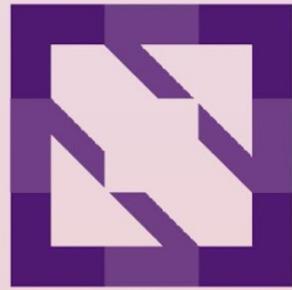




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Dragonfly v2.1.0 - Intro, Updates and Practice in AI Model Distribution

Wenbo Qi – Ant Group

Introduction



Container Registry



Container Runtime



What is Dragonfly?

Provide efficient, stable and secure file distribution and image acceleration based on p2p technology to be the best practice and standard solution in cloud native architectures.

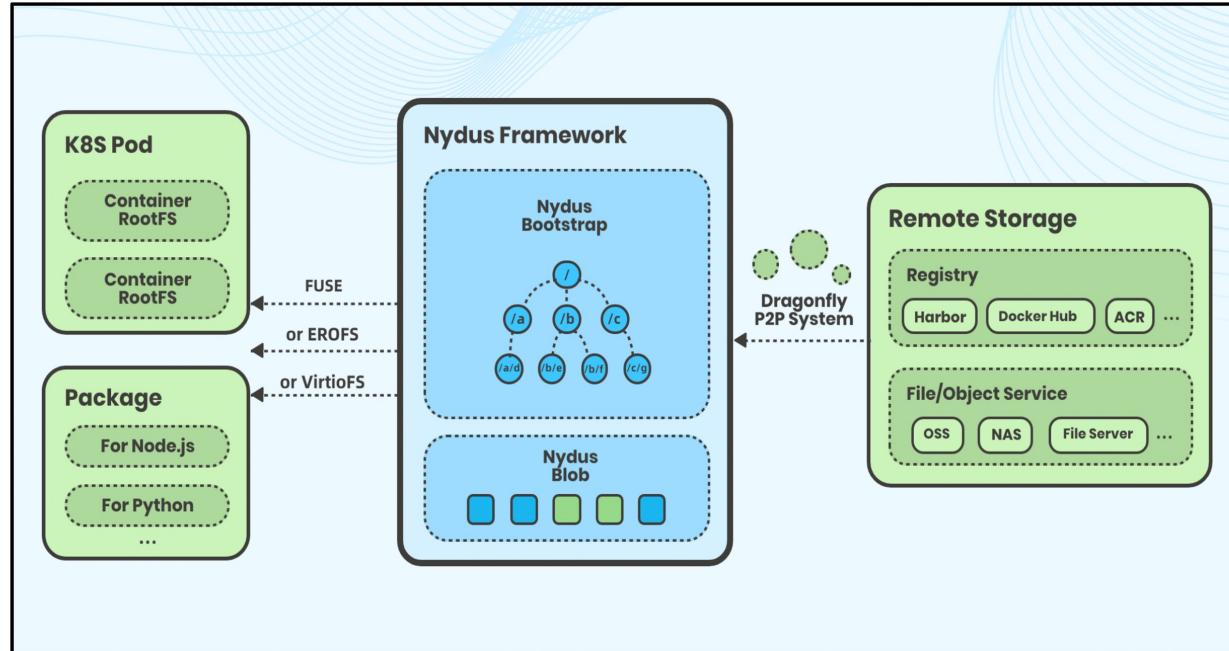
It is hosted by the Cloud Native Computing Foundation(CNCF)as an *Incubating* Level Project.

There are more than **100** contributors, and maintainers come from *Ant Group, Alibaba Group, ByteDance, Intel, Baidu Group, JiHu and Dalian University of Technology*.

Public cloud users include *Alibaba Cloud(Aliyun), Google Cloud Platform (GCP), Volcano Engine, Baidu AI Cloud*, etc.



Introduction



What is Nydus?

Provide a content-addressable file system on the RAFS format, which enhances the current OCI image specification by improving container launch speed, image space and network bandwidth efficiency, and data integrity.

It is a **sub-project of Dragonfly**. It can reduce the end-to-end cold start time of containers from **minutes to seconds**, and supports the creation of **millions of containers** every day in production.

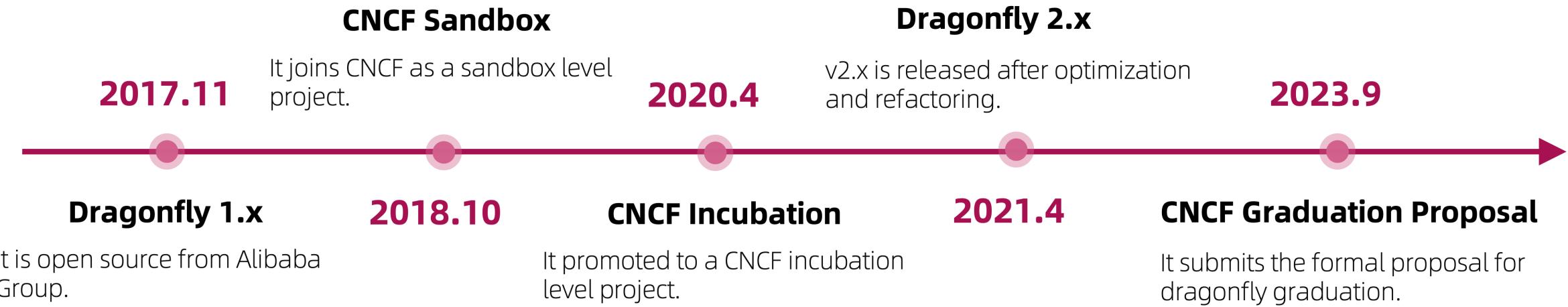
Maintainers come from **Ant Group, Alibaba Group, ByteDance**, etc.



CLOUD NATIVE
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Introduction



Introduction

Image Acceleration

Dragonfly supports various container clients such as *containerd*, *Docker*, *cri-o*, *ORAS*, etc. It provides three solutions for image acceleration.

The first solution is to use Dragonfly to distribute images based on P2P technology, which is suitable for *large-scale cluster*.

The second solution is to use Dragonfly and Nydus to distribute accelerated images, which is suitable for *large-scale cluster* and *faster container launching*.

The third solution is to use Nydus to distribute accelerated images, which is suitable for *faster container launching*.

File Distribution

Dragonfly supports large-scale file distribution and uses P2P technology to *eliminate the impact of origin bandwidth limitations*.

It supports file distribution of protocols including *HTTP*, *HDFS*, etc. Additionally, it also supports different object storage protocols includes *S3*, *OSS*, *OBS*, etc.

