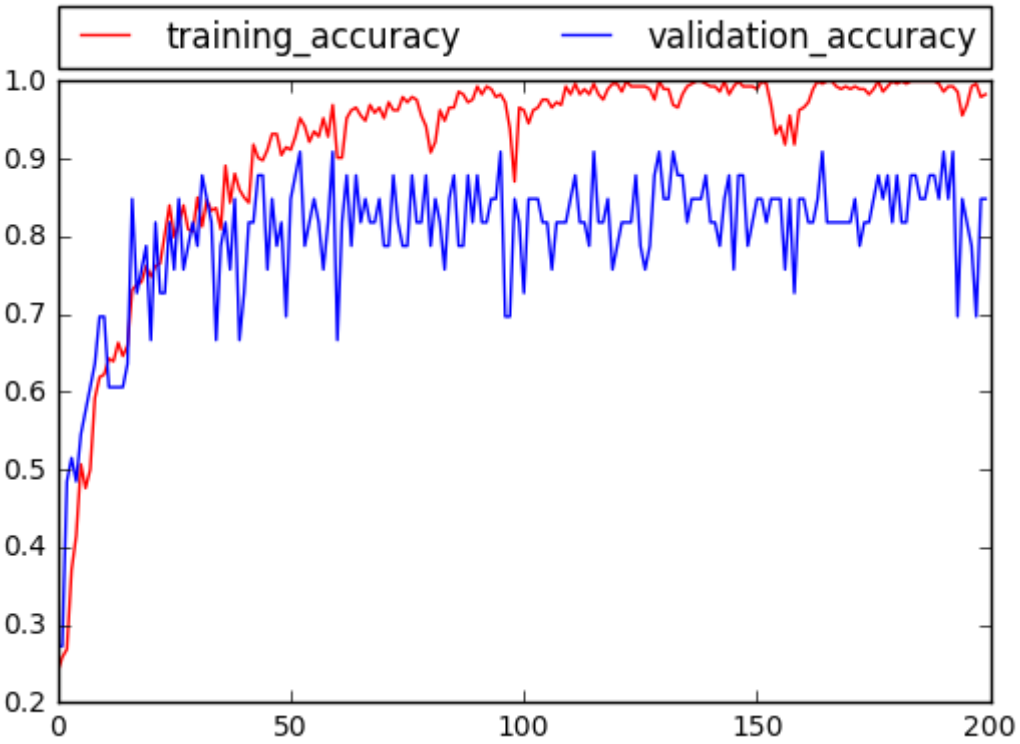
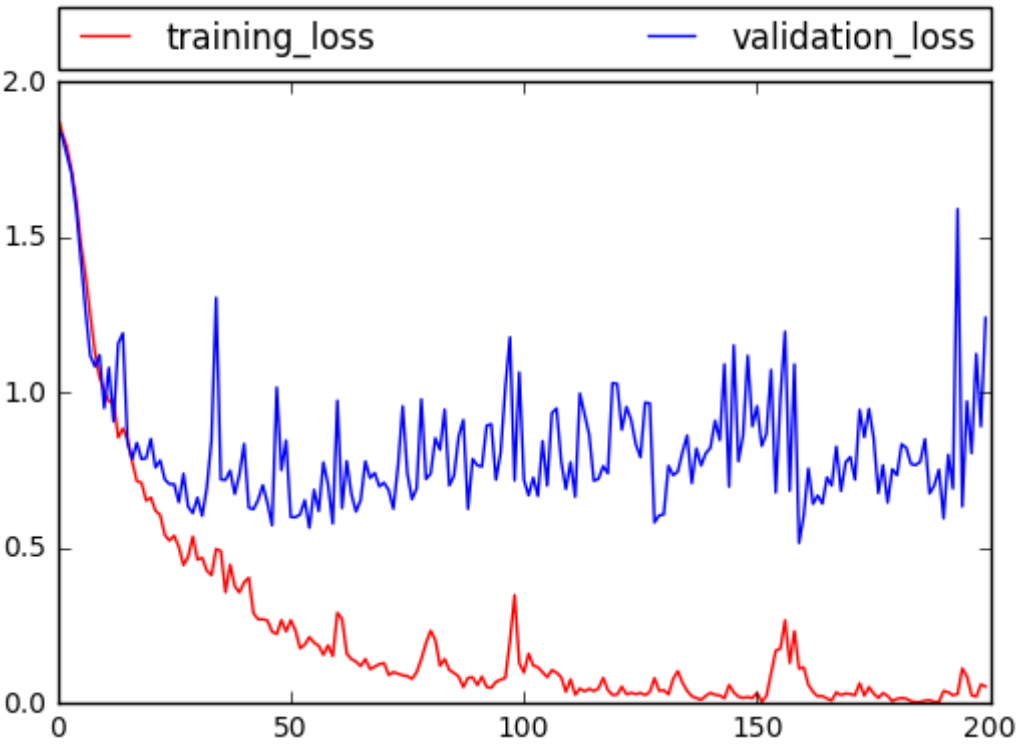
In [1]:
```
import numpy as np
from matplotlib import pyplot as plt
from scipy import stats
```

