Angel

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1.

Angel   Angel   PSModel   PS
Server   PSModel   Angel Java Scala   Yarn
Spark on Angel

2.

2.1. Angel

Client

       Angel

Master

       Worker ParameterServer   Worker ParameterServer

Parameter Server

Worker

       Worker   Worker

2.2. Angel

PSModel

PSModel   Client   Worker   PSServer

MLModel
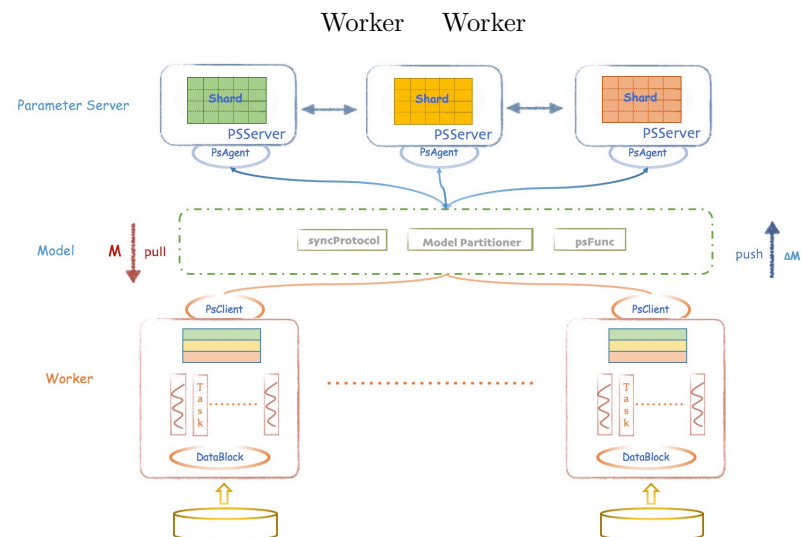
PSModel
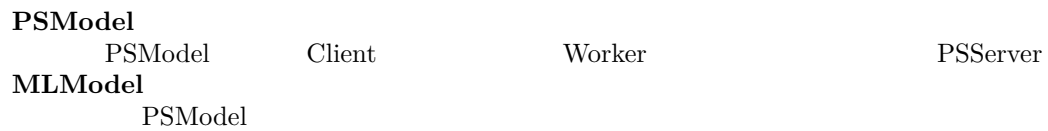
3.

3.1.

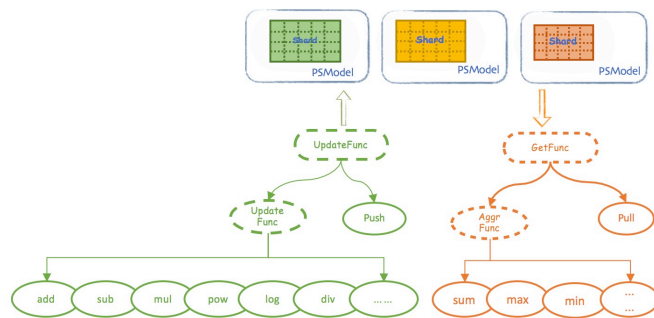- BSP   Task
- SSP   Task
- ASP Task   Task

3.2. ps function(psf)

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       pull()/push()   psf   ps   psFunc   PSSe

  PSServer

       Angel   psf   psFunc   psFunc   Worker

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- GetFunc

       PSServer PSServer

- UpdateFunc

       PSClient

       PS   PS

Note. Get Update psFunc

Note. github psf client-ps psf ps-ps psf ps-ps psf github

3.3.

- Angel 1 PS 2 PS 3 PS
- Partitioner getPartitions assignPartToServer PSModel MatrixCc

3.4.

- PS checkpoint
- Worker Master PS
- Master hdfs Yarn Angel Master Worker PS

4. Angel

- Jdk >= 1.8 Maven >= 3.0.5 Protobuf >= 2.5.0 Hadoop Protobuf
- git clone https://github.com/Tencent/angel
- mvn clean package -Dmaven.test.skip=true dist/target
- Yarn

  Note. Angel Hadoop Protobuf Hadoop Protobuf 2.4 Angel Pro-
  tobuf2.4 Angel

5.

1. MLModel
2. Task TrainTask parse() train()
3. Runner MLRunner train() predict()
4. psf psf

   Note. Angel Distributed Negative Sampling for Word Embeddings ps-
   ps psf Angel ps ps Angel Word2Vec

6.

Angel Angel Angel PS Server psf client-
ps psf

ps client or ps Word2Vec
ps Angel ps-ps psf ps Distributed Neg-
ative Sampling for Word Embeddings