs = [batch_outs]

~\AppData\Local\Continuum\anaconda3\lib\site-packages\tensorflow\python\keras
\engine\training.py in train_on_batch(self, x, y, sample_weight, class_weigh
t, reset_metrics)
   1189       else:
   1190         self._make_fit_function()
-> 1191         outputs = self._fit_function(ins)  # pylint: disable=not-call
able
   1192
   1193     if reset_metrics:

~\AppData\Local\Continuum\anaconda3\lib\site-packages\tensorflow\python\keras
\backend.py in __call__(self, inputs)
   3074
   3075     fetched = self._callable_fn(*array_vals,
-> 3076                                 run_metadata=self.run_metadata)
   3077     self._call_fetch_callbacks(fetched[-len(self._fetches):])
   3078     return nest.pack_sequence_as(self._outputs_structure,

~\AppData\Local\Continuum\anaconda3\lib\site-packages\tensorflow\python\clien
t\session.py in __call__(self, *args, **kwargs)
   1437           ret = tf_session.TF_SessionRunCallable(
   1438               self._session._session, self._handle, args, status,
-> 1439               run_metadata_ptr)
   1440         if run_metadata:
   1441           proto_data = tf_session.TF_GetBuffer(run_metadata_ptr)
```

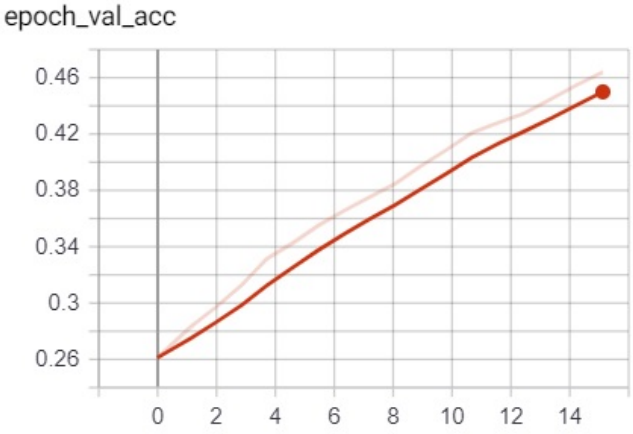
```
        KeyboardInterrupt:
```

Epoch Vs Validation Loss



Epoch And Validation Accuracy*





6. Evaluation

In [334]:
```
dev_excat_lemma_ = np.array(dev_excat_lemma)
dev_pos_tag_ = np.array(dev_pos_tag)
dev_term_ = np.array(dev_term)

for i in [dev_question_sequence,dev_context_sequence,dev_excat_lemma_,dev_pos_
tag_,dev_term_]:
    print(type(i),i.shape)
```

```
<class 'numpy.ndarray'> (10000, 40)
<class 'numpy.ndarray'> (10000, 680)
<class 'numpy.ndarray'> (10000, 680, 2)
<class 'numpy.ndarray'> (10000, 680, 37)
<class 'numpy.ndarray'> (10000, 680, 1)
```

Micro F1-Score and Accuracy

In [199]:
```
y_ = model.predict([dev_question_sequence,dev_context_sequence,dev_excat_lemma
_,dev_pos_tag_,dev_term_])
```

In [250]:
```
y_.shape
```

Out[250]:
```
(10000, 1360)
```

In [461]:
```
start_pred = []
end_pred = []
for i in range(10000):
    start_pred.append(np.argmax(y_[i,:CON_LEN]))
    end_pred.append(np.argmax(y_[i,CON_LEN:]))

start = []
end = []
for i in range(10000):
    start.append(np.argmax(y_dev[i,:CON_LEN]))
    end.append(np.argmax(y_dev[i,CON_LEN:]))
```

Lets check how much it matches with original

In [496]:
```
print(start_pred[100:120])
print(end_pred[100:120])
```

```
[11, 46, 20, 69, 0, 6, 7, 38, 33, 19, 0, 1, 123, 123, 67, 23, 31, 59, 95, 18]
[13, 46, 20, 73, 1, 6, 7, 39, 33, 21, 0, 1, 124, 124, 67, 25, 31, 59, 95, 19]
```

In [497]:
```
print(start[100:120])
print(end[100:120])
```

```
[11, 46, 20, 69, 0, 34, 4, 33, 51, 19, 0, 196, 145, 124, 67, 27, 34, 51, 95,
4]
[11, 46, 21, 73, 1, 34, 4, 34, 52, 22, 0, 196, 146, 124, 68, 28, 34, 56, 95,
5]
```

In [499]:
```
y_predicted = np.zeros((10000,680))
for i in range(10000):
    y_predicted[i,start_pred[i]:end_pred[i]+1] = 1

y_test = np.zeros((10000,680))
for i in range(10000):
    y_test[i,start[i]:end[i]+1] = 1
```

In [534]:
```
warnings.filterwarnings("ignore")
from sklearn.metrics import f1_score,accuracy_score,precision_score
print("Micro f1-score on test data is ",f1_score(y_test,y_predicted,average="micro"))
print("Macro f1-score on test data is ",f1_score(y_test,y_predicted,average="macro"))
print("Accuracy on test data is ",accuracy_score(y_test,y_predicted))
```

