SRGAN

In [1]:
```
import os, sys
sys.path.append('../lib/SRGAN/')
import tensorflow as tf
from main import train, predict
```

Train

In [2]:
```
#tf.reset_default_graph()
# We can do validation!
#train(train_lr_path, train_hr_path, save_path, validation=True, ratio=
0.9, n_epoch_init=20, n_epoch=20)

##### Parameters #####:
## data and result path
train_lr_path = '../data/train_set/LR'
train_hr_path = '../data/train_set/HR'
save_path = '../output/SRGAN2'
save_every_epoch = 1
# validation: whether to split data into train set and validation setbn7
## Adam
batch_size=32
# lr_init=1e-4
# beta1=0.9
## Initialize generator
# n_epoch_init
## train adversial net
# n_epoch
# lr_decay=0.1
train(train_lr_path=train_lr_path, train_hr_path=train_hr_path, save_pat
h=save_path,
      save_every_epoch=save_every_epoch, validation=False, batch_size=ba
tch_size, n_epoch_init=10, n_epoch=20)
```

```
[TL] [!] ../output/SRGAN2/srgan_ginit exists ...
[TL] [!] ../output/SRGAN2/srgan_gan exists ...
[TL] [!] ../output/SRGAN2/checkpoint exists ...
[TL] read 32 from ../data/train_set/LR
[TL] read 64 from ../data/train_set/LR
[TL] read 96 from ../data/train_set/LR
[TL] read 128 from ../data/train_set/LR
[TL] read 160 from ../data/train_set/LR
[TL] read 192 from ../data/train_set/LR
[TL] read 224 from ../data/train_set/LR
[TL] read 256 from ../data/train_set/LR
[TL] read 288 from ../data/train_set/LR
[TL] read 320 from ../data/train_set/LR
[TL] read 352 from ../data/train_set/LR
[TL] read 384 from ../data/train_set/LR
[TL] read 416 from ../data/train_set/LR
[TL] read 448 from ../data/train_set/LR
[TL] read 480 from ../data/train_set/LR
[TL] read 512 from ../data/train_set/LR
[TL] read 544 from ../data/train_set/LR
[TL] read 576 from ../data/train_set/LR
[TL] read 608 from ../data/train_set/LR
[TL] read 640 from ../data/train_set/LR
[TL] read 672 from ../data/train_set/LR
[TL] read 704 from ../data/train_set/LR
[TL] read 736 from ../data/train_set/LR
[TL] read 768 from ../data/train_set/LR
[TL] read 800 from ../data/train_set/LR
[TL] read 832 from ../data/train_set/LR
[TL] read 864 from ../data/train_set/LR
[TL] read 896 from ../data/train_set/LR
[TL] read 928 from ../data/train_set/LR
[TL] read 960 from ../data/train_set/LR
[TL] read 992 from ../data/train_set/LR
[TL] read 1024 from ../data/train_set/LR
[TL] read 1056 from ../data/train_set/LR
[TL] read 1088 from ../data/train_set/LR
[TL] read 1120 from ../data/train_set/LR
[TL] read 1152 from ../data/train_set/LR
[TL] read 1184 from ../data/train_set/LR
[TL] read 1216 from ../data/train_set/LR
[TL] read 1248 from ../data/train_set/LR
[TL] read 1280 from ../data/train_set/LR
[TL] read 1312 from ../data/train_set/LR
[TL] read 1344 from ../data/train_set/LR
[TL] read 1376 from ../data/train_set/LR
[TL] read 1408 from ../data/train_set/LR
[TL] read 1440 from ../data/train_set/LR
[TL] read 1472 from ../data/train_set/LR
[TL] read 1500 from ../data/train_set/LR
[TL] read 32 from ../data/train_set/HR
[TL] read 64 from ../data/train_set/HR
[TL] read 96 from ../data/train_set/HR
[TL] read 128 from ../data/train_set/HR
[TL] read 160 from ../data/train_set/HR
[TL] read 192 from ../data/train_set/HR
[TL] read 224 from ../data/train_set/HR
```

```
[TL] read 256 from ../data/train_set/HR
[TL] read 288 from ../data/train_set/HR
[TL] read 320 from ../data/train_set/HR
[TL] read 352 from ../data/train_set/HR
[TL] read 384 from ../data/train_set/HR
[TL] read 416 from ../data/train_set/HR
[TL] read 448 from ../data/train_set/HR
[TL] read 480 from ../data/train_set/HR
[TL] read 512 from ../data/train_set/HR
[TL] read 544 from ../data/train_set/HR
[TL] read 576 from ../data/train_set/HR
[TL] read 608 from ../data/train_set/HR
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[TL] read 672 from ../data/train_set/HR
[TL] read 704 from ../data/train_set/HR
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[TL] read 928 from ../data/train_set/HR
[TL] read 960 from ../data/train_set/HR
[TL] read 992 from ../data/train_set/HR
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[TL] read 1184 from ../data/train_set/HR
[TL] read 1216 from ../data/train_set/HR
[TL] read 1248 from ../data/train_set/HR
[TL] read 1280 from ../data/train_set/HR
[TL] read 1312 from ../data/train_set/HR
[TL] read 1344 from ../data/train_set/HR
[TL] read 1376 from ../data/train_set/HR
[TL] read 1408 from ../data/train_set/HR
[TL] read 1440 from ../data/train_set/HR
[TL] read 1472 from ../data/train_set/HR
[TL] read 1500 from ../data/train_set/HR
[TL] InputLayer  SRGAN_g/in: (?, 96, 96, 3)
[TL] Conv2d SRGAN_g/n64s1/c: n_filter: 64 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d SRGAN_g/n64s1/c1/0: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/0: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/0: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/0: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/0: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/1: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/1: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
```

```
[TL] Conv2d SRGAN_g/n64s1/c2/1: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/1: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/1: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/2: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/2: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/2: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/2: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/2: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/3: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/3: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/3: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/3: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/3: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/4: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/4: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/4: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/4: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/4: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/5: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/5: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/5: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/5: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/5: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/6: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/6: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/6: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/6: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/6: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/7: n_filter: 64 filter_size: (3, 3) stride
```

```
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/7: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/7: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/7: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/7: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/8: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/8: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/8: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/8: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/8: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/9: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/9: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/9: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/9: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/9: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/10: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/10: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/10: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/10: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/10: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/11: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/11: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/11: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/11: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/11: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/12: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/12: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/12: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/12: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: True
```

```
[TL] ElementwiseLayer SRGAN_g/b_residual_add/12: size: (?, 96, 96, 64) fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/13: n_filter: 64 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/13: decay: 0.900000 epsilon: 0.000010 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/13: n_filter: 64 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/13: decay: 0.900000 epsilon: 0.000010 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/13: size: (?, 96, 96, 64) fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/14: n_filter: 64 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/14: decay: 0.900000 epsilon: 0.000010 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/14: n_filter: 64 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/14: decay: 0.900000 epsilon: 0.000010 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/14: size: (?, 96, 96, 64) fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/15: n_filter: 64 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/15: decay: 0.900000 epsilon: 0.000010 act: relu is_train: True
[TL] Conv2d SRGAN_g/n64s1/c2/15: n_filter: 64 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/15: decay: 0.900000 epsilon: 0.000010 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/b_residual_add/15: size: (?, 96, 96, 64) fn: add
[TL] Conv2d SRGAN_g/n64s1/c/m: n_filter: 64 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b/m: decay: 0.900000 epsilon: 0.000010 act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_g/add3: size: (?, 96, 96, 64) fn: add
[TL] Conv2d SRGAN_g/n256s1/1: n_filter: 256 filter_size: (3, 3) strides: (1, 1) pad: SAME act: No Activation
[TL] SubpixelConv2d  SRGAN_g/pixelshufflerx2/1: scale: 2 n_out_channel: 64 act: relu
[TL] Conv2d SRGAN_g/out: n_filter: 3 filter_size: (1, 1) strides: (1, 1) pad: SAME act: tanh
[TL] WARNING: Function: `tensorlayer.layers.utils.set_name_reuse` (in file: /Users/james/anaconda3/lib/python3.6/site-packages/tensorlayer/layers/utils.py) is deprecated and will be removed after 2018-06-30.
Instructions for updating: TensorLayer relies on TensorFlow to check name reusing

[TL] WARNING: this method is DEPRECATED and has no effect, please remove it from your code.
[TL] InputLayer  SRGAN_d/input/images: (?, 192, 192, 3)
[TL] Conv2d SRGAN_d/h0/c: n_filter: 64 filter_size: (4, 4) strides: (2, 2) pad: SAME act: <lambda>
[TL] WARNING: Function: `tensorlayer.activation.leaky_relu` (in file: /Users/james/anaconda3/lib/python3.6/site-packages/tensorlayer/activation.py) is deprecated and will be removed after 2018-09-30.
```

```
Instructions for updating: This API is deprecated. Please use as `tf.n
n.leaky_relu`

[TL] Conv2d SRGAN_d/h1/c: n_filter: 128 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h1/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h2/c: n_filter: 256 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h2/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h3/c: n_filter: 512 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h3/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h4/c: n_filter: 1024 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h4/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h5/c: n_filter: 2048 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h5/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h6/c: n_filter: 1024 filter_size: (1, 1) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h6/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h7/c: n_filter: 512 filter_size: (1, 1) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h7/bn: decay: 0.900000 epsilon: 0.000010 ac
t: No Activation is_train: True
[TL] Conv2d SRGAN_d/res/c: n_filter: 128 filter_size: (1, 1) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/res/bn: decay: 0.900000 epsilon: 0.000010 a
ct: <lambda> is_train: True
[TL] Conv2d SRGAN_d/res/c2: n_filter: 128 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/res/bn2: decay: 0.900000 epsilon: 0.000010
act: <lambda> is_train: True
[TL] Conv2d SRGAN_d/res/c3: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/res/bn3: decay: 0.900000 epsilon: 0.000010
act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_d/res/add: size: (?, 3, 3, 512) fn: add
[TL] FlattenLayer SRGAN_d/ho/flatten: 4608
[TL] DenseLayer  SRGAN_d/ho/dense: 1 No Activation
[TL] WARNING: this method is DEPRECATED and has no effect, please remov
e it from your code.
[TL] InputLayer  SRGAN_d/input/images: (?, 192, 192, 3)
[TL] Conv2d SRGAN_d/h0/c: n_filter: 64 filter_size: (4, 4) strides: (2,
2) pad: SAME act: <lambda>
[TL] Conv2d SRGAN_d/h1/c: n_filter: 128 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h1/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h2/c: n_filter: 256 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
```

```
[TL] BatchNormLayer SRGAN_d/h2/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h3/c: n_filter: 512 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h3/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h4/c: n_filter: 1024 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h4/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h5/c: n_filter: 2048 filter_size: (4, 4) strides:
(2, 2) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h5/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h6/c: n_filter: 1024 filter_size: (1, 1) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h6/bn: decay: 0.900000 epsilon: 0.000010 ac
t: <lambda> is_train: True
[TL] Conv2d SRGAN_d/h7/c: n_filter: 512 filter_size: (1, 1) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/h7/bn: decay: 0.900000 epsilon: 0.000010 ac
t: No Activation is_train: True
[TL] Conv2d SRGAN_d/res/c: n_filter: 128 filter_size: (1, 1) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/res/bn: decay: 0.900000 epsilon: 0.000010 a
ct: <lambda> is_train: True
[TL] Conv2d SRGAN_d/res/c2: n_filter: 128 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/res/bn2: decay: 0.900000 epsilon: 0.000010
act: <lambda> is_train: True
[TL] Conv2d SRGAN_d/res/c3: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_d/res/bn3: decay: 0.900000 epsilon: 0.000010
act: No Activation is_train: True
[TL] ElementwiseLayer SRGAN_d/res/add: size: (?, 3, 3, 512) fn: add
[TL] FlattenLayer SRGAN_d/ho/flatten: 4608
[TL] DenseLayer  SRGAN_d/ho/dense: 1 No Activation
[TL] InputLayer  VGG19/input: (?, 224, 224, 3)
[TL] Conv2d VGG19/conv1_1: n_filter: 64 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv1_2: n_filter: 64 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool1: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv2_1: n_filter: 128 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv2_2: n_filter: 128 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool2: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv3_1: n_filter: 256 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv3_2: n_filter: 256 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv3_3: n_filter: 256 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv3_4: n_filter: 256 filter_size: (3, 3) strides:
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(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool3: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv4_1: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv4_2: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv4_3: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv4_4: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool4: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv5_1: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv5_2: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv5_3: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv5_4: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool5: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] FlattenLayer VGG19/flatten: 25088
[TL] DenseLayer  VGG19/fc6: 4096 relu
[TL] DenseLayer  VGG19/fc7: 4096 relu
[TL] DenseLayer  VGG19/fc8: 1000 No Activation
[TL] InputLayer  VGG19/input: (?, 224, 224, 3)
[TL] Conv2d VGG19/conv1_1: n_filter: 64 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv1_2: n_filter: 64 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool1: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv2_1: n_filter: 128 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv2_2: n_filter: 128 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool2: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv3_1: n_filter: 256 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv3_2: n_filter: 256 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv3_3: n_filter: 256 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv3_4: n_filter: 256 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool3: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv4_1: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv4_2: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv4_3: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv4_4: n_filter: 512 filter_size: (3, 3) strides:
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(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool4: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] Conv2d VGG19/conv5_1: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv5_2: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv5_3: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d VGG19/conv5_4: n_filter: 512 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] MaxPool2d VGG19/pool5: filter_size: (2, 2) strides: (2, 2) paddin
g: SAME
[TL] FlattenLayer VGG19/flatten: 25088
[TL] DenseLayer  VGG19/fc6: 4096 relu
[TL] DenseLayer  VGG19/fc7: 4096 relu
[TL] DenseLayer  VGG19/fc8: 1000 No Activation
[TL] InputLayer  SRGAN_g/in: (?, 96, 96, 3)
[TL] Conv2d SRGAN_g/n64s1/c: n_filter: 64 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d SRGAN_g/n64s1/c1/0: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/0: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/0: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/0: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/0: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/1: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/1: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/1: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/1: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/1: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/2: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/2: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/2: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/2: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/2: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/3: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/3: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/3: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/3: decay: 0.900000 epsilon: 0.0000
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10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/3: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/4: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/4: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/4: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/4: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/4: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/5: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/5: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/5: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/5: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/5: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/6: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/6: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/6: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/6: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/6: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/7: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/7: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/7: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/7: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/7: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/8: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/8: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/8: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/8: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/8: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/9: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/9: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
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[TL] Conv2d SRGAN_g/n64s1/c2/9: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/9: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/9: size: (?, 96, 96, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/10: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/10: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/10: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/10: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/10: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/11: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/11: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/11: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/11: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/11: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/12: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/12: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/12: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/12: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/12: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/13: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/13: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/13: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/13: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/13: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/14: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/14: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/14: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/14: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/14: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c1/15: n_filter: 64 filter_size: (3, 3) strid
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es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/15: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/15: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/15: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/15: size: (?, 96, 96, 64)
fn: add
[TL] Conv2d SRGAN_g/n64s1/c/m: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b/m: decay: 0.900000 epsilon: 0.00001
0 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/add3: size: (?, 96, 96, 64) fn: add
[TL] Conv2d SRGAN_g/n256s1/1: n_filter: 256 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] SubpixelConv2d  SRGAN_g/pixelshufflerx2/1: scale: 2 n_out_channel:
64 act: relu
[TL] Conv2d SRGAN_g/out: n_filter: 3 filter_size: (1, 1) strides: (1,
1) pad: SAME act: tanh
[TL]   [*] geting variables with SRGAN_g
[TL]   got   0: SRGAN_g/n64s1/c/kernel:0   (3, 3, 3, 64)
[TL]   got   1: SRGAN_g/n64s1/c/bias:0   (64,)
[TL]   got   2: SRGAN_g/n64s1/c1/0/kernel:0   (3, 3, 64, 64)
[TL]   got   3: SRGAN_g/n64s1/c1/0/bias:0   (64,)
[TL]   got   4: SRGAN_g/n64s1/b1/0/beta:0   (64,)
[TL]   got   5: SRGAN_g/n64s1/b1/0/gamma:0   (64,)
[TL]   got   6: SRGAN_g/n64s1/c2/0/kernel:0   (3, 3, 64, 64)
[TL]   got   7: SRGAN_g/n64s1/c2/0/bias:0   (64,)
[TL]   got   8: SRGAN_g/n64s1/b2/0/beta:0   (64,)
[TL]   got   9: SRGAN_g/n64s1/b2/0/gamma:0   (64,)
[TL]   got  10: SRGAN_g/n64s1/c1/1/kernel:0   (3, 3, 64, 64)
[TL]   got  11: SRGAN_g/n64s1/c1/1/bias:0   (64,)
[TL]   got  12: SRGAN_g/n64s1/b1/1/beta:0   (64,)
[TL]   got  13: SRGAN_g/n64s1/b1/1/gamma:0   (64,)
[TL]   got  14: SRGAN_g/n64s1/c2/1/kernel:0   (3, 3, 64, 64)
[TL]   got  15: SRGAN_g/n64s1/c2/1/bias:0   (64,)
[TL]   got  16: SRGAN_g/n64s1/b2/1/beta:0   (64,)
[TL]   got  17: SRGAN_g/n64s1/b2/1/gamma:0   (64,)
[TL]   got  18: SRGAN_g/n64s1/c1/2/kernel:0   (3, 3, 64, 64)
[TL]   got  19: SRGAN_g/n64s1/c1/2/bias:0   (64,)
[TL]   got  20: SRGAN_g/n64s1/b1/2/beta:0   (64,)
[TL]   got  21: SRGAN_g/n64s1/b1/2/gamma:0   (64,)
[TL]   got  22: SRGAN_g/n64s1/c2/2/kernel:0   (3, 3, 64, 64)
[TL]   got  23: SRGAN_g/n64s1/c2/2/bias:0   (64,)
[TL]   got  24: SRGAN_g/n64s1/b2/2/beta:0   (64,)
[TL]   got  25: SRGAN_g/n64s1/b2/2/gamma:0   (64,)
[TL]   got  26: SRGAN_g/n64s1/c1/3/kernel:0   (3, 3, 64, 64)
[TL]   got  27: SRGAN_g/n64s1/c1/3/bias:0   (64,)
[TL]   got  28: SRGAN_g/n64s1/b1/3/beta:0   (64,)
[TL]   got  29: SRGAN_g/n64s1/b1/3/gamma:0   (64,)
[TL]   got  30: SRGAN_g/n64s1/c2/3/kernel:0   (3, 3, 64, 64)
[TL]   got  31: SRGAN_g/n64s1/c2/3/bias:0   (64,)
[TL]   got  32: SRGAN_g/n64s1/b2/3/beta:0   (64,)
[TL]   got  33: SRGAN_g/n64s1/b2/3/gamma:0   (64,)
[TL]   got  34: SRGAN_g/n64s1/c1/4/kernel:0   (3, 3, 64, 64)
[TL]   got  35: SRGAN_g/n64s1/c1/4/bias:0   (64,)
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[TL]   got  36: SRGAN_g/n64s1/b1/4/beta:0   (64,)
[TL]   got  37: SRGAN_g/n64s1/b1/4/gamma:0   (64,)
[TL]   got  38: SRGAN_g/n64s1/c2/4/kernel:0   (3, 3, 64, 64)
[TL]   got  39: SRGAN_g/n64s1/c2/4/bias:0   (64,)
[TL]   got  40: SRGAN_g/n64s1/b2/4/beta:0   (64,)
[TL]   got  41: SRGAN_g/n64s1/b2/4/gamma:0   (64,)
[TL]   got  42: SRGAN_g/n64s1/c1/5/kernel:0   (3, 3, 64, 64)
[TL]   got  43: SRGAN_g/n64s1/c1/5/bias:0   (64,)
[TL]   got  44: SRGAN_g/n64s1/b1/5/beta:0   (64,)
[TL]   got  45: SRGAN_g/n64s1/b1/5/gamma:0   (64,)
[TL]   got  46: SRGAN_g/n64s1/c2/5/kernel:0   (3, 3, 64, 64)
[TL]   got  47: SRGAN_g/n64s1/c2/5/bias:0   (64,)
[TL]   got  48: SRGAN_g/n64s1/b2/5/beta:0   (64,)
[TL]   got  49: SRGAN_g/n64s1/b2/5/gamma:0   (64,)
[TL]   got  50: SRGAN_g/n64s1/c1/6/kernel:0   (3, 3, 64, 64)
[TL]   got  51: SRGAN_g/n64s1/c1/6/bias:0   (64,)
[TL]   got  52: SRGAN_g/n64s1/b1/6/beta:0   (64,)
[TL]   got  53: SRGAN_g/n64s1/b1/6/gamma:0   (64,)
[TL]   got  54: SRGAN_g/n64s1/c2/6/kernel:0   (3, 3, 64, 64)
[TL]   got  55: SRGAN_g/n64s1/c2/6/bias:0   (64,)
[TL]   got  56: SRGAN_g/n64s1/b2/6/beta:0   (64,)
[TL]   got  57: SRGAN_g/n64s1/b2/6/gamma:0   (64,)
[TL]   got  58: SRGAN_g/n64s1/c1/7/kernel:0   (3, 3, 64, 64)
[TL]   got  59: SRGAN_g/n64s1/c1/7/bias:0   (64,)
[TL]   got  60: SRGAN_g/n64s1/b1/7/beta:0   (64,)
[TL]   got  61: SRGAN_g/n64s1/b1/7/gamma:0   (64,)
[TL]   got  62: SRGAN_g/n64s1/c2/7/kernel:0   (3, 3, 64, 64)
[TL]   got  63: SRGAN_g/n64s1/c2/7/bias:0   (64,)
[TL]   got  64: SRGAN_g/n64s1/b2/7/beta:0   (64,)
[TL]   got  65: SRGAN_g/n64s1/b2/7/gamma:0   (64,)
[TL]   got  66: SRGAN_g/n64s1/c1/8/kernel:0   (3, 3, 64, 64)
[TL]   got  67: SRGAN_g/n64s1/c1/8/bias:0   (64,)
[TL]   got  68: SRGAN_g/n64s1/b1/8/beta:0   (64,)
[TL]   got  69: SRGAN_g/n64s1/b1/8/gamma:0   (64,)
[TL]   got  70: SRGAN_g/n64s1/c2/8/kernel:0   (3, 3, 64, 64)
[TL]   got  71: SRGAN_g/n64s1/c2/8/bias:0   (64,)
[TL]   got  72: SRGAN_g/n64s1/b2/8/beta:0   (64,)
[TL]   got  73: SRGAN_g/n64s1/b2/8/gamma:0   (64,)
[TL]   got  74: SRGAN_g/n64s1/c1/9/kernel:0   (3, 3, 64, 64)
[TL]   got  75: SRGAN_g/n64s1/c1/9/bias:0   (64,)
[TL]   got  76: SRGAN_g/n64s1/b1/9/beta:0   (64,)
[TL]   got  77: SRGAN_g/n64s1/b1/9/gamma:0   (64,)
[TL]   got  78: SRGAN_g/n64s1/c2/9/kernel:0   (3, 3, 64, 64)
[TL]   got  79: SRGAN_g/n64s1/c2/9/bias:0   (64,)
[TL]   got  80: SRGAN_g/n64s1/b2/9/beta:0   (64,)
[TL]   got  81: SRGAN_g/n64s1/b2/9/gamma:0   (64,)
[TL]   got  82: SRGAN_g/n64s1/c1/10/kernel:0   (3, 3, 64, 64)
[TL]   got  83: SRGAN_g/n64s1/c1/10/bias:0   (64,)
[TL]   got  84: SRGAN_g/n64s1/b1/10/beta:0   (64,)
[TL]   got  85: SRGAN_g/n64s1/b1/10/gamma:0   (64,)
[TL]   got  86: SRGAN_g/n64s1/c2/10/kernel:0   (3, 3, 64, 64)
[TL]   got  87: SRGAN_g/n64s1/c2/10/bias:0   (64,)
[TL]   got  88: SRGAN_g/n64s1/b2/10/beta:0   (64,)
[TL]   got  89: SRGAN_g/n64s1/b2/10/gamma:0   (64,)
[TL]   got  90: SRGAN_g/n64s1/c1/11/kernel:0   (3, 3, 64, 64)
[TL]   got  91: SRGAN_g/n64s1/c1/11/bias:0   (64,)
[TL]   got  92: SRGAN_g/n64s1/b1/11/beta:0   (64,)
```