In [2]:
```
def remove_first_line(log_file):
    with open(log_file, 'r') as fin:
        data = fin.read().splitlines(True)
    with open(log_file, 'w') as fout:
        fout.writelines(data[1:])

def plot_l_and_a(log_file):
    t = np.loadtxt(log_file, delimiter=',')
    training_accuracy, = plt.plot(t[:,1],'r', label='training_accurac
y')
    validation_accuracy, = plt.plot(t[:,3],'b', label='validation_acc
uracy')
    plt.legend(handles=[training_accuracy, validation_accuracy], bbox
_to_anchor=(0., 1.02, 1., .102), loc=3,
           ncol=2, mode="expand", borderaxespad=0.)
    plt.show()
    training_loss, = plt.plot(t[:,2],'r', label='training_loss')
    validation_loss, = plt.plot(t[:,4],'b', label='validation_loss')
    plt.legend(handles=[training_loss, validation_loss], bbox_to_anch
or=(0., 1.02, 1., .102), loc=3,
           ncol=2, mode="expand", borderaxespad=0.)
    plt.show()
```

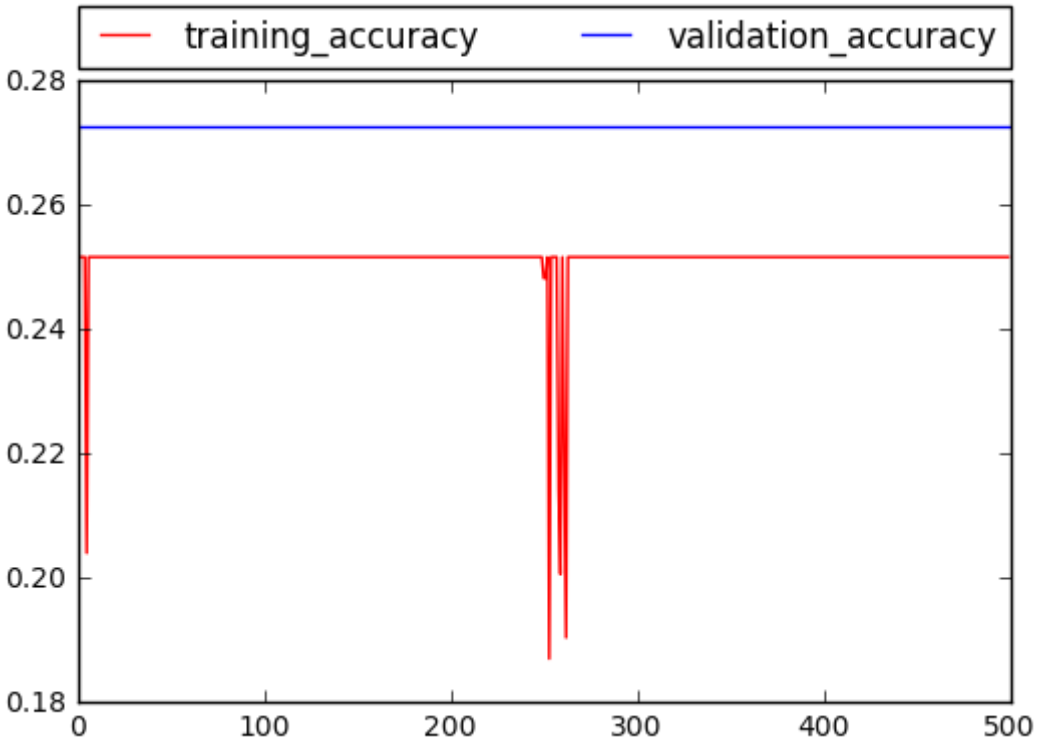
In [3]:
```
plot_l_and_a('basic_cnn_training_200_log')
```