```
Micro f1-score on test data is  0.4033550243615317
Macro f1-score on test data is  0.30633713774622445
Accuracy on test data is  0.2868
```

7. SQUAD Using BERT:

BERT, or **B**idirectional **E**ncoder **R**epresentations from **T**ransformers, is a new method of pre-training language representations which obtains state-of-the-art results on a wide array of Natural Language Processing (NLP) tasks.

Please refer this research paper. https://arxiv.org/abs/1810.04805 (https://arxiv.org/abs/1810.04805).

Disclaimer

- Most of the code is taken from google-research github account
- The bert model is **fine-tuned** only.
- THe code modified as per necesscity
- Used the **bert base model** with 110M parameters
- All the referance are mentioned in the referances section

Parameters used for BERT:

- TRAIN_BATCH_SIZE = 16
- LEARNING_RATE = 3e-5
- NUM_TRAIN_EPOCHS = 2.0
- WARMUP_PROPORTION = 0.1
- MAX_SEQ_LENGTH = 256
- EVAL_BATCH_SIZE = 8
- tpu_cluster_resolver = None
- SAVE_CHECKPOINTS_STEPS = 1000
- ITERATIONS_PER_LOOP = 1000
- NUM_TPU_CORES = 8

For ipynb notebook , please check the another notebook submitted

8. Observations:

- Obtained micro f1_score of 40.33% on test data.
- Algined question embedding and f_exact match found to be the moset effective as mentioned in paper
- f1_score can be further improoved by adding Algined question embedding feature to context.
- Algined question embedding was omitted due to computational power limits
- To train on 1 epoch it took around hour without **Algined question embedding**
- **Algined question embedding** was omittited because, training on 1 epoch was taking more than 5 hours.
- **Performance can be improoved further by considering:**
    1. All data points
    2. Taking **128 units and 3 Layer of Bi_LSTM as mentioned in paper.**
    3. Considering Algined question embedding + f_exact together.
- Fine tuned **Bert Uncased** state of the art model to get the results.
- Bert model results are obtained using TPU provided by google

9. Summary:

In [11]:
```
from prettytable import PrettyTable
summary = PrettyTable()
```

In [12]:
```
summary.title = "Standford Attentive Reader"
summary.field_names = ["Model","Features", "Accuracy/Exact Match","micro f1 sc
ore","macro f1 score"]
summary.add_row(["Standford Attentive Reader","que + cont + POS + TF + Exact_l
emma","0.308","0.403","0.306"])
summary.add_row(["BERT uncased_L-12_H-768_A-12","question + context","0.8085",
"0.8802","0.8802"])
```

In [13]:
```
print(summary)
```

```
+-----------------------------+-------------------------------------+-------
---------------+----------------+----------------+
|            Model            |               Features              | Accura
cy/Exact Match | micro f1 score | macro f1 score |
+-----------------------------+-------------------------------------+-------
---------------+----------------+----------------+
|  Standford Attentive Reader  | que + cont + POS + TF + Exact_lemma |
0.308          |     0.403      |     0.306      |
| BERT uncased_L-12_H-768_A-12 |          question + context         |
0.8085         |     0.8802     |     0.8802     |
+-----------------------------+-------------------------------------+-------
---------------+----------------+----------------+
```

10. Referances:

- The Stanford Question Answering Dataset by Rajpurkar https://rajpurkar.github.io/mlx/qa-and-squad/ (https://rajpurkar.github.io/mlx/qa-and-squad/)
- ReadingWikipedia to Answer Open-Domain Questions https://arxiv.org/pdf/1704.00051.pdf (https://arxiv.org/pdf/1704.00051.pdf)
- https://hanxiao.github.io/2018/04/21/Teach-Machine-to-Comprehend-Text-and-Answer-Question-with-Tensorflow/ (https://hanxiao.github.io/2018/04/21/Teach-Machine-to-Comprehend-Text-and-Answer-Question-with-Tensorflow/)
- https://github.com/kellywzhang/reading-comprehension (https://github.com/kellywzhang/reading-comprehension)
- https://github.com/Shuang0420/Fast-Reading-Comprehension (https://github.com/Shuang0420/Fast-Reading-Comprehension)
- https://github.com/google-research/bert/blob/master/run_squad.py (https://github.com/google-research/bert/blob/master/run_squad.py)
- https://github.com/google-research/bert (https://github.com/google-research/bert)
- https://www.kaggle.com/lapolonio/bert-squad-forked-from-sergeykalutsky/code (https://www.kaggle.com/lapolonio/bert-squad-forked-from-sergeykalutsky/code)

In [ ]:
```

```