

分布式机器学习笔记

Ruichen Wang

March 12, 2019

Abstract

Contents

1 基本知识	1
--------	---

1 基本知识

Communication Backends 主要有四种:

- TCP
 - 适用范围广，大部分系统和机器都提供支持。支持cpu上的p2p和collective functions。但是不支持GPU，优化程度也不高。
- MPI
- Gloo
- NCCL

Backend	gloo		mpi		nccl	
Device	CPU	GPU	CPU	GPU	CPU	GPU
send	✓	✗	✓	?	✗	✗
recv	✓	✗	✓	?	✗	✗
broadcast	✓	✓	✓	?	✗	✓
all_reduce	✓	✓	✓	?	✗	✓
reduce	✓	✗	✓	?	✗	✓
all_gather	✓	✗	✓	?	✗	✓
gather	✓	✗	✓	?	✗	✗
scatter	✓	✗	✓	?	✗	✗
barrier	✓	✗	✓	?	✗	✓

Figure 1: backends