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[TL]   got  93: SRGAN_g/n64s1/b1/11/gamma:0   (64,)
[TL]   got  94: SRGAN_g/n64s1/c2/11/kernel:0   (3, 3, 64, 64)
[TL]   got  95: SRGAN_g/n64s1/c2/11/bias:0   (64,)
[TL]   got  96: SRGAN_g/n64s1/b2/11/beta:0   (64,)
[TL]   got  97: SRGAN_g/n64s1/b2/11/gamma:0   (64,)
[TL]   got  98: SRGAN_g/n64s1/c1/12/kernel:0   (3, 3, 64, 64)
[TL]   got  99: SRGAN_g/n64s1/c1/12/bias:0   (64,)
[TL]   got 100: SRGAN_g/n64s1/b1/12/beta:0   (64,)
[TL]   got 101: SRGAN_g/n64s1/b1/12/gamma:0   (64,)
[TL]   got 102: SRGAN_g/n64s1/c2/12/kernel:0   (3, 3, 64, 64)
[TL]   got 103: SRGAN_g/n64s1/c2/12/bias:0   (64,)
[TL]   got 104: SRGAN_g/n64s1/b2/12/beta:0   (64,)
[TL]   got 105: SRGAN_g/n64s1/b2/12/gamma:0   (64,)
[TL]   got 106: SRGAN_g/n64s1/c1/13/kernel:0   (3, 3, 64, 64)
[TL]   got 107: SRGAN_g/n64s1/c1/13/bias:0   (64,)
[TL]   got 108: SRGAN_g/n64s1/b1/13/beta:0   (64,)
[TL]   got 109: SRGAN_g/n64s1/b1/13/gamma:0   (64,)
[TL]   got 110: SRGAN_g/n64s1/c2/13/kernel:0   (3, 3, 64, 64)
[TL]   got 111: SRGAN_g/n64s1/c2/13/bias:0   (64,)
[TL]   got 112: SRGAN_g/n64s1/b2/13/beta:0   (64,)
[TL]   got 113: SRGAN_g/n64s1/b2/13/gamma:0   (64,)
[TL]   got 114: SRGAN_g/n64s1/c1/14/kernel:0   (3, 3, 64, 64)
[TL]   got 115: SRGAN_g/n64s1/c1/14/bias:0   (64,)
[TL]   got 116: SRGAN_g/n64s1/b1/14/beta:0   (64,)
[TL]   got 117: SRGAN_g/n64s1/b1/14/gamma:0   (64,)
[TL]   got 118: SRGAN_g/n64s1/c2/14/kernel:0   (3, 3, 64, 64)
[TL]   got 119: SRGAN_g/n64s1/c2/14/bias:0   (64,)
[TL]   got 120: SRGAN_g/n64s1/b2/14/beta:0   (64,)
[TL]   got 121: SRGAN_g/n64s1/b2/14/gamma:0   (64,)
[TL]   got 122: SRGAN_g/n64s1/c1/15/kernel:0   (3, 3, 64, 64)
[TL]   got 123: SRGAN_g/n64s1/c1/15/bias:0   (64,)
[TL]   got 124: SRGAN_g/n64s1/b1/15/beta:0   (64,)
[TL]   got 125: SRGAN_g/n64s1/b1/15/gamma:0   (64,)
[TL]   got 126: SRGAN_g/n64s1/c2/15/kernel:0   (3, 3, 64, 64)
[TL]   got 127: SRGAN_g/n64s1/c2/15/bias:0   (64,)
[TL]   got 128: SRGAN_g/n64s1/b2/15/beta:0   (64,)
[TL]   got 129: SRGAN_g/n64s1/b2/15/gamma:0   (64,)
[TL]   got 130: SRGAN_g/n64s1/c/m/kernel:0   (3, 3, 64, 64)
[TL]   got 131: SRGAN_g/n64s1/c/m/bias:0   (64,)
[TL]   got 132: SRGAN_g/n64s1/b/m/beta:0   (64,)
[TL]   got 133: SRGAN_g/n64s1/b/m/gamma:0   (64,)
[TL]   got 134: SRGAN_g/n256s1/1/kernel:0   (3, 3, 64, 256)
[TL]   got 135: SRGAN_g/n256s1/1/bias:0   (256,)
[TL]   got 136: SRGAN_g/out/kernel:0   (1, 1, 64, 3)
[TL]   got 137: SRGAN_g/out/bias:0   (3,)
[TL]   [*] geting variables with SRGAN_d
[TL]   got   0: SRGAN_d/h0/c/kernel:0   (4, 4, 3, 64)
[TL]   got   1: SRGAN_d/h0/c/bias:0   (64,)
[TL]   got   2: SRGAN_d/h1/c/kernel:0   (4, 4, 64, 128)
[TL]   got   3: SRGAN_d/h1/c/bias:0   (128,)
[TL]   got   4: SRGAN_d/h1/bn/beta:0   (128,)
[TL]   got   5: SRGAN_d/h1/bn/gamma:0   (128,)
[TL]   got   6: SRGAN_d/h2/c/kernel:0   (4, 4, 128, 256)
[TL]   got   7: SRGAN_d/h2/c/bias:0   (256,)
[TL]   got   8: SRGAN_d/h2/bn/beta:0   (256,)
[TL]   got   9: SRGAN_d/h2/bn/gamma:0   (256,)
[TL]   got  10: SRGAN_d/h3/c/kernel:0   (4, 4, 256, 512)
```

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[TL]   got  11: SRGAN_d/h3/c/bias:0   (512,)
[TL]   got  12: SRGAN_d/h3/bn/beta:0   (512,)
[TL]   got  13: SRGAN_d/h3/bn/gamma:0   (512,)
[TL]   got  14: SRGAN_d/h4/c/kernel:0   (4, 4, 512, 1024)
[TL]   got  15: SRGAN_d/h4/c/bias:0   (1024,)
[TL]   got  16: SRGAN_d/h4/bn/beta:0   (1024,)
[TL]   got  17: SRGAN_d/h4/bn/gamma:0   (1024,)
[TL]   got  18: SRGAN_d/h5/c/kernel:0   (4, 4, 1024, 2048)
[TL]   got  19: SRGAN_d/h5/c/bias:0   (2048,)
[TL]   got  20: SRGAN_d/h5/bn/beta:0   (2048,)
[TL]   got  21: SRGAN_d/h5/bn/gamma:0   (2048,)
[TL]   got  22: SRGAN_d/h6/c/kernel:0   (1, 1, 2048, 1024)
[TL]   got  23: SRGAN_d/h6/c/bias:0   (1024,)
[TL]   got  24: SRGAN_d/h6/bn/beta:0   (1024,)
[TL]   got  25: SRGAN_d/h6/bn/gamma:0   (1024,)
[TL]   got  26: SRGAN_d/h7/c/kernel:0   (1, 1, 1024, 512)
[TL]   got  27: SRGAN_d/h7/c/bias:0   (512,)
[TL]   got  28: SRGAN_d/h7/bn/beta:0   (512,)
[TL]   got  29: SRGAN_d/h7/bn/gamma:0   (512,)
[TL]   got  30: SRGAN_d/res/c/kernel:0   (1, 1, 512, 128)
[TL]   got  31: SRGAN_d/res/c/bias:0   (128,)
[TL]   got  32: SRGAN_d/res/bn/beta:0   (128,)
[TL]   got  33: SRGAN_d/res/bn/gamma:0   (128,)
[TL]   got  34: SRGAN_d/res/c2/kernel:0   (3, 3, 128, 128)
[TL]   got  35: SRGAN_d/res/c2/bias:0   (128,)
[TL]   got  36: SRGAN_d/res/bn2/beta:0   (128,)
[TL]   got  37: SRGAN_d/res/bn2/gamma:0   (128,)
[TL]   got  38: SRGAN_d/res/c3/kernel:0   (3, 3, 128, 512)
[TL]   got  39: SRGAN_d/res/c3/bias:0   (512,)
[TL]   got  40: SRGAN_d/res/bn3/beta:0   (512,)
[TL]   got  41: SRGAN_d/res/bn3/gamma:0   (512,)
[TL]   got  42: SRGAN_d/ho/dense/W:0   (4608, 1)
[TL]   got  43: SRGAN_d/ho/dense/b:0   (1,)
[TL] [*] Load ../output/SRGAN2/checkpoint/g_srgan_init.npz SUCCESS!
[TL] ERROR: file ../output/SRGAN2/checkpoint/d_srgan.npz doesn't exist.
  Loading conv1_1: (3, 3, 3, 64), (64,)
  Loading conv1_2: (3, 3, 64, 64), (64,)
  Loading conv2_1: (3, 3, 64, 128), (128,)
  Loading conv2_2: (3, 3, 128, 128), (128,)
  Loading conv3_1: (3, 3, 128, 256), (256,)
  Loading conv3_2: (3, 3, 256, 256), (256,)
  Loading conv3_3: (3, 3, 256, 256), (256,)
  Loading conv3_4: (3, 3, 256, 256), (256,)
  Loading conv4_1: (3, 3, 256, 512), (512,)
  Loading conv4_2: (3, 3, 512, 512), (512,)
  Loading conv4_3: (3, 3, 512, 512), (512,)
  Loading conv4_4: (3, 3, 512, 512), (512,)
  Loading conv5_1: (3, 3, 512, 512), (512,)
  Loading conv5_2: (3, 3, 512, 512), (512,)
  Loading conv5_3: (3, 3, 512, 512), (512,)
  Loading conv5_4: (3, 3, 512, 512), (512,)
  Loading fc6: (25088, 4096), (4096,)
  Loading fc7: (4096, 4096), (4096,)
  Loading fc8: (4096, 1000), (1000,)
sample LR sub-image: (16, 96, 96, 3) -1.0 1.0
sample HR sub-image: (16, 192, 192, 3) -1.0 1.0
finish saving sample images
```

```
 ** fixed learning rate: 0.000100 (for init G)
Epoch [ 0/ 0]    0 time: 33.24s, mse: 0.0123, psnr: 26.4093
Epoch [ 0/ 0]    1 time: 29.89s, mse: 0.0171, psnr: 24.5435
Epoch [ 0/ 0]    2 time: 30.25s, mse: 0.0188, psnr: 23.8611
Epoch [ 0/ 0]    3 time: 29.72s, mse: 0.0210, psnr: 23.0730
Epoch [ 0/ 0]    4 time: 30.03s, mse: 0.0139, psnr: 24.9418
Epoch [ 0/ 0]    5 time: 30.18s, mse: 0.0175, psnr: 24.2590
Epoch [ 0/ 0]    6 time: 29.92s, mse: 0.0128, psnr: 25.5272
Epoch [ 0/ 0]    7 time: 34.47s, mse: 0.0131, psnr: 25.4647
Epoch [ 0/ 0]    8 time: 33.66s, mse: 0.0139, psnr: 25.3225
Epoch [ 0/ 0]    9 time: 32.54s, mse: 0.0164, psnr: 24.5303
Epoch [ 0/ 0]   10 time: 31.16s, mse: 0.0218, psnr: 24.4800
Epoch [ 0/ 0]   11 time: 31.86s, mse: 0.0188, psnr: 24.2042
Epoch [ 0/ 0]   12 time: 32.25s, mse: 0.0165, psnr: 24.2907
Epoch [ 0/ 0]   13 time: 30.13s, mse: 0.0125, psnr: 25.3944
Epoch [ 0/ 0]   14 time: 29.69s, mse: 0.0128, psnr: 25.3797
Epoch [ 0/ 0]   15 time: 29.70s, mse: 0.0151, psnr: 25.0383
Epoch [ 0/ 0]   16 time: 29.76s, mse: 0.0141, psnr: 25.4026
Epoch [ 0/ 0]   17 time: 31.85s, mse: 0.0127, psnr: 25.7208
Epoch [ 0/ 0]   18 time: 31.46s, mse: 0.0142, psnr: 24.9992
Epoch [ 0/ 0]   19 time: 30.04s, mse: 0.0208, psnr: 23.4861
Epoch [ 0/ 0]   20 time: 29.84s, mse: 0.0171, psnr: 24.1585
Epoch [ 0/ 0]   21 time: 30.02s, mse: 0.0182, psnr: 23.7389
Epoch [ 0/ 0]   22 time: 33.40s, mse: 0.0152, psnr: 25.1947
Epoch [ 0/ 0]   23 time: 35.95s, mse: 0.0133, psnr: 25.6332
Epoch [ 0/ 0]   24 time: 31.86s, mse: 0.0131, psnr: 25.1897
Epoch [ 0/ 0]   25 time: 30.78s, mse: 0.0136, psnr: 25.4094
Epoch [ 0/ 0]   26 time: 32.32s, mse: 0.0230, psnr: 24.1464
Epoch [ 0/ 0]   27 time: 30.66s, mse: 0.0170, psnr: 24.4136
Epoch [ 0/ 0]   28 time: 30.54s, mse: 0.0147, psnr: 24.7636
Epoch [ 0/ 0]   29 time: 31.60s, mse: 0.0171, psnr: 24.0634
Epoch [ 0/ 0]   30 time: 31.50s, mse: 0.0197, psnr: 24.0961
Epoch [ 0/ 0]   31 time: 33.11s, mse: 0.0227, psnr: 22.8146
Epoch [ 0/ 0]   32 time: 32.15s, mse: 0.0146, psnr: 24.7168
Epoch [ 0/ 0]   33 time: 30.46s, mse: 0.0126, psnr: 26.2573
Epoch [ 0/ 0]   34 time: 31.24s, mse: 0.0122, psnr: 26.2371
Epoch [ 0/ 0]   35 time: 30.65s, mse: 0.0177, psnr: 24.2307
Epoch [ 0/ 0]   36 time: 31.43s, mse: 0.0122, psnr: 26.0283
Epoch [ 0/ 0]   37 time: 30.91s, mse: 0.0107, psnr: 26.4816
Epoch [ 0/ 0]   38 time: 31.08s, mse: 0.0138, psnr: 25.3411
Epoch [ 0/ 0]   39 time: 29.68s, mse: 0.0164, psnr: 24.8477
Epoch [ 0/ 0]   40 time: 29.67s, mse: 0.0116, psnr: 25.9916
Epoch [ 0/ 0]   41 time: 31.22s, mse: 0.0129, psnr: 26.1476
Epoch [ 0/ 0]   42 time: 31.31s, mse: 0.0138, psnr: 25.7726
Epoch [ 0/ 0]   43 time: 30.68s, mse: 0.0124, psnr: 25.8166
Epoch [ 0/ 0]   44 time: 30.23s, mse: 0.0126, psnr: 25.8262
Epoch [ 0/ 0]   45 time: 30.99s, mse: 0.0235, psnr: 23.0315
Epoch [ 0/ 0]   46 time: 27.60s, mse: 0.0103, psnr: 26.2994
[*] Epoch: [ 0/ 0] time: 1462.70s, mse: 0.0155, psnr: 24.9569
 ** init lr: 0.000100  decay_every_init: 10, lr_decay: 0.100000 (for GA
N)
Epoch [ 0/20]    0 time: 79.29s, d_loss: 1.5770 g_loss: 0.0572 (mse: 0.
0176, psnr: 25.5059, accuracy: 0.4688)
Epoch [ 0/20]    1 time: 68.73s, d_loss: 2.7956 g_loss: 0.0604 (mse: 0.
0172, psnr: 24.2452, accuracy: 0.5312)
Epoch [ 0/20]    2 time: 68.53s, d_loss: 2.0243 g_loss: 0.0583 (mse: 0.
0190, psnr: 23.4915, accuracy: 0.4531)
```