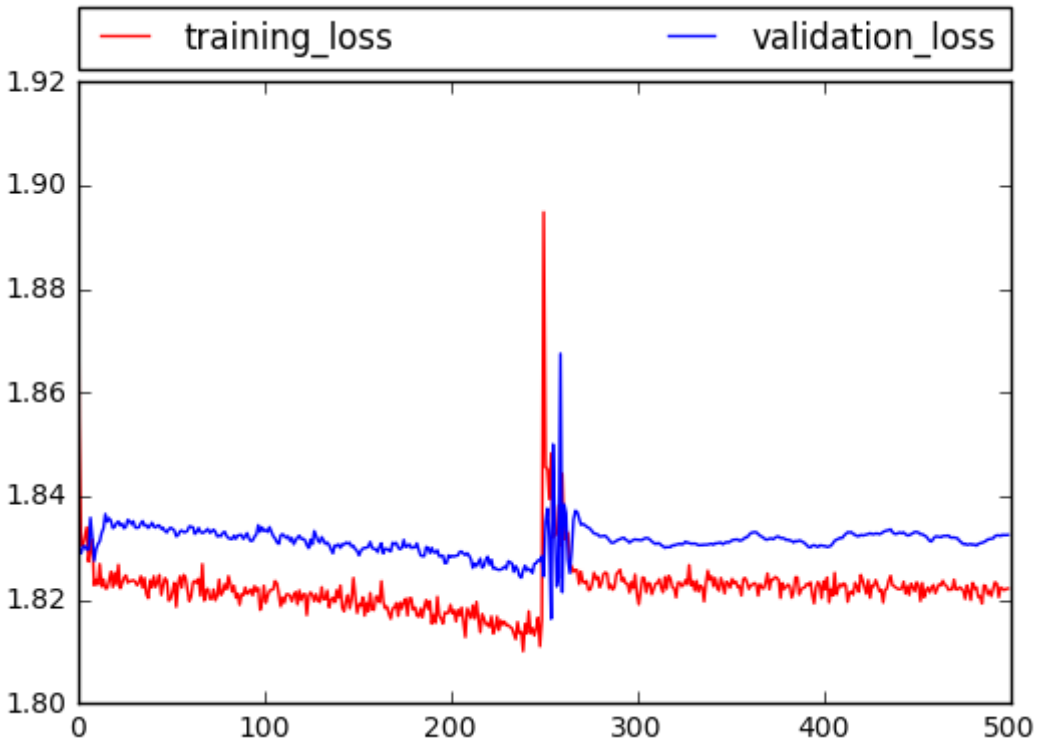




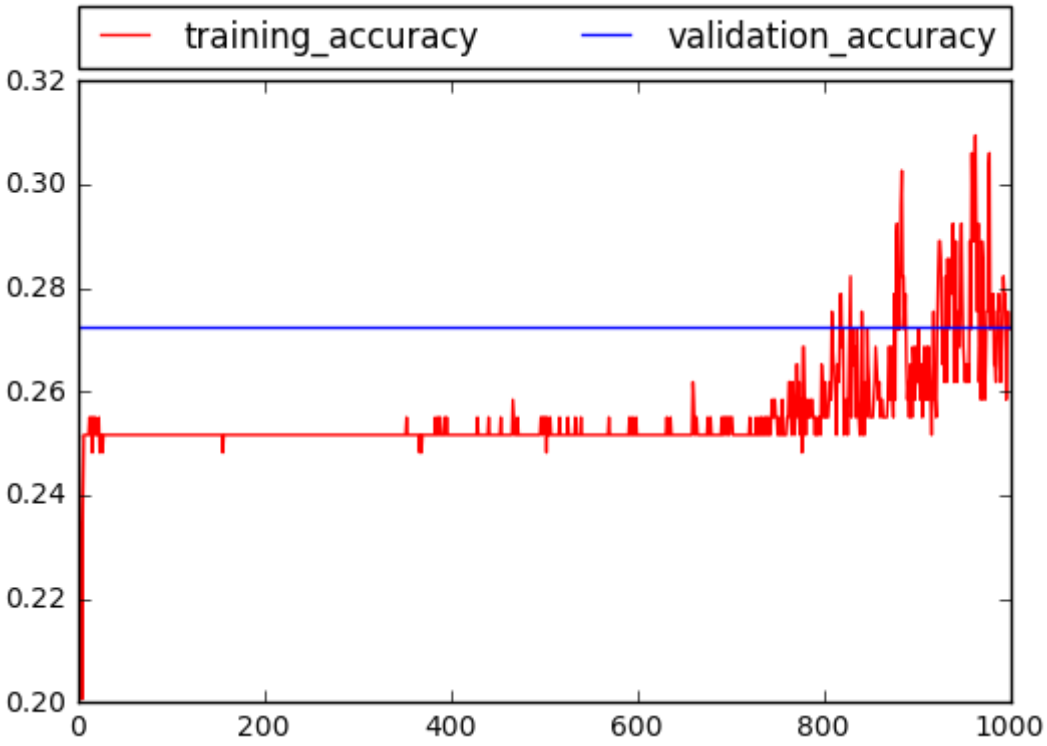
In [13]:
```
remove_first_line('basic_cnn_