Add *Dfstore* to expand the file distribution capability, it can depend on different types of object storage, such as S3, OSS, OBS, etc. to *provide stable object storage capabilities*.

AI Infrastructure

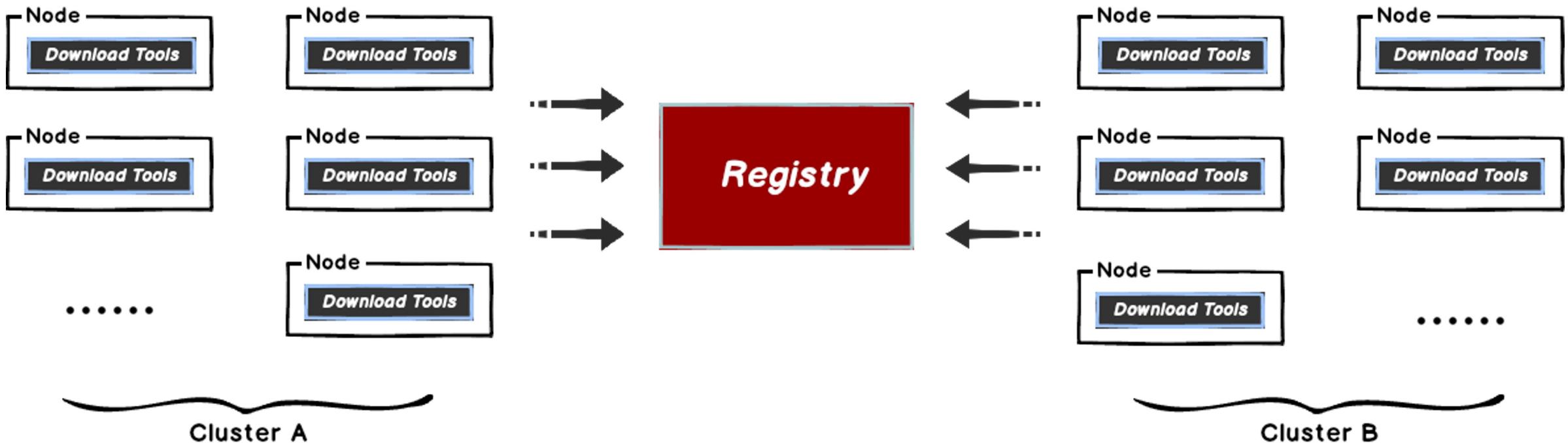
Dragonfly supports distributing data during *AI training* and *AI inference*.

In the AI inference, Dragonfly supports *Triton Server* and *TorchServe* to use Dragonfly distribution model.

Supports downloading models and datasets from *Hugging Face Hub* by SDK through Dragonfly HTTP proxy.

Introduction

When downloading files in large batches, the storage bandwidth can easily reach the limit.



Introduction

How to solve the problem?

Increase storage bandwidth

P2P eliminates the impact of bandwidth limitations

Reduce download size

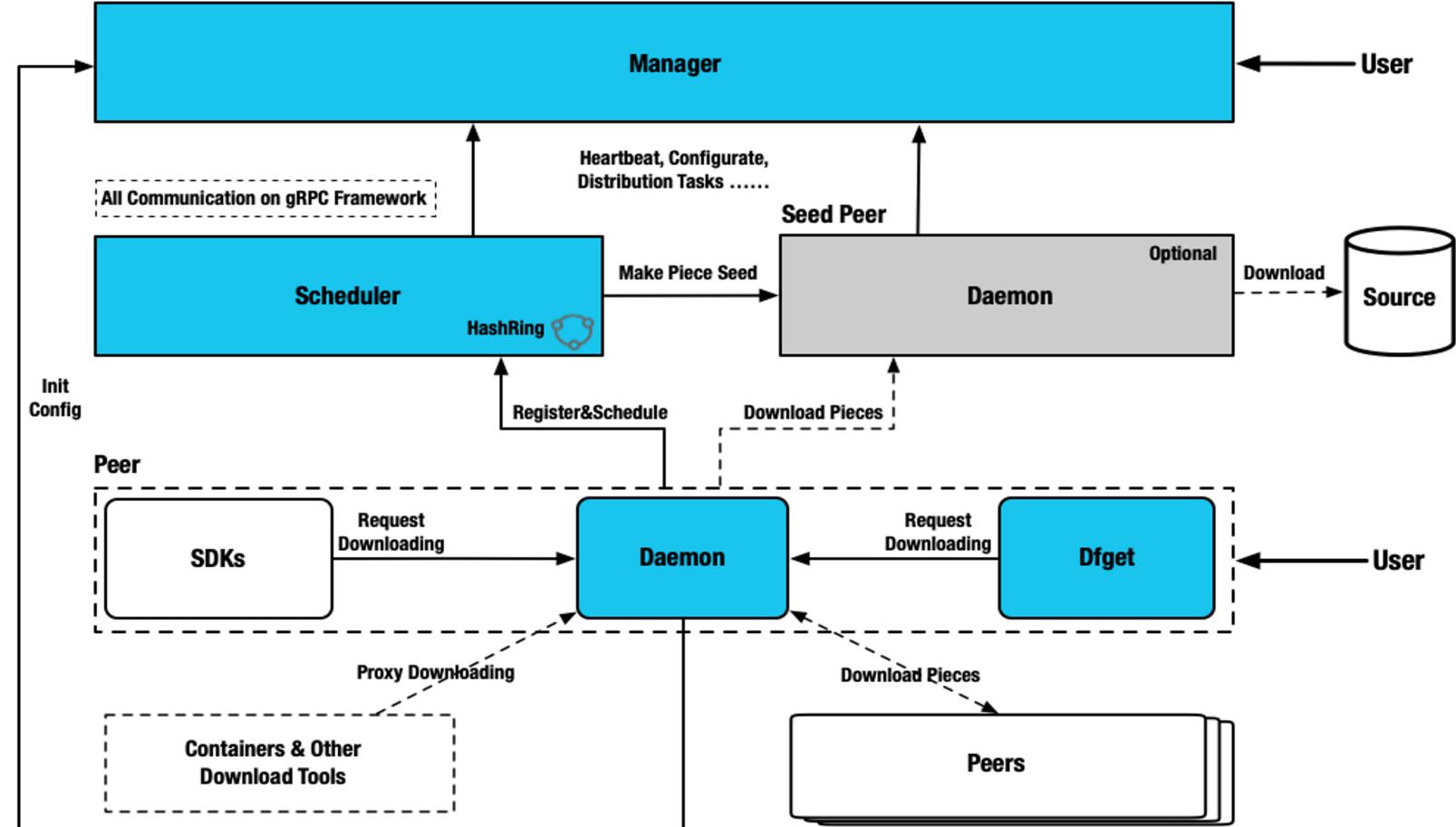


Architecture

Manager manages cluster relationships, dynamic configuration and provides a console.