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Epoch [ 0/20]    3 time: 67.98s, d_loss: 2.0739 g_loss: 0.0466 (mse: 0.
0146, psnr: 25.0962, accuracy: 0.5469)
Epoch [ 0/20]    4 time: 68.46s, d_loss: 1.9308 g_loss: 0.0447 (mse: 0.
0114, psnr: 26.2912, accuracy: 0.5156)
Epoch [ 0/20]    5 time: 69.32s, d_loss: 2.1796 g_loss: 0.0466 (mse: 0.
0132, psnr: 25.7165, accuracy: 0.4844)
Epoch [ 0/20]    6 time: 66.94s, d_loss: 2.5313 g_loss: 0.0490 (mse: 0.
0156, psnr: 25.0556, accuracy: 0.5312)
Epoch [ 0/20]    7 time: 65.67s, d_loss: 1.8957 g_loss: 0.0446 (mse: 0.
0126, psnr: 25.6632, accuracy: 0.4844)
Epoch [ 0/20]    8 time: 65.46s, d_loss: 1.8393 g_loss: 0.0423 (mse: 0.
0116, psnr: 26.0124, accuracy: 0.5000)
Epoch [ 0/20]    9 time: 65.44s, d_loss: 2.0583 g_loss: 0.0457 (mse: 0.
0135, psnr: 25.5165, accuracy: 0.4844)
Epoch [ 0/20]   10 time: 65.43s, d_loss: 1.8794 g_loss: 0.0378 (mse: 0.
0115, psnr: 25.8179, accuracy: 0.5156)
Epoch [ 0/20]   11 time: 65.74s, d_loss: 1.9780 g_loss: 0.0353 (mse: 0.
0098, psnr: 26.4602, accuracy: 0.5312)
Epoch [ 0/20]   12 time: 65.54s, d_loss: 1.9587 g_loss: 0.0385 (mse: 0.
0118, psnr: 26.3272, accuracy: 0.4531)
Epoch [ 0/20]   13 time: 65.62s, d_loss: 1.8673 g_loss: 0.0332 (mse: 0.
0096, psnr: 27.1684, accuracy: 0.4688)
Epoch [ 0/20]   14 time: 66.11s, d_loss: 1.6567 g_loss: 0.0400 (mse: 0.
0131, psnr: 25.7048, accuracy: 0.5781)
Epoch [ 0/20]   15 time: 65.99s, d_loss: 1.9417 g_loss: 0.0455 (mse: 0.
0183, psnr: 24.5470, accuracy: 0.5312)
Epoch [ 0/20]   16 time: 65.82s, d_loss: 1.9787 g_loss: 0.0504 (mse: 0.
0199, psnr: 24.5038, accuracy: 0.5156)
Epoch [ 0/20]   17 time: 66.08s, d_loss: 1.8170 g_loss: 0.0511 (mse: 0.
0208, psnr: 23.0814, accuracy: 0.4531)
Epoch [ 0/20]   18 time: 66.92s, d_loss: 1.7662 g_loss: 0.0374 (mse: 0.
0114, psnr: 26.5362, accuracy: 0.4844)
Epoch [ 0/20]   19 time: 66.71s, d_loss: 1.8398 g_loss: 0.0401 (mse: 0.
0138, psnr: 25.4356, accuracy: 0.5156)
Epoch [ 0/20]   20 time: 66.80s, d_loss: 1.8167 g_loss: 0.0330 (mse: 0.
0102, psnr: 26.7629, accuracy: 0.5000)
Epoch [ 0/20]   21 time: 65.06s, d_loss: 1.7215 g_loss: 0.0387 (mse: 0.
0115, psnr: 26.3293, accuracy: 0.5000)
Epoch [ 0/20]   22 time: 69.43s, d_loss: 1.6397 g_loss: 0.0430 (mse: 0.
0157, psnr: 24.7524, accuracy: 0.5625)
Epoch [ 0/20]   23 time: 67.99s, d_loss: 1.8901 g_loss: 0.0411 (mse: 0.
0135, psnr: 25.1460, accuracy: 0.4844)
Epoch [ 0/20]   24 time: 65.13s, d_loss: 1.8525 g_loss: 0.0398 (mse: 0.
0129, psnr: 25.5928, accuracy: 0.4844)
Epoch [ 0/20]   25 time: 65.91s, d_loss: 1.7183 g_loss: 0.0396 (mse: 0.
0125, psnr: 26.1091, accuracy: 0.5000)
Epoch [ 0/20]   26 time: 64.99s, d_loss: 1.7965 g_loss: 0.0426 (mse: 0.
0147, psnr: 25.4196, accuracy: 0.5312)
Epoch [ 0/20]   27 time: 66.25s, d_loss: 1.7567 g_loss: 0.0408 (mse: 0.
0155, psnr: 25.4852, accuracy: 0.4844)
Epoch [ 0/20]   28 time: 65.77s, d_loss: 1.6823 g_loss: 0.0282 (mse: 0.
0085, psnr: 27.5555, accuracy: 0.4844)
Epoch [ 0/20]   29 time: 66.61s, d_loss: 1.7713 g_loss: 0.0345 (mse: 0.
0109, psnr: 26.6426, accuracy: 0.5156)
Epoch [ 0/20]   30 time: 66.58s, d_loss: 1.6333 g_loss: 0.0396 (mse: 0.
0166, psnr: 26.3186, accuracy: 0.5156)
Epoch [ 0/20]   31 time: 65.17s, d_loss: 1.7113 g_loss: 0.0285 (mse: 0.
```

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0095, psnr: 27.2264, accuracy: 0.4531)
Epoch [ 0/20]   32 time: 65.37s, d_loss: 1.6569 g_loss: 0.0389 (mse: 0.
0124, psnr: 25.9464, accuracy: 0.4688)
Epoch [ 0/20]   33 time: 65.25s, d_loss: 1.5607 g_loss: 0.0389 (mse: 0.
0132, psnr: 25.8983, accuracy: 0.5312)
Epoch [ 0/20]   34 time: 66.68s, d_loss: 1.5328 g_loss: 0.0363 (mse: 0.
0119, psnr: 26.0318, accuracy: 0.5000)
Epoch [ 0/20]   35 time: 67.64s, d_loss: 1.6199 g_loss: 0.0365 (mse: 0.
0102, psnr: 26.7410, accuracy: 0.5312)
Epoch [ 0/20]   36 time: 65.79s, d_loss: 1.6835 g_loss: 0.0365 (mse: 0.
0110, psnr: 26.2807, accuracy: 0.5000)
Epoch [ 0/20]   37 time: 65.33s, d_loss: 1.6075 g_loss: 0.0419 (mse: 0.
0157, psnr: 24.7933, accuracy: 0.4844)
Epoch [ 0/20]   38 time: 64.99s, d_loss: 1.6089 g_loss: 0.0360 (mse: 0.
0115, psnr: 26.2222, accuracy: 0.4844)
Epoch [ 0/20]   39 time: 66.08s, d_loss: 1.6734 g_loss: 0.0386 (mse: 0.
0156, psnr: 24.7601, accuracy: 0.5312)
Epoch [ 0/20]   40 time: 65.77s, d_loss: 1.7040 g_loss: 0.0364 (mse: 0.
0127, psnr: 26.1969, accuracy: 0.5000)
Epoch [ 0/20]   41 time: 65.70s, d_loss: 1.5940 g_loss: 0.0373 (mse: 0.
0132, psnr: 25.5111, accuracy: 0.5469)
Epoch [ 0/20]   42 time: 65.18s, d_loss: 1.5282 g_loss: 0.0356 (mse: 0.
0119, psnr: 26.0617, accuracy: 0.5000)
Epoch [ 0/20]   43 time: 65.04s, d_loss: 1.5081 g_loss: 0.0326 (mse: 0.
0116, psnr: 26.0915, accuracy: 0.4844)
Epoch [ 0/20]   44 time: 65.98s, d_loss: 1.5668 g_loss: 0.0352 (mse: 0.
0104, psnr: 26.4622, accuracy: 0.5000)
Epoch [ 0/20]   45 time: 65.47s, d_loss: 1.5520 g_loss: 0.0361 (mse: 0.
0107, psnr: 27.1352, accuracy: 0.5156)
Epoch [ 0/20]   46 time: 56.89s, d_loss: 1.5217 g_loss: 0.0315 (mse: 0.
0114, psnr: 26.1367, accuracy: 0.5000)
[*] Epoch: [ 0/20] time: 3118.64s, d_loss: 1.7978 g_loss: 0.0405 (mse:
0.013232, psnr: 25.7827, accuracy: 0.5030)
Epoch [ 1/20]    0 time: 65.73s, d_loss: 1.6481 g_loss: 0.0406 (mse: 0.
0168, psnr: 25.5941, accuracy: 0.4844)
Epoch [ 1/20]    1 time: 64.95s, d_loss: 1.5532 g_loss: 0.0300 (mse: 0.
0094, psnr: 27.5145, accuracy: 0.4688)
Epoch [ 1/20]    2 time: 65.04s, d_loss: 1.5526 g_loss: 0.0370 (mse: 0.
0137, psnr: 25.6062, accuracy: 0.5156)
Epoch [ 1/20]    3 time: 65.64s, d_loss: 1.5293 g_loss: 0.0368 (mse: 0.
0140, psnr: 26.9652, accuracy: 0.4844)
Epoch [ 1/20]    4 time: 65.87s, d_loss: 1.5664 g_loss: 0.0310 (mse: 0.
0092, psnr: 27.2553, accuracy: 0.5000)
Epoch [ 1/20]    5 time: 64.91s, d_loss: 1.5927 g_loss: 0.0392 (mse: 0.
0140, psnr: 25.2486, accuracy: 0.5156)
Epoch [ 1/20]    6 time: 66.92s, d_loss: 1.5849 g_loss: 0.0336 (mse: 0.
0120, psnr: 25.9948, accuracy: 0.5000)
Epoch [ 1/20]    7 time: 64.43s, d_loss: 1.6410 g_loss: 0.0270 (mse: 0.
0090, psnr: 27.1829, accuracy: 0.5000)
Epoch [ 1/20]    8 time: 64.96s, d_loss: 1.5225 g_loss: 0.0410 (mse: 0.
0142, psnr: 25.2409, accuracy: 0.4844)
Epoch [ 1/20]    9 time: 64.66s, d_loss: 1.5003 g_loss: 0.0356 (mse: 0.
0117, psnr: 26.4836, accuracy: 0.5156)
Epoch [ 1/20]   10 time: 64.94s, d_loss: 1.4898 g_loss: 0.0359 (mse: 0.
0120, psnr: 26.2319, accuracy: 0.5000)
Epoch [ 1/20]   11 time: 65.10s, d_loss: 1.5092 g_loss: 0.0356 (mse: 0.
0124, psnr: 26.2024, accuracy: 0.4688)
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Epoch [ 1/20]   12 time: 65.03s, d_loss: 1.5541 g_loss: 0.0302 (mse: 0.
0101, psnr: 26.5483, accuracy: 0.4844)
Epoch [ 1/20]   13 time: 65.32s, d_loss: 1.5642 g_loss: 0.0397 (mse: 0.
0150, psnr: 25.6931, accuracy: 0.5000)
Epoch [ 1/20]   14 time: 64.80s, d_loss: 1.5551 g_loss: 0.0360 (mse: 0.
0133, psnr: 25.5280, accuracy: 0.5469)
Epoch [ 1/20]   15 time: 64.86s, d_loss: 1.5544 g_loss: 0.0339 (mse: 0.
0135, psnr: 25.8344, accuracy: 0.5312)
Epoch [ 1/20]   16 time: 64.77s, d_loss: 1.5629 g_loss: 0.0316 (mse: 0.
0123, psnr: 25.8743, accuracy: 0.5312)
Epoch [ 1/20]   17 time: 64.98s, d_loss: 1.5821 g_loss: 0.0363 (mse: 0.
0133, psnr: 25.5762, accuracy: 0.5312)
Epoch [ 1/20]   18 time: 65.05s, d_loss: 1.6522 g_loss: 0.0354 (mse: 0.
0134, psnr: 25.3837, accuracy: 0.5312)
Epoch [ 1/20]   19 time: 64.91s, d_loss: 1.5231 g_loss: 0.0376 (mse: 0.
0131, psnr: 25.3892, accuracy: 0.5469)
Epoch [ 1/20]   20 time: 64.93s, d_loss: 1.4932 g_loss: 0.0410 (mse: 0.
0165, psnr: 24.4863, accuracy: 0.5156)
Epoch [ 1/20]   21 time: 65.11s, d_loss: 1.5373 g_loss: 0.0350 (mse: 0.
0136, psnr: 25.8327, accuracy: 0.4844)
Epoch [ 1/20]   22 time: 64.94s, d_loss: 1.5437 g_loss: 0.0295 (mse: 0.
0096, psnr: 27.0769, accuracy: 0.5000)
Epoch [ 1/20]   23 time: 64.74s, d_loss: 1.5269 g_loss: 0.0359 (mse: 0.
0114, psnr: 26.1636, accuracy: 0.5000)
Epoch [ 1/20]   24 time: 65.15s, d_loss: 1.4310 g_loss: 0.0379 (mse: 0.
0131, psnr: 25.3872, accuracy: 0.5156)
Epoch [ 1/20]   25 time: 65.03s, d_loss: 1.4410 g_loss: 0.0359 (mse: 0.
0133, psnr: 25.9844, accuracy: 0.5156)
Epoch [ 1/20]   26 time: 64.65s, d_loss: 1.5232 g_loss: 0.0350 (mse: 0.
0109, psnr: 26.1338, accuracy: 0.5156)
Epoch [ 1/20]   27 time: 64.60s, d_loss: 1.5742 g_loss: 0.0423 (mse: 0.
0153, psnr: 25.1010, accuracy: 0.5312)
Epoch [ 1/20]   28 time: 64.55s, d_loss: 1.5920 g_loss: 0.0347 (mse: 0.
0117, psnr: 26.6524, accuracy: 0.4844)
Epoch [ 1/20]   29 time: 64.89s, d_loss: 1.4678 g_loss: 0.0366 (mse: 0.
0125, psnr: 25.9330, accuracy: 0.5469)
Epoch [ 1/20]   30 time: 64.82s, d_loss: 1.5702 g_loss: 0.0372 (mse: 0.
0137, psnr: 25.6285, accuracy: 0.5312)
Epoch [ 1/20]   31 time: 64.64s, d_loss: 1.6014 g_loss: 0.0377 (mse: 0.
0148, psnr: 25.8291, accuracy: 0.5000)
Epoch [ 1/20]   32 time: 64.63s, d_loss: 1.5147 g_loss: 0.0330 (mse: 0.
0109, psnr: 26.4672, accuracy: 0.5312)
Epoch [ 1/20]   33 time: 64.78s, d_loss: 1.5593 g_loss: 0.0303 (mse: 0.
0112, psnr: 26.4520, accuracy: 0.5156)
Epoch [ 1/20]   34 time: 64.71s, d_loss: 1.5920 g_loss: 0.0404 (mse: 0.
0137, psnr: 25.6440, accuracy: 0.5156)
Epoch [ 1/20]   35 time: 64.79s, d_loss: 1.5754 g_loss: 0.0389 (mse: 0.
0156, psnr: 24.8518, accuracy: 0.5000)
Epoch [ 1/20]   36 time: 64.75s, d_loss: 1.4938 g_loss: 0.0373 (mse: 0.
0129, psnr: 25.9227, accuracy: 0.4688)
Epoch [ 1/20]   37 time: 65.29s, d_loss: 1.4901 g_loss: 0.0316 (mse: 0.
0102, psnr: 26.4689, accuracy: 0.5000)
Epoch [ 1/20]   38 time: 64.88s, d_loss: 1.5284 g_loss: 0.0273 (mse: 0.
0099, psnr: 26.5657, accuracy: 0.5000)
Epoch [ 1/20]   39 time: 65.22s, d_loss: 1.5924 g_loss: 0.0392 (mse: 0.
0156, psnr: 24.7541, accuracy: 0.5000)
Epoch [ 1/20]   40 time: 65.06s, d_loss: 1.4988 g_loss: 0.0330 (mse: 0.
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0107, psnr: 26.4667, accuracy: 0.5156)
Epoch [ 1/20]   41 time: 64.79s, d_loss: 1.5985 g_loss: 0.0271 (mse: 0.
0098, psnr: 27.4986, accuracy: 0.5000)
Epoch [ 1/20]   42 time: 65.05s, d_loss: 1.5360 g_loss: 0.0282 (mse: 0.
0103, psnr: 26.3676, accuracy: 0.5000)
Epoch [ 1/20]   43 time: 65.18s, d_loss: 1.5738 g_loss: 0.0343 (mse: 0.
0125, psnr: 25.8338, accuracy: 0.4688)
Epoch [ 1/20]   44 time: 65.10s, d_loss: 1.4802 g_loss: 0.0425 (mse: 0.
0138, psnr: 25.4019, accuracy: 0.5156)
Epoch [ 1/20]   45 time: 64.64s, d_loss: 1.4977 g_loss: 0.0363 (mse: 0.
0169, psnr: 24.2846, accuracy: 0.4688)
Epoch [ 1/20]   46 time: 56.48s, d_loss: 1.4746 g_loss: 0.0305 (mse: 0.
0110, psnr: 26.6935, accuracy: 0.5000)
[*] Epoch: [ 1/20] time: 3046.28s, d_loss: 1.5435 g_loss: 0.0352 (mse:
 0.012628, psnr: 25.9836, accuracy: 0.5060)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 2/20]    0 time: 66.17s, d_loss: 1.5165 g_loss: 0.0334 (mse: 0.
0116, psnr: 25.9833, accuracy: 0.4844)
Epoch [ 2/20]    1 time: 64.67s, d_loss: 1.4462 g_loss: 0.0339 (mse: 0.
0119, psnr: 26.4323, accuracy: 0.5312)
Epoch [ 2/20]    2 time: 64.33s, d_loss: 1.6231 g_loss: 0.0275 (mse: 0.
0096, psnr: 26.5413, accuracy: 0.4688)
Epoch [ 2/20]    3 time: 64.54s, d_loss: 1.5106 g_loss: 0.0272 (mse: 0.
0092, psnr: 27.0935, accuracy: 0.5156)
Epoch [ 2/20]    4 time: 64.47s, d_loss: 1.5606 g_loss: 0.0342 (mse: 0.
0136, psnr: 25.8078, accuracy: 0.5469)
Epoch [ 2/20]    5 time: 64.40s, d_loss: 1.4969 g_loss: 0.0365 (mse: 0.
0139, psnr: 25.4275, accuracy: 0.5312)
Epoch [ 2/20]    6 time: 64.57s, d_loss: 1.4121 g_loss: 0.0340 (mse: 0.
0130, psnr: 26.6138, accuracy: 0.5156)
Epoch [ 2/20]    7 time: 64.36s, d_loss: 1.4560 g_loss: 0.0281 (mse: 0.
0110, psnr: 26.6121, accuracy: 0.5000)
Epoch [ 2/20]    8 time: 64.65s, d_loss: 1.5105 g_loss: 0.0412 (mse: 0.
0142, psnr: 25.3294, accuracy: 0.5156)
Epoch [ 2/20]    9 time: 65.19s, d_loss: 1.5532 g_loss: 0.0315 (mse: 0.
0125, psnr: 25.8826, accuracy: 0.5156)
Epoch [ 2/20]   10 time: 64.69s, d_loss: 1.5024 g_loss: 0.0326 (mse: 0.
0111, psnr: 26.3962, accuracy: 0.5156)
Epoch [ 2/20]   11 time: 65.08s, d_loss: 1.4074 g_loss: 0.0425 (mse: 0.
0183, psnr: 24.5364, accuracy: 0.5000)
Epoch [ 2/20]   12 time: 64.78s, d_loss: 1.5286 g_loss: 0.0354 (mse: 0.
0135, psnr: 25.4994, accuracy: 0.5000)
Epoch [ 2/20]   13 time: 65.00s, d_loss: 1.5818 g_loss: 0.0317 (mse: 0.
0116, psnr: 26.3913, accuracy: 0.5156)
Epoch [ 2/20]   14 time: 64.91s, d_loss: 1.4699 g_loss: 0.0352 (mse: 0.
0116, psnr: 26.1028, accuracy: 0.4531)
Epoch [ 2/20]   15 time: 64.70s, d_loss: 1.4594 g_loss: 0.0324 (mse: 0.
0113, psnr: 26.6607, accuracy: 0.5000)
Epoch [ 2/20]   16 time: 64.87s, d_loss: 1.4833 g_loss: 0.0329 (mse: 0.
0125, psnr: 25.9949, accuracy: 0.5000)
Epoch [ 2/20]   17 time: 64.82s, d_loss: 1.5210 g_loss: 0.0397 (mse: 0.
0191, psnr: 24.5141, accuracy: 0.5312)
Epoch [ 2/20]   18 time: 65.13s, d_loss: 1.4564 g_loss: 0.0323 (mse: 0.
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0114, psnr: 26.2776, accuracy: 0.5000)
Epoch [ 2/20]   19 time: 64.98s, d_loss: 1.4388 g_loss: 0.0453 (mse: 0.
0248, psnr: 24.1996, accuracy: 0.5156)
Epoch [ 2/20]   20 time: 65.24s, d_loss: 1.4791 g_loss: 0.0347 (mse: 0.
0128, psnr: 25.6780, accuracy: 0.4688)
Epoch [ 2/20]   21 time: 65.43s, d_loss: 1.4709 g_loss: 0.0332 (mse: 0.
0124, psnr: 25.6689, accuracy: 0.4844)
Epoch [ 2/20]   22 time: 64.73s, d_loss: 1.4773 g_loss: 0.0340 (mse: 0.
0117, psnr: 25.9116, accuracy: 0.4844)
Epoch [ 2/20]   23 time: 64.69s, d_loss: 1.5073 g_loss: 0.0348 (mse: 0.
0120, psnr: 26.0425, accuracy: 0.5156)
Epoch [ 2/20]   24 time: 64.71s, d_loss: 1.5167 g_loss: 0.0374 (mse: 0.
0137, psnr: 25.7381, accuracy: 0.5156)
Epoch [ 2/20]   25 time: 64.67s, d_loss: 1.4717 g_loss: 0.0272 (mse: 0.
0096, psnr: 27.6876, accuracy: 0.5000)
Epoch [ 2/20]   26 time: 64.98s, d_loss: 1.4588 g_loss: 0.0377 (mse: 0.
0143, psnr: 24.9999, accuracy: 0.5000)
Epoch [ 2/20]   27 time: 65.09s, d_loss: 1.4581 g_loss: 0.0362 (mse: 0.
0143, psnr: 24.7371, accuracy: 0.5000)
Epoch [ 2/20]   28 time: 64.98s, d_loss: 1.5307 g_loss: 0.0290 (mse: 0.
0101, psnr: 27.2325, accuracy: 0.5156)
Epoch [ 2/20]   29 time: 64.87s, d_loss: 1.4007 g_loss: 0.0407 (mse: 0.
0178, psnr: 24.2114, accuracy: 0.5156)
Epoch [ 2/20]   30 time: 65.06s, d_loss: 1.4255 g_loss: 0.0462 (mse: 0.
0163, psnr: 24.4082, accuracy: 0.5156)
Epoch [ 2/20]   31 time: 64.89s, d_loss: 1.4685 g_loss: 0.0317 (mse: 0.
0114, psnr: 26.2348, accuracy: 0.4844)
Epoch [ 2/20]   32 time: 64.70s, d_loss: 1.4353 g_loss: 0.0361 (mse: 0.
0127, psnr: 25.9996, accuracy: 0.5312)
Epoch [ 2/20]   33 time: 64.82s, d_loss: 1.4362 g_loss: 0.0367 (mse: 0.
0130, psnr: 25.7670, accuracy: 0.4844)
Epoch [ 2/20]   34 time: 65.12s, d_loss: 1.4808 g_loss: 0.0361 (mse: 0.
0137, psnr: 25.6534, accuracy: 0.5000)
Epoch [ 2/20]   35 time: 64.99s, d_loss: 1.4468 g_loss: 0.0313 (mse: 0.
0115, psnr: 26.3659, accuracy: 0.4844)
Epoch [ 2/20]   36 time: 64.91s, d_loss: 1.4737 g_loss: 0.0313 (mse: 0.
0114, psnr: 26.1364, accuracy: 0.4844)
Epoch [ 2/20]   37 time: 64.94s, d_loss: 1.4396 g_loss: 0.0343 (mse: 0.
0140, psnr: 25.6470, accuracy: 0.5000)
Epoch [ 2/20]   38 time: 64.99s, d_loss: 1.4412 g_loss: 0.0475 (mse: 0.
0284, psnr: 25.3422, accuracy: 0.5000)
Epoch [ 2/20]   39 time: 65.34s, d_loss: 1.5099 g_loss: 0.0299 (mse: 0.
0113, psnr: 26.9291, accuracy: 0.5000)
Epoch [ 2/20]   40 time: 64.97s, d_loss: 1.4299 g_loss: 0.0301 (mse: 0.
0115, psnr: 26.3879, accuracy: 0.4844)
Epoch [ 2/20]   41 time: 64.86s, d_loss: 1.4455 g_loss: 0.0294 (mse: 0.
0111, psnr: 26.6019, accuracy: 0.5000)
Epoch [ 2/20]   42 time: 64.90s, d_loss: 1.4832 g_loss: 0.0356 (mse: 0.
0122, psnr: 25.8732, accuracy: 0.5000)
Epoch [ 2/20]   43 time: 65.04s, d_loss: 1.4126 g_loss: 0.0416 (mse: 0.
0158, psnr: 24.8502, accuracy: 0.5312)
Epoch [ 2/20]   44 time: 65.05s, d_loss: 1.4307 g_loss: 0.0388 (mse: 0.
0148, psnr: 25.1455, accuracy: 0.5156)
Epoch [ 2/20]   45 time: 65.01s, d_loss: 1.4371 g_loss: 0.0309 (mse: 0.
0113, psnr: 26.2216, accuracy: 0.5156)
Epoch [ 2/20]   46 time: 56.98s, d_loss: 1.4290 g_loss: 0.0397 (mse: 0.
0144, psnr: 25.3661, accuracy: 0.5536)
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[*] Epoch: [ 2/20] time: 3042.31s, d_loss: 1.4751 g_loss: 0.0349 (mse:
 0.013386, psnr: 25.8539, accuracy: 0.5051)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 3/20]    0 time: 65.54s, d_loss: 1.3976 g_loss: 0.0344 (mse: 0.
0136, psnr: 25.4271, accuracy: 0.5000)
Epoch [ 3/20]    1 time: 64.77s, d_loss: 1.4116 g_loss: 0.0344 (mse: 0.
0132, psnr: 25.9265, accuracy: 0.5000)
Epoch [ 3/20]    2 time: 64.90s, d_loss: 1.4581 g_loss: 0.0349 (mse: 0.
0132, psnr: 25.5559, accuracy: 0.5000)
Epoch [ 3/20]    3 time: 64.97s, d_loss: 1.4198 g_loss: 0.0313 (mse: 0.
0112, psnr: 26.3752, accuracy: 0.5156)
Epoch [ 3/20]    4 time: 64.82s, d_loss: 1.4377 g_loss: 0.0361 (mse: 0.
0154, psnr: 26.2830, accuracy: 0.5000)
Epoch [ 3/20]    5 time: 65.02s, d_loss: 1.4602 g_loss: 0.0408 (mse: 0.
0135, psnr: 25.7266, accuracy: 0.5156)
Epoch [ 3/20]    6 time: 64.98s, d_loss: 1.4598 g_loss: 0.0324 (mse: 0.
0135, psnr: 25.9673, accuracy: 0.5156)
Epoch [ 3/20]    7 time: 65.08s, d_loss: 1.5121 g_loss: 0.0268 (mse: 0.
0097, psnr: 26.8688, accuracy: 0.5156)
Epoch [ 3/20]    8 time: 64.99s, d_loss: 1.4367 g_loss: 0.0352 (mse: 0.
0127, psnr: 25.6898, accuracy: 0.5000)
Epoch [ 3/20]    9 time: 65.32s, d_loss: 1.3962 g_loss: 0.0436 (mse: 0.
0184, psnr: 25.1388, accuracy: 0.5000)
Epoch [ 3/20]   10 time: 64.91s, d_loss: 1.4293 g_loss: 0.0280 (mse: 0.
0104, psnr: 26.9415, accuracy: 0.4844)
Epoch [ 3/20]   11 time: 64.39s, d_loss: 1.4789 g_loss: 0.0431 (mse: 0.
0194, psnr: 25.3444, accuracy: 0.5000)
Epoch [ 3/20]   12 time: 64.63s, d_loss: 1.4631 g_loss: 0.0338 (mse: 0.
0140, psnr: 25.5453, accuracy: 0.5000)
Epoch [ 3/20]   13 time: 64.79s, d_loss: 1.4202 g_loss: 0.0270 (mse: 0.
0101, psnr: 26.4992, accuracy: 0.4844)
Epoch [ 3/20]   14 time: 64.79s, d_loss: 1.4686 g_loss: 0.0373 (mse: 0.
0173, psnr: 23.9923, accuracy: 0.5312)
Epoch [ 3/20]   15 time: 64.86s, d_loss: 1.4181 g_loss: 0.0306 (mse: 0.
0130, psnr: 25.5260, accuracy: 0.4844)
Epoch [ 3/20]   16 time: 64.89s, d_loss: 1.4255 g_loss: 0.0333 (mse: 0.
0115, psnr: 26.3304, accuracy: 0.5312)
Epoch [ 3/20]   17 time: 64.75s, d_loss: 1.4664 g_loss: 0.0404 (mse: 0.
0135, psnr: 25.2608, accuracy: 0.4844)
Epoch [ 3/20]   18 time: 64.50s, d_loss: 1.4651 g_loss: 0.0314 (mse: 0.
0114, psnr: 26.3276, accuracy: 0.5000)
Epoch [ 3/20]   19 time: 65.11s, d_loss: 1.4005 g_loss: 0.0335 (mse: 0.
0111, psnr: 26.5500, accuracy: 0.5156)
Epoch [ 3/20]   20 time: 64.98s, d_loss: 1.4583 g_loss: 0.0352 (mse: 0.
0128, psnr: 26.0199, accuracy: 0.5000)
Epoch [ 3/20]   21 time: 65.00s, d_loss: 1.4809 g_loss: 0.0343 (mse: 0.
0159, psnr: 25.9502, accuracy: 0.5156)
Epoch [ 3/20]   22 time: 64.66s, d_loss: 1.4551 g_loss: 0.0276 (mse: 0.
0096, psnr: 26.8835, accuracy: 0.5156)
Epoch [ 3/20]   23 time: 64.82s, d_loss: 1.4448 g_loss: 0.0366 (mse: 0.
0140, psnr: 24.9305, accuracy: 0.5000)
Epoch [ 3/20]   24 time: 64.88s, d_loss: 1.4033 g_loss: 0.0399 (mse: 0.
0155, psnr: 25.1402, accuracy: 0.5312)
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Epoch [ 3/20]   25 time: 64.91s, d_loss: 1.4647 g_loss: 0.0332 (mse: 0.
0114, psnr: 26.2804, accuracy: 0.5000)
Epoch [ 3/20]   26 time: 64.74s, d_loss: 1.4528 g_loss: 0.0350 (mse: 0.
0128, psnr: 25.7077, accuracy: 0.5000)
Epoch [ 3/20]   27 time: 64.80s, d_loss: 1.4464 g_loss: 0.0334 (mse: 0.
0126, psnr: 26.3745, accuracy: 0.4688)
Epoch [ 3/20]   28 time: 64.90s, d_loss: 1.4526 g_loss: 0.0301 (mse: 0.
0099, psnr: 26.5948, accuracy: 0.5000)
Epoch [ 3/20]   29 time: 64.61s, d_loss: 1.4530 g_loss: 0.0328 (mse: 0.
0124, psnr: 26.9297, accuracy: 0.5000)
Epoch [ 3/20]   30 time: 64.86s, d_loss: 1.4724 g_loss: 0.0327 (mse: 0.
0132, psnr: 26.0512, accuracy: 0.5000)
Epoch [ 3/20]   31 time: 64.96s, d_loss: 1.4494 g_loss: 0.0351 (mse: 0.
0147, psnr: 24.8986, accuracy: 0.5312)
Epoch [ 3/20]   32 time: 64.81s, d_loss: 1.4690 g_loss: 0.0270 (mse: 0.
0096, psnr: 27.0735, accuracy: 0.4844)
Epoch [ 3/20]   33 time: 64.84s, d_loss: 1.4376 g_loss: 0.0305 (mse: 0.
0105, psnr: 26.6018, accuracy: 0.5000)
Epoch [ 3/20]   34 time: 64.64s, d_loss: 1.4369 g_loss: 0.0250 (mse: 0.
0082, psnr: 27.7158, accuracy: 0.4844)
Epoch [ 3/20]   35 time: 64.51s, d_loss: 1.4367 g_loss: 0.0289 (mse: 0.
0138, psnr: 25.6790, accuracy: 0.5156)
Epoch [ 3/20]   36 time: 64.85s, d_loss: 1.4340 g_loss: 0.0341 (mse: 0.
0159, psnr: 26.3964, accuracy: 0.5312)
Epoch [ 3/20]   37 time: 64.86s, d_loss: 1.4422 g_loss: 0.0279 (mse: 0.
0115, psnr: 26.2846, accuracy: 0.5312)
Epoch [ 3/20]   38 time: 64.65s, d_loss: 1.4143 g_loss: 0.0326 (mse: 0.
0118, psnr: 25.9627, accuracy: 0.5000)
Epoch [ 3/20]   39 time: 64.70s, d_loss: 1.4235 g_loss: 0.0324 (mse: 0.
0130, psnr: 25.5178, accuracy: 0.5000)
Epoch [ 3/20]   40 time: 64.84s, d_loss: 1.3890 g_loss: 0.0328 (mse: 0.
0122, psnr: 26.1785, accuracy: 0.5000)
Epoch [ 3/20]   41 time: 64.81s, d_loss: 1.4346 g_loss: 0.0366 (mse: 0.
0145, psnr: 24.9488, accuracy: 0.5000)
Epoch [ 3/20]   42 time: 64.61s, d_loss: 1.5073 g_loss: 0.0257 (mse: 0.
0081, psnr: 27.9699, accuracy: 0.5000)
Epoch [ 3/20]   43 time: 64.81s, d_loss: 1.4336 g_loss: 0.0294 (mse: 0.
0114, psnr: 26.2307, accuracy: 0.5000)
Epoch [ 3/20]   44 time: 64.59s, d_loss: 1.4309 g_loss: 0.0342 (mse: 0.
0123, psnr: 26.1630, accuracy: 0.5000)
Epoch [ 3/20]   45 time: 64.49s, d_loss: 1.4299 g_loss: 0.0310 (mse: 0.
0125, psnr: 25.5269, accuracy: 0.5156)
Epoch [ 3/20]   46 time: 56.60s, d_loss: 1.4630 g_loss: 0.0329 (mse: 0.
0110, psnr: 26.5838, accuracy: 0.5000)
[*] Epoch: [ 3/20] time: 3038.74s, d_loss: 1.4434 g_loss: 0.0331 (mse:
 0.012703, psnr: 26.0398, accuracy: 0.5043)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 4/20]    0 time: 64.95s, d_loss: 1.4629 g_loss: 0.0347 (mse: 0.
0126, psnr: 25.7063, accuracy: 0.4844)
Epoch [ 4/20]    1 time: 64.60s, d_loss: 1.4052 g_loss: 0.0290 (mse: 0.
0103, psnr: 26.8156, accuracy: 0.5312)
Epoch [ 4/20]    2 time: 64.70s, d_loss: 1.4130 g_loss: 0.0382 (mse: 0.
0186, psnr: 24.5536, accuracy: 0.5156)
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Epoch [ 4/20]    3 time: 64.78s, d_loss: 1.4411 g_loss: 0.0322 (mse: 0.
0127, psnr: 25.5927, accuracy: 0.4219)
Epoch [ 4/20]    4 time: 64.83s, d_loss: 1.4597 g_loss: 0.0290 (mse: 0.
0115, psnr: 26.1991, accuracy: 0.5156)
Epoch [ 4/20]    5 time: 64.63s, d_loss: 1.4368 g_loss: 0.0386 (mse: 0.
0142, psnr: 25.7175, accuracy: 0.5156)
Epoch [ 4/20]    6 time: 64.65s, d_loss: 1.4313 g_loss: 0.0329 (mse: 0.
0115, psnr: 26.2755, accuracy: 0.5000)
Epoch [ 4/20]    7 time: 64.89s, d_loss: 1.4580 g_loss: 0.0295 (mse: 0.
0107, psnr: 26.6827, accuracy: 0.5156)
Epoch [ 4/20]    8 time: 64.86s, d_loss: 1.4517 g_loss: 0.0334 (mse: 0.
0142, psnr: 26.4135, accuracy: 0.5000)
Epoch [ 4/20]    9 time: 64.69s, d_loss: 1.4438 g_loss: 0.0306 (mse: 0.
0103, psnr: 26.8911, accuracy: 0.5156)
Epoch [ 4/20]   10 time: 64.78s, d_loss: 1.4631 g_loss: 0.0317 (mse: 0.
0114, psnr: 26.5635, accuracy: 0.5156)
Epoch [ 4/20]   11 time: 64.71s, d_loss: 1.4835 g_loss: 0.0372 (mse: 0.
0157, psnr: 25.0120, accuracy: 0.5000)
Epoch [ 4/20]   12 time: 64.71s, d_loss: 1.3914 g_loss: 0.0398 (mse: 0.