training_16000_log')
```

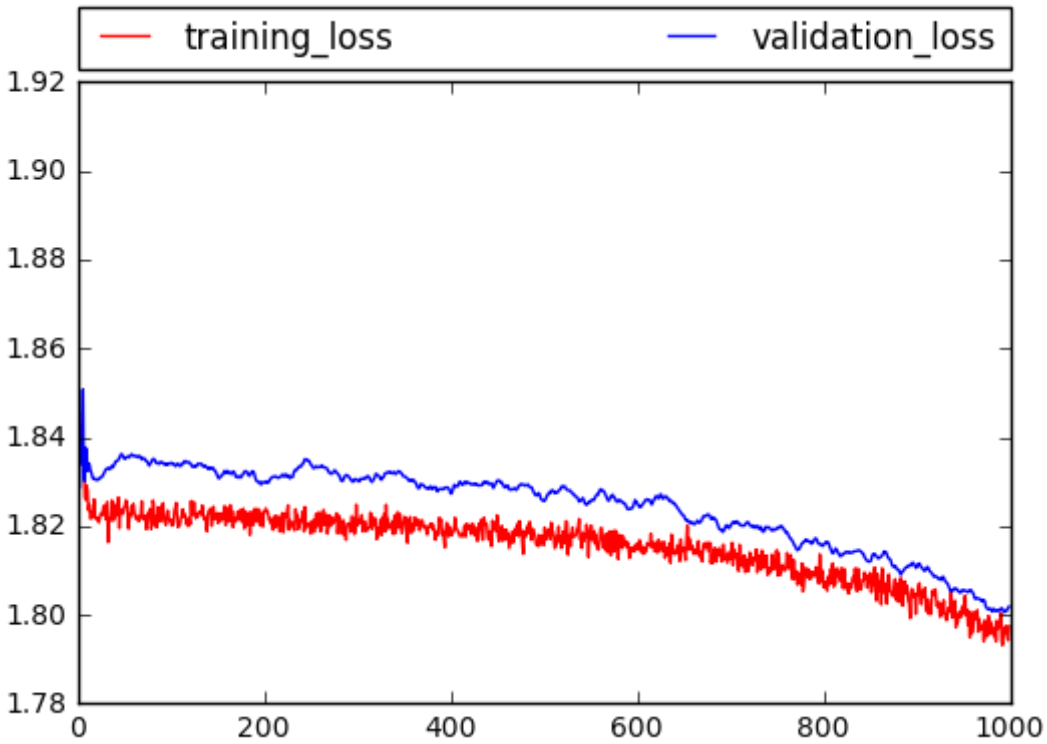
In [5]:
```
plot_l_and_a('basic_cnn_training_250_log')
```