Scheduler schedules a set of parent nodes for the download node.

Peer provides upload and download capabilities.



Console

Dragonfly

Welcome To Dragonfly Console !

Provides an efficient, stable, and secure file distribution and image acceleration system based on P2P technology, and is a standard solution and best practice in the field of image acceleration in the cloud native architecture.

Partners From 6 companies

Provide Efficient,stable, secure file distribution

CNCF Incubating

SIGN IN

New to Dragnfly? Create an account.

Location China|Zhejiang|Hangzhou

IDC hz

CIDRs 192.168.0.0/16

root@id7y.com

Welcome back!

clusters / cluster-1

Cluster

Information

Name cluster-1	Description	Set as default cluster Yes	Scheduler cluster ID 1	Seed Peer cluster ID 1
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Scopes

Location China Zhejiang Hangzhou	IDC hz	CIDRs 192.168.0.0/16
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Config

Seed Peer load limit 300
Peer load limit 50
Number of concurrent download pieces 4
Candidate parent limit 4
Filter parent limit 40

Scheduler Cluster

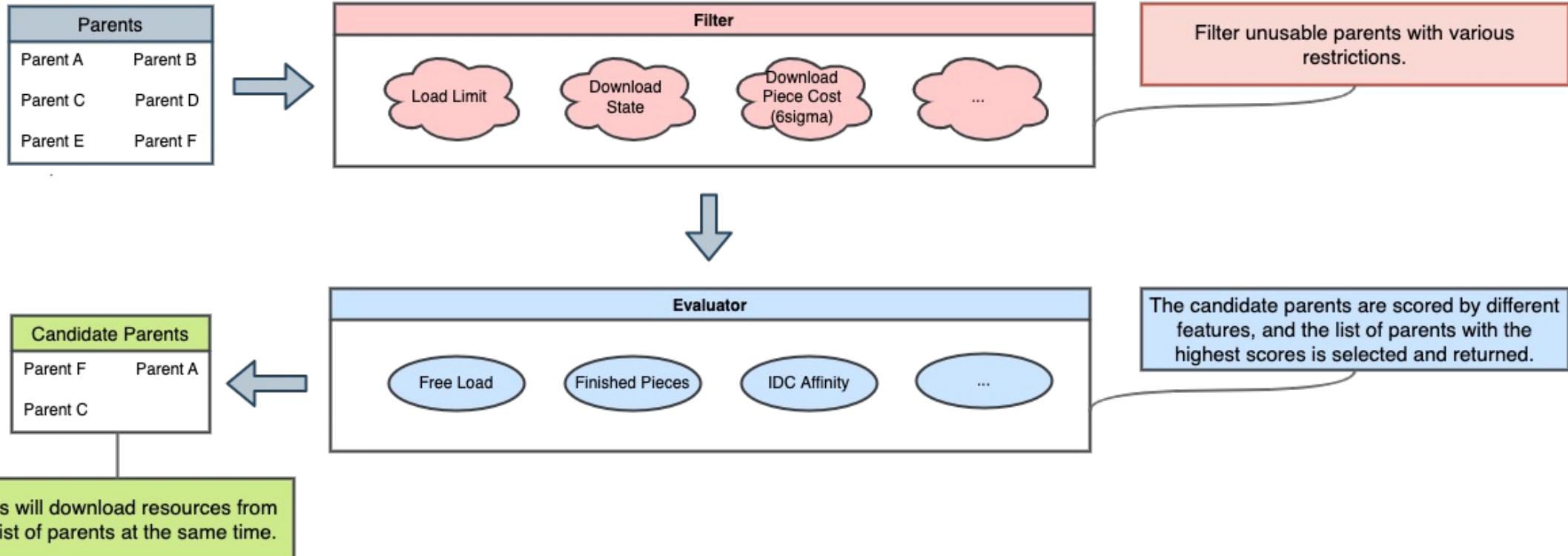
ID	Hostname	IP	Port	IDC	Location	State	Features	Operation
1	dev-hz01	192.11.201.1	8002	hz	-	Active	Schedule Preheat	

Seed Peer Cluster

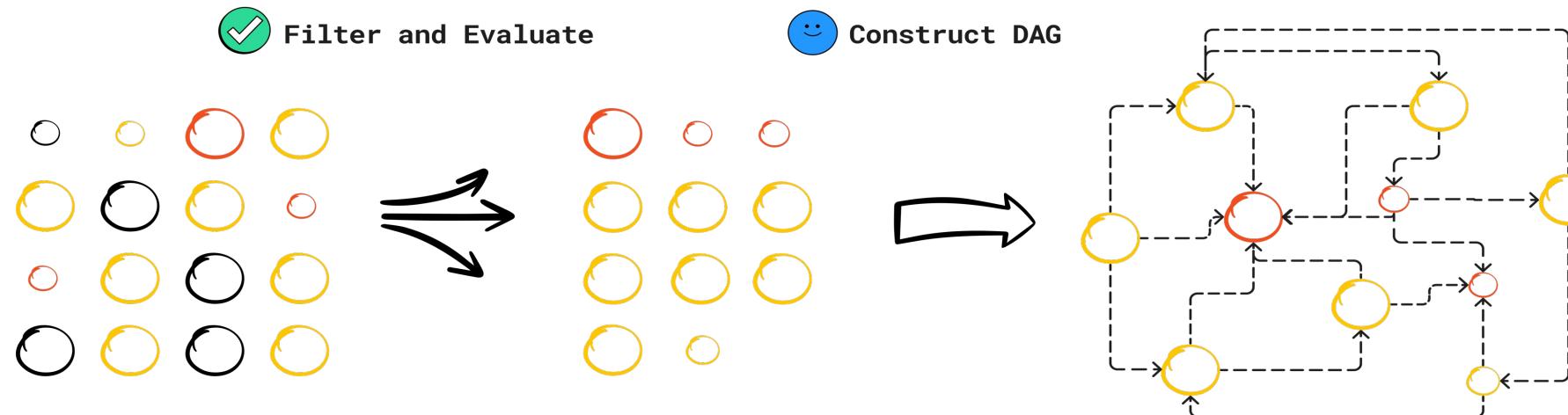
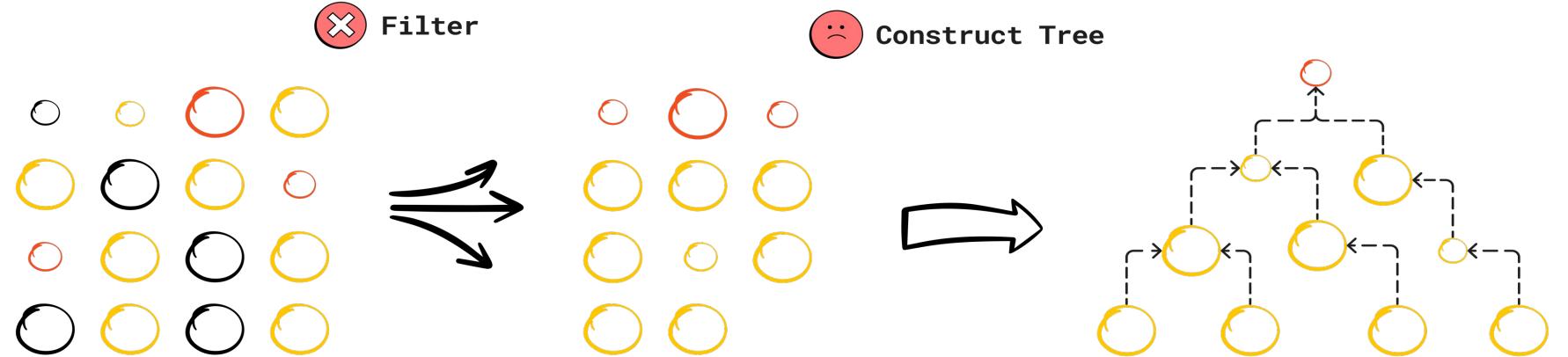
ID	Hostname	IP	Port	Download Port	Object Storage Port	Type	State	Operation
1	dev-hz02	192.11.201.2	65000	65002	65004	Super	Active	