0197, psnr: 24.0049, accuracy: 0.5156)
Epoch [ 4/20]   13 time: 64.68s, d_loss: 1.4859 g_loss: 0.0270 (mse: 0.
0088, psnr: 27.4243, accuracy: 0.5000)
Epoch [ 4/20]   14 time: 65.11s, d_loss: 1.4382 g_loss: 0.0285 (mse: 0.
0098, psnr: 27.2169, accuracy: 0.5000)
Epoch [ 4/20]   15 time: 64.71s, d_loss: 1.4131 g_loss: 0.0255 (mse: 0.
0091, psnr: 26.9637, accuracy: 0.5312)
Epoch [ 4/20]   16 time: 64.60s, d_loss: 1.4140 g_loss: 0.0261 (mse: 0.
0095, psnr: 27.2727, accuracy: 0.4844)
Epoch [ 4/20]   17 time: 65.02s, d_loss: 1.4415 g_loss: 0.0390 (mse: 0.
0198, psnr: 26.4894, accuracy: 0.5000)
Epoch [ 4/20]   18 time: 64.99s, d_loss: 1.4628 g_loss: 0.0337 (mse: 0.
0125, psnr: 26.1668, accuracy: 0.5000)
Epoch [ 4/20]   19 time: 64.85s, d_loss: 1.4522 g_loss: 0.0315 (mse: 0.
0110, psnr: 26.7544, accuracy: 0.5312)
Epoch [ 4/20]   20 time: 65.26s, d_loss: 1.4501 g_loss: 0.0314 (mse: 0.
0111, psnr: 26.7350, accuracy: 0.5625)
Epoch [ 4/20]   21 time: 64.71s, d_loss: 1.4502 g_loss: 0.0279 (mse: 0.
0096, psnr: 27.3264, accuracy: 0.5156)
Epoch [ 4/20]   22 time: 64.71s, d_loss: 1.4061 g_loss: 0.0331 (mse: 0.
0123, psnr: 25.9103, accuracy: 0.5000)
Epoch [ 4/20]   23 time: 64.74s, d_loss: 1.5133 g_loss: 0.0338 (mse: 0.
0132, psnr: 25.4397, accuracy: 0.5000)
Epoch [ 4/20]   24 time: 64.62s, d_loss: 1.4511 g_loss: 0.0275 (mse: 0.
0104, psnr: 26.9748, accuracy: 0.5000)
Epoch [ 4/20]   25 time: 64.73s, d_loss: 1.4332 g_loss: 0.0330 (mse: 0.
0118, psnr: 26.1065, accuracy: 0.4844)
Epoch [ 4/20]   26 time: 64.52s, d_loss: 1.4281 g_loss: 0.0369 (mse: 0.
0126, psnr: 25.8794, accuracy: 0.5000)
Epoch [ 4/20]   27 time: 64.76s, d_loss: 1.4434 g_loss: 0.0276 (mse: 0.
0099, psnr: 27.1938, accuracy: 0.5156)
Epoch [ 4/20]   28 time: 64.59s, d_loss: 1.4373 g_loss: 0.0296 (mse: 0.
0108, psnr: 26.7125, accuracy: 0.5156)
Epoch [ 4/20]   29 time: 64.59s, d_loss: 1.4755 g_loss: 0.0396 (mse: 0.
0140, psnr: 25.1671, accuracy: 0.5000)
Epoch [ 4/20]   30 time: 64.68s, d_loss: 1.4462 g_loss: 0.0299 (mse: 0.
0111, psnr: 26.6776, accuracy: 0.5000)
Epoch [ 4/20]   31 time: 64.72s, d_loss: 1.4446 g_loss: 0.0226 (mse: 0.
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0072, psnr: 28.0880, accuracy: 0.5000)
Epoch [ 4/20]   32 time: 64.64s, d_loss: 1.4150 g_loss: 0.0330 (mse: 0.
0140, psnr: 26.0378, accuracy: 0.5312)
Epoch [ 4/20]   33 time: 64.75s, d_loss: 1.4448 g_loss: 0.0315 (mse: 0.
0121, psnr: 26.7085, accuracy: 0.5000)
Epoch [ 4/20]   34 time: 64.73s, d_loss: 1.4205 g_loss: 0.0368 (mse: 0.
0150, psnr: 25.3832, accuracy: 0.5156)
Epoch [ 4/20]   35 time: 64.68s, d_loss: 1.4200 g_loss: 0.0324 (mse: 0.
0103, psnr: 26.6567, accuracy: 0.5000)
Epoch [ 4/20]   36 time: 64.75s, d_loss: 1.4170 g_loss: 0.0314 (mse: 0.
0124, psnr: 26.4337, accuracy: 0.5156)
Epoch [ 4/20]   37 time: 64.57s, d_loss: 1.4050 g_loss: 0.0287 (mse: 0.
0109, psnr: 26.7812, accuracy: 0.5312)
Epoch [ 4/20]   38 time: 64.54s, d_loss: 1.4669 g_loss: 0.0233 (mse: 0.
0077, psnr: 28.0447, accuracy: 0.4844)
Epoch [ 4/20]   39 time: 64.47s, d_loss: 1.4399 g_loss: 0.0250 (mse: 0.
0083, psnr: 27.6213, accuracy: 0.5156)
Epoch [ 4/20]   40 time: 64.83s, d_loss: 1.4151 g_loss: 0.0322 (mse: 0.
0115, psnr: 26.5260, accuracy: 0.5000)
Epoch [ 4/20]   41 time: 64.61s, d_loss: 1.4146 g_loss: 0.0306 (mse: 0.
0100, psnr: 27.0060, accuracy: 0.5312)
Epoch [ 4/20]   42 time: 64.73s, d_loss: 1.4303 g_loss: 0.0407 (mse: 0.
0195, psnr: 23.5588, accuracy: 0.5625)
Epoch [ 4/20]   43 time: 64.61s, d_loss: 1.4132 g_loss: 0.0318 (mse: 0.
0129, psnr: 25.7609, accuracy: 0.5000)
Epoch [ 4/20]   44 time: 64.45s, d_loss: 1.3994 g_loss: 0.0289 (mse: 0.
0117, psnr: 25.9561, accuracy: 0.5156)
Epoch [ 4/20]   45 time: 64.73s, d_loss: 1.4617 g_loss: 0.0282 (mse: 0.
0091, psnr: 27.3120, accuracy: 0.5000)
Epoch [ 4/20]   46 time: 56.59s, d_loss: 1.4399 g_loss: 0.0279 (mse: 0.
0094, psnr: 27.4121, accuracy: 0.5000)
[*] Epoch: [ 4/20] time: 3034.05s, d_loss: 1.4390 g_loss: 0.0316 (mse:
 0.011972, psnr: 26.3857, accuracy: 0.5083)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 5/20]    0 time: 64.63s, d_loss: 1.4023 g_loss: 0.0260 (mse: 0.
0103, psnr: 26.4914, accuracy: 0.5312)
Epoch [ 5/20]    1 time: 64.63s, d_loss: 1.4240 g_loss: 0.0361 (mse: 0.
0133, psnr: 25.4258, accuracy: 0.4844)
Epoch [ 5/20]    2 time: 64.66s, d_loss: 1.4545 g_loss: 0.0316 (mse: 0.
0117, psnr: 26.2962, accuracy: 0.5156)
Epoch [ 5/20]    3 time: 64.72s, d_loss: 1.3990 g_loss: 0.0235 (mse: 0.
0080, psnr: 27.9191, accuracy: 0.5000)
Epoch [ 5/20]    4 time: 64.65s, d_loss: 1.4088 g_loss: 0.0284 (mse: 0.
0112, psnr: 26.7248, accuracy: 0.4844)
Epoch [ 5/20]    5 time: 64.66s, d_loss: 1.4341 g_loss: 0.0291 (mse: 0.
0103, psnr: 27.0913, accuracy: 0.5000)
Epoch [ 5/20]    6 time: 64.67s, d_loss: 1.4124 g_loss: 0.0331 (mse: 0.
0150, psnr: 26.3694, accuracy: 0.5156)
Epoch [ 5/20]    7 time: 64.71s, d_loss: 1.3869 g_loss: 0.0274 (mse: 0.
0125, psnr: 25.4349, accuracy: 0.5000)
Epoch [ 5/20]    8 time: 64.64s, d_loss: 1.4120 g_loss: 0.0297 (mse: 0.
0108, psnr: 26.4936, accuracy: 0.5156)
Epoch [ 5/20]    9 time: 68.09s, d_loss: 1.4131 g_loss: 0.0286 (mse: 0.
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0098, psnr: 27.0650, accuracy: 0.5156)
Epoch [ 5/20]   10 time: 64.71s, d_loss: 1.3907 g_loss: 0.0262 (mse: 0.
0099, psnr: 27.1010, accuracy: 0.5156)
Epoch [ 5/20]   11 time: 64.55s, d_loss: 1.4080 g_loss: 0.0283 (mse: 0.
0093, psnr: 27.3589, accuracy: 0.5312)
Epoch [ 5/20]   12 time: 64.61s, d_loss: 1.3857 g_loss: 0.0309 (mse: 0.
0103, psnr: 26.5851, accuracy: 0.5312)
Epoch [ 5/20]   13 time: 64.66s, d_loss: 1.3806 g_loss: 0.0327 (mse: 0.
0133, psnr: 25.9350, accuracy: 0.5000)
Epoch [ 5/20]   14 time: 64.75s, d_loss: 1.4027 g_loss: 0.0303 (mse: 0.
0101, psnr: 26.6621, accuracy: 0.5156)
Epoch [ 5/20]   15 time: 64.67s, d_loss: 1.4139 g_loss: 0.0258 (mse: 0.
0101, psnr: 26.8313, accuracy: 0.5000)
Epoch [ 5/20]   16 time: 64.97s, d_loss: 1.4386 g_loss: 0.0337 (mse: 0.
0135, psnr: 25.7861, accuracy: 0.5156)
Epoch [ 5/20]   17 time: 64.52s, d_loss: 1.4325 g_loss: 0.0292 (mse: 0.
0108, psnr: 26.3518, accuracy: 0.5000)
Epoch [ 5/20]   18 time: 64.71s, d_loss: 1.4652 g_loss: 0.0362 (mse: 0.
0156, psnr: 25.8708, accuracy: 0.5312)
Epoch [ 5/20]   19 time: 64.76s, d_loss: 1.4486 g_loss: 0.0330 (mse: 0.
0135, psnr: 25.7352, accuracy: 0.5000)
Epoch [ 5/20]   20 time: 64.94s, d_loss: 1.4702 g_loss: 0.0335 (mse: 0.
0143, psnr: 25.9213, accuracy: 0.5000)
Epoch [ 5/20]   21 time: 64.60s, d_loss: 1.4166 g_loss: 0.0381 (mse: 0.
0183, psnr: 25.4464, accuracy: 0.5469)
Epoch [ 5/20]   22 time: 64.88s, d_loss: 1.4250 g_loss: 0.0298 (mse: 0.
0116, psnr: 25.8218, accuracy: 0.5000)
Epoch [ 5/20]   23 time: 64.90s, d_loss: 1.4039 g_loss: 0.0344 (mse: 0.
0127, psnr: 25.7000, accuracy: 0.4844)
Epoch [ 5/20]   24 time: 65.66s, d_loss: 1.4359 g_loss: 0.0288 (mse: 0.
0104, psnr: 26.7139, accuracy: 0.5000)
Epoch [ 5/20]   25 time: 65.04s, d_loss: 1.3808 g_loss: 0.0354 (mse: 0.
0133, psnr: 25.7678, accuracy: 0.5000)
Epoch [ 5/20]   26 time: 64.55s, d_loss: 1.4055 g_loss: 0.0307 (mse: 0.
0112, psnr: 26.5255, accuracy: 0.5312)
Epoch [ 5/20]   27 time: 64.56s, d_loss: 1.4412 g_loss: 0.0302 (mse: 0.
0130, psnr: 26.3554, accuracy: 0.5312)
Epoch [ 5/20]   28 time: 64.89s, d_loss: 1.4365 g_loss: 0.0319 (mse: 0.
0127, psnr: 25.7748, accuracy: 0.5156)
Epoch [ 5/20]   29 time: 64.75s, d_loss: 1.4212 g_loss: 0.0313 (mse: 0.
0113, psnr: 26.8144, accuracy: 0.5000)
Epoch [ 5/20]   30 time: 64.67s, d_loss: 1.4246 g_loss: 0.0243 (mse: 0.
0091, psnr: 27.4015, accuracy: 0.5000)
Epoch [ 5/20]   31 time: 64.87s, d_loss: 1.4077 g_loss: 0.0275 (mse: 0.
0095, psnr: 27.2261, accuracy: 0.5000)
Epoch [ 5/20]   32 time: 64.93s, d_loss: 1.4193 g_loss: 0.0289 (mse: 0.
0090, psnr: 27.3388, accuracy: 0.5000)
Epoch [ 5/20]   33 time: 64.66s, d_loss: 1.3865 g_loss: 0.0337 (mse: 0.
0138, psnr: 25.9294, accuracy: 0.5156)
Epoch [ 5/20]   34 time: 64.95s, d_loss: 1.3897 g_loss: 0.0328 (mse: 0.
0112, psnr: 26.4221, accuracy: 0.5312)
Epoch [ 5/20]   35 time: 64.62s, d_loss: 1.4321 g_loss: 0.0288 (mse: 0.
0096, psnr: 27.2471, accuracy: 0.5312)
Epoch [ 5/20]   36 time: 64.92s, d_loss: 1.4252 g_loss: 0.0353 (mse: 0.
0118, psnr: 26.1134, accuracy: 0.5000)
Epoch [ 5/20]   37 time: 65.07s, d_loss: 1.4041 g_loss: 0.0331 (mse: 0.
0124, psnr: 26.1303, accuracy: 0.5312)
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Epoch [ 5/20]   38 time: 65.05s, d_loss: 1.4003 g_loss: 0.0332 (mse: 0.
0117, psnr: 25.9593, accuracy: 0.5000)
Epoch [ 5/20]   39 time: 64.96s, d_loss: 1.4916 g_loss: 0.0277 (mse: 0.
0101, psnr: 26.8592, accuracy: 0.5000)
Epoch [ 5/20]   40 time: 64.84s, d_loss: 1.4790 g_loss: 0.0298 (mse: 0.
0113, psnr: 26.5050, accuracy: 0.5625)
Epoch [ 5/20]   41 time: 65.00s, d_loss: 1.3802 g_loss: 0.0352 (mse: 0.
0143, psnr: 25.3841, accuracy: 0.5000)
Epoch [ 5/20]   42 time: 64.72s, d_loss: 1.4730 g_loss: 0.0303 (mse: 0.
0111, psnr: 26.4328, accuracy: 0.5000)
Epoch [ 5/20]   43 time: 64.99s, d_loss: 1.4514 g_loss: 0.0401 (mse: 0.
0166, psnr: 24.1479, accuracy: 0.5000)
Epoch [ 5/20]   44 time: 64.80s, d_loss: 1.3873 g_loss: 0.0259 (mse: 0.
0091, psnr: 27.2451, accuracy: 0.4844)
Epoch [ 5/20]   45 time: 65.10s, d_loss: 1.4297 g_loss: 0.0382 (mse: 0.
0189, psnr: 24.7827, accuracy: 0.5156)
Epoch [ 5/20]   46 time: 56.57s, d_loss: 1.4271 g_loss: 0.0367 (mse: 0.
0137, psnr: 25.6309, accuracy: 0.5179)
[*] Epoch: [ 5/20] time: 3040.45s, d_loss: 1.4204 g_loss: 0.0312 (mse:
 0.011940, psnr: 26.3218, accuracy: 0.5107)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 6/20]    0 time: 65.23s, d_loss: 1.4382 g_loss: 0.0235 (mse: 0.
0091, psnr: 27.3336, accuracy: 0.5312)
Epoch [ 6/20]    1 time: 64.65s, d_loss: 1.3481 g_loss: 0.0364 (mse: 0.
0180, psnr: 25.6172, accuracy: 0.5156)
Epoch [ 6/20]    2 time: 64.52s, d_loss: 1.3924 g_loss: 0.0305 (mse: 0.
0117, psnr: 26.4504, accuracy: 0.5312)
Epoch [ 6/20]    3 time: 64.62s, d_loss: 1.4146 g_loss: 0.0332 (mse: 0.
0123, psnr: 25.7670, accuracy: 0.4844)
Epoch [ 6/20]    4 time: 64.59s, d_loss: 1.4471 g_loss: 0.0363 (mse: 0.
0164, psnr: 24.6391, accuracy: 0.4688)
Epoch [ 6/20]    5 time: 64.51s, d_loss: 1.4426 g_loss: 0.0289 (mse: 0.
0101, psnr: 27.0208, accuracy: 0.5000)
Epoch [ 6/20]    6 time: 64.42s, d_loss: 1.5092 g_loss: 0.0268 (mse: 0.
0096, psnr: 26.7896, accuracy: 0.5000)
Epoch [ 6/20]    7 time: 64.63s, d_loss: 1.4272 g_loss: 0.0306 (mse: 0.
0112, psnr: 26.2337, accuracy: 0.5625)
Epoch [ 6/20]    8 time: 64.85s, d_loss: 1.4154 g_loss: 0.0269 (mse: 0.
0086, psnr: 27.4275, accuracy: 0.5312)
Epoch [ 6/20]    9 time: 64.54s, d_loss: 1.4055 g_loss: 0.0268 (mse: 0.
0090, psnr: 27.5807, accuracy: 0.5469)
Epoch [ 6/20]   10 time: 64.73s, d_loss: 1.4448 g_loss: 0.0295 (mse: 0.
0125, psnr: 26.9649, accuracy: 0.5625)
Epoch [ 6/20]   11 time: 64.59s, d_loss: 1.4101 g_loss: 0.0254 (mse: 0.
0086, psnr: 27.8449, accuracy: 0.5000)
Epoch [ 6/20]   12 time: 64.53s, d_loss: 1.4058 g_loss: 0.0339 (mse: 0.
0132, psnr: 25.6705, accuracy: 0.5469)
Epoch [ 6/20]   13 time: 64.70s, d_loss: 1.4449 g_loss: 0.0334 (mse: 0.
0131, psnr: 26.0130, accuracy: 0.5000)
Epoch [ 6/20]   14 time: 64.72s, d_loss: 1.4416 g_loss: 0.0324 (mse: 0.
0122, psnr: 26.0900, accuracy: 0.4844)
Epoch [ 6/20]   15 time: 64.70s, d_loss: 1.5113 g_loss: 0.0335 (mse: 0.
0120, psnr: 26.0422, accuracy: 0.5000)
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Epoch [ 6/20]   16 time: 64.72s, d_loss: 1.3922 g_loss: 0.0290 (mse: 0.
0114, psnr: 26.4065, accuracy: 0.5156)
Epoch [ 6/20]   17 time: 64.85s, d_loss: 1.4509 g_loss: 0.0324 (mse: 0.
0116, psnr: 26.2560, accuracy: 0.5000)
Epoch [ 6/20]   18 time: 64.40s, d_loss: 1.4684 g_loss: 0.0339 (mse: 0.
0152, psnr: 25.6232, accuracy: 0.5000)
Epoch [ 6/20]   19 time: 64.32s, d_loss: 1.4107 g_loss: 0.0301 (mse: 0.
0123, psnr: 26.3259, accuracy: 0.5469)
Epoch [ 6/20]   20 time: 64.42s, d_loss: 1.4415 g_loss: 0.0212 (mse: 0.
0075, psnr: 27.9999, accuracy: 0.5312)
Epoch [ 6/20]   21 time: 64.59s, d_loss: 1.4089 g_loss: 0.0282 (mse: 0.
0094, psnr: 27.0494, accuracy: 0.5000)
Epoch [ 6/20]   22 time: 64.84s, d_loss: 1.6696 g_loss: 0.0285 (mse: 0.
0118, psnr: 26.0980, accuracy: 0.5000)
Epoch [ 6/20]   23 time: 65.03s, d_loss: 1.4446 g_loss: 0.0334 (mse: 0.
0131, psnr: 25.1885, accuracy: 0.5312)
Epoch [ 6/20]   24 time: 64.89s, d_loss: 1.5216 g_loss: 0.0297 (mse: 0.
0119, psnr: 25.9360, accuracy: 0.4531)
Epoch [ 6/20]   25 time: 64.50s, d_loss: 1.4895 g_loss: 0.0385 (mse: 0.
0172, psnr: 25.4273, accuracy: 0.5625)
Epoch [ 6/20]   26 time: 64.61s, d_loss: 1.4340 g_loss: 0.0298 (mse: 0.
0105, psnr: 26.6515, accuracy: 0.5312)
Epoch [ 6/20]   27 time: 65.22s, d_loss: 1.4472 g_loss: 0.0345 (mse: 0.
0131, psnr: 25.8151, accuracy: 0.5000)
Epoch [ 6/20]   28 time: 64.72s, d_loss: 1.4594 g_loss: 0.0336 (mse: 0.
0172, psnr: 25.9769, accuracy: 0.5312)
Epoch [ 6/20]   29 time: 64.54s, d_loss: 1.5282 g_loss: 0.0265 (mse: 0.
0092, psnr: 27.2283, accuracy: 0.5000)
Epoch [ 6/20]   30 time: 64.52s, d_loss: 1.4838 g_loss: 0.0328 (mse: 0.
0118, psnr: 26.7528, accuracy: 0.5000)
Epoch [ 6/20]   31 time: 64.51s, d_loss: 1.4828 g_loss: 0.0344 (mse: 0.
0153, psnr: 24.8165, accuracy: 0.5000)
Epoch [ 6/20]   32 time: 64.89s, d_loss: 1.5560 g_loss: 0.0319 (mse: 0.
0118, psnr: 26.5871, accuracy: 0.4844)
Epoch [ 6/20]   33 time: 64.41s, d_loss: 1.5282 g_loss: 0.0305 (mse: 0.
0112, psnr: 26.7310, accuracy: 0.5000)
Epoch [ 6/20]   34 time: 64.44s, d_loss: 1.4821 g_loss: 0.0307 (mse: 0.
0125, psnr: 25.5897, accuracy: 0.4688)
Epoch [ 6/20]   35 time: 64.45s, d_loss: 1.4198 g_loss: 0.0277 (mse: 0.
0104, psnr: 26.7366, accuracy: 0.5156)
Epoch [ 6/20]   36 time: 64.89s, d_loss: 1.4442 g_loss: 0.0335 (mse: 0.
0163, psnr: 26.6455, accuracy: 0.5156)
Epoch [ 6/20]   37 time: 68.70s, d_loss: 1.5208 g_loss: 0.0292 (mse: 0.
0116, psnr: 26.3931, accuracy: 0.5000)
Epoch [ 6/20]   38 time: 66.49s, d_loss: 1.4918 g_loss: 0.0284 (mse: 0.
0093, psnr: 27.3662, accuracy: 0.5312)
Epoch [ 6/20]   39 time: 64.55s, d_loss: 1.4182 g_loss: 0.0307 (mse: 0.
0108, psnr: 26.3944, accuracy: 0.4688)
Epoch [ 6/20]   40 time: 64.71s, d_loss: 1.4675 g_loss: 0.0279 (mse: 0.
0109, psnr: 26.8298, accuracy: 0.5312)
Epoch [ 6/20]   41 time: 64.55s, d_loss: 1.5010 g_loss: 0.0311 (mse: 0.
0103, psnr: 26.8099, accuracy: 0.5156)
Epoch [ 6/20]   42 time: 64.72s, d_loss: 1.4327 g_loss: 0.0336 (mse: 0.
0140, psnr: 26.0101, accuracy: 0.5156)
Epoch [ 6/20]   43 time: 64.71s, d_loss: 1.4240 g_loss: 0.0262 (mse: 0.
0085, psnr: 27.7601, accuracy: 0.5000)
Epoch [ 6/20]   44 time: 65.04s, d_loss: 1.4553 g_loss: 0.0290 (mse: 0.
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0116, psnr: 26.7907, accuracy: 0.4844)
Epoch [ 6/20]   45 time: 64.85s, d_loss: 1.4919 g_loss: 0.0267 (mse: 0.
0105, psnr: 26.5321, accuracy: 0.5000)
Epoch [ 6/20]   46 time: 56.73s, d_loss: 1.4395 g_loss: 0.0277 (mse: 0.
0123, psnr: 26.4737, accuracy: 0.5000)
[*] Epoch: [ 6/20] time: 3037.38s, d_loss: 1.4576 g_loss: 0.0304 (mse:
 0.011876, psnr: 26.4401, accuracy: 0.5106)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 7/20]    0 time: 66.62s, d_loss: 1.3712 g_loss: 0.0262 (mse: 0.
0118, psnr: 26.7954, accuracy: 0.5156)
Epoch [ 7/20]    1 time: 65.12s, d_loss: 1.4620 g_loss: 0.0292 (mse: 0.
0106, psnr: 26.4641, accuracy: 0.5000)
Epoch [ 7/20]    2 time: 68.61s, d_loss: 1.4858 g_loss: 0.0305 (mse: 0.
0109, psnr: 26.6165, accuracy: 0.4688)
Epoch [ 7/20]    3 time: 68.12s, d_loss: 1.4245 g_loss: 0.0293 (mse: 0.
0098, psnr: 27.1104, accuracy: 0.5000)
Epoch [ 7/20]    4 time: 68.35s, d_loss: 1.3614 g_loss: 0.0388 (mse: 0.
0201, psnr: 25.1845, accuracy: 0.5781)
Epoch [ 7/20]    5 time: 67.36s, d_loss: 1.3949 g_loss: 0.0251 (mse: 0.
0082, psnr: 27.7067, accuracy: 0.5156)
Epoch [ 7/20]    6 time: 66.86s, d_loss: 1.4317 g_loss: 0.0359 (mse: 0.
0139, psnr: 25.4152, accuracy: 0.5156)
Epoch [ 7/20]    7 time: 67.93s, d_loss: 1.4366 g_loss: 0.0279 (mse: 0.
0105, psnr: 26.5559, accuracy: 0.5000)
Epoch [ 7/20]    8 time: 67.88s, d_loss: 1.3919 g_loss: 0.0265 (mse: 0.
0090, psnr: 27.4069, accuracy: 0.5000)
Epoch [ 7/20]    9 time: 64.78s, d_loss: 1.4328 g_loss: 0.0280 (mse: 0.
0103, psnr: 26.3303, accuracy: 0.5000)
Epoch [ 7/20]   10 time: 64.73s, d_loss: 1.3884 g_loss: 0.0275 (mse: 0.
0106, psnr: 26.3817, accuracy: 0.5000)
Epoch [ 7/20]   11 time: 64.93s, d_loss: 1.3912 g_loss: 0.0307 (mse: 0.
0116, psnr: 26.4757, accuracy: 0.5000)
Epoch [ 7/20]   12 time: 65.04s, d_loss: 1.3868 g_loss: 0.0325 (mse: 0.
0114, psnr: 26.4401, accuracy: 0.5156)
Epoch [ 7/20]   13 time: 64.74s, d_loss: 1.3886 g_loss: 0.0278 (mse: 0.
0097, psnr: 27.0303, accuracy: 0.5000)
Epoch [ 7/20]   14 time: 64.77s, d_loss: 1.3933 g_loss: 0.0298 (mse: 0.
0117, psnr: 26.1283, accuracy: 0.5000)
Epoch [ 7/20]   15 time: 64.89s, d_loss: 1.3905 g_loss: 0.0348 (mse: 0.
0149, psnr: 26.0213, accuracy: 0.5156)
Epoch [ 7/20]   16 time: 64.84s, d_loss: 1.3996 g_loss: 0.0316 (mse: 0.
0132, psnr: 26.3082, accuracy: 0.4844)
Epoch [ 7/20]   17 time: 64.94s, d_loss: 1.3837 g_loss: 0.0194 (mse: 0.
0071, psnr: 28.2132, accuracy: 0.5312)
Epoch [ 7/20]   18 time: 65.07s, d_loss: 1.4046 g_loss: 0.0252 (mse: 0.
0086, psnr: 27.2910, accuracy: 0.5000)
Epoch [ 7/20]   19 time: 64.80s, d_loss: 1.3915 g_loss: 0.0294 (mse: 0.
0120, psnr: 26.4865, accuracy: 0.5000)
Epoch [ 7/20]   20 time: 64.82s, d_loss: 1.3888 g_loss: 0.0308 (mse: 0.
0128, psnr: 26.0959, accuracy: 0.5000)
Epoch [ 7/20]   21 time: 64.77s, d_loss: 1.4022 g_loss: 0.0274 (mse: 0.
0117, psnr: 25.8186, accuracy: 0.5000)
Epoch [ 7/20]   22 time: 65.00s, d_loss: 1.4210 g_loss: 0.0333 (mse: 0.
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0125, psnr: 26.2438, accuracy: 0.5156)
Epoch [ 7/20]   23 time: 65.30s, d_loss: 1.3682 g_loss: 0.0302 (mse: 0.
0121, psnr: 26.6700, accuracy: 0.5156)
Epoch [ 7/20]   24 time: 65.19s, d_loss: 1.3822 g_loss: 0.0291 (mse: 0.
0117, psnr: 26.5971, accuracy: 0.5156)
Epoch [ 7/20]   25 time: 64.84s, d_loss: 1.4072 g_loss: 0.0350 (mse: 0.
0132, psnr: 25.4043, accuracy: 0.5156)
Epoch [ 7/20]   26 time: 65.54s, d_loss: 1.3914 g_loss: 0.0290 (mse: 0.
0101, psnr: 27.3528, accuracy: 0.5469)
Epoch [ 7/20]   27 time: 64.56s, d_loss: 1.3823 g_loss: 0.0246 (mse: 0.
0087, psnr: 27.8433, accuracy: 0.5312)
Epoch [ 7/20]   28 time: 66.19s, d_loss: 1.3913 g_loss: 0.0292 (mse: 0.
0131, psnr: 26.5318, accuracy: 0.5000)
Epoch [ 7/20]   29 time: 64.82s, d_loss: 1.3741 g_loss: 0.0254 (mse: 0.
0091, psnr: 26.9510, accuracy: 0.5156)
Epoch [ 7/20]   30 time: 64.52s, d_loss: 1.3928 g_loss: 0.0276 (mse: 0.
0114, psnr: 26.3212, accuracy: 0.5000)
Epoch [ 7/20]   31 time: 64.59s, d_loss: 1.3906 g_loss: 0.0275 (mse: 0.
0094, psnr: 27.1420, accuracy: 0.5000)
Epoch [ 7/20]   32 time: 64.99s, d_loss: 1.3863 g_loss: 0.0372 (mse: 0.
0134, psnr: 25.2819, accuracy: 0.5000)
Epoch [ 7/20]   33 time: 65.43s, d_loss: 1.3995 g_loss: 0.0364 (mse: 0.
0123, psnr: 26.4785, accuracy: 0.5000)
Epoch [ 7/20]   34 time: 65.37s, d_loss: 1.4226 g_loss: 0.0271 (mse: 0.
0099, psnr: 26.9036, accuracy: 0.5156)
Epoch [ 7/20]   35 time: 64.92s, d_loss: 1.4113 g_loss: 0.0285 (mse: 0.
0101, psnr: 26.5307, accuracy: 0.5000)
Epoch [ 7/20]   36 time: 65.51s, d_loss: 1.3908 g_loss: 0.0279 (mse: 0.
0106, psnr: 26.7747, accuracy: 0.4844)
Epoch [ 7/20]   37 time: 64.63s, d_loss: 1.3881 g_loss: 0.0252 (mse: 0.
0096, psnr: 27.0098, accuracy: 0.4844)
Epoch [ 7/20]   38 time: 64.56s, d_loss: 1.3622 g_loss: 0.0299 (mse: 0.
0101, psnr: 26.9118, accuracy: 0.5000)
Epoch [ 7/20]   39 time: 64.59s, d_loss: 1.3821 g_loss: 0.0245 (mse: 0.
0094, psnr: 26.9577, accuracy: 0.5156)
Epoch [ 7/20]   40 time: 64.61s, d_loss: 1.3574 g_loss: 0.0288 (mse: 0.
0108, psnr: 26.5722, accuracy: 0.5469)
Epoch [ 7/20]   41 time: 64.68s, d_loss: 1.3712 g_loss: 0.0291 (mse: 0.
0099, psnr: 26.8711, accuracy: 0.5156)
Epoch [ 7/20]   42 time: 65.18s, d_loss: 1.3674 g_loss: 0.0284 (mse: 0.
0109, psnr: 26.9304, accuracy: 0.5000)
Epoch [ 7/20]   43 time: 64.94s, d_loss: 1.3945 g_loss: 0.0250 (mse: 0.
0080, psnr: 27.8048, accuracy: 0.5156)
Epoch [ 7/20]   44 time: 64.63s, d_loss: 1.3558 g_loss: 0.0292 (mse: 0.
0122, psnr: 25.6577, accuracy: 0.5312)
Epoch [ 7/20]   45 time: 65.11s, d_loss: 1.3800 g_loss: 0.0270 (mse: 0.
0115, psnr: 26.6862, accuracy: 0.5156)
Epoch [ 7/20]   46 time: 56.81s, d_loss: 1.4075 g_loss: 0.0264 (mse: 0.
0095, psnr: 27.0070, accuracy: 0.5714)
[*] Epoch: [ 7/20] time: 3066.49s, d_loss: 1.3953 g_loss: 0.0291 (mse:
 0.011053, psnr: 26.6322, accuracy: 0.5105)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 8/20]    0 time: 64.62s, d_loss: 1.3692 g_loss: 0.0324 (mse: 0.
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0160, psnr: 25.2976, accuracy: 0.5156)
Epoch [ 8/20]    1 time: 64.93s, d_loss: 1.3938 g_loss: 0.0226 (mse: 0.
0076, psnr: 28.4130, accuracy: 0.4844)
Epoch [ 8/20]    2 time: 64.36s, d_loss: 1.4087 g_loss: 0.0282 (mse: 0.
0109, psnr: 26.2927, accuracy: 0.5000)
Epoch [ 8/20]    3 time: 64.54s, d_loss: 1.3966 g_loss: 0.0282 (mse: 0.
0099, psnr: 26.8826, accuracy: 0.4844)
Epoch [ 8/20]    4 time: 64.61s, d_loss: 1.3601 g_loss: 0.0280 (mse: 0.
0101, psnr: 26.9308, accuracy: 0.5312)
Epoch [ 8/20]    5 time: 64.19s, d_loss: 1.3728 g_loss: 0.0284 (mse: 0.
0099, psnr: 27.0950, accuracy: 0.5312)
Epoch [ 8/20]    6 time: 64.54s, d_loss: 1.3769 g_loss: 0.0279 (mse: 0.
0112, psnr: 26.5167, accuracy: 0.5312)
Epoch [ 8/20]    7 time: 64.61s, d_loss: 1.3596 g_loss: 0.0246 (mse: 0.
0093, psnr: 27.2880, accuracy: 0.5312)
Epoch [ 8/20]    8 time: 64.66s, d_loss: 1.3740 g_loss: 0.0300 (mse: 0.
0111, psnr: 26.6048, accuracy: 0.5156)
Epoch [ 8/20]    9 time: 64.66s, d_loss: 1.4461 g_loss: 0.0308 (mse: 0.
0141, psnr: 27.2406, accuracy: 0.5000)
Epoch [ 8/20]   10 time: 64.64s, d_loss: 1.4184 g_loss: 0.0224 (mse: 0.
0075, psnr: 28.3138, accuracy: 0.5312)
Epoch [ 8/20]   11 time: 64.33s, d_loss: 1.3697 g_loss: 0.0277 (mse: 0.
0095, psnr: 26.8978, accuracy: 0.5469)
Epoch [ 8/20]   12 time: 64.57s, d_loss: 1.3967 g_loss: 0.0271 (mse: 0.
0094, psnr: 27.3140, accuracy: 0.5000)
Epoch [ 8/20]   13 time: 64.46s, d_loss: 1.3547 g_loss: 0.0277 (mse: 0.
0106, psnr: 26.6376, accuracy: 0.5156)
Epoch [ 8/20]   14 time: 64.62s, d_loss: 1.4263 g_loss: 0.0313 (mse: 0.
0117, psnr: 25.8825, accuracy: 0.5000)
Epoch [ 8/20]   15 time: 64.72s, d_loss: 1.4514 g_loss: 0.0284 (mse: 0.
0111, psnr: 26.0897, accuracy: 0.5156)
Epoch [ 8/20]   16 time: 64.53s, d_loss: 1.4032 g_loss: 0.0227 (mse: 0.
0079, psnr: 27.7622, accuracy: 0.5156)
Epoch [ 8/20]   17 time: 64.39s, d_loss: 1.3621 g_loss: 0.0330 (mse: 0.
0113, psnr: 26.1033, accuracy: 0.5312)
Epoch [ 8/20]   18 time: 64.52s, d_loss: 1.3819 g_loss: 0.0319 (mse: 0.
0120, psnr: 25.8250, accuracy: 0.5000)
Epoch [ 8/20]   19 time: 64.57s, d_loss: 1.3188 g_loss: 0.0296 (mse: 0.
0115, psnr: 26.6218, accuracy: 0.5469)
Epoch [ 8/20]   20 time: 64.37s, d_loss: 1.4377 g_loss: 0.0215 (mse: 0.
0076, psnr: 28.0191, accuracy: 0.5625)
Epoch [ 8/20]   21 time: 64.29s, d_loss: 1.3735 g_loss: 0.0283 (mse: 0.
0102, psnr: 26.8588, accuracy: 0.5625)