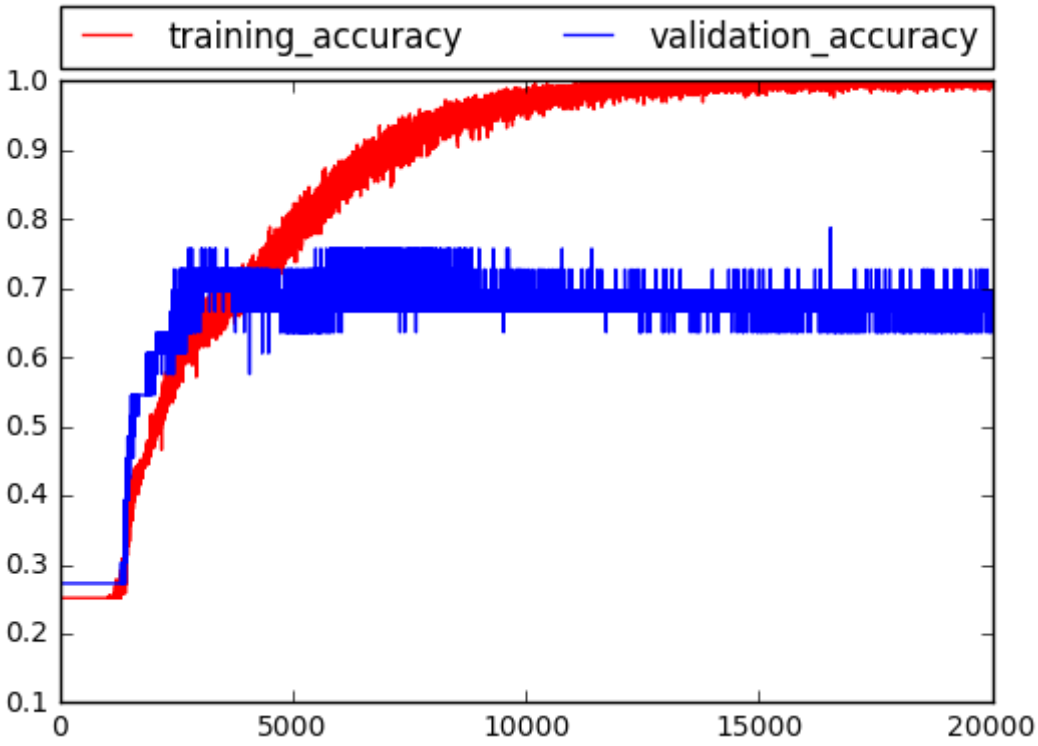


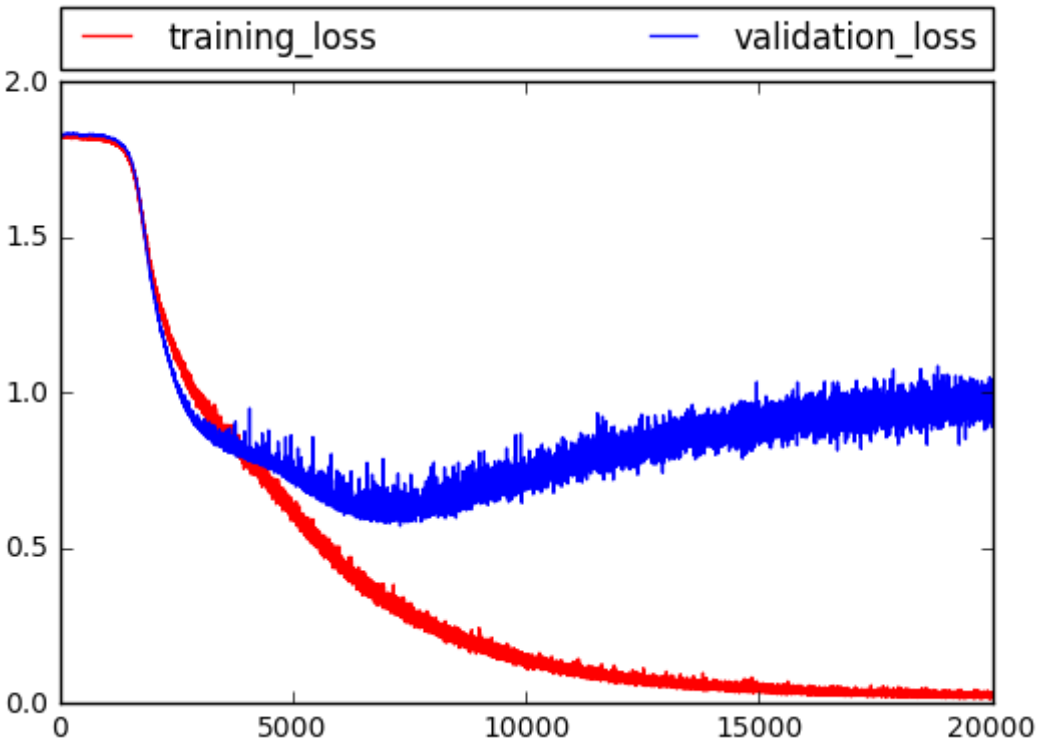
In [6]:
```
plot_l_and_a('basic_cnn_training_1000_log')
```





