

llama分布式权重合并

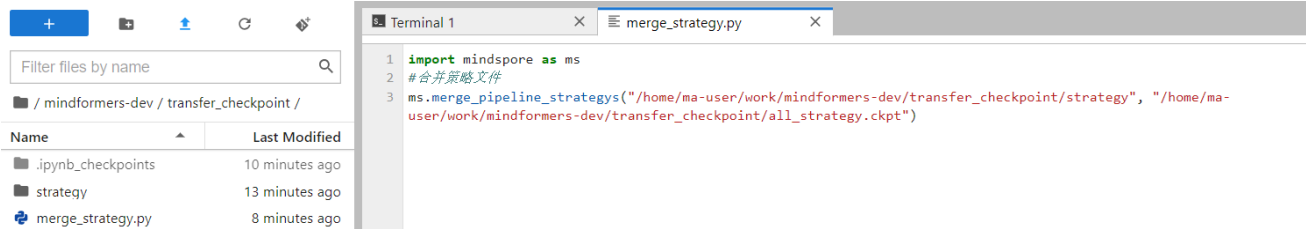
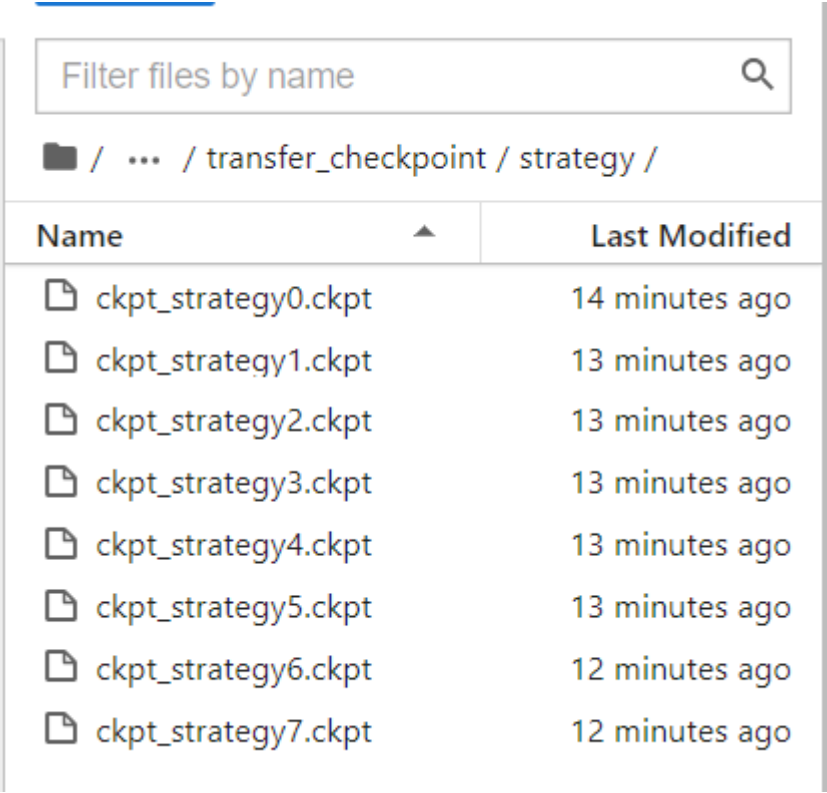
https://www.mindspore.cn/tutorials/experts/zh-CN/r2.0/parallel/resilience_train_and_predict.html

准备合并切分策略文件脚本 merge_strategy.py

在 mindformers-dev 目录下，创建 transfer_checkpoint 文件夹，在 transfer_checkpoint 文件夹中创建名为 merge_strategy.py 的文件，并且在文件中写入如下内容：

```
import mindspore as ms
#合并策略文件
ms.merge_pipeline_strategys("/home/ma-user/work/mindformers-dev/transfer_checkpoint/strategy",
"/home/ma-user/work/mindformers-dev/transfer_checkpoint/all_strategy.ckpt")
```