Epoch [ 8/20]   22 time: 64.43s, d_loss: 1.3854 g_loss: 0.0298 (mse: 0.
0106, psnr: 26.7550, accuracy: 0.4844)
Epoch [ 8/20]   23 time: 64.38s, d_loss: 1.3802 g_loss: 0.0341 (mse: 0.
0130, psnr: 25.9898, accuracy: 0.5000)
Epoch [ 8/20]   24 time: 64.66s, d_loss: 1.4116 g_loss: 0.0265 (mse: 0.
0091, psnr: 27.0987, accuracy: 0.5000)
Epoch [ 8/20]   25 time: 64.53s, d_loss: 1.4304 g_loss: 0.0273 (mse: 0.
0107, psnr: 26.4841, accuracy: 0.5000)
Epoch [ 8/20]   26 time: 64.45s, d_loss: 1.4216 g_loss: 0.0330 (mse: 0.
0126, psnr: 25.6104, accuracy: 0.5312)
Epoch [ 8/20]   27 time: 64.59s, d_loss: 1.4519 g_loss: 0.0361 (mse: 0.
0140, psnr: 25.9122, accuracy: 0.5625)
Epoch [ 8/20]   28 time: 65.07s, d_loss: 1.4244 g_loss: 0.0295 (mse: 0.
0097, psnr: 26.9795, accuracy: 0.5156)
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Epoch [ 8/20]   29 time: 64.45s, d_loss: 1.3771 g_loss: 0.0250 (mse: 0.
0100, psnr: 27.0826, accuracy: 0.5156)
Epoch [ 8/20]   30 time: 64.45s, d_loss: 1.4948 g_loss: 0.0265 (mse: 0.
0097, psnr: 26.8696, accuracy: 0.5000)
Epoch [ 8/20]   31 time: 64.57s, d_loss: 1.4014 g_loss: 0.0331 (mse: 0.
0142, psnr: 25.8101, accuracy: 0.5156)
Epoch [ 8/20]   32 time: 64.52s, d_loss: 1.3406 g_loss: 0.0307 (mse: 0.
0138, psnr: 25.9928, accuracy: 0.5156)
Epoch [ 8/20]   33 time: 64.74s, d_loss: 1.4784 g_loss: 0.0318 (mse: 0.
0121, psnr: 26.1992, accuracy: 0.5000)
Epoch [ 8/20]   34 time: 64.49s, d_loss: 1.4514 g_loss: 0.0304 (mse: 0.
0121, psnr: 25.7687, accuracy: 0.5312)
Epoch [ 8/20]   35 time: 64.44s, d_loss: 1.3722 g_loss: 0.0300 (mse: 0.
0120, psnr: 26.0534, accuracy: 0.5156)
Epoch [ 8/20]   36 time: 64.51s, d_loss: 1.3886 g_loss: 0.0264 (mse: 0.
0119, psnr: 25.9207, accuracy: 0.5156)
Epoch [ 8/20]   37 time: 64.98s, d_loss: 1.3758 g_loss: 0.0260 (mse: 0.
0096, psnr: 27.7127, accuracy: 0.5312)
Epoch [ 8/20]   38 time: 64.31s, d_loss: 1.3797 g_loss: 0.0308 (mse: 0.
0128, psnr: 26.2528, accuracy: 0.5156)
Epoch [ 8/20]   39 time: 64.60s, d_loss: 1.3515 g_loss: 0.0354 (mse: 0.
0129, psnr: 25.9379, accuracy: 0.5469)
Epoch [ 8/20]   40 time: 64.42s, d_loss: 1.3488 g_loss: 0.0260 (mse: 0.
0099, psnr: 27.2951, accuracy: 0.5312)
Epoch [ 8/20]   41 time: 64.80s, d_loss: 1.3407 g_loss: 0.0300 (mse: 0.
0114, psnr: 26.6419, accuracy: 0.5156)
Epoch [ 8/20]   42 time: 64.67s, d_loss: 1.4014 g_loss: 0.0320 (mse: 0.
0119, psnr: 26.1624, accuracy: 0.5000)
Epoch [ 8/20]   43 time: 64.63s, d_loss: 1.3874 g_loss: 0.0323 (mse: 0.
0110, psnr: 26.8411, accuracy: 0.5469)
Epoch [ 8/20]   44 time: 64.64s, d_loss: 1.4518 g_loss: 0.0345 (mse: 0.
0126, psnr: 25.5726, accuracy: 0.5000)
Epoch [ 8/20]   45 time: 64.73s, d_loss: 1.3799 g_loss: 0.0385 (mse: 0.
0175, psnr: 24.6415, accuracy: 0.5469)
Epoch [ 8/20]   46 time: 56.61s, d_loss: 1.3938 g_loss: 0.0300 (mse: 0.
0136, psnr: 26.1932, accuracy: 0.5179)
[*] Epoch: [ 8/20] time: 3026.41s, d_loss: 1.3952 g_loss: 0.0293 (mse:
 0.011253, psnr: 26.5673, accuracy: 0.5193)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [ 9/20]    0 time: 64.55s, d_loss: 1.3293 g_loss: 0.0282 (mse: 0.
0127, psnr: 25.9925, accuracy: 0.5469)
Epoch [ 9/20]    1 time: 64.55s, d_loss: 1.3452 g_loss: 0.0223 (mse: 0.
0077, psnr: 28.1198, accuracy: 0.5469)
Epoch [ 9/20]    2 time: 64.48s, d_loss: 1.4048 g_loss: 0.0265 (mse: 0.
0103, psnr: 26.7473, accuracy: 0.5000)
Epoch [ 9/20]    3 time: 64.56s, d_loss: 1.4538 g_loss: 0.0303 (mse: 0.
0121, psnr: 26.3013, accuracy: 0.5000)
Epoch [ 9/20]    4 time: 64.50s, d_loss: 1.3649 g_loss: 0.0331 (mse: 0.
0125, psnr: 26.3199, accuracy: 0.5938)
Epoch [ 9/20]    5 time: 64.56s, d_loss: 1.3543 g_loss: 0.0340 (mse: 0.
0126, psnr: 25.9105, accuracy: 0.5625)
Epoch [ 9/20]    6 time: 64.64s, d_loss: 1.3848 g_loss: 0.0244 (mse: 0.
0083, psnr: 27.6096, accuracy: 0.5312)
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Epoch [ 9/20]    7 time: 64.66s, d_loss: 1.3740 g_loss: 0.0306 (mse: 0.
0122, psnr: 26.1271, accuracy: 0.5000)
Epoch [ 9/20]    8 time: 64.63s, d_loss: 1.3454 g_loss: 0.0247 (mse: 0.
0109, psnr: 27.8149, accuracy: 0.5312)
Epoch [ 9/20]    9 time: 64.36s, d_loss: 1.3760 g_loss: 0.0245 (mse: 0.
0092, psnr: 26.9797, accuracy: 0.5156)
Epoch [ 9/20]   10 time: 64.35s, d_loss: 1.4191 g_loss: 0.0327 (mse: 0.
0144, psnr: 26.3838, accuracy: 0.5156)
Epoch [ 9/20]   11 time: 64.51s, d_loss: 1.3437 g_loss: 0.0295 (mse: 0.
0118, psnr: 26.3110, accuracy: 0.5156)
Epoch [ 9/20]   12 time: 65.55s, d_loss: 1.3933 g_loss: 0.0304 (mse: 0.
0106, psnr: 26.5909, accuracy: 0.5625)
Epoch [ 9/20]   13 time: 64.61s, d_loss: 1.3665 g_loss: 0.0309 (mse: 0.
0134, psnr: 26.4331, accuracy: 0.5156)
Epoch [ 9/20]   14 time: 64.45s, d_loss: 1.3554 g_loss: 0.0338 (mse: 0.
0169, psnr: 26.5007, accuracy: 0.5312)
Epoch [ 9/20]   15 time: 64.37s, d_loss: 1.3343 g_loss: 0.0335 (mse: 0.
0113, psnr: 26.4525, accuracy: 0.5156)
Epoch [ 9/20]   16 time: 64.49s, d_loss: 1.4203 g_loss: 0.0239 (mse: 0.
0087, psnr: 27.1666, accuracy: 0.5000)
Epoch [ 9/20]   17 time: 64.59s, d_loss: 1.4382 g_loss: 0.0274 (mse: 0.
0103, psnr: 26.4946, accuracy: 0.5625)
Epoch [ 9/20]   18 time: 64.51s, d_loss: 1.3188 g_loss: 0.0345 (mse: 0.
0131, psnr: 25.4544, accuracy: 0.6875)
Epoch [ 9/20]   19 time: 64.48s, d_loss: 1.3618 g_loss: 0.0302 (mse: 0.
0121, psnr: 26.2056, accuracy: 0.5312)
Epoch [ 9/20]   20 time: 64.28s, d_loss: 1.3417 g_loss: 0.0246 (mse: 0.
0089, psnr: 27.7653, accuracy: 0.5156)
Epoch [ 9/20]   21 time: 64.59s, d_loss: 1.3375 g_loss: 0.0237 (mse: 0.
0081, psnr: 27.8169, accuracy: 0.5312)
Epoch [ 9/20]   22 time: 64.35s, d_loss: 1.3341 g_loss: 0.0448 (mse: 0.
0266, psnr: 25.9135, accuracy: 0.5156)
Epoch [ 9/20]   23 time: 64.27s, d_loss: 1.3937 g_loss: 0.0239 (mse: 0.
0094, psnr: 26.8951, accuracy: 0.5000)
Epoch [ 9/20]   24 time: 64.51s, d_loss: 1.3939 g_loss: 0.0305 (mse: 0.
0109, psnr: 26.3251, accuracy: 0.5469)
Epoch [ 9/20]   25 time: 64.69s, d_loss: 1.3356 g_loss: 0.0308 (mse: 0.
0122, psnr: 25.8587, accuracy: 0.6250)
Epoch [ 9/20]   26 time: 64.33s, d_loss: 1.4373 g_loss: 0.0278 (mse: 0.
0098, psnr: 26.7528, accuracy: 0.5000)
Epoch [ 9/20]   27 time: 64.71s, d_loss: 1.4097 g_loss: 0.0267 (mse: 0.
0095, psnr: 26.7516, accuracy: 0.5000)
Epoch [ 9/20]   28 time: 64.40s, d_loss: 1.3982 g_loss: 0.0268 (mse: 0.
0094, psnr: 27.3008, accuracy: 0.6250)
Epoch [ 9/20]   29 time: 64.25s, d_loss: 1.5211 g_loss: 0.0251 (mse: 0.
0095, psnr: 27.4350, accuracy: 0.5469)
Epoch [ 9/20]   30 time: 64.52s, d_loss: 1.3441 g_loss: 0.0317 (mse: 0.
0112, psnr: 26.2026, accuracy: 0.5156)
Epoch [ 9/20]   31 time: 64.25s, d_loss: 1.3476 g_loss: 0.0259 (mse: 0.
0093, psnr: 26.9645, accuracy: 0.5000)
Epoch [ 9/20]   32 time: 64.34s, d_loss: 1.5926 g_loss: 0.0328 (mse: 0.
0144, psnr: 25.4300, accuracy: 0.5000)
Epoch [ 9/20]   33 time: 64.24s, d_loss: 1.3761 g_loss: 0.0294 (mse: 0.
0104, psnr: 26.5451, accuracy: 0.5312)
Epoch [ 9/20]   34 time: 64.40s, d_loss: 1.3881 g_loss: 0.0265 (mse: 0.
0108, psnr: 26.7486, accuracy: 0.5781)
Epoch [ 9/20]   35 time: 64.29s, d_loss: 1.4292 g_loss: 0.0292 (mse: 0.
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0099, psnr: 26.8572, accuracy: 0.5469)
Epoch [ 9/20]   36 time: 64.52s, d_loss: 1.5231 g_loss: 0.0352 (mse: 0.
0175, psnr: 25.3277, accuracy: 0.6094)
Epoch [ 9/20]   37 time: 64.46s, d_loss: 1.2922 g_loss: 0.0323 (mse: 0.
0141, psnr: 26.7150, accuracy: 0.5469)
Epoch [ 9/20]   38 time: 64.45s, d_loss: 1.5357 g_loss: 0.0284 (mse: 0.
0120, psnr: 26.6983, accuracy: 0.5000)
Epoch [ 9/20]   39 time: 64.37s, d_loss: 1.4201 g_loss: 0.0211 (mse: 0.
0077, psnr: 27.7239, accuracy: 0.5000)
Epoch [ 9/20]   40 time: 64.39s, d_loss: 1.3767 g_loss: 0.0328 (mse: 0.
0146, psnr: 26.1187, accuracy: 0.5312)
Epoch [ 9/20]   41 time: 64.24s, d_loss: 1.3694 g_loss: 0.0306 (mse: 0.
0109, psnr: 26.9168, accuracy: 0.6094)
Epoch [ 9/20]   42 time: 64.40s, d_loss: 1.3947 g_loss: 0.0376 (mse: 0.
0132, psnr: 25.6770, accuracy: 0.5312)
Epoch [ 9/20]   43 time: 64.66s, d_loss: 1.4765 g_loss: 0.0205 (mse: 0.
0079, psnr: 28.6947, accuracy: 0.5000)
Epoch [ 9/20]   44 time: 64.15s, d_loss: 1.3777 g_loss: 0.0291 (mse: 0.
0099, psnr: 27.1298, accuracy: 0.5156)
Epoch [ 9/20]   45 time: 64.37s, d_loss: 1.4108 g_loss: 0.0207 (mse: 0.
0078, psnr: 28.3912, accuracy: 0.5156)
Epoch [ 9/20]   46 time: 56.37s, d_loss: 1.5240 g_loss: 0.0272 (mse: 0.
0098, psnr: 27.1202, accuracy: 0.5000)
[*] Epoch: [ 9/20] time: 3022.21s, d_loss: 1.3950 g_loss: 0.0290 (mse:
 0.011423, psnr: 26.7232, accuracy: 0.5362)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
 ** new learning rate: 0.000010 (for GAN)
Epoch [10/20]    0 time: 68.17s, d_loss: 1.3393 g_loss: 0.0260 (mse: 0.
0094, psnr: 27.4356, accuracy: 0.5312)
Epoch [10/20]    1 time: 66.92s, d_loss: 1.3414 g_loss: 0.0301 (mse: 0.
0136, psnr: 25.7439, accuracy: 0.5000)
Epoch [10/20]    2 time: 66.49s, d_loss: 1.3584 g_loss: 0.0253 (mse: 0.
0090, psnr: 27.1594, accuracy: 0.5000)
Epoch [10/20]    3 time: 64.90s, d_loss: 1.3423 g_loss: 0.0260 (mse: 0.
0093, psnr: 27.8079, accuracy: 0.5156)
Epoch [10/20]    4 time: 65.96s, d_loss: 1.3538 g_loss: 0.0295 (mse: 0.
0107, psnr: 26.7258, accuracy: 0.5000)
Epoch [10/20]    5 time: 65.86s, d_loss: 1.3439 g_loss: 0.0273 (mse: 0.
0137, psnr: 27.0276, accuracy: 0.5000)
Epoch [10/20]    6 time: 64.48s, d_loss: 1.3570 g_loss: 0.0316 (mse: 0.
0106, psnr: 26.8212, accuracy: 0.5156)
Epoch [10/20]    7 time: 64.47s, d_loss: 1.3570 g_loss: 0.0294 (mse: 0.
0099, psnr: 27.3368, accuracy: 0.5156)
Epoch [10/20]    8 time: 64.49s, d_loss: 1.4004 g_loss: 0.0242 (mse: 0.
0090, psnr: 27.5608, accuracy: 0.5156)
Epoch [10/20]    9 time: 64.63s, d_loss: 1.3982 g_loss: 0.0319 (mse: 0.
0113, psnr: 26.4326, accuracy: 0.6250)
Epoch [10/20]   10 time: 64.92s, d_loss: 1.3404 g_loss: 0.0226 (mse: 0.
0082, psnr: 27.8127, accuracy: 0.5000)
Epoch [10/20]   11 time: 66.79s, d_loss: 1.3813 g_loss: 0.0285 (mse: 0.
0097, psnr: 27.1032, accuracy: 0.5156)
Epoch [10/20]   12 time: 65.11s, d_loss: 1.3369 g_loss: 0.0244 (mse: 0.
0087, psnr: 27.5574, accuracy: 0.5156)
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Epoch [10/20]   13 time: 65.98s, d_loss: 1.3016 g_loss: 0.0309 (mse: 0.
0122, psnr: 26.3522, accuracy: 0.5000)
Epoch [10/20]   14 time: 64.36s, d_loss: 1.3414 g_loss: 0.0283 (mse: 0.
0100, psnr: 26.8222, accuracy: 0.5469)
Epoch [10/20]   15 time: 64.29s, d_loss: 1.3055 g_loss: 0.0310 (mse: 0.
0161, psnr: 27.2233, accuracy: 0.5156)
Epoch [10/20]   16 time: 64.36s, d_loss: 1.3273 g_loss: 0.0258 (mse: 0.
0093, psnr: 27.7094, accuracy: 0.5312)
Epoch [10/20]   17 time: 64.66s, d_loss: 1.3381 g_loss: 0.0256 (mse: 0.
0089, psnr: 27.8292, accuracy: 0.5312)
Epoch [10/20]   18 time: 64.34s, d_loss: 1.3415 g_loss: 0.0234 (mse: 0.
0086, psnr: 27.9341, accuracy: 0.5469)
Epoch [10/20]   19 time: 64.94s, d_loss: 1.3417 g_loss: 0.0253 (mse: 0.
0096, psnr: 26.7523, accuracy: 0.5156)
Epoch [10/20]   20 time: 65.13s, d_loss: 1.3320 g_loss: 0.0296 (mse: 0.
0112, psnr: 26.6995, accuracy: 0.5156)
Epoch [10/20]   21 time: 65.26s, d_loss: 1.3765 g_loss: 0.0295 (mse: 0.
0113, psnr: 26.9857, accuracy: 0.5469)
Epoch [10/20]   22 time: 64.60s, d_loss: 1.3671 g_loss: 0.0279 (mse: 0.
0105, psnr: 26.5507, accuracy: 0.5469)
Epoch [10/20]   23 time: 64.45s, d_loss: 1.3321 g_loss: 0.0278 (mse: 0.
0116, psnr: 26.8291, accuracy: 0.5156)
Epoch [10/20]   24 time: 64.98s, d_loss: 1.3672 g_loss: 0.0286 (mse: 0.
0116, psnr: 26.6396, accuracy: 0.5000)
Epoch [10/20]   25 time: 64.58s, d_loss: 1.3418 g_loss: 0.0285 (mse: 0.
0109, psnr: 26.8302, accuracy: 0.5000)
Epoch [10/20]   26 time: 64.49s, d_loss: 1.3530 g_loss: 0.0288 (mse: 0.
0113, psnr: 26.7211, accuracy: 0.5000)
Epoch [10/20]   27 time: 64.41s, d_loss: 1.3091 g_loss: 0.0247 (mse: 0.
0103, psnr: 27.3460, accuracy: 0.5469)
Epoch [10/20]   28 time: 64.93s, d_loss: 1.3535 g_loss: 0.0256 (mse: 0.
0096, psnr: 27.0020, accuracy: 0.5156)
Epoch [10/20]   29 time: 65.24s, d_loss: 1.2934 g_loss: 0.0272 (mse: 0.
0104, psnr: 27.0814, accuracy: 0.5625)
Epoch [10/20]   30 time: 64.26s, d_loss: 1.3639 g_loss: 0.0260 (mse: 0.
0111, psnr: 26.8689, accuracy: 0.5000)
Epoch [10/20]   31 time: 64.48s, d_loss: 1.3452 g_loss: 0.0290 (mse: 0.
0120, psnr: 27.3053, accuracy: 0.5156)
Epoch [10/20]   32 time: 65.09s, d_loss: 1.3712 g_loss: 0.0234 (mse: 0.
0088, psnr: 27.8684, accuracy: 0.5469)
Epoch [10/20]   33 time: 65.10s, d_loss: 1.3839 g_loss: 0.0302 (mse: 0.
0130, psnr: 25.3277, accuracy: 0.5000)
Epoch [10/20]   34 time: 64.79s, d_loss: 1.3223 g_loss: 0.0238 (mse: 0.
0079, psnr: 27.7340, accuracy: 0.5000)
Epoch [10/20]   35 time: 64.42s, d_loss: 1.3216 g_loss: 0.0269 (mse: 0.
0097, psnr: 27.3963, accuracy: 0.5938)
Epoch [10/20]   36 time: 65.21s, d_loss: 1.3248 g_loss: 0.0239 (mse: 0.
0095, psnr: 27.5330, accuracy: 0.5000)
Epoch [10/20]   37 time: 64.32s, d_loss: 1.3136 g_loss: 0.0261 (mse: 0.
0097, psnr: 27.0846, accuracy: 0.5625)
Epoch [10/20]   38 time: 64.82s, d_loss: 1.3114 g_loss: 0.0266 (mse: 0.
0093, psnr: 27.3539, accuracy: 0.5312)
Epoch [10/20]   39 time: 64.41s, d_loss: 1.2910 g_loss: 0.0272 (mse: 0.
0098, psnr: 27.6035, accuracy: 0.5000)
Epoch [10/20]   40 time: 64.48s, d_loss: 1.3072 g_loss: 0.0245 (mse: 0.
0094, psnr: 27.7881, accuracy: 0.5156)
Epoch [10/20]   41 time: 63.70s, d_loss: 1.3184 g_loss: 0.0280 (mse: 0.
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0104, psnr: 27.5995, accuracy: 0.5312)
Epoch [10/20]   42 time: 64.34s, d_loss: 1.3635 g_loss: 0.0228 (mse: 0.
0078, psnr: 27.9422, accuracy: 0.5000)
Epoch [10/20]   43 time: 64.29s, d_loss: 1.2999 g_loss: 0.0238 (mse: 0.
0076, psnr: 28.4730, accuracy: 0.5000)
Epoch [10/20]   44 time: 63.47s, d_loss: 1.2927 g_loss: 0.0239 (mse: 0.
0087, psnr: 27.6466, accuracy: 0.5469)
Epoch [10/20]   45 time: 64.75s, d_loss: 1.2786 g_loss: 0.0312 (mse: 0.
0116, psnr: 26.4760, accuracy: 0.5625)
Epoch [10/20]   46 time: 56.18s, d_loss: 1.2897 g_loss: 0.0270 (mse: 0.
0094, psnr: 27.1154, accuracy: 0.5893)
[*] Epoch: [10/20] time: 3042.33s, d_loss: 1.3377 g_loss: 0.0270 (mse:
 0.010264, psnr: 27.1691, accuracy: 0.5252)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [11/20]    0 time: 65.11s, d_loss: 1.3399 g_loss: 0.0207 (mse: 0.
0073, psnr: 28.3014, accuracy: 0.5000)
Epoch [11/20]    1 time: 64.34s, d_loss: 1.3120 g_loss: 0.0216 (mse: 0.
0084, psnr: 27.7638, accuracy: 0.5156)
Epoch [11/20]    2 time: 64.46s, d_loss: 1.3254 g_loss: 0.0300 (mse: 0.
0114, psnr: 26.2109, accuracy: 0.5469)
Epoch [11/20]    3 time: 64.32s, d_loss: 1.3732 g_loss: 0.0256 (mse: 0.
0094, psnr: 27.4769, accuracy: 0.5000)
Epoch [11/20]    4 time: 64.26s, d_loss: 1.2462 g_loss: 0.0276 (mse: 0.
0111, psnr: 27.3174, accuracy: 0.6719)
Epoch [11/20]    5 time: 64.47s, d_loss: 1.2679 g_loss: 0.0280 (mse: 0.
0110, psnr: 26.6593, accuracy: 0.6562)
Epoch [11/20]    6 time: 64.71s, d_loss: 1.2826 g_loss: 0.0314 (mse: 0.
0125, psnr: 26.8668, accuracy: 0.6562)
Epoch [11/20]    7 time: 64.85s, d_loss: 1.2821 g_loss: 0.0272 (mse: 0.
0097, psnr: 26.9271, accuracy: 0.5625)
Epoch [11/20]    8 time: 64.76s, d_loss: 1.3124 g_loss: 0.0195 (mse: 0.
0077, psnr: 28.5480, accuracy: 0.5938)
Epoch [11/20]    9 time: 64.70s, d_loss: 1.2565 g_loss: 0.0285 (mse: 0.
0103, psnr: 27.1698, accuracy: 0.6562)
Epoch [11/20]   10 time: 65.02s, d_loss: 1.3091 g_loss: 0.0242 (mse: 0.
0100, psnr: 27.3752, accuracy: 0.5625)
Epoch [11/20]   11 time: 64.39s, d_loss: 1.3555 g_loss: 0.0280 (mse: 0.
0133, psnr: 27.2089, accuracy: 0.5000)
Epoch [11/20]   12 time: 64.89s, d_loss: 1.2853 g_loss: 0.0302 (mse: 0.
0130, psnr: 26.5004, accuracy: 0.5156)
Epoch [11/20]   13 time: 64.74s, d_loss: 1.2687 g_loss: 0.0291 (mse: 0.
0113, psnr: 26.4967, accuracy: 0.5625)
Epoch [11/20]   14 time: 64.91s, d_loss: 1.2990 g_loss: 0.0305 (mse: 0.
0106, psnr: 26.6007, accuracy: 0.5625)
Epoch [11/20]   15 time: 64.52s, d_loss: 1.2573 g_loss: 0.0327 (mse: 0.
0128, psnr: 26.5160, accuracy: 0.5469)
Epoch [11/20]   16 time: 64.77s, d_loss: 1.2189 g_loss: 0.0313 (mse: 0.
0145, psnr: 26.1923, accuracy: 0.5469)
Epoch [11/20]   17 time: 64.48s, d_loss: 1.2171 g_loss: 0.0330 (mse: 0.
0125, psnr: 25.8643, accuracy: 0.5625)
Epoch [11/20]   18 time: 64.58s, d_loss: 1.2608 g_loss: 0.0287 (mse: 0.
0115, psnr: 26.5100, accuracy: 0.5000)
Epoch [11/20]   19 time: 64.56s, d_loss: 1.2751 g_loss: 0.0262 (mse: 0.
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0097, psnr: 27.1107, accuracy: 0.5000)
Epoch [11/20]   20 time: 64.63s, d_loss: 1.2940 g_loss: 0.0248 (mse: 0.
0089, psnr: 27.5003, accuracy: 0.5781)
Epoch [11/20]   21 time: 64.29s, d_loss: 1.2683 g_loss: 0.0289 (mse: 0.
0100, psnr: 27.3305, accuracy: 0.5469)
Epoch [11/20]   22 time: 64.73s, d_loss: 1.3130 g_loss: 0.0223 (mse: 0.
0077, psnr: 27.5877, accuracy: 0.5156)
Epoch [11/20]   23 time: 64.74s, d_loss: 1.2579 g_loss: 0.0220 (mse: 0.
0081, psnr: 28.2738, accuracy: 0.6406)
Epoch [11/20]   24 time: 64.38s, d_loss: 1.2208 g_loss: 0.0288 (mse: 0.
0140, psnr: 26.4316, accuracy: 0.7031)
Epoch [11/20]   25 time: 64.86s, d_loss: 1.3031 g_loss: 0.0213 (mse: 0.
0069, psnr: 28.3193, accuracy: 0.5469)
Epoch [11/20]   26 time: 64.20s, d_loss: 1.2410 g_loss: 0.0300 (mse: 0.
0109, psnr: 26.5830, accuracy: 0.6094)
Epoch [11/20]   27 time: 63.80s, d_loss: 1.2731 g_loss: 0.0269 (mse: 0.
0113, psnr: 26.7325, accuracy: 0.5781)
Epoch [11/20]   28 time: 64.42s, d_loss: 1.2643 g_loss: 0.0247 (mse: 0.
0090, psnr: 27.8815, accuracy: 0.5156)
Epoch [11/20]   29 time: 65.10s, d_loss: 1.2646 g_loss: 0.0245 (mse: 0.
0086, psnr: 27.5867, accuracy: 0.5312)
Epoch [11/20]   30 time: 65.49s, d_loss: 1.4168 g_loss: 0.0262 (mse: 0.
0097, psnr: 26.7751, accuracy: 0.5000)
Epoch [11/20]   31 time: 63.25s, d_loss: 1.3047 g_loss: 0.0290 (mse: 0.
0149, psnr: 27.9117, accuracy: 0.5000)
Epoch [11/20]   32 time: 64.29s, d_loss: 1.2912 g_loss: 0.0241 (mse: 0.
0087, psnr: 27.8384, accuracy: 0.5156)
Epoch [11/20]   33 time: 63.75s, d_loss: 1.2918 g_loss: 0.0281 (mse: 0.
0106, psnr: 27.3029, accuracy: 0.5000)
Epoch [11/20]   34 time: 64.30s, d_loss: 1.2512 g_loss: 0.0338 (mse: 0.
0158, psnr: 26.3709, accuracy: 0.7031)
Epoch [11/20]   35 time: 64.20s, d_loss: 1.2936 g_loss: 0.0254 (mse: 0.
0110, psnr: 27.3846, accuracy: 0.5000)
Epoch [11/20]   36 time: 64.20s, d_loss: 1.1504 g_loss: 0.0323 (mse: 0.
0121, psnr: 26.4342, accuracy: 0.6406)
Epoch [11/20]   37 time: 64.07s, d_loss: 1.3074 g_loss: 0.0232 (mse: 0.
0089, psnr: 28.2320, accuracy: 0.5000)
Epoch [11/20]   38 time: 64.23s, d_loss: 1.2907 g_loss: 0.0335 (mse: 0.
0148, psnr: 26.9893, accuracy: 0.6719)
Epoch [11/20]   39 time: 64.26s, d_loss: 1.2353 g_loss: 0.0278 (mse: 0.
0100, psnr: 27.4360, accuracy: 0.6094)
Epoch [11/20]   40 time: 64.33s, d_loss: 1.2898 g_loss: 0.0225 (mse: 0.
0078, psnr: 28.0034, accuracy: 0.5625)
Epoch [11/20]   41 time: 63.99s, d_loss: 1.2398 g_loss: 0.0275 (mse: 0.
0122, psnr: 26.6246, accuracy: 0.6250)
Epoch [11/20]   42 time: 64.29s, d_loss: 1.1891 g_loss: 0.0261 (mse: 0.
0100, psnr: 27.7028, accuracy: 0.7188)
Epoch [11/20]   43 time: 64.00s, d_loss: 1.2811 g_loss: 0.0216 (mse: 0.
0075, psnr: 27.9676, accuracy: 0.5156)
Epoch [11/20]   44 time: 64.37s, d_loss: 1.2565 g_loss: 0.0255 (mse: 0.
0091, psnr: 27.5810, accuracy: 0.5000)
Epoch [11/20]   45 time: 64.66s, d_loss: 1.2239 g_loss: 0.0230 (mse: 0.
0085, psnr: 28.2001, accuracy: 0.5469)
Epoch [11/20]   46 time: 56.51s, d_loss: 1.3056 g_loss: 0.0248 (mse: 0.
0080, psnr: 27.9751, accuracy: 0.5179)
[*] Epoch: [11/20] time: 3022.21s, d_loss: 1.2780 g_loss: 0.0269 (mse:
 0.010484, psnr: 27.2462, accuracy: 0.5662)
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[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [12/20]    0 time: 65.10s, d_loss: 1.2710 g_loss: 0.0224 (mse: 0.
0081, psnr: 28.1073, accuracy: 0.5156)
Epoch [12/20]    1 time: 64.37s, d_loss: 1.2310 g_loss: 0.0221 (mse: 0.
0071, psnr: 28.5782, accuracy: 0.5469)
Epoch [12/20]    2 time: 64.44s, d_loss: 1.2855 g_loss: 0.0255 (mse: 0.
0096, psnr: 26.8701, accuracy: 0.5312)
Epoch [12/20]    3 time: 64.23s, d_loss: 1.2685 g_loss: 0.0244 (mse: 0.
0109, psnr: 27.0018, accuracy: 0.7031)
Epoch [12/20]    4 time: 64.35s, d_loss: 1.2362 g_loss: 0.0306 (mse: 0.
0116, psnr: 26.4198, accuracy: 0.6406)
Epoch [12/20]    5 time: 64.44s, d_loss: 1.2562 g_loss: 0.0276 (mse: 0.
0107, psnr: 27.0087, accuracy: 0.7812)
Epoch [12/20]    6 time: 64.52s, d_loss: 1.2242 g_loss: 0.0305 (mse: 0.
0114, psnr: 27.2553, accuracy: 0.7656)
Epoch [12/20]    7 time: 64.28s, d_loss: 1.2708 g_loss: 0.0262 (mse: 0.
0098, psnr: 27.4852, accuracy: 0.5156)
Epoch [12/20]    8 time: 64.38s, d_loss: 1.1939 g_loss: 0.0271 (mse: 0.
0099, psnr: 27.3203, accuracy: 0.6250)
Epoch [12/20]    9 time: 64.60s, d_loss: 1.1652 g_loss: 0.0297 (mse: 0.
0101, psnr: 27.2922, accuracy: 0.5312)
Epoch [12/20]   10 time: 64.25s, d_loss: 1.1849 g_loss: 0.0269 (mse: 0.
0109, psnr: 26.8105, accuracy: 0.5312)
Epoch [12/20]   11 time: 64.27s, d_loss: 1.2737 g_loss: 0.0258 (mse: 0.
0080, psnr: 28.6446, accuracy: 0.5156)
Epoch [12/20]   12 time: 64.45s, d_loss: 1.2782 g_loss: 0.0213 (mse: 0.
0078, psnr: 28.5390, accuracy: 0.5000)
Epoch [12/20]   13 time: 64.35s, d_loss: 1.1927 g_loss: 0.0294 (mse: 0.
0144, psnr: 26.4686, accuracy: 0.7188)
Epoch [12/20]   14 time: 64.20s, d_loss: 1.2410 g_loss: 0.0235 (mse: 0.
0079, psnr: 28.0221, accuracy: 0.5625)
Epoch [12/20]   15 time: 64.41s, d_loss: 1.1951 g_loss: 0.0232 (mse: 0.
0091, psnr: 28.5941, accuracy: 0.5312)
Epoch [12/20]   16 time: 64.24s, d_loss: 1.5097 g_loss: 0.0275 (mse: 0.
0113, psnr: 26.9074, accuracy: 0.5625)
Epoch [12/20]   17 time: 64.43s, d_loss: 1.1844 g_loss: 0.0271 (mse: 0.
0104, psnr: 26.9613, accuracy: 0.8125)
Epoch [12/20]   18 time: 64.23s, d_loss: 1.2378 g_loss: 0.0252 (mse: 0.
0094, psnr: 27.8312, accuracy: 0.6875)
Epoch [12/20]   19 time: 64.56s, d_loss: 1.1960 g_loss: 0.0279 (mse: 0.
0095, psnr: 27.2347, accuracy: 0.5312)
Epoch [12/20]   20 time: 64.19s, d_loss: 1.3037 g_loss: 0.0244 (mse: 0.
0082, psnr: 28.1155, accuracy: 0.5156)
Epoch [12/20]   21 time: 64.41s, d_loss: 1.2950 g_loss: 0.0307 (mse: 0.
0149, psnr: 26.8521, accuracy: 0.5000)
Epoch [12/20]   22 time: 64.41s, d_loss: 1.1525 g_loss: 0.0251 (mse: 0.
0087, psnr: 27.7182, accuracy: 0.5938)
Epoch [12/20]   23 time: 64.12s, d_loss: 1.2290 g_loss: 0.0256 (mse: 0.
0100, psnr: 27.3857, accuracy: 0.5312)
Epoch [12/20]   24 time: 64.47s, d_loss: 1.1936 g_loss: 0.0282 (mse: 0.
0098, psnr: 27.4689, accuracy: 0.5000)
Epoch [12/20]   25 time: 64.11s, d_loss: 1.2147 g_loss: 0.0255 (mse: 0.
0100, psnr: 27.2298, accuracy: 0.5625)
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Epoch [12/20]   26 time: 64.71s, d_loss: 1.3029 g_loss: 0.0235 (mse: 0.
0088, psnr: 27.3577, accuracy: 0.5000)
Epoch [12/20]   27 time: 64.33s, d_loss: 1.1721 g_loss: 0.0309 (mse: 0.
0125, psnr: 26.3421, accuracy: 0.6094)
Epoch [12/20]   28 time: 64.50s, d_loss: 1.2688 g_loss: 0.0255 (mse: 0.
0099, psnr: 27.6981, accuracy: 0.7188)
Epoch [12/20]   29 time: 65.61s, d_loss: 1.2532 g_loss: 0.0255 (mse: 0.
0098, psnr: 27.2120, accuracy: 0.7812)
Epoch [12/20]   30 time: 68.45s, d_loss: 1.2733 g_loss: 0.0258 (mse: 0.