In [7]:
```
plot_l_and_a('basic_cnn_training_20000_log')
```





In [8]:
```
t = np.loadtxt('basic_cnn_training_20000_log', delimiter=',')
print np.unravel_index(t[:,3].argmax(), t[:,3].shape)
```

```
(16536,)
```

In [9]:
```
from copy import deepcopy
a = list(deepcopy(t[:,4]))
a, size = sorted(a), len(a)
res = [a[i + 1] - a[i] for i in xrange(size) if i+1 < size]
print "MinDiff: {0}, MaxDiff: {1}.".format(min(res), max(res))
```

```
MinDiff: 1.50987145009e-09, MaxDiff: 0.00769473442977.
```

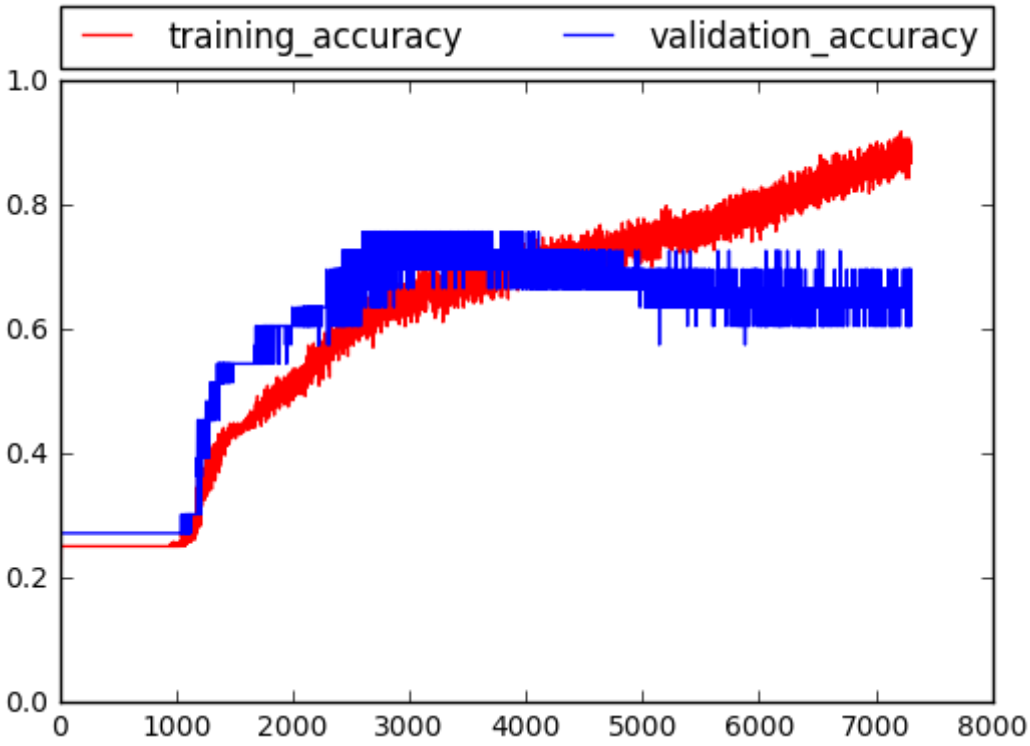
In [10]:
```
print np.unravel_index(t[:,4].argmin(), t[:,4].shape)
```

