

04. Custom Vision 的模型导出部署到 Jetson Nano 上

1. 关于Jetson Nano本地的Docker 安装

```
sudo apt-get update -y
sudo apt-get upgrade -y
sudo apt-get install curl python3-pip libffi-dev python-openssl libssl-dev
zlib1g-dev gcc g++ make -y
curl -sSL https://get.docker.com/ | sh
sudo pip3 install docker-compose
sudo docker-compose --version
```

安装成功后，运行 docker info ，可以看到一下信息

```
(mldev) → ~ docker info
[Client:
  Context:      default
  Debug Mode:   false

Server:
  Containers: 1
    Running: 0
    Paused: 0
    Stopped: 1
  Images: 10
  Server Version: 20.10.7
  Storage Driver: overlay2
    Backing Filesystem: extfs
    Supports d_type: true
    Native Overlay Diff: true
    userxattr: false
  Logging Driver: json-file
  Cgroup Driver: cgroupfs
  Cgroup Version: 1
```

2.关于从Custom Vision 导出的模型

Choose your platform

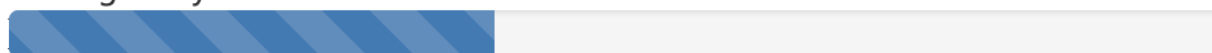


Dockerfile

ARM (Raspberry Pi 3)



Getting ready...



通过容器快速导出

但这里注意不能直接部署，因为这只是给到树莓派的容器

3.关于Jetson Nano 里的TensorFlow 容器

l4t-tensorflow docker 镜像包含预安装在 Python 3.6 环境中的 TensorFlow，以便在 Jetson 上使用 TensorFlow 快速启动和运行。这些容器支持以下版本的 JetPack for Jetson Nano、TX1/TX2、Xavier NX 和 AGX Xavier：

JetPack 4.6 (L4T R32.6.1) JetPack 4.5 (L4T R32.5.0) JetPack 4.4.1 (L4T R32.4.4) JetPack 4.4 (L4T R32.4.3)
JetPack 4.4 开发者预览版 (L4T R32.4.2)

NVIDIA L4T TensorFlow

r32.6.1-tf2.5-py3

Pull Tag

Overview Tags Layers Security Scanning Related Collections

TensorFlow

Accelerated with
NVIDIA

Description

TensorFlow is an open-source software library for numerical computation using data flow graphs. This container contains TensorFlow pre-installed in a Python 3.6 environment to get up & running quickly with TensorFlow on Jetson.

Publisher

Google Brain Team

Latest Tag

r32.6.1-tf2.5-py3

Modified

December 16, 2021

Compressed Size

739.75 MB

Multinode Support

No

Multi-Arch Support

No

r32.6.1-tf2.5-py3 (Latest) Scan Results

TensorFlow Container for Jetson and JetPack

The l4t-tensorflow docker image contains TensorFlow pre-installed in a Python 3.6 environment to get up & running quickly with TensorFlow on Jetson. These containers support the following releases of [JetPack](#) for Jetson Nano, TX1/TX2, Xavier NX, and AGX Xavier:

- JetPack 4.6 (L4T R32.6.1)
- JetPack 4.5 (L4T R32.5.0)
- JetPack 4.4.1 (L4T R32.4.4)
- JetPack 4.4 (L4T R32.4.3)
- JetPack 4.4 Developer Preview (L4T R32.4.2)

For additional machine learning containers for Jetson, see the [l4t-ml](#) and [l4t-pytorch](#) images. Note that the TensorFlow pip wheel installers for aarch64 used by these containers are available to download independently from the [Jetson Zoo](#).

Package Versions

Depending on your version of JetPack-L4T, different tags of the l4t-tensorflow container are available, each with support for Python 3.6. Be sure to clone a tag that matches the version of JetPack-L4T that you have installed on your Jetson.

- JetPack 4.6 (L4T R32.6.1)
 - l4t-tensorflow:r32.6.1-tf1.15-py3
 - TensorFlow 1.15.5
 - l4t-tensorflow:r32.6.1-tf2.5-py3
 - TensorFlow 2.5.0
- JetPack 4.5 (L4T R32.5.0)
 - l4t-tensorflow:r32.5.0-tf1.15-py3
 - TensorFlow 1.15
 - l4t-tensorflow:r32.5.0-tf2.3-py3
 - TensorFlow 2.3.1

更多相关的知识 <https://catalog.ngc.nvidia.com/orgs/nvidia/containers/l4t-tensorflow>

```
FROM nvcr.io/nvidia/l4t-tensorflow:r32.5.0-tf2.3-py3
```

```
RUN apt-get update -y
```

```
RUN apt-get install python3-pip -y
```

```
RUN pip3 install -U pip -i https://pypi.tuna.tsinghua.edu.cn/simple
```

```
RUN DEBIAN_FRONTEND=noninteractive apt-get install -y python3-opencv
```

```
RUN pip3 install flask pillow -i
```

```
https://pypi.tuna.tsinghua.edu.cn/simple
```

```
COPY app /app
```

```
# Expose the port
```

```
EXPOSE 80
```

```
# Set the working directory
```

```
WORKDIR /app
```

```
# Run the flask server for the endpoints
```

```
CMD python3 -u app.py
```

```
(mldev) → ~ curl -X POST http://127.0.0.1/url -d '{ "url": "https://img1.baidu.com/it/u=3868911901,2977215387&fm=26&fmt=auto" }'
{"created": "2022-01-08T03:54:19.470289", "id": "", "iteration": "", "predictions": [{"boundingBox": null, "probability": 0.9999803304672241, "tagId": "", "tagName": "bb8"}, {"boundingBox": null, "probability": 1.7770000340533443e-05, "tagId": "", "tagName": "c3po"}, {"boundingBox": null, "probability": 1.8499999896448571e-06, "tagId": "", "tagName": "r2d2"}], "project": ""}
(mldev) → ~
```