0108, psnr: 27.4146, accuracy: 0.6406)
Epoch [12/20]   31 time: 67.50s, d_loss: 1.2971 g_loss: 0.0223 (mse: 0.
0084, psnr: 28.1568, accuracy: 0.6875)
Epoch [12/20]   32 time: 64.43s, d_loss: 1.1299 g_loss: 0.0263 (mse: 0.
0099, psnr: 26.9434, accuracy: 0.6875)
Epoch [12/20]   33 time: 64.41s, d_loss: 1.2517 g_loss: 0.0244 (mse: 0.
0087, psnr: 28.1683, accuracy: 0.5000)
Epoch [12/20]   34 time: 64.61s, d_loss: 1.1140 g_loss: 0.0308 (mse: 0.
0104, psnr: 26.7907, accuracy: 0.5156)
Epoch [12/20]   35 time: 64.29s, d_loss: 1.1704 g_loss: 0.0270 (mse: 0.
0101, psnr: 27.1765, accuracy: 0.5469)
Epoch [12/20]   36 time: 64.68s, d_loss: 1.1894 g_loss: 0.0242 (mse: 0.
0087, psnr: 28.3326, accuracy: 0.6406)
Epoch [12/20]   37 time: 64.61s, d_loss: 1.0793 g_loss: 0.0328 (mse: 0.
0129, psnr: 25.9373, accuracy: 0.6562)
Epoch [12/20]   38 time: 65.14s, d_loss: 1.1875 g_loss: 0.0253 (mse: 0.
0104, psnr: 27.2567, accuracy: 0.6094)
Epoch [12/20]   39 time: 65.26s, d_loss: 1.0760 g_loss: 0.0304 (mse: 0.
0132, psnr: 26.6478, accuracy: 0.6250)
Epoch [12/20]   40 time: 65.05s, d_loss: 1.1060 g_loss: 0.0222 (mse: 0.
0075, psnr: 28.1822, accuracy: 0.7656)
Epoch [12/20]   41 time: 64.72s, d_loss: 1.0894 g_loss: 0.0295 (mse: 0.
0144, psnr: 27.1991, accuracy: 0.7812)
Epoch [12/20]   42 time: 66.52s, d_loss: 1.1424 g_loss: 0.0278 (mse: 0.
0103, psnr: 27.3797, accuracy: 0.8594)
Epoch [12/20]   43 time: 67.07s, d_loss: 1.0608 g_loss: 0.0223 (mse: 0.
0083, psnr: 27.3811, accuracy: 0.5469)
Epoch [12/20]   44 time: 67.00s, d_loss: 1.0635 g_loss: 0.0286 (mse: 0.
0104, psnr: 26.4939, accuracy: 0.5156)
Epoch [12/20]   45 time: 67.35s, d_loss: 1.1492 g_loss: 0.0273 (mse: 0.
0106, psnr: 27.1708, accuracy: 0.5000)
Epoch [12/20]   46 time: 59.49s, d_loss: 1.1336 g_loss: 0.0254 (mse: 0.
0096, psnr: 27.5057, accuracy: 0.5893)
[*] Epoch: [12/20] time: 3043.54s, d_loss: 1.2084 g_loss: 0.0264 (mse:
 0.010109, psnr: 27.3802, accuracy: 0.6083)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [13/20]    0 time: 66.27s, d_loss: 1.0696 g_loss: 0.0269 (mse: 0.
0097, psnr: 26.9522, accuracy: 0.5938)
Epoch [13/20]    1 time: 69.28s, d_loss: 1.0504 g_loss: 0.0263 (mse: 0.
0104, psnr: 27.4316, accuracy: 0.7812)
Epoch [13/20]    2 time: 64.72s, d_loss: 1.0700 g_loss: 0.0231 (mse: 0.
0094, psnr: 27.1972, accuracy: 0.5938)
Epoch [13/20]    3 time: 64.93s, d_loss: 1.1635 g_loss: 0.0247 (mse: 0.
0090, psnr: 27.3854, accuracy: 0.7812)
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Epoch [13/20]    4 time: 64.67s, d_loss: 1.3134 g_loss: 0.0325 (mse: 0.
0128, psnr: 26.0310, accuracy: 0.7031)
Epoch [13/20]    5 time: 66.55s, d_loss: 1.0465 g_loss: 0.0268 (mse: 0.
0106, psnr: 27.4724, accuracy: 0.6719)
Epoch [13/20]    6 time: 64.96s, d_loss: 1.3556 g_loss: 0.0218 (mse: 0.
0074, psnr: 28.3332, accuracy: 0.5000)
Epoch [13/20]    7 time: 64.79s, d_loss: 1.3438 g_loss: 0.0233 (mse: 0.
0086, psnr: 28.1477, accuracy: 0.5156)
Epoch [13/20]    8 time: 64.23s, d_loss: 1.1479 g_loss: 0.0245 (mse: 0.
0093, psnr: 27.3102, accuracy: 0.5312)
Epoch [13/20]    9 time: 64.48s, d_loss: 1.1858 g_loss: 0.0236 (mse: 0.
0085, psnr: 27.9661, accuracy: 0.6719)
Epoch [13/20]   10 time: 65.01s, d_loss: 1.1370 g_loss: 0.0271 (mse: 0.
0090, psnr: 27.3236, accuracy: 0.7969)
Epoch [13/20]   11 time: 64.79s, d_loss: 1.0450 g_loss: 0.1480 (mse: 0.
1292, psnr: 26.0791, accuracy: 0.8594)
Epoch [13/20]   12 time: 64.78s, d_loss: 1.1181 g_loss: 0.0309 (mse: 0.
0104, psnr: 26.5984, accuracy: 0.8281)
Epoch [13/20]   13 time: 64.38s, d_loss: 1.2703 g_loss: 0.0274 (mse: 0.
0101, psnr: 26.5910, accuracy: 0.5000)
Epoch [13/20]   14 time: 64.94s, d_loss: 1.3702 g_loss: 0.0297 (mse: 0.
0109, psnr: 26.3350, accuracy: 0.5000)
Epoch [13/20]   15 time: 64.91s, d_loss: 1.5035 g_loss: 0.0246 (mse: 0.
0095, psnr: 27.3437, accuracy: 0.5000)
Epoch [13/20]   16 time: 64.79s, d_loss: 0.9428 g_loss: 0.0336 (mse: 0.
0127, psnr: 26.1153, accuracy: 0.7500)
Epoch [13/20]   17 time: 64.54s, d_loss: 1.1584 g_loss: 0.0270 (mse: 0.
0109, psnr: 26.9855, accuracy: 0.5000)
Epoch [13/20]   18 time: 64.84s, d_loss: 0.9716 g_loss: 0.0285 (mse: 0.
0129, psnr: 26.5719, accuracy: 0.9531)
Epoch [13/20]   19 time: 64.92s, d_loss: 1.1184 g_loss: 0.0283 (mse: 0.
0108, psnr: 26.4571, accuracy: 0.8906)
Epoch [13/20]   20 time: 66.06s, d_loss: 1.1671 g_loss: 0.0211 (mse: 0.
0072, psnr: 28.5122, accuracy: 0.6875)
Epoch [13/20]   21 time: 64.65s, d_loss: 0.9636 g_loss: 0.0251 (mse: 0.
0111, psnr: 27.1569, accuracy: 0.8281)
Epoch [13/20]   22 time: 65.16s, d_loss: 1.1639 g_loss: 0.0237 (mse: 0.
0081, psnr: 27.8106, accuracy: 0.5625)
Epoch [13/20]   23 time: 65.47s, d_loss: 1.1854 g_loss: 0.0325 (mse: 0.
0158, psnr: 26.2780, accuracy: 0.8438)
Epoch [13/20]   24 time: 64.85s, d_loss: 1.1483 g_loss: 0.0224 (mse: 0.
0084, psnr: 27.9802, accuracy: 0.5625)
Epoch [13/20]   25 time: 64.85s, d_loss: 1.0420 g_loss: 0.0238 (mse: 0.
0086, psnr: 27.7332, accuracy: 0.6094)
Epoch [13/20]   26 time: 64.94s, d_loss: 1.2591 g_loss: 0.0212 (mse: 0.
0069, psnr: 28.7190, accuracy: 0.5312)
Epoch [13/20]   27 time: 64.98s, d_loss: 1.0908 g_loss: 0.0257 (mse: 0.
0106, psnr: 27.6195, accuracy: 0.5312)
Epoch [13/20]   28 time: 67.15s, d_loss: 1.0527 g_loss: 0.0266 (mse: 0.
0104, psnr: 27.3486, accuracy: 0.7500)
Epoch [13/20]   29 time: 65.54s, d_loss: 0.9670 g_loss: 0.0256 (mse: 0.
0109, psnr: 27.3590, accuracy: 0.8438)
Epoch [13/20]   30 time: 65.08s, d_loss: 0.8227 g_loss: 0.0339 (mse: 0.
0133, psnr: 25.5252, accuracy: 0.9844)
Epoch [13/20]   31 time: 64.31s, d_loss: 1.1496 g_loss: 0.0245 (mse: 0.
0086, psnr: 27.7253, accuracy: 0.5938)
Epoch [13/20]   32 time: 64.55s, d_loss: 0.9639 g_loss: 0.0323 (mse: 0.
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0126, psnr: 26.3690, accuracy: 0.9219)
Epoch [13/20]   33 time: 64.59s, d_loss: 1.4307 g_loss: 0.0202 (mse: 0.
0068, psnr: 28.6127, accuracy: 0.5000)
Epoch [13/20]   34 time: 64.32s, d_loss: 1.1982 g_loss: 0.0252 (mse: 0.
0087, psnr: 28.0530, accuracy: 0.5156)
Epoch [13/20]   35 time: 67.20s, d_loss: 0.9723 g_loss: 0.0317 (mse: 0.
0153, psnr: 27.1477, accuracy: 0.7500)
Epoch [13/20]   36 time: 66.34s, d_loss: 1.0178 g_loss: 0.0231 (mse: 0.
0083, psnr: 27.9049, accuracy: 0.9062)
Epoch [13/20]   37 time: 66.00s, d_loss: 1.1152 g_loss: 0.0236 (mse: 0.
0101, psnr: 27.8142, accuracy: 0.7812)
Epoch [13/20]   38 time: 65.75s, d_loss: 1.1043 g_loss: 0.0261 (mse: 0.
0092, psnr: 27.1085, accuracy: 0.7656)
Epoch [13/20]   39 time: 64.50s, d_loss: 1.0664 g_loss: 0.0270 (mse: 0.
0096, psnr: 27.4618, accuracy: 0.7344)
Epoch [13/20]   40 time: 64.64s, d_loss: 0.9932 g_loss: 0.0284 (mse: 0.
0107, psnr: 27.1688, accuracy: 0.8125)
Epoch [13/20]   41 time: 64.99s, d_loss: 0.9615 g_loss: 0.0322 (mse: 0.
0152, psnr: 27.5928, accuracy: 0.6250)
Epoch [13/20]   42 time: 64.74s, d_loss: 1.2072 g_loss: 0.0246 (mse: 0.
0088, psnr: 27.5181, accuracy: 0.5312)
Epoch [13/20]   43 time: 66.94s, d_loss: 1.0714 g_loss: 0.0231 (mse: 0.
0093, psnr: 28.0945, accuracy: 0.5625)
Epoch [13/20]   44 time: 69.93s, d_loss: 0.8366 g_loss: 0.0291 (mse: 0.
0106, psnr: 27.1331, accuracy: 0.7344)
Epoch [13/20]   45 time: 65.44s, d_loss: 1.0757 g_loss: 0.0261 (mse: 0.
0091, psnr: 27.5822, accuracy: 0.5625)
Epoch [13/20]   46 time: 56.80s, d_loss: 1.5266 g_loss: 0.0344 (mse: 0.
0143, psnr: 25.2085, accuracy: 0.5357)
[*] Epoch: [13/20] time: 3062.58s, d_loss: 1.1263 g_loss: 0.0292 (mse:
 0.012778, psnr: 27.2588, accuracy: 0.6806)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [14/20]    0 time: 65.72s, d_loss: 0.9203 g_loss: 0.0279 (mse: 0.
0101, psnr: 27.4335, accuracy: 0.9844)
Epoch [14/20]    1 time: 64.89s, d_loss: 0.9281 g_loss: 0.0312 (mse: 0.
0146, psnr: 27.2264, accuracy: 0.6719)
Epoch [14/20]    2 time: 65.29s, d_loss: 1.2276 g_loss: 0.0217 (mse: 0.
0080, psnr: 27.8711, accuracy: 0.5000)
Epoch [14/20]    3 time: 65.04s, d_loss: 1.6059 g_loss: 0.0326 (mse: 0.
0134, psnr: 25.8004, accuracy: 0.5000)
Epoch [14/20]    4 time: 64.89s, d_loss: 1.1696 g_loss: 0.0259 (mse: 0.
0108, psnr: 26.8771, accuracy: 0.5156)
Epoch [14/20]    5 time: 64.85s, d_loss: 0.7791 g_loss: 0.0322 (mse: 0.
0148, psnr: 25.9331, accuracy: 0.8125)
Epoch [14/20]    6 time: 64.84s, d_loss: 0.9715 g_loss: 0.0249 (mse: 0.
0092, psnr: 27.5675, accuracy: 0.6406)
Epoch [14/20]    7 time: 64.52s, d_loss: 1.3087 g_loss: 0.0248 (mse: 0.
0095, psnr: 28.0345, accuracy: 0.5469)
Epoch [14/20]    8 time: 64.50s, d_loss: 1.3355 g_loss: 0.0265 (mse: 0.
0101, psnr: 27.2485, accuracy: 0.6094)
Epoch [14/20]    9 time: 64.47s, d_loss: 1.1269 g_loss: 0.0270 (mse: 0.
0087, psnr: 27.8533, accuracy: 0.8438)
Epoch [14/20]   10 time: 64.75s, d_loss: 1.3770 g_loss: 0.0262 (mse: 0.
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0102, psnr: 26.9576, accuracy: 0.6094)
Epoch [14/20]   11 time: 64.47s, d_loss: 1.1512 g_loss: 0.0237 (mse: 0.
0083, psnr: 27.7467, accuracy: 0.7969)
Epoch [14/20]   12 time: 64.26s, d_loss: 1.1153 g_loss: 0.0295 (mse: 0.
0109, psnr: 26.4069, accuracy: 0.5000)
Epoch [14/20]   13 time: 64.48s, d_loss: 1.4920 g_loss: 0.0233 (mse: 0.
0083, psnr: 27.6783, accuracy: 0.5000)
Epoch [14/20]   14 time: 64.91s, d_loss: 1.2071 g_loss: 0.0238 (mse: 0.
0084, psnr: 27.4300, accuracy: 0.5000)
Epoch [14/20]   15 time: 64.65s, d_loss: 0.7455 g_loss: 0.0269 (mse: 0.
0102, psnr: 27.2132, accuracy: 0.9688)
Epoch [14/20]   16 time: 64.76s, d_loss: 1.1411 g_loss: 0.0266 (mse: 0.
0108, psnr: 26.9667, accuracy: 0.5938)
Epoch [14/20]   17 time: 65.58s, d_loss: 1.1257 g_loss: 0.0288 (mse: 0.
0117, psnr: 26.9034, accuracy: 0.8438)
Epoch [14/20]   18 time: 67.06s, d_loss: 1.1941 g_loss: 0.0281 (mse: 0.
0102, psnr: 26.7379, accuracy: 0.7656)
Epoch [14/20]   19 time: 64.49s, d_loss: 1.0294 g_loss: 0.0227 (mse: 0.
0084, psnr: 27.6700, accuracy: 0.9531)
Epoch [14/20]   20 time: 65.65s, d_loss: 0.9583 g_loss: 0.0302 (mse: 0.
0142, psnr: 27.2722, accuracy: 0.8594)
Epoch [14/20]   21 time: 65.30s, d_loss: 0.8652 g_loss: 0.0293 (mse: 0.
0130, psnr: 27.1113, accuracy: 0.6406)
Epoch [14/20]   22 time: 65.93s, d_loss: 1.4307 g_loss: 0.0246 (mse: 0.
0079, psnr: 28.1969, accuracy: 0.5000)
Epoch [14/20]   23 time: 65.23s, d_loss: 1.2841 g_loss: 0.0245 (mse: 0.
0082, psnr: 27.9285, accuracy: 0.5000)
Epoch [14/20]   24 time: 65.00s, d_loss: 0.9158 g_loss: 0.0231 (mse: 0.
0081, psnr: 27.8524, accuracy: 0.7812)
Epoch [14/20]   25 time: 64.61s, d_loss: 1.1004 g_loss: 0.0295 (mse: 0.
0115, psnr: 26.4817, accuracy: 0.8438)
Epoch [14/20]   26 time: 65.62s, d_loss: 0.8429 g_loss: 0.0330 (mse: 0.
0135, psnr: 25.3543, accuracy: 0.9375)
Epoch [14/20]   27 time: 64.67s, d_loss: 1.1811 g_loss: 0.0245 (mse: 0.
0091, psnr: 27.1660, accuracy: 0.5000)
Epoch [14/20]   28 time: 64.64s, d_loss: 0.8296 g_loss: 0.0273 (mse: 0.
0103, psnr: 27.2632, accuracy: 0.9844)
Epoch [14/20]   29 time: 66.22s, d_loss: 1.0198 g_loss: 0.0272 (mse: 0.
0091, psnr: 27.6498, accuracy: 0.6562)
Epoch [14/20]   30 time: 65.31s, d_loss: 1.3398 g_loss: 0.0227 (mse: 0.
0092, psnr: 27.2593, accuracy: 0.6250)
Epoch [14/20]   31 time: 64.63s, d_loss: 0.8153 g_loss: 0.0272 (mse: 0.
0091, psnr: 27.4420, accuracy: 0.9688)
Epoch [14/20]   32 time: 64.66s, d_loss: 1.0508 g_loss: 0.0282 (mse: 0.
0106, psnr: 27.0387, accuracy: 0.6094)
Epoch [14/20]   33 time: 65.63s, d_loss: 1.4241 g_loss: 0.0267 (mse: 0.
0097, psnr: 27.2558, accuracy: 0.5000)
Epoch [14/20]   34 time: 64.20s, d_loss: 1.0571 g_loss: 0.0269 (mse: 0.
0099, psnr: 27.0745, accuracy: 0.5469)
Epoch [14/20]   35 time: 64.90s, d_loss: 1.1893 g_loss: 0.0290 (mse: 0.
0113, psnr: 26.5327, accuracy: 0.5156)
Epoch [14/20]   36 time: 63.32s, d_loss: 1.1062 g_loss: 0.0248 (mse: 0.
0087, psnr: 27.5407, accuracy: 0.5312)
Epoch [14/20]   37 time: 64.82s, d_loss: 1.0285 g_loss: 0.0330 (mse: 0.
0133, psnr: 26.1495, accuracy: 0.8281)
Epoch [14/20]   38 time: 64.92s, d_loss: 1.1841 g_loss: 0.0267 (mse: 0.
0103, psnr: 26.5083, accuracy: 0.7656)
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Epoch [14/20]   39 time: 64.82s, d_loss: 1.1677 g_loss: 0.0271 (mse: 0.
0124, psnr: 26.7755, accuracy: 0.8281)
Epoch [14/20]   40 time: 64.33s, d_loss: 0.7318 g_loss: 0.0316 (mse: 0.
0106, psnr: 26.8902, accuracy: 0.9531)
Epoch [14/20]   41 time: 64.35s, d_loss: 1.2126 g_loss: 0.0250 (mse: 0.
0094, psnr: 27.3983, accuracy: 0.5000)
Epoch [14/20]   42 time: 64.64s, d_loss: 0.9216 g_loss: 0.0302 (mse: 0.
0106, psnr: 27.3061, accuracy: 0.5156)
Epoch [14/20]   43 time: 64.54s, d_loss: 0.9690 g_loss: 0.0254 (mse: 0.
0093, psnr: 27.2358, accuracy: 0.6094)
Epoch [14/20]   44 time: 64.68s, d_loss: 0.9110 g_loss: 0.0291 (mse: 0.
0125, psnr: 26.8633, accuracy: 0.6562)
Epoch [14/20]   45 time: 63.90s, d_loss: 1.1658 g_loss: 0.0216 (mse: 0.
0077, psnr: 28.0923, accuracy: 0.5469)
Epoch [14/20]   46 time: 56.63s, d_loss: 1.3843 g_loss: 0.0178 (mse: 0.
0067, psnr: 28.7552, accuracy: 0.6607)
[*] Epoch: [14/20] time: 3041.54s, d_loss: 1.1072 g_loss: 0.0268 (mse:
 0.010272, psnr: 27.1904, accuracy: 0.6813)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [15/20]    0 time: 65.92s, d_loss: 1.1234 g_loss: 0.0239 (mse: 0.
0099, psnr: 27.9759, accuracy: 0.8281)
Epoch [15/20]    1 time: 65.17s, d_loss: 1.3697 g_loss: 0.0247 (mse: 0.
0091, psnr: 27.6929, accuracy: 0.5938)
Epoch [15/20]    2 time: 64.70s, d_loss: 1.0510 g_loss: 0.0280 (mse: 0.
0112, psnr: 26.6269, accuracy: 0.8750)
Epoch [15/20]    3 time: 64.72s, d_loss: 0.9443 g_loss: 0.0252 (mse: 0.
0092, psnr: 27.3504, accuracy: 0.7812)
Epoch [15/20]    4 time: 64.51s, d_loss: 1.1851 g_loss: 0.0256 (mse: 0.
0090, psnr: 27.6181, accuracy: 0.5000)
Epoch [15/20]    5 time: 64.08s, d_loss: 1.1410 g_loss: 0.0330 (mse: 0.
0118, psnr: 26.1952, accuracy: 0.5156)
Epoch [15/20]    6 time: 64.51s, d_loss: 1.7573 g_loss: 0.0282 (mse: 0.
0099, psnr: 26.7551, accuracy: 0.5000)
Epoch [15/20]    7 time: 64.43s, d_loss: 1.1299 g_loss: 0.0262 (mse: 0.
0101, psnr: 27.1205, accuracy: 0.5312)
Epoch [15/20]    8 time: 64.39s, d_loss: 1.1824 g_loss: 0.0313 (mse: 0.
0145, psnr: 26.5166, accuracy: 0.5469)
Epoch [15/20]    9 time: 64.43s, d_loss: 1.0054 g_loss: 0.0251 (mse: 0.
0100, psnr: 26.8799, accuracy: 0.7969)
Epoch [15/20]   10 time: 64.50s, d_loss: 1.2779 g_loss: 0.0244 (mse: 0.
0088, psnr: 27.7084, accuracy: 0.7500)
Epoch [15/20]   11 time: 64.60s, d_loss: 1.1186 g_loss: 0.0245 (mse: 0.
0103, psnr: 27.3972, accuracy: 0.8281)
Epoch [15/20]   12 time: 64.65s, d_loss: 1.2890 g_loss: 0.0286 (mse: 0.
0110, psnr: 26.6583, accuracy: 0.6875)
Epoch [15/20]   13 time: 64.82s, d_loss: 0.9999 g_loss: 0.0235 (mse: 0.
0080, psnr: 28.6053, accuracy: 0.8594)
Epoch [15/20]   14 time: 64.49s, d_loss: 1.1358 g_loss: 0.0250 (mse: 0.
0085, psnr: 27.6624, accuracy: 0.5625)
Epoch [15/20]   15 time: 64.93s, d_loss: 0.9940 g_loss: 0.0215 (mse: 0.
0071, psnr: 28.8204, accuracy: 0.5469)
Epoch [15/20]   16 time: 64.54s, d_loss: 0.8488 g_loss: 0.0220 (mse: 0.
0080, psnr: 28.1446, accuracy: 0.8594)
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Epoch [15/20]   17 time: 64.69s, d_loss: 0.8340 g_loss: 0.0250 (mse: 0.
0088, psnr: 27.7237, accuracy: 1.0000)
Epoch [15/20]   18 time: 63.76s, d_loss: 1.3084 g_loss: 0.0204 (mse: 0.
0071, psnr: 28.3697, accuracy: 0.5000)
Epoch [15/20]   19 time: 64.45s, d_loss: 0.9554 g_loss: 0.0229 (mse: 0.
0086, psnr: 27.9288, accuracy: 0.7656)
Epoch [15/20]   20 time: 64.75s, d_loss: 0.9545 g_loss: 0.0324 (mse: 0.
0110, psnr: 26.5627, accuracy: 0.9688)
Epoch [15/20]   21 time: 64.80s, d_loss: 0.9246 g_loss: 0.0289 (mse: 0.
0093, psnr: 27.3278, accuracy: 1.0000)
Epoch [15/20]   22 time: 64.58s, d_loss: 1.3290 g_loss: 0.0251 (mse: 0.
0092, psnr: 27.3238, accuracy: 0.5000)
Epoch [15/20]   23 time: 64.50s, d_loss: 1.0338 g_loss: 0.0314 (mse: 0.
0130, psnr: 26.2184, accuracy: 0.5469)
Epoch [15/20]   24 time: 64.64s, d_loss: 1.3382 g_loss: 0.0262 (mse: 0.
0098, psnr: 27.1048, accuracy: 0.5938)
Epoch [15/20]   25 time: 64.22s, d_loss: 1.0514 g_loss: 0.0226 (mse: 0.
0081, psnr: 28.0994, accuracy: 0.5781)
Epoch [15/20]   26 time: 64.64s, d_loss: 0.7834 g_loss: 0.0263 (mse: 0.
0093, psnr: 27.4989, accuracy: 0.9375)
Epoch [15/20]   27 time: 64.37s, d_loss: 0.9481 g_loss: 0.0216 (mse: 0.
0079, psnr: 28.0589, accuracy: 0.5938)
Epoch [15/20]   28 time: 64.48s, d_loss: 0.9684 g_loss: 0.0279 (mse: 0.
0110, psnr: 26.2451, accuracy: 0.8750)
Epoch [15/20]   29 time: 64.72s, d_loss: 1.5324 g_loss: 0.0245 (mse: 0.
0088, psnr: 27.9919, accuracy: 0.5000)
Epoch [15/20]   30 time: 63.97s, d_loss: 0.9944 g_loss: 0.0268 (mse: 0.
0093, psnr: 27.8673, accuracy: 0.5469)
Epoch [15/20]   31 time: 64.71s, d_loss: 0.7802 g_loss: 0.0271 (mse: 0.
0100, psnr: 27.6173, accuracy: 1.0000)
Epoch [15/20]   32 time: 64.62s, d_loss: 0.7934 g_loss: 0.0314 (mse: 0.
0116, psnr: 26.8777, accuracy: 0.9219)
Epoch [15/20]   33 time: 64.63s, d_loss: 0.9231 g_loss: 0.0277 (mse: 0.
0105, psnr: 26.5963, accuracy: 0.8906)
Epoch [15/20]   34 time: 64.24s, d_loss: 0.9899 g_loss: 0.0261 (mse: 0.
0095, psnr: 27.4971, accuracy: 0.7188)
Epoch [15/20]   35 time: 64.85s, d_loss: 0.8202 g_loss: 0.0275 (mse: 0.
0091, psnr: 27.2338, accuracy: 0.8438)
Epoch [15/20]   36 time: 64.54s, d_loss: 1.2116 g_loss: 0.0263 (mse: 0.
0122, psnr: 27.1757, accuracy: 0.5469)
Epoch [15/20]   37 time: 64.73s, d_loss: 1.1566 g_loss: 0.0241 (mse: 0.
0091, psnr: 27.5707, accuracy: 0.7969)
Epoch [15/20]   38 time: 66.98s, d_loss: 0.9381 g_loss: 0.0410 (mse: 0.
0216, psnr: 26.5363, accuracy: 0.8438)
Epoch [15/20]   39 time: 1271.33s, d_loss: 1.1763 g_loss: 0.0222 (mse:
 0.0077, psnr: 28.5372, accuracy: 0.5000)
Epoch [15/20]   40 time: 75.74s, d_loss: 0.9772 g_loss: 0.0272 (mse: 0.
0096, psnr: 27.5081, accuracy: 0.6094)
Epoch [15/20]   41 time: 67.13s, d_loss: 0.8741 g_loss: 0.0276 (mse: 0.
0105, psnr: 27.2044, accuracy: 0.9844)
Epoch [15/20]   42 time: 64.81s, d_loss: 0.8636 g_loss: 0.0304 (mse: 0.
0116, psnr: 27.0772, accuracy: 0.9219)
Epoch [15/20]   43 time: 64.37s, d_loss: 1.0671 g_loss: 0.0297 (mse: 0.
0130, psnr: 25.9263, accuracy: 0.5000)
Epoch [15/20]   44 time: 64.28s, d_loss: 0.9126 g_loss: 0.0305 (mse: 0.
0112, psnr: 26.3225, accuracy: 0.8281)
Epoch [15/20]   45 time: 64.73s, d_loss: 1.0114 g_loss: 0.0271 (mse: 0.
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0101, psnr: 27.0617, accuracy: 0.5312)
Epoch [15/20]   46 time: 56.14s, d_loss: 1.0334 g_loss: 0.0285 (mse: 0.
0106, psnr: 26.2554, accuracy: 0.8929)
[*] Epoch: [15/20] time: 4249.80s, d_loss: 1.0646 g_loss: 0.0267 (mse:
 0.010117, psnr: 27.2989, accuracy: 0.7191)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [16/20]    0 time: 64.40s, d_loss: 1.8561 g_loss: 0.0201 (mse: 0.
0072, psnr: 28.3475, accuracy: 0.5000)
Epoch [16/20]    1 time: 64.33s, d_loss: 0.9626 g_loss: 0.0299 (mse: 0.
0106, psnr: 27.2416, accuracy: 0.9219)
Epoch [16/20]    2 time: 64.82s, d_loss: 0.9590 g_loss: 0.0394 (mse: 0.
0197, psnr: 26.6032, accuracy: 0.9219)
Epoch [16/20]    3 time: 65.21s, d_loss: 1.2102 g_loss: 0.0282 (mse: 0.
0124, psnr: 27.2562, accuracy: 0.5469)
Epoch [16/20]    4 time: 65.37s, d_loss: 1.3159 g_loss: 0.0322 (mse: 0.
0161, psnr: 26.6820, accuracy: 0.5156)
Epoch [16/20]    5 time: 65.45s, d_loss: 0.9095 g_loss: 0.0316 (mse: 0.
0111, psnr: 26.7906, accuracy: 0.6406)
Epoch [16/20]    6 time: 65.40s, d_loss: 1.3357 g_loss: 0.0208 (mse: 0.
0069, psnr: 28.6398, accuracy: 0.5156)
Epoch [16/20]    7 time: 65.79s, d_loss: 0.7913 g_loss: 0.0257 (mse: 0.
0104, psnr: 27.1195, accuracy: 0.9688)
Epoch [16/20]    8 time: 64.41s, d_loss: 1.0388 g_loss: 0.0229 (mse: 0.
0085, psnr: 27.7953, accuracy: 0.7969)
Epoch [16/20]    9 time: 64.03s, d_loss: 1.1497 g_loss: 0.0228 (mse: 0.
0088, psnr: 27.4054, accuracy: 0.7812)
Epoch [16/20]   10 time: 63.76s, d_loss: 1.1112 g_loss: 0.0263 (mse: 0.
0096, psnr: 27.3669, accuracy: 0.8125)
Epoch [16/20]   11 time: 64.59s, d_loss: 0.9874 g_loss: 0.0279 (mse: 0.
0105, psnr: 27.0566, accuracy: 0.5938)
Epoch [16/20]   12 time: 64.91s, d_loss: 0.7199 g_loss: 0.0256 (mse: 0.
0091, psnr: 27.5519, accuracy: 0.9531)
Epoch [16/20]   13 time: 64.07s, d_loss: 0.8219 g_loss: 0.0297 (mse: 0.
0108, psnr: 26.8112, accuracy: 0.6562)
Epoch [16/20]   14 time: 64.97s, d_loss: 0.7085 g_loss: 0.0237 (mse: 0.
0079, psnr: 28.3098, accuracy: 0.8125)
Epoch [16/20]   15 time: 64.89s, d_loss: 0.7492 g_loss: 0.0378 (mse: 0.
0185, psnr: 26.7197, accuracy: 0.9688)
Epoch [16/20]   16 time: 65.17s, d_loss: 0.8957 g_loss: 0.0257 (mse: 0.
0089, psnr: 27.6498, accuracy: 0.7031)
Epoch [16/20]   17 time: 65.44s, d_loss: 0.8958 g_loss: 0.0213 (mse: 0.
0080, psnr: 27.9294, accuracy: 0.7188)
Epoch [16/20]   18 time: 64.71s, d_loss: 0.6249 g_loss: 0.0315 (mse: 0.
0123, psnr: 26.4569, accuracy: 1.0000)
Epoch [16/20]   19 time: 64.69s, d_loss: 0.8504 g_loss: 0.0264 (mse: 0.
0093, psnr: 27.6687, accuracy: 0.7812)
Epoch [16/20]   20 time: 64.87s, d_loss: 0.9237 g_loss: 0.0253 (mse: 0.
0094, psnr: 27.6688, accuracy: 0.6406)
Epoch [16/20]   21 time: 65.06s, d_loss: 0.7906 g_loss: 0.0292 (mse: 0.
0120, psnr: 26.3889, accuracy: 1.0000)
Epoch [16/20]   22 time: 65.44s, d_loss: 0.6212 g_loss: 0.0250 (mse: 0.
0095, psnr: 27.7179, accuracy: 0.8906)
Epoch [16/20]   23 time: 64.01s, d_loss: 0.6759 g_loss: 0.0301 (mse: 0.
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0104, psnr: 26.9996, accuracy: 1.0000)
Epoch [16/20]   24 time: 65.25s, d_loss: 0.7143 g_loss: 0.0297 (mse: 0.
0118, psnr: 26.6892, accuracy: 0.7031)
Epoch [16/20]   25 time: 63.98s, d_loss: 0.7712 g_loss: 0.0295 (mse: 0.
0106, psnr: 26.7932, accuracy: 0.6719)
Epoch [16/20]   26 time: 65.47s, d_loss: 0.6254 g_loss: 0.0289 (mse: 0.
0104, psnr: 26.9827, accuracy: 1.0000)
Epoch [16/20]   27 time: 64.28s, d_loss: 0.8578 g_loss: 0.0278 (mse: 0.
0095, psnr: 27.6589, accuracy: 0.6250)
Epoch [16/20]   28 time: 64.37s, d_loss: 0.7671 g_loss: 0.0275 (mse: 0.
0100, psnr: 27.5592, accuracy: 0.8906)
Epoch [16/20]   29 time: 64.21s, d_loss: 1.0849 g_loss: 0.0277 (mse: 0.
0102, psnr: 27.0518, accuracy: 0.7344)
Epoch [16/20]   30 time: 65.47s, d_loss: 1.1445 g_loss: 0.0293 (mse: 0.
0118, psnr: 26.3223, accuracy: 0.5156)
Epoch [16/20]   31 time: 65.12s, d_loss: 1.3193 g_loss: 0.0251 (mse: 0.
0083, psnr: 27.5924, accuracy: 0.5000)
Epoch [16/20]   32 time: 64.69s, d_loss: 0.8913 g_loss: 0.0249 (mse: 0.
0084, psnr: 28.0840, accuracy: 0.9531)
Epoch [16/20]   33 time: 64.87s, d_loss: 0.7420 g_loss: 0.0288 (mse: 0.
0105, psnr: 27.0893, accuracy: 0.9844)
Epoch [16/20]   34 time: 64.36s, d_loss: 0.8529 g_loss: 0.0255 (mse: 0.
0097, psnr: 26.7267, accuracy: 0.9062)
Epoch [16/20]   35 time: 65.11s, d_loss: 0.5668 g_loss: 0.0286 (mse: 0.
0112, psnr: 27.2861, accuracy: 0.9688)
Epoch [16/20]   36 time: 66.23s, d_loss: 1.1115 g_loss: 0.0221 (mse: 0.
0081, psnr: 28.0835, accuracy: 0.6094)
Epoch [16/20]   37 time: 64.63s, d_loss: 0.9848 g_loss: 0.0295 (mse: 0.
0111, psnr: 27.4223, accuracy: 0.5156)
Epoch [16/20]   38 time: 64.88s, d_loss: 0.8517 g_loss: 0.0261 (mse: 0.
0096, psnr: 28.0092, accuracy: 0.7188)
Epoch [16/20]   39 time: 68.67s, d_loss: 0.8321 g_loss: 0.0326 (mse: 0.
0143, psnr: 26.7218, accuracy: 0.9531)