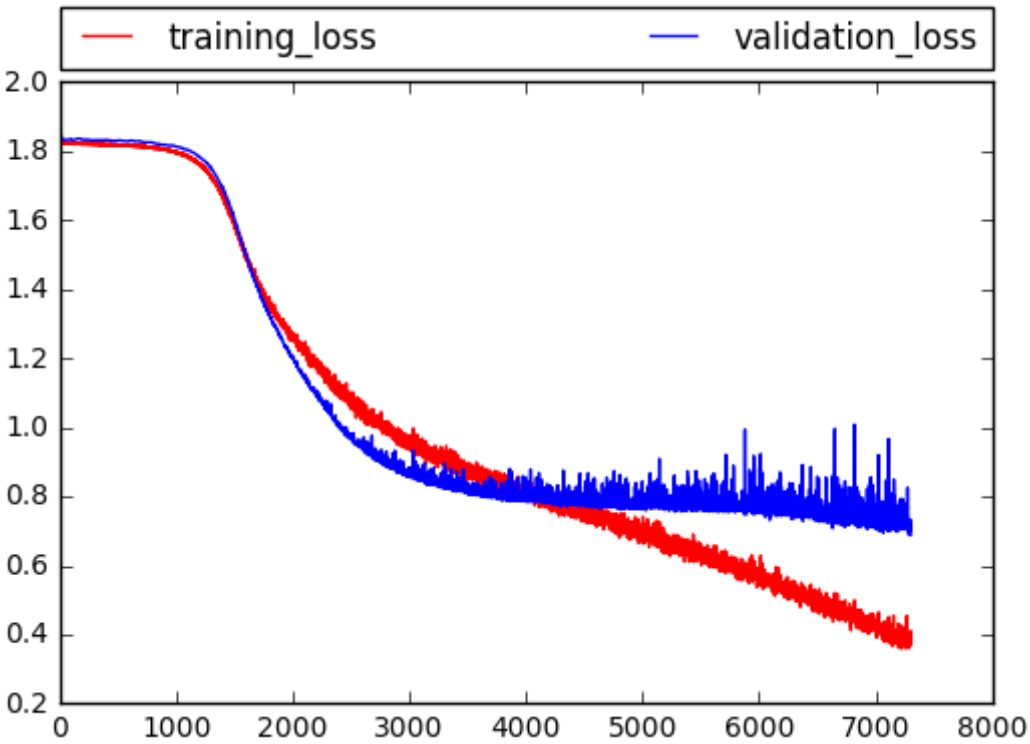
```
(7303,)
```

In [11]:
```
print "final validation accuracy is: "+ str(100*t[:,3][7303])+ "%"
```