在 transfer_checkpoint 文件夹下创建一个名为 strategy 的子文件夹，将 切分策略文件 按如下格式放置到该单独目录下，如下图所示：



执行python merge_strategy.py，合并后的切分策略文件如下图

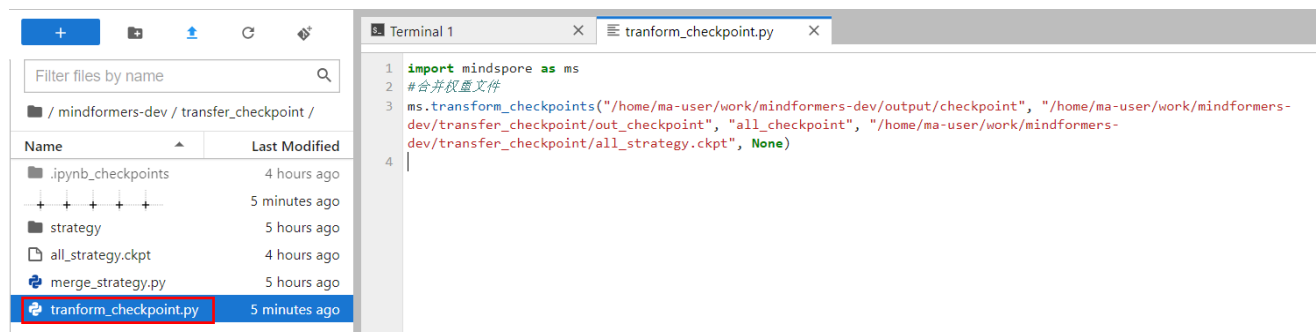
```
(MindSpore) [ma-user transfer_checkpoint]$ python merge_strategy.py
(MindSpore) [ma-user transfer_checkpoint]$ ls
all_strategy.ckpt merge_strategy.py strategy
(MindSpore) [ma-user transfer_checkpoint]$ ll
total 132
-rw-r----- 1 ma-user ma-group 125353 Jul 31 10:55 all_strategy.ckpt
-rw-r----- 1 ma-user ma-group    213 Jul 31 10:45 merge_strategy.py
drwxr-x--- 2 ma-user ma-group  4096 Jul 31 10:40 strategy
(MindSpore) [ma-user transfer_checkpoint]$
```

(备注：对于非流水线并行的情况下（mindformers-dev/configs/llama/run_llama_xx.yaml 文件中pipeline_stage 的值为 1 时），每张卡的切分策略文件内容均是一致的，无需做切分策略文件合并操作）

准备权重合并文件 tranform_checkpoint.py

```
import mindspore as ms
#合并权重文件
ms.transform_checkpoints("/home/ma-user/work/mindformers-dev/output/checkpoint", "/home/ma-
user/work/mindformers-dev/transfer_checkpoint/out_checkpoint", "all_checkpoint", "/home/ma-
user/work/mindformers-dev/transfer_checkpoint/all_strategy.ckpt", None)
```

(备注：ms.transform_checkpoints 的第一个参数是训练/微调之后得到的8份权重文件的目录，示例中为“/home/ma-user/work/mindformers-dev/output/checkpoint”)



执行 tranform_checkpoint.py，生成合并后的权重文件

```
(MindSpore) [ma-user transfer_checkpoint]$ pwd
/home/ma-user/work/mindformers-dev/transfer_checkpoint
(MindSpore) [ma-user transfer_checkpoint]$ python tranform_checkpoint.py
[WARNING] ME(78204:281473760135984,MainProcess):2023-07-31-15:38:52.808.660 [mindspore/parallel/_parallel_s
erialization.py:351] The parameter scale_sense is not in src_strategy.
[WARNING] ME(78204:281473760135984,MainProcess):2023-07-31-15:38:52.808.975 [mindspore/parallel/_parallel_s
erialization.py:351] The parameter global_step is not in src_strategy.
[WARNING] ME(78204:281473760135984,MainProcess):2023-07-31-15:39:31.810.841 [mindspore/parallel/_parallel_s
erialization.py:351] The parameter current_iterator_step is not in src_strategy.
[WARNING] ME(78204:281473760135984,MainProcess):2023-07-31-15:39:31.811.104 [mindspore/parallel/_parallel_s
erialization.py:351] The parameter last_overflow_iterator_step is not in src_strategy.
[WARNING] ME(78204:281473760135984,MainProcess):2023-07-31-15:39:31.811.198 [mindspore/parallel/_parallel_s
erialization.py:351] The parameter epoch_num is not in src_strategy.
[WARNING] ME(78204:281473760135984,MainProcess):2023-07-31-15:39:31.811.276 [mindspore/parallel/_parallel_s
erialization.py:351] The parameter step_num is not in src_strategy.
[WARNING] ME(78204:281473760135984,MainProcess):2023-07-31-15:39:31.811.351 [mindspore/parallel/_parallel_s
erialization.py:351] The parameter loss_scale is not in src_strategy.
(MindSpore) [ma-user transfer_checkpoint]$
```

示例中合并后的模型文件为： /home/ma-user/work/mindformers-dev/transfer_checkpoint/out_checkpoint/rank_0/all_checkpoint0.ckpt，如下图所示：

```
(MindSpore) [ma-user rank_0]$pwd
/home/ma-user/work/mindformers-dev/transfer_checkpoint/out_checkpoint/rank_0
(MindSpore) [ma-user rank_0]$ls
all_checkpoint0.ckpt
```