Epoch [16/20]   40 time: 68.37s, d_loss: 1.1233 g_loss: 0.0255 (mse: 0.
0099, psnr: 27.1150, accuracy: 0.5000)
Epoch [16/20]   41 time: 69.94s, d_loss: 1.4128 g_loss: 0.0261 (mse: 0.
0109, psnr: 26.1219, accuracy: 0.6719)
Epoch [16/20]   42 time: 69.32s, d_loss: 1.0283 g_loss: 0.0219 (mse: 0.
0080, psnr: 27.7859, accuracy: 0.9062)
Epoch [16/20]   43 time: 67.64s, d_loss: 1.5373 g_loss: 0.0282 (mse: 0.
0115, psnr: 25.9778, accuracy: 0.5312)
Epoch [16/20]   44 time: 68.46s, d_loss: 1.0609 g_loss: 0.0263 (mse: 0.
0084, psnr: 27.6584, accuracy: 0.5156)
Epoch [16/20]   45 time: 68.91s, d_loss: 0.7541 g_loss: 0.0286 (mse: 0.
0095, psnr: 26.7958, accuracy: 0.7188)
Epoch [16/20]   46 time: 58.86s, d_loss: 0.9791 g_loss: 0.0281 (mse: 0.
0125, psnr: 26.6042, accuracy: 0.5000)
[*] Epoch: [16/20] time: 3068.91s, d_loss: 0.9557 g_loss: 0.0274 (mse:
 0.010512, psnr: 27.2406, accuracy: 0.7497)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [17/20]    0 time: 70.78s, d_loss: 1.2023 g_loss: 0.0233 (mse: 0.
0093, psnr: 27.8014, accuracy: 0.8125)
Epoch [17/20]    1 time: 71.62s, d_loss: 0.7764 g_loss: 0.0299 (mse: 0.
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0125, psnr: 26.5435, accuracy: 0.9688)
Epoch [17/20]    2 time: 71.28s, d_loss: 1.6237 g_loss: 0.0261 (mse: 0.
0093, psnr: 27.3945, accuracy: 0.5156)
Epoch [17/20]    3 time: 69.32s, d_loss: 0.6274 g_loss: 0.0293 (mse: 0.
0108, psnr: 26.9180, accuracy: 0.7812)
Epoch [17/20]    4 time: 68.12s, d_loss: 1.5001 g_loss: 0.0393 (mse: 0.
0217, psnr: 26.3135, accuracy: 0.5000)
Epoch [17/20]    5 time: 68.10s, d_loss: 0.7425 g_loss: 0.0310 (mse: 0.
0110, psnr: 26.5751, accuracy: 0.6250)
Epoch [17/20]    6 time: 70.07s, d_loss: 1.5330 g_loss: 0.0234 (mse: 0.
0088, psnr: 27.5454, accuracy: 0.5000)
Epoch [17/20]    7 time: 71.82s, d_loss: 1.0035 g_loss: 0.0238 (mse: 0.
0087, psnr: 28.1420, accuracy: 0.9375)
Epoch [17/20]    8 time: 69.90s, d_loss: 0.9785 g_loss: 0.0255 (mse: 0.
0091, psnr: 27.2927, accuracy: 0.8906)
Epoch [17/20]    9 time: 68.75s, d_loss: 1.2271 g_loss: 0.0272 (mse: 0.
0093, psnr: 27.5689, accuracy: 0.6875)
Epoch [17/20]   10 time: 70.19s, d_loss: 1.0149 g_loss: 0.0337 (mse: 0.
0154, psnr: 25.8689, accuracy: 0.7656)
Epoch [17/20]   11 time: 67.79s, d_loss: 0.9765 g_loss: 0.0259 (mse: 0.
0085, psnr: 28.1230, accuracy: 0.5156)
Epoch [17/20]   12 time: 68.42s, d_loss: 1.5163 g_loss: 0.0298 (mse: 0.
0139, psnr: 27.2838, accuracy: 0.5000)
Epoch [17/20]   13 time: 66.39s, d_loss: 1.3874 g_loss: 0.0260 (mse: 0.
0087, psnr: 27.7199, accuracy: 0.5000)
Epoch [17/20]   14 time: 68.39s, d_loss: 0.9968 g_loss: 0.0288 (mse: 0.
0117, psnr: 26.6175, accuracy: 0.6562)
Epoch [17/20]   15 time: 68.18s, d_loss: 1.1119 g_loss: 0.0294 (mse: 0.
0105, psnr: 26.3286, accuracy: 0.5312)
Epoch [17/20]   16 time: 70.14s, d_loss: 1.1670 g_loss: 0.0290 (mse: 0.
0102, psnr: 27.4056, accuracy: 0.7031)
Epoch [17/20]   17 time: 68.23s, d_loss: 1.1785 g_loss: 0.0261 (mse: 0.
0107, psnr: 27.3561, accuracy: 0.7031)
Epoch [17/20]   18 time: 64.84s, d_loss: 1.0807 g_loss: 0.0263 (mse: 0.
0096, psnr: 27.4830, accuracy: 0.8281)
Epoch [17/20]   19 time: 65.31s, d_loss: 0.9560 g_loss: 0.0262 (mse: 0.
0096, psnr: 27.2130, accuracy: 0.7344)
Epoch [17/20]   20 time: 68.26s, d_loss: 1.6072 g_loss: 0.0252 (mse: 0.
0120, psnr: 26.8569, accuracy: 0.5000)
Epoch [17/20]   21 time: 66.03s, d_loss: 0.9673 g_loss: 0.0263 (mse: 0.
0103, psnr: 27.5108, accuracy: 0.8281)
Epoch [17/20]   22 time: 67.48s, d_loss: 1.1201 g_loss: 0.0289 (mse: 0.
0097, psnr: 27.0801, accuracy: 0.5625)
Epoch [17/20]   23 time: 67.97s, d_loss: 1.4025 g_loss: 0.0290 (mse: 0.
0107, psnr: 26.3348, accuracy: 0.5156)
Epoch [17/20]   24 time: 70.33s, d_loss: 1.2351 g_loss: 0.0260 (mse: 0.
0121, psnr: 27.3917, accuracy: 0.5625)
Epoch [17/20]   25 time: 67.60s, d_loss: 1.1483 g_loss: 0.0244 (mse: 0.
0091, psnr: 27.1223, accuracy: 0.5938)
Epoch [17/20]   26 time: 68.14s, d_loss: 1.2260 g_loss: 0.0225 (mse: 0.
0073, psnr: 28.2934, accuracy: 0.7969)
Epoch [17/20]   27 time: 71.21s, d_loss: 1.3122 g_loss: 0.0289 (mse: 0.
0110, psnr: 26.7910, accuracy: 0.6719)
Epoch [17/20]   28 time: 73.35s, d_loss: 1.1308 g_loss: 0.0206 (mse: 0.
0073, psnr: 28.5398, accuracy: 0.7188)
Epoch [17/20]   29 time: 69.40s, d_loss: 0.8943 g_loss: 0.0257 (mse: 0.
0089, psnr: 27.6919, accuracy: 0.8281)
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Epoch [17/20]   30 time: 66.06s, d_loss: 0.8617 g_loss: 0.0251 (mse: 0.
0090, psnr: 27.6462, accuracy: 0.9219)
Epoch [17/20]   31 time: 66.46s, d_loss: 0.9191 g_loss: 0.0260 (mse: 0.
0104, psnr: 26.8832, accuracy: 0.6562)
Epoch [17/20]   32 time: 65.86s, d_loss: 0.6138 g_loss: 0.0276 (mse: 0.
0101, psnr: 27.3894, accuracy: 1.0000)
Epoch [17/20]   33 time: 67.60s, d_loss: 0.9450 g_loss: 0.0312 (mse: 0.
0160, psnr: 26.1860, accuracy: 0.8281)
Epoch [17/20]   34 time: 73.69s, d_loss: 1.0575 g_loss: 0.0279 (mse: 0.
0101, psnr: 27.1447, accuracy: 0.7656)
Epoch [17/20]   35 time: 66.37s, d_loss: 0.6357 g_loss: 0.0247 (mse: 0.
0082, psnr: 27.9185, accuracy: 0.9688)
Epoch [17/20]   36 time: 65.61s, d_loss: 0.4642 g_loss: 0.0321 (mse: 0.
0126, psnr: 25.9539, accuracy: 0.9219)
Epoch [17/20]   37 time: 67.42s, d_loss: 2.1407 g_loss: 0.0264 (mse: 0.
0090, psnr: 27.6886, accuracy: 0.5000)
Epoch [17/20]   38 time: 68.93s, d_loss: 0.7992 g_loss: 0.0340 (mse: 0.
0119, psnr: 25.7837, accuracy: 0.5781)
Epoch [17/20]   39 time: 68.20s, d_loss: 1.7970 g_loss: 0.0309 (mse: 0.
0132, psnr: 27.2643, accuracy: 0.5000)
Epoch [17/20]   40 time: 68.74s, d_loss: 1.1205 g_loss: 0.0268 (mse: 0.
0089, psnr: 27.4182, accuracy: 0.5625)
Epoch [17/20]   41 time: 65.95s, d_loss: 0.7514 g_loss: 0.0246 (mse: 0.
0090, psnr: 27.6054, accuracy: 0.9062)
Epoch [17/20]   42 time: 66.16s, d_loss: 1.0436 g_loss: 0.0236 (mse: 0.
0096, psnr: 27.6766, accuracy: 0.8281)
Epoch [17/20]   43 time: 66.42s, d_loss: 1.5931 g_loss: 0.0278 (mse: 0.
0101, psnr: 27.1178, accuracy: 0.5312)
Epoch [17/20]   44 time: 65.17s, d_loss: 1.1199 g_loss: 0.0196 (mse: 0.
0071, psnr: 28.5213, accuracy: 0.8750)
Epoch [17/20]   45 time: 65.30s, d_loss: 0.8992 g_loss: 0.0274 (mse: 0.
0094, psnr: 27.4259, accuracy: 0.9531)
Epoch [17/20]   46 time: 58.49s, d_loss: 0.5751 g_loss: 0.0276 (mse: 0.
0105, psnr: 27.2438, accuracy: 1.0000)
[*] Epoch: [17/20] time: 3199.83s, d_loss: 1.1060 g_loss: 0.0273 (mse:
 0.010488, psnr: 27.2335, accuracy: 0.7134)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [18/20]    0 time: 67.07s, d_loss: 1.1310 g_loss: 0.0272 (mse: 0.
0099, psnr: 27.0507, accuracy: 0.5000)
Epoch [18/20]    1 time: 71.10s, d_loss: 1.3359 g_loss: 0.0240 (mse: 0.
0076, psnr: 28.2835, accuracy: 0.5000)
Epoch [18/20]    2 time: 70.69s, d_loss: 1.6057 g_loss: 0.0237 (mse: 0.
0078, psnr: 27.8038, accuracy: 0.5000)
Epoch [18/20]    3 time: 68.27s, d_loss: 1.2404 g_loss: 0.0247 (mse: 0.
0086, psnr: 28.2999, accuracy: 0.5000)
Epoch [18/20]    4 time: 69.36s, d_loss: 1.9627 g_loss: 0.0213 (mse: 0.
0072, psnr: 28.7068, accuracy: 0.5000)
Epoch [18/20]    5 time: 64.91s, d_loss: 0.8546 g_loss: 0.0282 (mse: 0.
0111, psnr: 26.8100, accuracy: 1.0000)
Epoch [18/20]    6 time: 68.59s, d_loss: 1.0719 g_loss: 0.0255 (mse: 0.
0094, psnr: 27.6553, accuracy: 0.7500)
Epoch [18/20]    7 time: 66.98s, d_loss: 1.7080 g_loss: 0.0273 (mse: 0.
0110, psnr: 26.5899, accuracy: 0.5156)
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Epoch [18/20]    8 time: 70.01s, d_loss: 1.1575 g_loss: 0.0277 (mse: 0.
0104, psnr: 27.1191, accuracy: 0.6875)
Epoch [18/20]    9 time: 68.25s, d_loss: 1.0637 g_loss: 0.0334 (mse: 0.
0161, psnr: 26.2795, accuracy: 0.7500)
Epoch [18/20]   10 time: 66.04s, d_loss: 0.8046 g_loss: 0.0259 (mse: 0.
0094, psnr: 27.3180, accuracy: 1.0000)
Epoch [18/20]   11 time: 66.09s, d_loss: 0.4512 g_loss: 0.0283 (mse: 0.
0115, psnr: 26.8260, accuracy: 1.0000)
Epoch [18/20]   12 time: 66.37s, d_loss: 1.7381 g_loss: 0.0266 (mse: 0.
0091, psnr: 27.5544, accuracy: 0.5000)
Epoch [18/20]   13 time: 65.15s, d_loss: 0.9601 g_loss: 0.0268 (mse: 0.
0103, psnr: 27.1214, accuracy: 0.5781)
Epoch [18/20]   14 time: 65.20s, d_loss: 1.0226 g_loss: 0.0273 (mse: 0.
0095, psnr: 27.1689, accuracy: 0.5625)
Epoch [18/20]   15 time: 65.94s, d_loss: 0.5187 g_loss: 0.0304 (mse: 0.
0135, psnr: 26.6193, accuracy: 1.0000)
Epoch [18/20]   16 time: 66.30s, d_loss: 0.7306 g_loss: 0.0264 (mse: 0.
0094, psnr: 27.8141, accuracy: 0.9688)
Epoch [18/20]   17 time: 66.09s, d_loss: 0.8157 g_loss: 0.0244 (mse: 0.
0093, psnr: 27.6182, accuracy: 0.9531)
Epoch [18/20]   18 time: 66.51s, d_loss: 0.9937 g_loss: 0.0267 (mse: 0.
0093, psnr: 27.2119, accuracy: 0.8750)
Epoch [18/20]   19 time: 65.66s, d_loss: 0.9000 g_loss: 0.0331 (mse: 0.
0114, psnr: 26.2791, accuracy: 0.9375)
Epoch [18/20]   20 time: 65.86s, d_loss: 0.7611 g_loss: 0.0285 (mse: 0.
0107, psnr: 26.5528, accuracy: 0.9688)
Epoch [18/20]   21 time: 65.35s, d_loss: 0.9107 g_loss: 0.0269 (mse: 0.
0086, psnr: 27.4934, accuracy: 0.5156)
Epoch [18/20]   22 time: 65.46s, d_loss: 0.7190 g_loss: 0.0304 (mse: 0.
0122, psnr: 27.7646, accuracy: 0.6875)
Epoch [18/20]   23 time: 66.73s, d_loss: 1.1863 g_loss: 0.0302 (mse: 0.
0100, psnr: 26.5125, accuracy: 0.5000)
Epoch [18/20]   24 time: 64.42s, d_loss: 0.9823 g_loss: 0.0262 (mse: 0.
0091, psnr: 27.4195, accuracy: 0.5312)
Epoch [18/20]   25 time: 65.49s, d_loss: 0.7089 g_loss: 0.0261 (mse: 0.
0091, psnr: 27.3026, accuracy: 0.8750)
Epoch [18/20]   26 time: 65.42s, d_loss: 0.7444 g_loss: 0.0299 (mse: 0.
0122, psnr: 26.1366, accuracy: 0.9844)
Epoch [18/20]   27 time: 64.73s, d_loss: 0.9207 g_loss: 0.0230 (mse: 0.
0087, psnr: 27.7450, accuracy: 0.8906)
Epoch [18/20]   28 time: 64.86s, d_loss: 0.9809 g_loss: 0.0288 (mse: 0.
0108, psnr: 27.0822, accuracy: 0.8594)
Epoch [18/20]   29 time: 65.33s, d_loss: 0.9120 g_loss: 0.0270 (mse: 0.
0094, psnr: 27.2554, accuracy: 0.9062)
Epoch [18/20]   30 time: 65.57s, d_loss: 0.5623 g_loss: 0.0328 (mse: 0.
0127, psnr: 26.1415, accuracy: 0.9844)
Epoch [18/20]   31 time: 64.57s, d_loss: 1.2304 g_loss: 0.0293 (mse: 0.
0107, psnr: 27.1589, accuracy: 0.5000)
Epoch [18/20]   32 time: 64.72s, d_loss: 1.3692 g_loss: 0.0285 (mse: 0.
0103, psnr: 27.2988, accuracy: 0.5000)
Epoch [18/20]   33 time: 65.45s, d_loss: 0.8558 g_loss: 0.0293 (mse: 0.
0100, psnr: 27.1838, accuracy: 0.5312)
Epoch [18/20]   34 time: 65.51s, d_loss: 1.3433 g_loss: 0.0240 (mse: 0.
0088, psnr: 27.3924, accuracy: 0.5000)
Epoch [18/20]   35 time: 64.73s, d_loss: 0.6413 g_loss: 0.0292 (mse: 0.
0109, psnr: 26.5802, accuracy: 1.0000)
Epoch [18/20]   36 time: 64.75s, d_loss: 1.4991 g_loss: 0.0191 (mse: 0.
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0063, psnr: 28.8901, accuracy: 0.5000)
Epoch [18/20]   37 time: 65.01s, d_loss: 1.8508 g_loss: 0.0257 (mse: 0.
0104, psnr: 26.8560, accuracy: 0.5000)
Epoch [18/20]   38 time: 66.51s, d_loss: 1.0333 g_loss: 0.0242 (mse: 0.
0102, psnr: 27.1792, accuracy: 0.8438)
Epoch [18/20]   39 time: 64.92s, d_loss: 0.9736 g_loss: 0.0239 (mse: 0.
0085, psnr: 27.5163, accuracy: 0.9219)
Epoch [18/20]   40 time: 66.14s, d_loss: 0.7499 g_loss: 0.0226 (mse: 0.
0075, psnr: 28.3706, accuracy: 0.9844)
Epoch [18/20]   41 time: 71.76s, d_loss: 0.9610 g_loss: 0.0246 (mse: 0.
0093, psnr: 27.3269, accuracy: 0.5625)
Epoch [18/20]   42 time: 70.28s, d_loss: 0.8338 g_loss: 0.0288 (mse: 0.
0111, psnr: 27.4203, accuracy: 0.6562)
Epoch [18/20]   43 time: 70.10s, d_loss: 1.1058 g_loss: 0.0267 (mse: 0.
0093, psnr: 27.8851, accuracy: 0.5156)
Epoch [18/20]   44 time: 70.59s, d_loss: 0.8691 g_loss: 0.0262 (mse: 0.
0091, psnr: 27.5414, accuracy: 0.6875)
Epoch [18/20]   45 time: 69.53s, d_loss: 0.7913 g_loss: 0.0233 (mse: 0.
0090, psnr: 27.3312, accuracy: 0.8594)
Epoch [18/20]   46 time: 59.72s, d_loss: 0.8714 g_loss: 0.0252 (mse: 0.
0085, psnr: 27.6170, accuracy: 0.5536)
[*] Epoch: [18/20] time: 3128.11s, d_loss: 1.0305 g_loss: 0.0268 (mse:
 0.009897, psnr: 27.2997, accuracy: 0.7212)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
Epoch [19/20]    0 time: 71.90s, d_loss: 1.1868 g_loss: 0.0278 (mse: 0.
0102, psnr: 26.7908, accuracy: 0.6250)
Epoch [19/20]    1 time: 69.91s, d_loss: 0.7775 g_loss: 0.0210 (mse: 0.
0069, psnr: 28.5742, accuracy: 0.9844)
Epoch [19/20]    2 time: 71.57s, d_loss: 1.0788 g_loss: 0.0235 (mse: 0.
0081, psnr: 28.4127, accuracy: 0.8125)
Epoch [19/20]    3 time: 71.08s, d_loss: 0.8043 g_loss: 0.0245 (mse: 0.
0074, psnr: 27.9686, accuracy: 0.7500)
Epoch [19/20]    4 time: 70.25s, d_loss: 0.4752 g_loss: 0.0276 (mse: 0.
0098, psnr: 27.4567, accuracy: 0.9688)
Epoch [19/20]    5 time: 68.52s, d_loss: 0.7462 g_loss: 0.0258 (mse: 0.
0090, psnr: 27.1974, accuracy: 0.6719)
Epoch [19/20]    6 time: 70.26s, d_loss: 0.4787 g_loss: 0.0292 (mse: 0.
0099, psnr: 26.9069, accuracy: 0.9688)
Epoch [19/20]    7 time: 69.41s, d_loss: 0.7498 g_loss: 0.0252 (mse: 0.
0094, psnr: 27.2561, accuracy: 0.7188)
Epoch [19/20]    8 time: 69.14s, d_loss: 0.7351 g_loss: 0.0274 (mse: 0.
0093, psnr: 27.5488, accuracy: 1.0000)
Epoch [19/20]    9 time: 69.15s, d_loss: 0.8668 g_loss: 0.0280 (mse: 0.
0112, psnr: 26.8692, accuracy: 0.9531)
Epoch [19/20]   10 time: 71.73s, d_loss: 0.8628 g_loss: 0.0231 (mse: 0.
0093, psnr: 27.3770, accuracy: 0.9844)
Epoch [19/20]   11 time: 68.45s, d_loss: 0.8806 g_loss: 0.0256 (mse: 0.
0086, psnr: 27.3828, accuracy: 0.6562)
Epoch [19/20]   12 time: 69.79s, d_loss: 0.8146 g_loss: 0.0281 (mse: 0.
0103, psnr: 26.7596, accuracy: 0.7812)
Epoch [19/20]   13 time: 71.35s, d_loss: 0.4779 g_loss: 0.0282 (mse: 0.
0118, psnr: 26.3513, accuracy: 1.0000)
Epoch [19/20]   14 time: 71.44s, d_loss: 0.2645 g_loss: 0.0322 (mse: 0.
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0107, psnr: 26.2940, accuracy: 1.0000)
Epoch [19/20]   15 time: 71.83s, d_loss: 0.2698 g_loss: 0.0301 (mse: 0.
0109, psnr: 27.0057, accuracy: 1.0000)
Epoch [19/20]   16 time: 71.62s, d_loss: 0.6768 g_loss: 0.0288 (mse: 0.
0098, psnr: 26.9932, accuracy: 0.7344)
Epoch [19/20]   17 time: 71.33s, d_loss: 1.0239 g_loss: 0.0256 (mse: 0.
0104, psnr: 27.7383, accuracy: 0.5156)
Epoch [19/20]   18 time: 71.59s, d_loss: 0.5268 g_loss: 0.0227 (mse: 0.
0077, psnr: 28.4934, accuracy: 0.9375)
Epoch [19/20]   19 time: 71.57s, d_loss: 1.0784 g_loss: 0.0287 (mse: 0.
0123, psnr: 26.8165, accuracy: 0.7500)
Epoch [19/20]   20 time: 70.96s, d_loss: 0.5261 g_loss: 0.0294 (mse: 0.
0097, psnr: 27.1874, accuracy: 1.0000)
Epoch [19/20]   21 time: 70.83s, d_loss: 0.7160 g_loss: 0.0275 (mse: 0.
0096, psnr: 26.9767, accuracy: 1.0000)
Epoch [19/20]   22 time: 72.14s, d_loss: 0.5386 g_loss: 0.0269 (mse: 0.
0093, psnr: 27.6382, accuracy: 0.9844)
Epoch [19/20]   23 time: 69.67s, d_loss: 1.6508 g_loss: 0.0297 (mse: 0.
0136, psnr: 26.7623, accuracy: 0.5000)
Epoch [19/20]   24 time: 68.87s, d_loss: 1.0725 g_loss: 0.0231 (mse: 0.
0082, psnr: 28.0832, accuracy: 0.5469)
Epoch [19/20]   25 time: 76.03s, d_loss: 1.9767 g_loss: 0.0252 (mse: 0.
0081, psnr: 27.3532, accuracy: 0.5000)
Epoch [19/20]   26 time: 71.19s, d_loss: 1.1881 g_loss: 0.0277 (mse: 0.
0098, psnr: 27.2244, accuracy: 0.5000)
Epoch [19/20]   27 time: 71.24s, d_loss: 0.9055 g_loss: 0.0221 (mse: 0.
0082, psnr: 28.1421, accuracy: 0.7812)
Epoch [19/20]   28 time: 76.21s, d_loss: 1.2324 g_loss: 0.0280 (mse: 0.
0113, psnr: 26.0476, accuracy: 0.5156)
Epoch [19/20]   29 time: 70.81s, d_loss: 1.0025 g_loss: 0.0298 (mse: 0.
0119, psnr: 26.8431, accuracy: 0.7656)
Epoch [19/20]   30 time: 71.03s, d_loss: 1.0085 g_loss: 0.0287 (mse: 0.
0111, psnr: 26.9831, accuracy: 0.7500)
Epoch [19/20]   31 time: 70.88s, d_loss: 1.2542 g_loss: 0.0311 (mse: 0.
0153, psnr: 26.4523, accuracy: 0.7031)
Epoch [19/20]   32 time: 70.74s, d_loss: 0.8481 g_loss: 0.0217 (mse: 0.
0081, psnr: 28.2012, accuracy: 0.9531)
Epoch [19/20]   33 time: 70.42s, d_loss: 1.0922 g_loss: 0.0262 (mse: 0.
0118, psnr: 27.2325, accuracy: 0.8906)
Epoch [19/20]   34 time: 71.12s, d_loss: 0.6804 g_loss: 0.0235 (mse: 0.
0080, psnr: 27.9943, accuracy: 0.9531)
Epoch [19/20]   35 time: 70.85s, d_loss: 0.5508 g_loss: 0.0330 (mse: 0.
0118, psnr: 26.3995, accuracy: 1.0000)
Epoch [19/20]   36 time: 70.96s, d_loss: 0.7591 g_loss: 0.0354 (mse: 0.
0134, psnr: 25.2357, accuracy: 0.6719)
Epoch [19/20]   37 time: 68.73s, d_loss: 0.5059 g_loss: 0.0324 (mse: 0.
0117, psnr: 26.5200, accuracy: 1.0000)
Epoch [19/20]   38 time: 66.75s, d_loss: 0.3676 g_loss: 0.0259 (mse: 0.
0108, psnr: 27.5342, accuracy: 1.0000)
Epoch [19/20]   39 time: 64.82s, d_loss: 0.6002 g_loss: 0.0275 (mse: 0.
0105, psnr: 26.6635, accuracy: 0.9844)
Epoch [19/20]   40 time: 67.52s, d_loss: 0.3871 g_loss: 0.0332 (mse: 0.
0119, psnr: 26.2647, accuracy: 1.0000)
Epoch [19/20]   41 time: 66.17s, d_loss: 0.3094 g_loss: 0.0261 (mse: 0.
0102, psnr: 27.2878, accuracy: 1.0000)
Epoch [19/20]   42 time: 64.97s, d_loss: 0.5105 g_loss: 0.0293 (mse: 0.
0111, psnr: 26.6210, accuracy: 0.8594)
```

```
Epoch [19/20]   43 time: 65.12s, d_loss: 0.4886 g_loss: 0.0283 (mse: 0.
0110, psnr: 26.3316, accuracy: 0.9844)
Epoch [19/20]   44 time: 68.52s, d_loss: 0.8805 g_loss: 0.0251 (mse: 0.
0089, psnr: 27.4106, accuracy: 0.5156)
Epoch [19/20]   45 time: 70.22s, d_loss: 0.4789 g_loss: 0.0267 (mse: 0.
0100, psnr: 27.0465, accuracy: 1.0000)
Epoch [19/20]   46 time: 60.27s, d_loss: 1.1567 g_loss: 0.0215 (mse: 0.
0072, psnr: 28.1440, accuracy: 0.8571)
[*] Epoch: [19/20] time: 3288.96s, d_loss: 0.7971 g_loss: 0.0272 (mse:
 0.010112, psnr: 27.1654, accuracy: 0.8304)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
 ** new learning rate: 0.000001 (for GAN)
Epoch [20/20]    0 time: 71.93s, d_loss: 1.0205 g_loss: 0.0248 (mse: 0.
0091, psnr: 27.8191, accuracy: 0.7656)
Epoch [20/20]    1 time: 73.08s, d_loss: 1.0497 g_loss: 0.0315 (mse: 0.
0153, psnr: 26.2655, accuracy: 0.7812)
Epoch [20/20]    2 time: 71.02s, d_loss: 0.9050 g_loss: 0.0269 (mse: 0.
0098, psnr: 27.4885, accuracy: 0.9219)
Epoch [20/20]    3 time: 71.77s, d_loss: 0.9178 g_loss: 0.0235 (mse: 0.
0093, psnr: 27.3399, accuracy: 0.8906)
Epoch [20/20]    4 time: 70.65s, d_loss: 0.7086 g_loss: 0.0269 (mse: 0.
0103, psnr: 26.9007, accuracy: 1.0000)
Epoch [20/20]    5 time: 70.84s, d_loss: 0.8367 g_loss: 0.0303 (mse: 0.
0109, psnr: 26.9341, accuracy: 0.8438)
Epoch [20/20]    6 time: 70.59s, d_loss: 0.6276 g_loss: 0.0261 (mse: 0.
0090, psnr: 27.8329, accuracy: 0.9375)
Epoch [20/20]    7 time: 68.07s, d_loss: 0.9123 g_loss: 0.0234 (mse: 0.
0079, psnr: 28.2162, accuracy: 0.5938)
Epoch [20/20]    8 time: 68.72s, d_loss: 0.5644 g_loss: 0.0268 (mse: 0.
0089, psnr: 27.4912, accuracy: 0.8750)
Epoch [20/20]    9 time: 73.07s, d_loss: 0.8814 g_loss: 0.0245 (mse: 0.
0099, psnr: 27.7254, accuracy: 0.5312)
Epoch [20/20]   10 time: 73.28s, d_loss: 1.3701 g_loss: 0.0312 (mse: 0.
0153, psnr: 27.1235, accuracy: 0.5000)
Epoch [20/20]   11 time: 67.26s, d_loss: 0.5376 g_loss: 0.0265 (mse: 0.
0088, psnr: 27.3364, accuracy: 1.0000)
Epoch [20/20]   12 time: 71.64s, d_loss: 0.3805 g_loss: 0.0249 (mse: 0.
0092, psnr: 27.2145, accuracy: 1.0000)
Epoch [20/20]   13 time: 70.16s, d_loss: 0.5897 g_loss: 0.0287 (mse: 0.
0113, psnr: 26.4957, accuracy: 1.0000)
Epoch [20/20]   14 time: 70.04s, d_loss: 0.5680 g_loss: 0.0265 (mse: 0.
0096, psnr: 27.4662, accuracy: 0.9531)
Epoch [20/20]   15 time: 70.56s, d_loss: 1.4677 g_loss: 0.0224 (mse: 0.
0072, psnr: 28.2334, accuracy: 0.5000)
Epoch [20/20]   16 time: 68.25s, d_loss: 0.8095 g_loss: 0.0284 (mse: 0.
0103, psnr: 26.7296, accuracy: 0.6719)
Epoch [20/20]   17 time: 64.84s, d_loss: 0.3686 g_loss: 0.0289 (mse: 0.
0096, psnr: 27.1037, accuracy: 0.9844)
Epoch [20/20]   18 time: 70.11s, d_loss: 0.9853 g_loss: 0.0266 (mse: 0.
0093, psnr: 27.7498, accuracy: 0.5781)
Epoch [20/20]   19 time: 68.92s, d_loss: 0.7119 g_loss: 0.0256 (mse: 0.
0091, psnr: 27.4129, accuracy: 0.6719)
Epoch [20/20]   20 time: 69.06s, d_loss: 0.4014 g_loss: 0.0308 (mse: 0.
```

```
0121, psnr: 26.4048, accuracy: 1.0000)
Epoch [20/20]   21 time: 67.85s, d_loss: 0.7251 g_loss: 0.0280 (mse: 0.
0101, psnr: 27.3528, accuracy: 1.0000)
Epoch [20/20]   22 time: 76.09s, d_loss: 0.7066 g_loss: 0.0297 (mse: 0.
0117, psnr: 26.2381, accuracy: 0.9844)
Epoch [20/20]   23 time: 70.86s, d_loss: 0.6808 g_loss: 0.0235 (mse: 0.
0098, psnr: 26.7901, accuracy: 0.8906)
Epoch [20/20]   24 time: 69.28s, d_loss: 0.4586 g_loss: 0.0281 (mse: 0.
0101, psnr: 27.4833, accuracy: 1.0000)
Epoch [20/20]   25 time: 68.05s, d_loss: 0.7406 g_loss: 0.0253 (mse: 0.
0094, psnr: 27.0285, accuracy: 0.7969)
Epoch [20/20]   26 time: 71.03s, d_loss: 0.6323 g_loss: 0.0239 (mse: 0.
0083, psnr: 28.0225, accuracy: 0.8125)
Epoch [20/20]   27 time: 73.65s, d_loss: 0.4490 g_loss: 0.0307 (mse: 0.
0104, psnr: 26.5882, accuracy: 0.9844)
Epoch [20/20]   28 time: 70.73s, d_loss: 0.5793 g_loss: 0.0279 (mse: 0.
0100, psnr: 27.5947, accuracy: 1.0000)
Epoch [20/20]   29 time: 74.93s, d_loss: 0.4149 g_loss: 0.0286 (mse: 0.
0105, psnr: 27.2461, accuracy: 1.0000)
Epoch [20/20]   30 time: 74.68s, d_loss: 0.2589 g_loss: 0.0253 (mse: 0.
0090, psnr: 27.4951, accuracy: 1.0000)
Epoch [20/20]   31 time: 73.17s, d_loss: 0.5018 g_loss: 0.0290 (mse: 0.
0102, psnr: 26.5353, accuracy: 1.0000)
Epoch [20/20]   32 time: 72.77s, d_loss: 0.4637 g_loss: 0.0314 (mse: 0.
0128, psnr: 27.4319, accuracy: 1.0000)
Epoch [20/20]   33 time: 74.07s, d_loss: 0.5587 g_loss: 0.0310 (mse: 0.
0109, psnr: 26.8178, accuracy: 1.0000)
Epoch [20/20]   34 time: 73.97s, d_loss: 1.5545 g_loss: 0.0284 (mse: 0.
0134, psnr: 27.3336, accuracy: 0.5000)
Epoch [20/20]   35 time: 73.70s, d_loss: 1.0919 g_loss: 0.0276 (mse: 0.
0101, psnr: 27.5685, accuracy: 0.5000)
Epoch [20/20]   36 time: 70.58s, d_loss: 1.7870 g_loss: 0.0234 (mse: 0.
0078, psnr: 28.0742, accuracy: 0.5000)
Epoch [20/20]   37 time: 67.91s, d_loss: 0.3188 g_loss: 0.0268 (mse: 0.
0088, psnr: 27.6284, accuracy: 1.0000)
Epoch [20/20]   38 time: 72.48s, d_loss: 0.6380 g_loss: 0.0254 (mse: 0.
0098, psnr: 27.5046, accuracy: 0.7344)
Epoch [20/20]   39 time: 74.72s, d_loss: 0.5095 g_loss: 0.0285 (mse: 0.
0106, psnr: 26.8781, accuracy: 0.9688)
Epoch [20/20]   40 time: 75.31s, d_loss: 0.4060 g_loss: 0.0290 (mse: 0.
0105, psnr: 26.5334, accuracy: 1.0000)
Epoch [20/20]   41 time: 73.77s, d_loss: 0.6002 g_loss: 0.0303 (mse: 0.
0106, psnr: 26.7029, accuracy: 0.7344)
Epoch [20/20]   42 time: 73.52s, d_loss: 0.6889 g_loss: 0.0302 (mse: 0.
0124, psnr: 25.9636, accuracy: 0.9844)
Epoch [20/20]   43 time: 75.32s, d_loss: 0.4679 g_loss: 0.0303 (mse: 0.
0109, psnr: 27.0150, accuracy: 1.0000)
Epoch [20/20]   44 time: 73.69s, d_loss: 0.7314 g_loss: 0.0282 (mse: 0.
0133, psnr: 26.9231, accuracy: 0.9844)
Epoch [20/20]   45 time: 71.98s, d_loss: 0.5500 g_loss: 0.0274 (mse: 0.
0118, psnr: 26.5463, accuracy: 1.0000)
Epoch [20/20]   46 time: 62.59s, d_loss: 1.0625 g_loss: 0.0226 (mse: 0.
0073, psnr: 28.2870, accuracy: 0.5179)
[*] Epoch: [20/20] time: 3350.55s, d_loss: 0.7275 g_loss: 0.0273 (mse:
 0.010266, psnr: 27.2099, accuracy: 0.8488)
[*] save images
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/g_srgan.npz
```

```
[TL] [*] Saved
[TL] [*] Saving TL params into ../output/SRGAN2/checkpoint/d_srgan.npz
[TL] [*] Saved
```

