

## tf.contrib.gan.losses.wargs.least\_squares\_generator\_loss

```
least_squares_generator_loss(  
    discriminator_gen_outputs,  
    real_label=1,  
    weights=1.0,  
    scope=None,  
    loss_collection=tf.GraphKeys.LOSSES,  
    reduction=losses.Reduction.SUM_BY_NONZERO_WEIGHTS,  
    add_summaries=False  
)
```

Defined in [tensorflow/contrib/gan/python/losses/python/losses\\_impl.py](#).

Least squares generator loss.

This loss comes from **Least Squares Generative Adversarial Networks** (<https://arxiv.org/abs/1611.04076>).

$$L = 1/2 * (D(G(z)) - \text{real\_label}) ** 2$$

where  $D(y)$  are discriminator logits.

#### Args:

- `discriminator_gen_outputs`: Discriminator output on generated data. Expected to be in the range of  $(-\infty, \infty)$ .
- `real_label`: The value that the generator is trying to get the discriminator to output on generated data.
- `weights`: Optional **Tensor** whose rank is either 0, or the same rank as `discriminator_gen_outputs`, and must be broadcastable to `discriminator_gen_outputs` (i.e., all dimensions must be either 1, or the same as the corresponding dimension).
- `scope`: The scope for the operations performed in computing the loss.
- `loss_collection`: collection to which this loss will be added.
- `reduction`: A **tf.losses.Reduction** to apply to loss.
- `add_summaries`: Whether or not to add summaries for the loss.

#### Returns:

A loss Tensor. The shape depends on `reduction`.

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