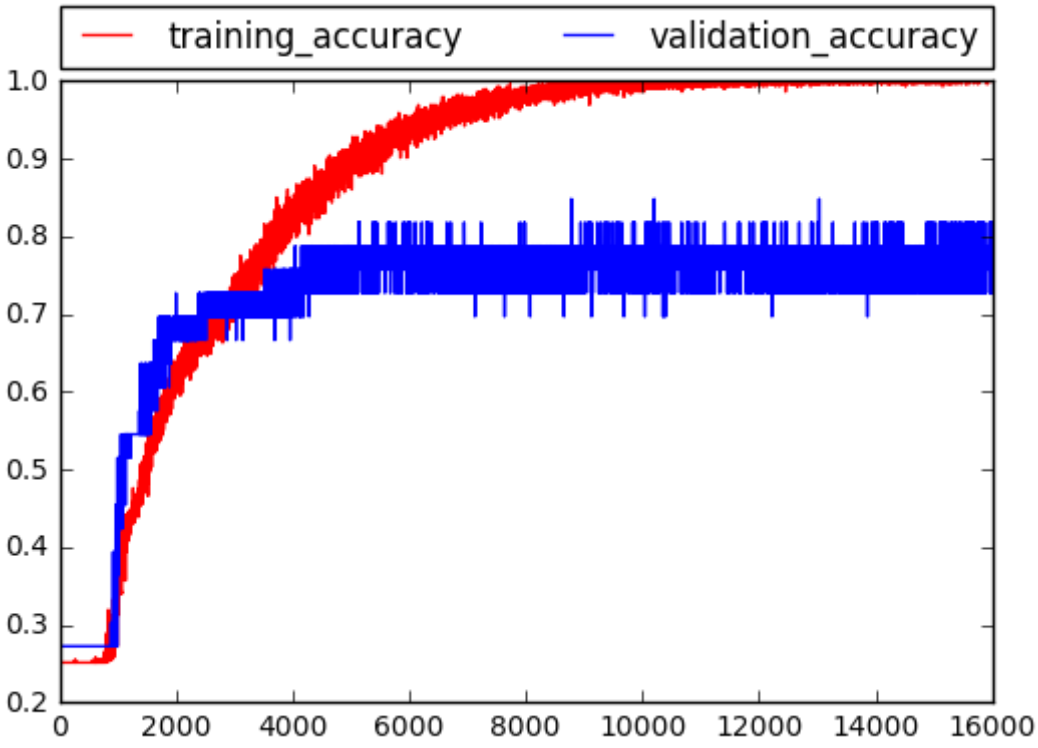
```
final validation accuracy is: 69.696969697%
```

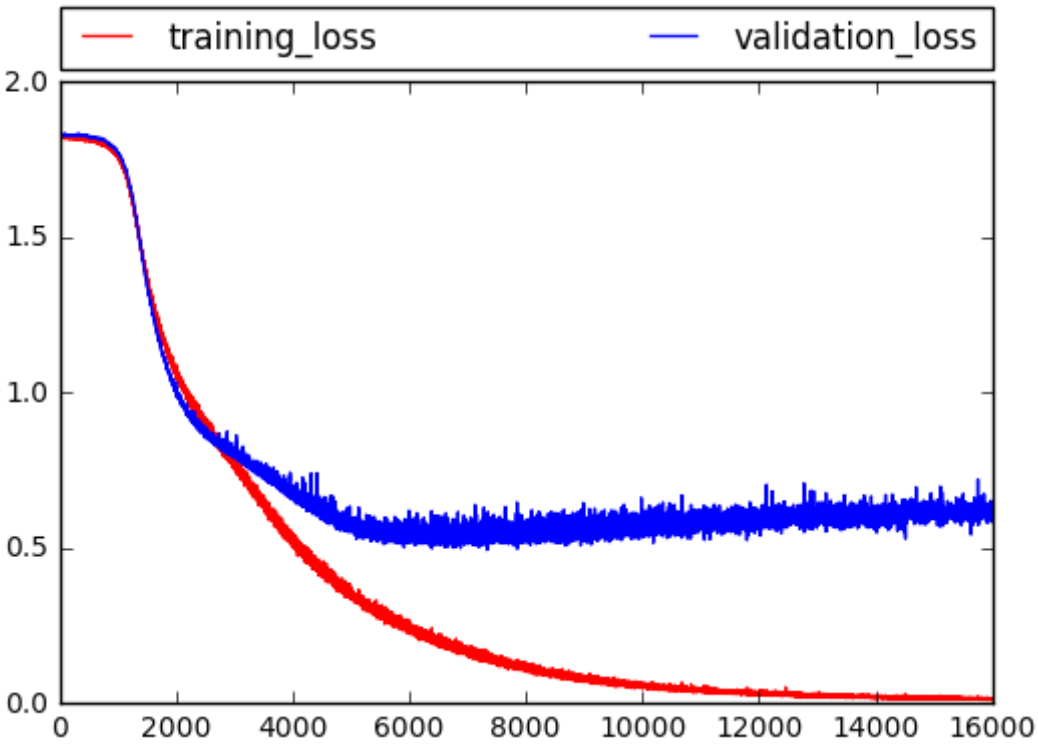
In [12]:
```
plot_l_and_a('basic_cnn_training_7303_log')
```





In [14]:
```
plot_l_and_a('basic_cnn_training_16000_log')
```





In [ ]:
```

```