Scheduler

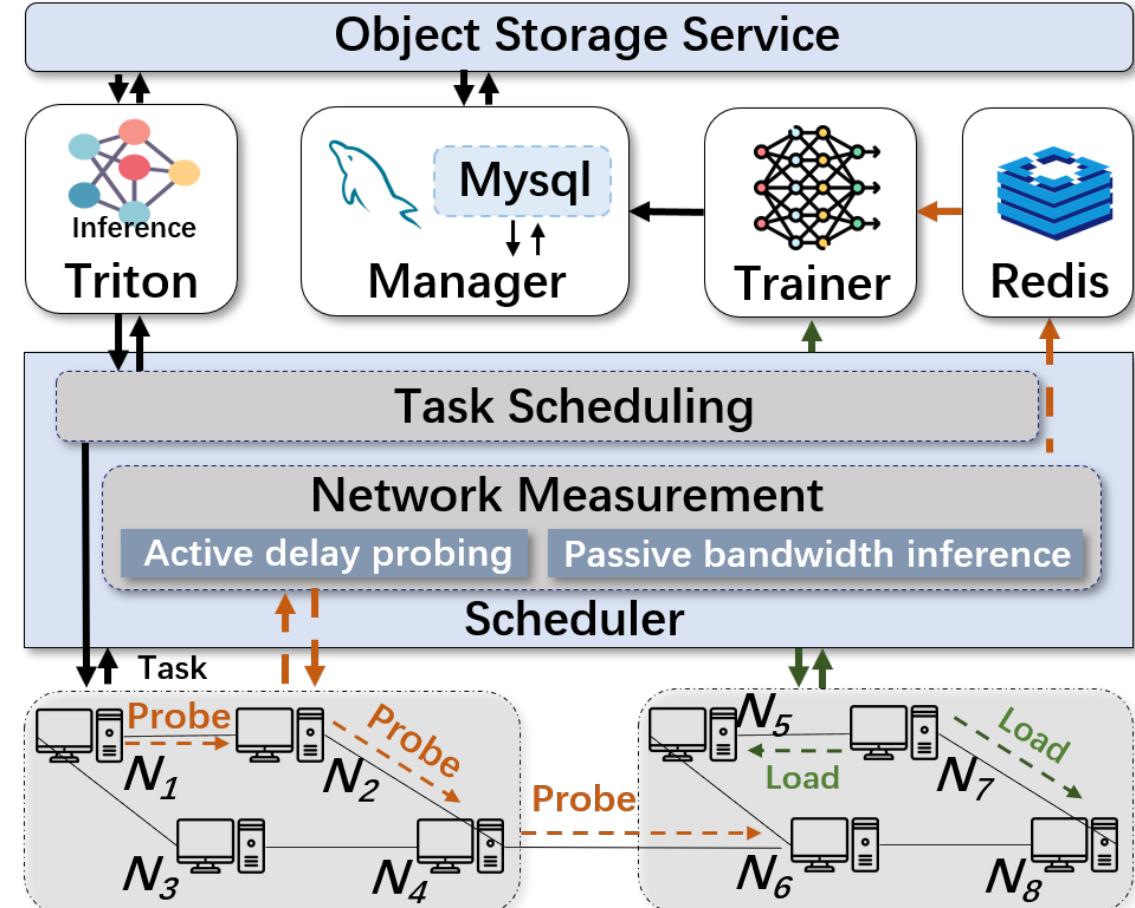
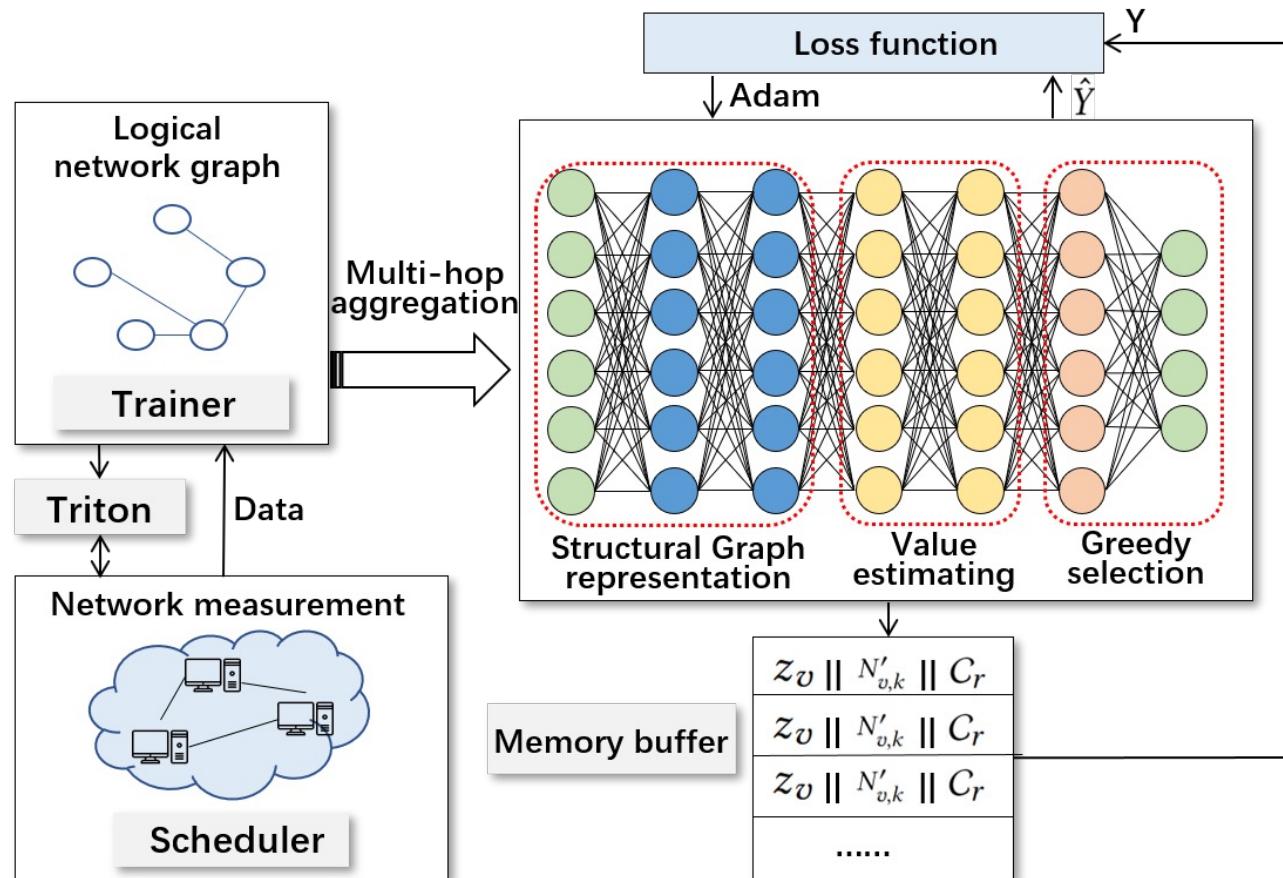
Schedule candidate parents