Prediction

In [3]:
```
test_lr_path = '../data/train_set/LR'
checkpoint_path = '../output/SRGAN2/checkpoint'
save_path = '../output/SRGAN2'
tf.reset_default_graph()
predict(test_lr_path=test_lr_path, checkpoint_path=checkpoint_path, save
_path=save_path)
```

```
[TL] [*] creates ../output/SRGAN2/test_gen ...
[TL] read 32 from ../data/train_set/LR
[TL] read 64 from ../data/train_set/LR
[TL] read 96 from ../data/train_set/LR
[TL] read 128 from ../data/train_set/LR
[TL] read 160 from ../data/train_set/LR
[TL] read 192 from ../data/train_set/LR
[TL] read 224 from ../data/train_set/LR
[TL] read 256 from ../data/train_set/LR
[TL] read 288 from ../data/train_set/LR
[TL] read 320 from ../data/train_set/LR
[TL] read 352 from ../data/train_set/LR
[TL] read 384 from ../data/train_set/LR
[TL] read 416 from ../data/train_set/LR
[TL] read 448 from ../data/train_set/LR
[TL] read 480 from ../data/train_set/LR
[TL] read 512 from ../data/train_set/LR
[TL] read 544 from ../data/train_set/LR
[TL] read 576 from ../data/train_set/LR
[TL] read 608 from ../data/train_set/LR
[TL] read 640 from ../data/train_set/LR
[TL] read 672 from ../data/train_set/LR
[TL] read 704 from ../data/train_set/LR
[TL] read 736 from ../data/train_set/LR
[TL] read 768 from ../data/train_set/LR
[TL] read 800 from ../data/train_set/LR
[TL] read 832 from ../data/train_set/LR
[TL] read 864 from ../data/train_set/LR
[TL] read 896 from ../data/train_set/LR
[TL] read 928 from ../data/train_set/LR
[TL] read 960 from ../data/train_set/LR
[TL] read 992 from ../data/train_set/LR
[TL] read 1024 from ../data/train_set/LR
[TL] read 1056 from ../data/train_set/LR
[TL] read 1088 from ../data/train_set/LR
[TL] read 1120 from ../data/train_set/LR
[TL] read 1152 from ../data/train_set/LR
[TL] read 1184 from ../data/train_set/LR
[TL] read 1216 from ../data/train_set/LR
[TL] read 1248 from ../data/train_set/LR
[TL] read 1280 from ../data/train_set/LR
[TL] read 1312 from ../data/train_set/LR
[TL] read 1344 from ../data/train_set/LR
[TL] read 1376 from ../data/train_set/LR
[TL] read 1408 from ../data/train_set/LR
[TL] read 1440 from ../data/train_set/LR
[TL] read 1472 from ../data/train_set/LR
[TL] read 1500 from ../data/train_set/LR
[TL] InputLayer  SRGAN_g/in: (1, ?, ?, 3)
[TL] Conv2d SRGAN_g/n64s1/c: n_filter: 64 filter_size: (3, 3) strides:
(1, 1) pad: SAME act: relu
[TL] Conv2d SRGAN_g/n64s1/c1/0: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/0: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/0: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
```

```
[TL] BatchNormLayer SRGAN_g/n64s1/b2/0: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/0: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/1: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/1: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/1: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/1: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/1: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/2: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/2: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/2: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/2: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/2: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/3: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/3: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/3: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/3: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/3: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/4: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/4: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/4: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/4: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/4: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/5: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/5: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/5: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/5: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/5: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/6: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/6: decay: 0.900000 epsilon: 0.0000
```

```
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/6: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/6: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/6: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/7: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/7: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/7: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/7: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/7: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/8: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/8: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/8: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/8: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/8: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/9: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/9: decay: 0.900000 epsilon: 0.0000
10 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/9: n_filter: 64 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/9: decay: 0.900000 epsilon: 0.0000
10 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/9: size: (1, ?, ?, 64) fn:
add
[TL] Conv2d SRGAN_g/n64s1/c1/10: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/10: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/10: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/10: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/10: size: (1, ?, ?, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/11: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/11: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/11: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/11: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/11: size: (1, ?, ?, 64) f
n: add
```

```
[TL] Conv2d SRGAN_g/n64s1/c1/12: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/12: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/12: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/12: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/12: size: (1, ?, ?, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/13: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/13: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/13: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/13: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/13: size: (1, ?, ?, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c1/14: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b1/14: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/14: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/14: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/14: size: (1, ?, ?, 64) f
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[TL] BatchNormLayer SRGAN_g/n64s1/b1/15: decay: 0.900000 epsilon: 0.000
010 act: relu is_train: False
[TL] Conv2d SRGAN_g/n64s1/c2/15: n_filter: 64 filter_size: (3, 3) strid
es: (1, 1) pad: SAME act: No Activation
[TL] BatchNormLayer SRGAN_g/n64s1/b2/15: decay: 0.900000 epsilon: 0.000
010 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/b_residual_add/15: size: (1, ?, ?, 64) f
n: add
[TL] Conv2d SRGAN_g/n64s1/c/m: n_filter: 64 filter_size: (3, 3) stride
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[TL] BatchNormLayer SRGAN_g/n64s1/b/m: decay: 0.900000 epsilon: 0.00001
0 act: No Activation is_train: False
[TL] ElementwiseLayer SRGAN_g/add3: size: (1, ?, ?, 64) fn: add
[TL] Conv2d SRGAN_g/n256s1/1: n_filter: 256 filter_size: (3, 3) stride
s: (1, 1) pad: SAME act: No Activation
[TL] SubpixelConv2d  SRGAN_g/pixelshufflerx2/1: scale: 2 n_out_channel:
64 act: relu
[TL] Conv2d SRGAN_g/out: n_filter: 3 filter_size: (1, 1) strides: (1,
1) pad: SAME act: tanh
[TL] [*] Load ../output/SRGAN2/checkpoint/g_srgan.npz SUCCESS!
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```

In [ ]:

Generate images by bicubic

In [4]:
```
import tensorlayer as tl
import scipy
```

In [7]:
```
test_lr_path = '../data/train_set/LR'
test_lr_img_list = sorted(tl.files.load_file_list(path=test_lr_path, reg
x='.*.jpg', printable=False))
save_path = '../output/SRGAN2/test_bicubic'

imgs = tl.vis.read_images(test_lr_img_list, path=test_lr_path)
out = [scipy.misc.imresize(img, [img.shape[0]*2, img.shape[1]*2], interp
='bicubic', mode=None) for img in imgs]
for i in range(len(out)):
    tl.vis.save_image(out[i], os.path.join(save_path, '{}'.format(test_l
r_img_list[i])))
```

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/Users/james/anaconda3/lib/python3.6/site-packages/ipykernel_launcher.p
y:6: DeprecationWarning: `imresize` is deprecated!
`imresize` is deprecated in SciPy 1.0.0, and will be removed in 1.2.0.
Use ``skimage.transform.resize`` instead.
```

Comparison by psnr

In [1]:
```
import numpy as np
import tensorlayer as tl
```

In [2]:
```
test_hr_img_path = '../data/train_set/HR'
gen_hr_img_path = '../output/SRGAN2/test_srgan'
def psnr(img1, img2):
    '''
    img1 and img2 are two 3-dimention images
    '''
    return 10*np.log10(255*255/(np.square(img1-img2).mean()))
```

In [3]:
```
test_hr_list = sorted(tl.files.load_file_list(path=test_hr_img_path, reg
x='.*.jpg', printable=False))
test_gen_list = sorted(tl.files.load_file_list(path=gen_hr_img_path, reg
x='.*.jpg', printable=False))

test_hr_imgs = tl.vis.read_images(test_hr_list, path=test_hr_img_path)
test_gen_imgs = tl.vis.read_images(test_gen_list, path=gen_hr_img_path)

# mean psnr
np.mean([psnr(img1,img2) for img1, img2 in zip(test_hr_imgs, test_gen_im
gs)])
```

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[TL] read 290 from ../output/SRGAN2/test_srgan
[TL] read 300 from ../output/SRGAN2/test_srgan
[TL] read 310 from ../output/SRGAN2/test_srgan
[TL] read 320 from ../output/SRGAN2/test_srgan
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[TL] read 380 from ../output/SRGAN2/test_srgan
[TL] read 390 from ../output/SRGAN2/test_srgan
[TL] read 400 from ../output/SRGAN2/test_srgan
[TL] read 410 from ../output/SRGAN2/test_srgan
[TL] read 420 from ../output/SRGAN2/test_srgan
[TL] read 430 from ../output/SRGAN2/test_srgan
[TL] read 440 from ../output/SRGAN2/test_srgan
[TL] read 450 from ../output/SRGAN2/test_srgan
[TL] read 460 from ../output/SRGAN2/test_srgan
[TL] read 470 from ../output/SRGAN2/test_srgan
[TL] read 480 from ../output/SRGAN2/test_srgan
[TL] read 490 from ../output/SRGAN2/test_srgan
[TL] read 500 from ../output/SRGAN2/test_srgan
[TL] read 510 from ../output/SRGAN2/test_srgan
[TL] read 520 from ../output/SRGAN2/test_srgan
[TL] read 530 from ../output/SRGAN2/test_srgan
[TL] read 540 from ../output/SRGAN2/test_srgan
[TL] read 550 from ../output/SRGAN2/test_srgan
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[TL] read 590 from ../output/SRGAN2/test_srgan
[TL] read 600 from ../output/SRGAN2/test_srgan
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[TL] read 620 from ../output/SRGAN2/test_srgan
[TL] read 630 from ../output/SRGAN2/test_srgan
[TL] read 640 from ../output/SRGAN2/test_srgan
[TL] read 650 from ../output/SRGAN2/test_srgan
[TL] read 660 from ../output/SRGAN2/test_srgan
[TL] read 670 from ../output/SRGAN2/test_srgan
[TL] read 680 from ../output/SRGAN2/test_srgan
[TL] read 690 from ../output/SRGAN2/test_srgan
[TL] read 700 from ../output/SRGAN2/test_srgan
[TL] read 710 from ../output/SRGAN2/test_srgan
[TL] read 720 from ../output/SRGAN2/test_srgan
[TL] read 730 from ../output/SRGAN2/test_srgan
[TL] read 740 from ../output/SRGAN2/test_srgan
[TL] read 750 from ../output/SRGAN2/test_srgan
[TL] read 760 from ../output/SRGAN2/test_srgan
[TL] read 770 from ../output/SRGAN2/test_srgan
[TL] read 780 from ../output/SRGAN2/test_srgan
```

```
[TL] read 790 from ../output/SRGAN2/test_srgan
[TL] read 800 from ../output/SRGAN2/test_srgan
[TL] read 810 from ../output/SRGAN2/test_srgan
[TL] read 820 from ../output/SRGAN2/test_srgan
[TL] read 830 from ../output/SRGAN2/test_srgan
[TL] read 840 from ../output/SRGAN2/test_srgan
[TL] read 850 from ../output/SRGAN2/test_srgan
[TL] read 860 from ../output/SRGAN2/test_srgan
[TL] read 870 from ../output/SRGAN2/test_srgan
[TL] read 880 from ../output/SRGAN2/test_srgan
[TL] read 890 from ../output/SRGAN2/test_srgan
[TL] read 900 from ../output/SRGAN2/test_srgan
[TL] read 910 from ../output/SRGAN2/test_srgan
[TL] read 920 from ../output/SRGAN2/test_srgan
[TL] read 930 from ../output/SRGAN2/test_srgan
[TL] read 940 from ../output/SRGAN2/test_srgan
[TL] read 950 from ../output/SRGAN2/test_srgan
[TL] read 960 from ../output/SRGAN2/test_srgan
[TL] read 970 from ../output/SRGAN2/test_srgan
[TL] read 980 from ../output/SRGAN2/test_srgan
[TL] read 990 from ../output/SRGAN2/test_srgan
[TL] read 1000 from ../output/SRGAN2/test_srgan
[TL] read 1010 from ../output/SRGAN2/test_srgan
[TL] read 1020 from ../output/SRGAN2/test_srgan
[TL] read 1030 from ../output/SRGAN2/test_srgan
[TL] read 1040 from ../output/SRGAN2/test_srgan
[TL] read 1050 from ../output/SRGAN2/test_srgan
[TL] read 1060 from ../output/SRGAN2/test_srgan
[TL] read 1070 from ../output/SRGAN2/test_srgan
[TL] read 1080 from ../output/SRGAN2/test_srgan
[TL] read 1090 from ../output/SRGAN2/test_srgan
[TL] read 1100 from ../output/SRGAN2/test_srgan
[TL] read 1110 from ../output/SRGAN2/test_srgan
[TL] read 1120 from ../output/SRGAN2/test_srgan
[TL] read 1130 from ../output/SRGAN2/test_srgan
[TL] read 1140 from ../output/SRGAN2/test_srgan
[TL] read 1150 from ../output/SRGAN2/test_srgan
[TL] read 1160 from ../output/SRGAN2/test_srgan
[TL] read 1170 from ../output/SRGAN2/test_srgan
[TL] read 1180 from ../output/SRGAN2/test_srgan
[TL] read 1190 from ../output/SRGAN2/test_srgan
[TL] read 1200 from ../output/SRGAN2/test_srgan
[TL] read 1210 from ../output/SRGAN2/test_srgan
[TL] read 1220 from ../output/SRGAN2/test_srgan
[TL] read 1230 from ../output/SRGAN2/test_srgan
[TL] read 1240 from ../output/SRGAN2/test_srgan
[TL] read 1250 from ../output/SRGAN2/test_srgan
[TL] read 1260 from ../output/SRGAN2/test_srgan
[TL] read 1270 from ../output/SRGAN2/test_srgan
[TL] read 1280 from ../output/SRGAN2/test_srgan
[TL] read 1290 from ../output/SRGAN2/test_srgan
[TL] read 1300 from ../output/SRGAN2/test_srgan
[TL] read 1310 from ../output/SRGAN2/test_srgan
[TL] read 1320 from ../output/SRGAN2/test_srgan
[TL] read 1330 from ../output/SRGAN2/test_srgan
[TL] read 1340 from ../output/SRGAN2/test_srgan
[TL] read 1350 from ../output/SRGAN2/test_srgan
```

```
[TL] read 1360 from ../output/SRGAN2/test_srgan
[TL] read 1370 from ../output/SRGAN2/test_srgan
[TL] read 1380 from ../output/SRGAN2/test_srgan
[TL] read 1390 from ../output/SRGAN2/test_srgan
[TL] read 1400 from ../output/SRGAN2/test_srgan
[TL] read 1410 from ../output/SRGAN2/test_srgan
[TL] read 1420 from ../output/SRGAN2/test_srgan
[TL] read 1430 from ../output/SRGAN2/test_srgan
[TL] read 1440 from ../output/SRGAN2/test_srgan
[TL] read 1450 from ../output/SRGAN2/test_srgan
[TL] read 1460 from ../output/SRGAN2/test_srgan
[TL] read 1470 from ../output/SRGAN2/test_srgan
[TL] read 1480 from ../output/SRGAN2/test_srgan
[TL] read 1490 from ../output/SRGAN2/test_srgan
[TL] read 1500 from ../output/SRGAN2/test_srgan
```

Out[3]: 31.064676199109826

In [ ]: