Jetson

Setting Up a Jetson Orin AGX Device

Here is a step-by-step tutorial explaining how to set up a Jetson Orin AGX device

Step 1: Install the NVIDIA SDK Manager

1. Visit the NVIDIA SDK Manager webpage and download the installation package for your host system (x86 Linux machine).
    - The SDK Manager is a tool that helps install the Jetson development environment, including flashing the Jetson device with the desired Jetpack version.
2. Install the downloaded package on your host machine.
    - This can typically be done by double-clicking the `.deb` file or using the `dpkg` command in the terminal.

Step 2: Launch the SDK Manager

1. Open the NVIDIA SDK Manager application on your host machine.
2. If prompted, enter your NVIDIA Developer account credentials.
    - If you don't have an account, you can create one for free.

Step 3: Configure the SDK Manager

1. In the SDK Manager interface, locate the “Target Hardware” section and select your Jetson model (e.g., Jetson Xavier NX).
2. Disable the “Host Machine” option if you're not planning to cross-compile on the host.
3. Choose the desired Jetpack version from the “Target Operating System” section.
    - The latest version is selected by default, but you can choose a different one if needed.
4. Enable or disable additional components like DeepStream based on your requirements.
5. Review the license agreements and accept them to proceed.

Step 4: Download the Required Components

1. The SDK Manager will download the necessary components, including the Jetson Linux image and the Jetson runtime/SDK components.
2. Set the desired download and target hardware image folders if prompted.
3. The download process may take some time, depending on your internet connection speed.

Step 5: Set Up the Jetson for Flashing

There are two methods for setting up the Jetson for flashing:

Automatic Setup (if the Jetson is already running)

1. Connect the Jetson device to the host machine via a USB cable.
2. The SDK Manager should automatically detect the Jetson model.
3. Provide the Jetson's username and password when prompted.
4. Configure the storage device where the root file system (rootFS) will be installed (e.g., NVMe SSD for native boot).

Manual Setup (if the Jetson is not running)

1. Select the “Manual Setup” option in the SDK Manager.
2. Follow the instructions to put the Jetson into force recovery mode by jumper pins on the J50 header.
3. Connect the Jetson to the host machine via a USB cable.
4. The SDK Manager should detect the Jetson in force recovery mode.
5. Configure the desired storage device for the rootFS installation.
6. Set the OEM configuration to “Runtime” if you want to configure the Jetson during the first boot.

Step 6: Flash the Jetson

1. Click the “Flash” button in the SDK Manager to begin the flashing process.
2. The SDK Manager will flash the Jetson Linux image to the selected storage device.

Step 7: Configure the Jetson (if OEM configuration is set to "Runtime")

1. After the initial flash, the Jetson will boot up, and you may need to configure it.
2. Follow the on-screen prompts to set up features like language, username, password, and partition sizes.
3. Choose any additional components you want to install, such as Chromium.

Step 8: Install Jetpack Components

1. Go back to the SDK Manager on the host machine.
2. Provide the Jetson's IP address and the username/password you set during the configuration.
3. Click the “Install” button to begin installing the selected Jetpack components (runtime, SDK, etc.) on the Jetson device.

Step 9: Verify the Installation

1. Once the installation is complete, you can verify the installed components on the Jetson itself.

2. Open a terminal on the Jetson and run commands like `sudo apt update` and `jtop` (after installing the `jetson-stats` package) to check the installed Jetpack version, libraries, and other details.
3. You can also use the “Disks” application to view the storage device and its partitions.

Note: This tutorial covers the basic steps for setting up a Jetson Orin AGX device using the NVIDIA SDK Manager. Always refer to the official documentation for the latest instructions and any updates, as the process may change over time.

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Last update: **2024/06/04 17:34**