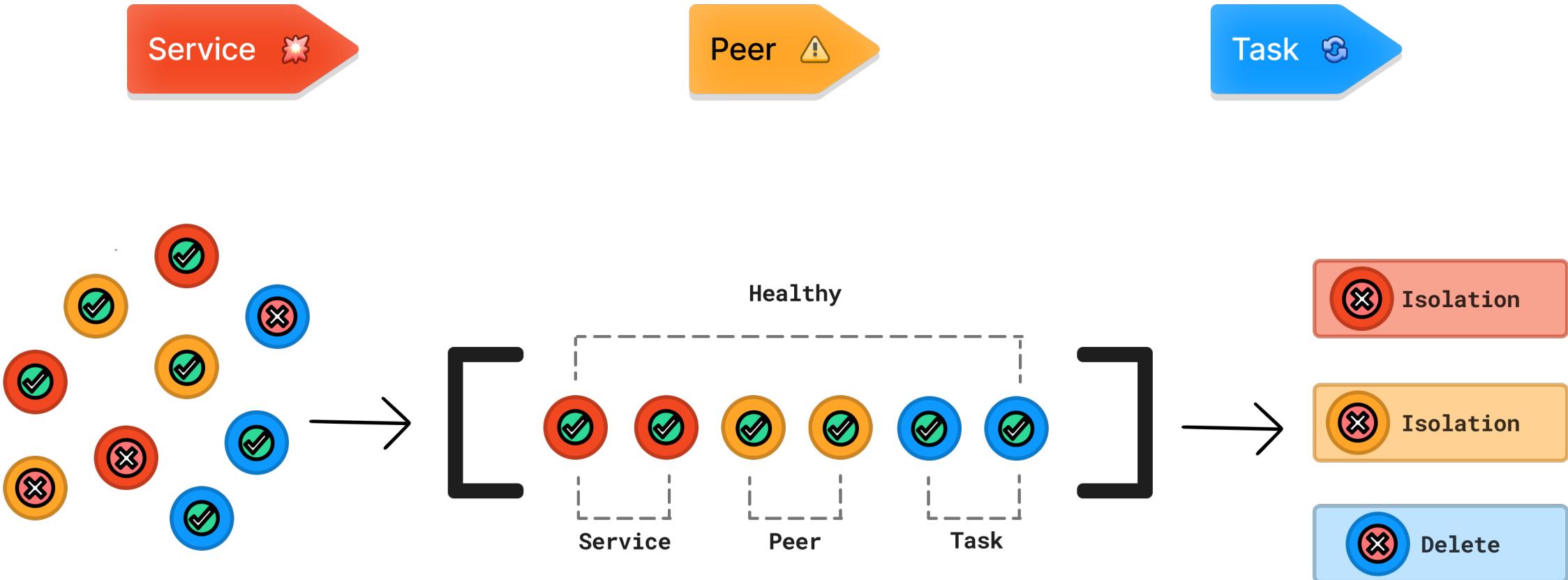
Scheduler



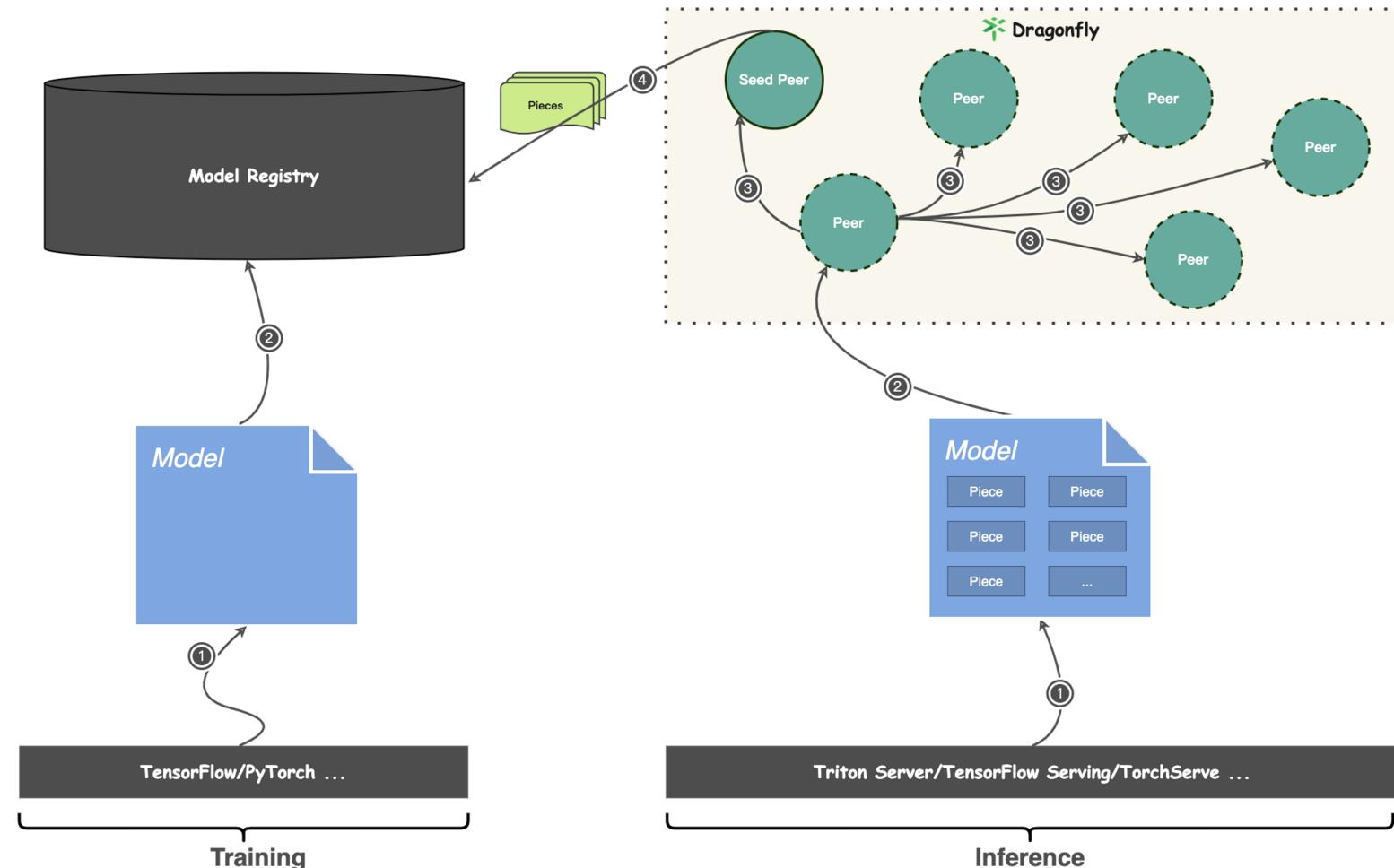
Scheduler



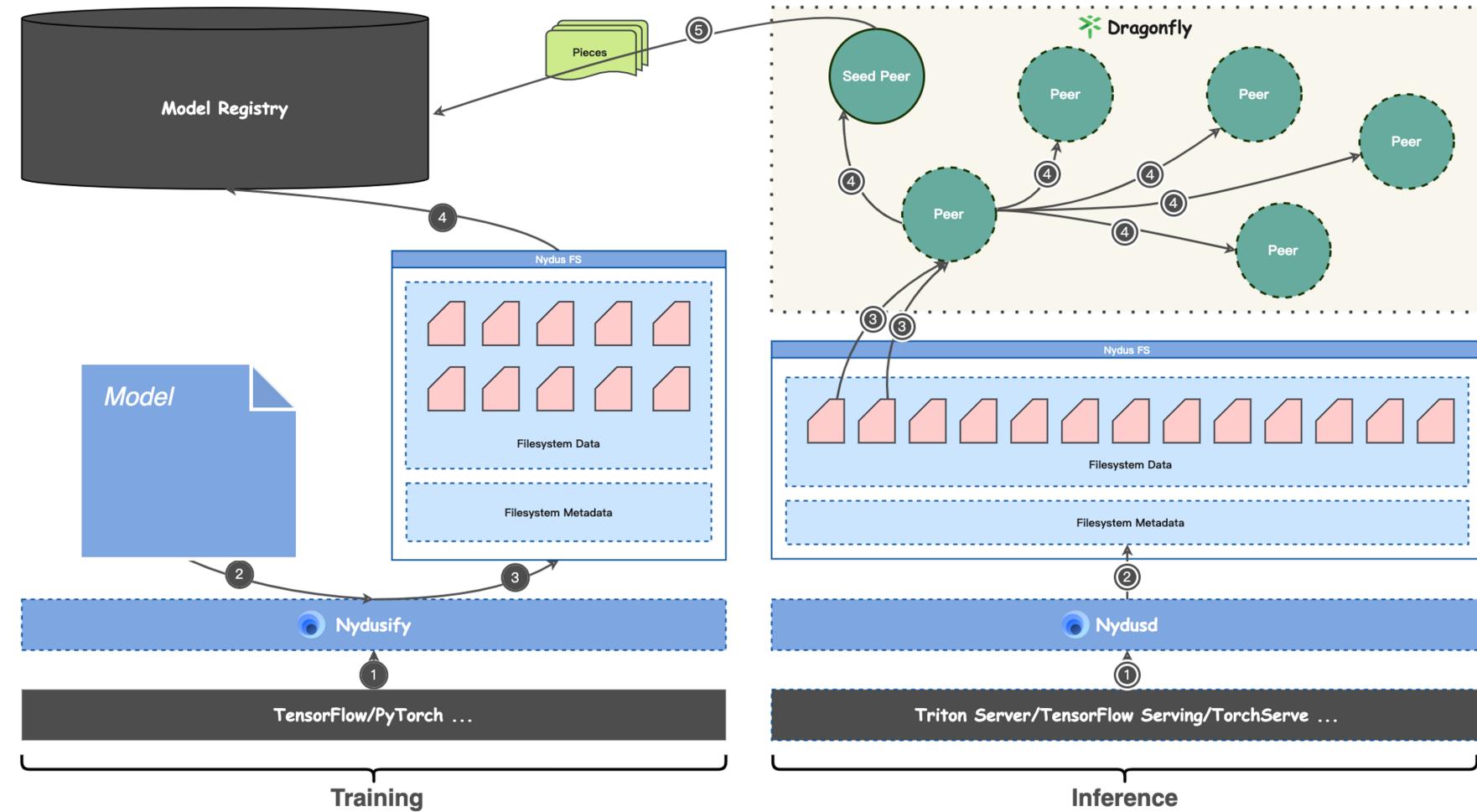
Exception Isolation



P2P Distribution

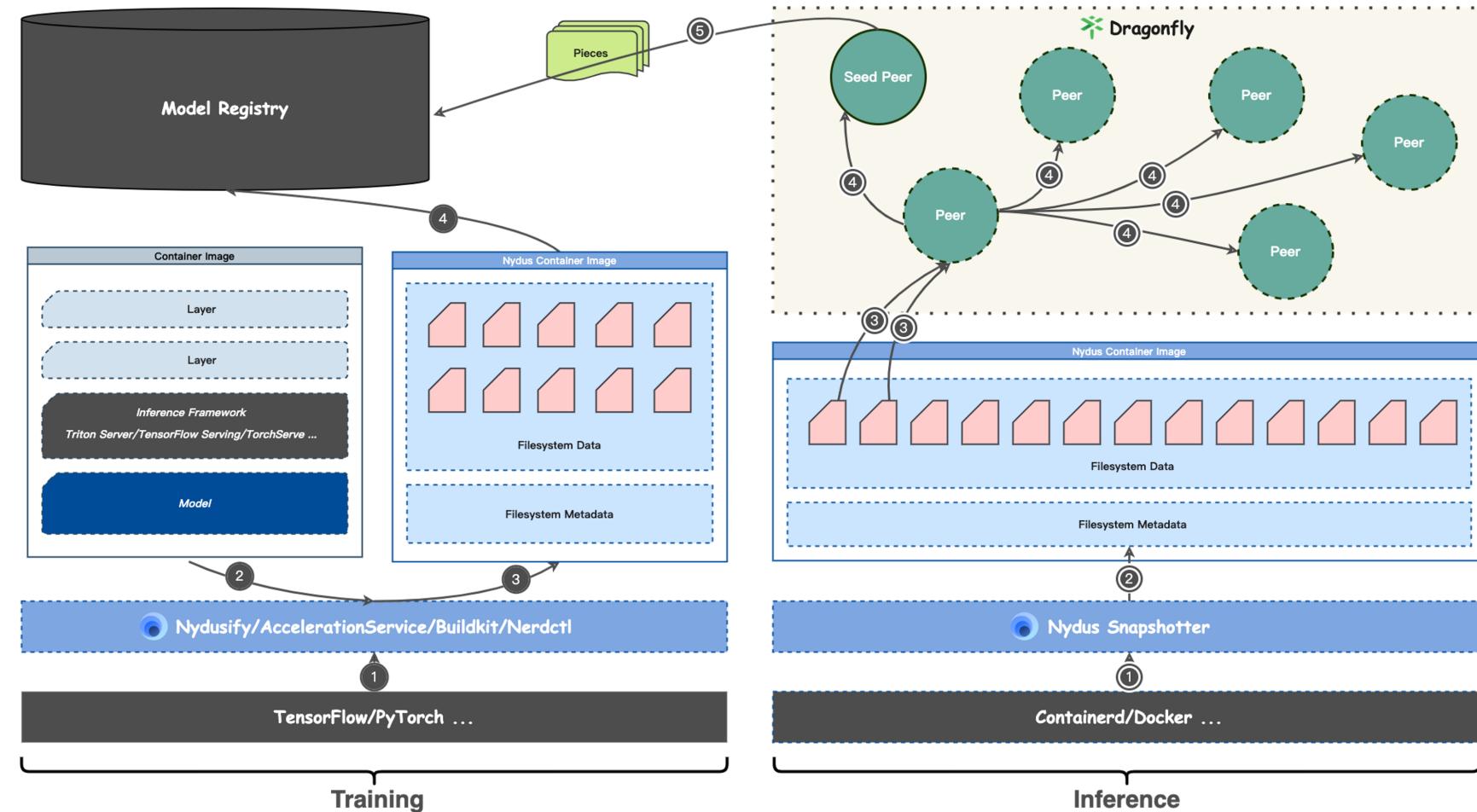


Model File System

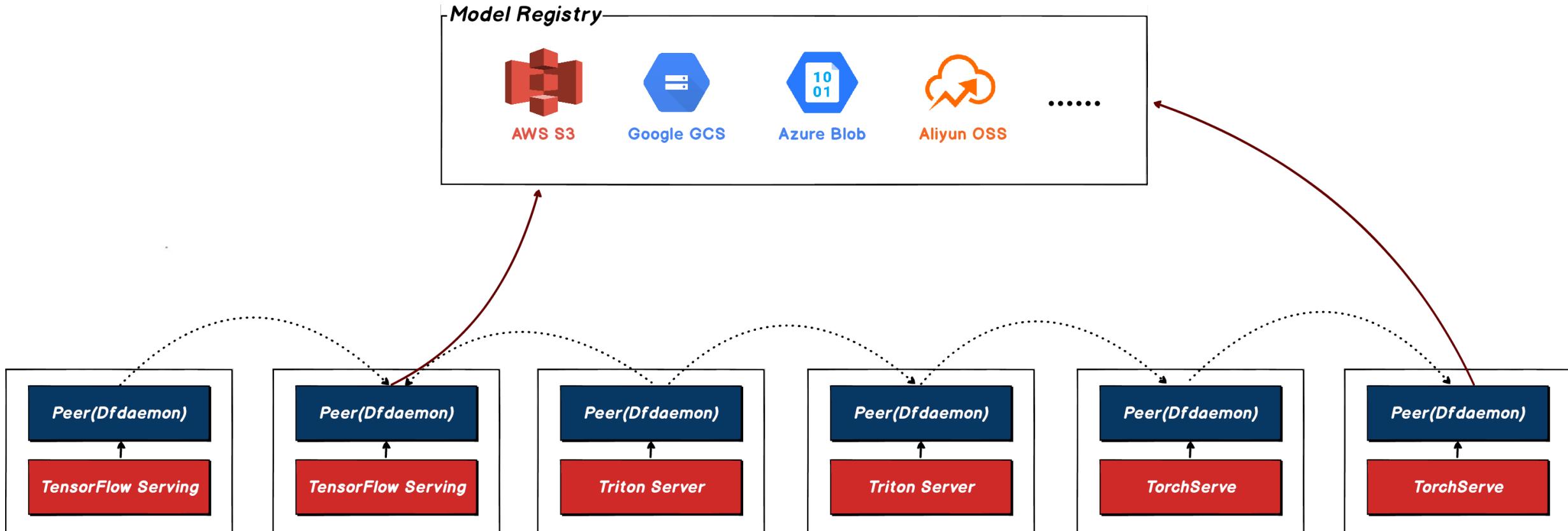


AI Inference

Model Image

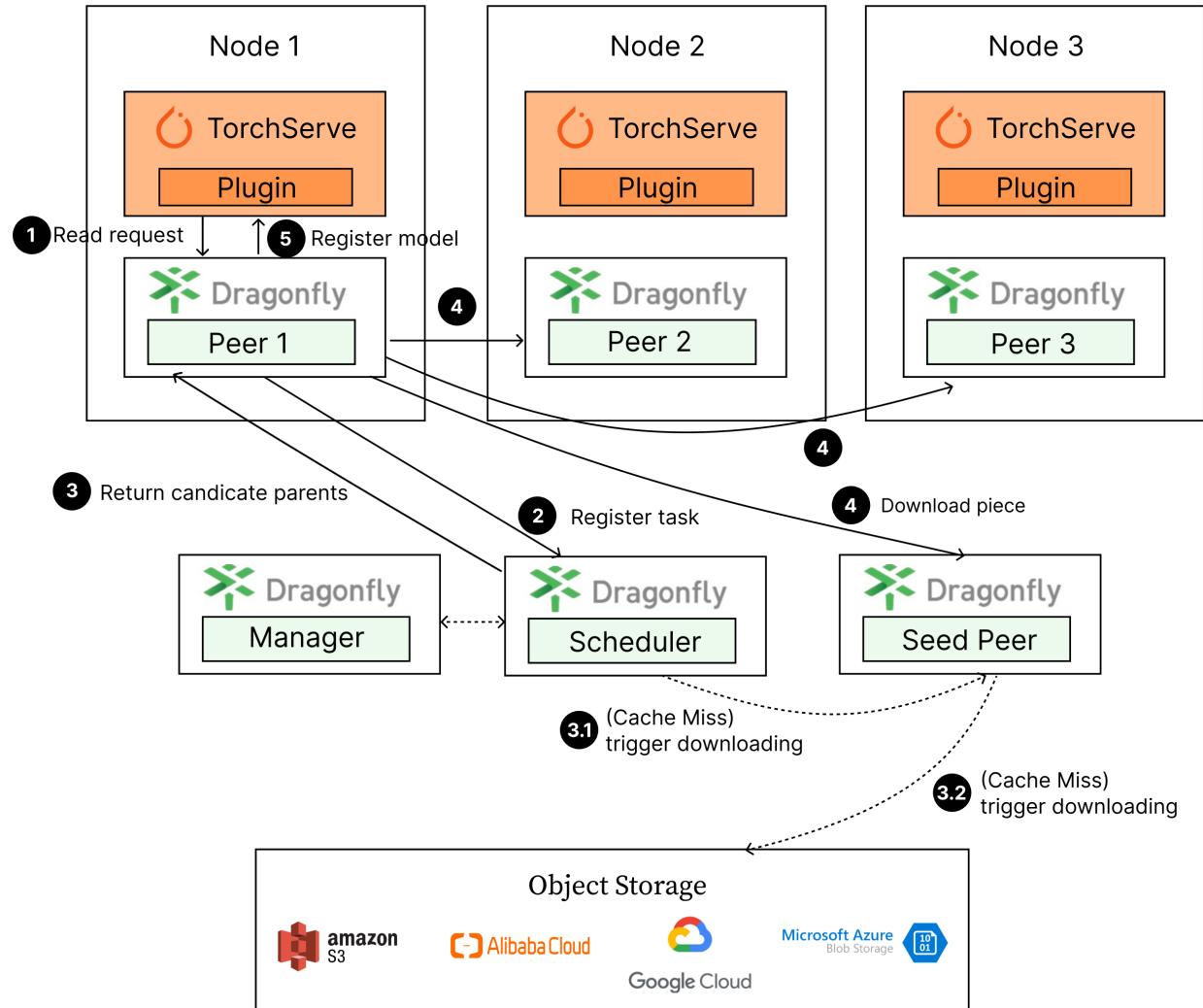
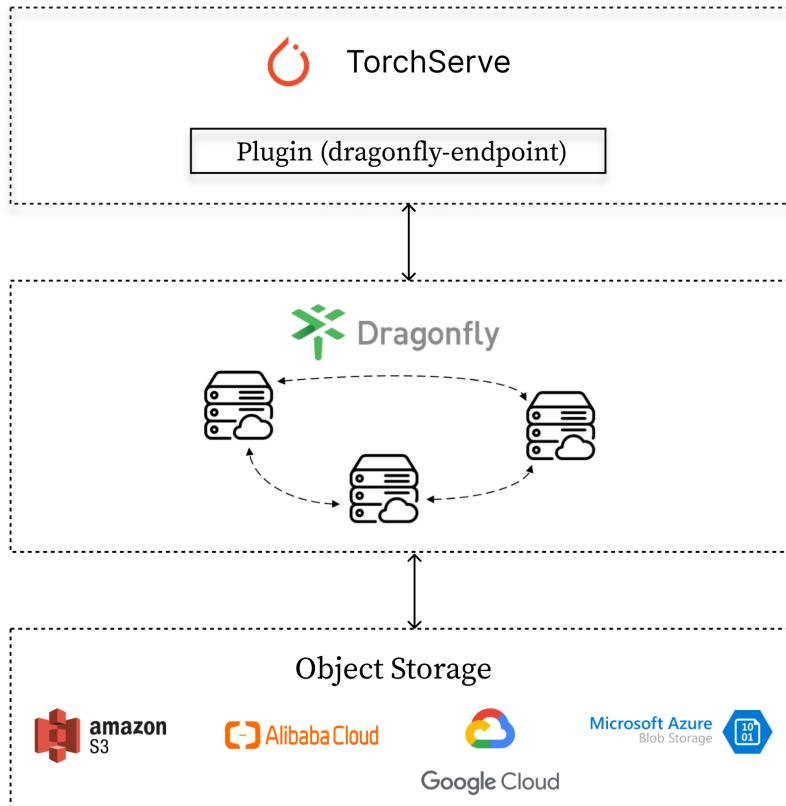


AI Inference



AI Inference

TorchServe & Dragonfly





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Thanks!



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Dragonfly [Website](#)



Nydus [Github](#)



Nydus [Website](#)