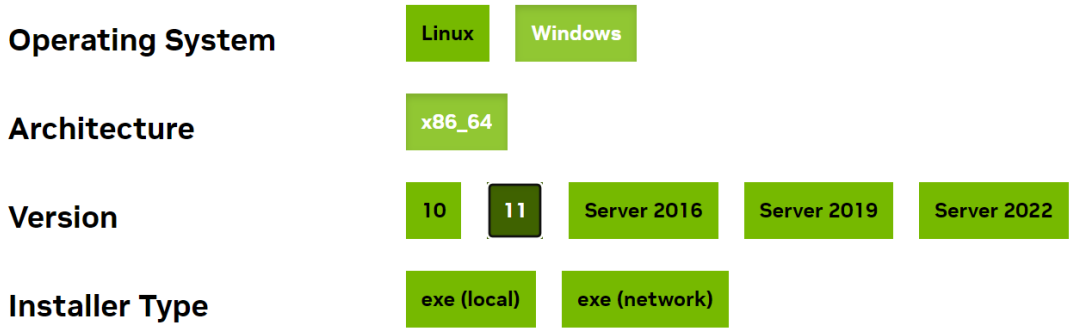
SOP INSTALASI TENSORFLOW-GPU MENGGUNAKAN WSL UBUNTU

SOP ini mengacu pada sumber berikut https://docs.nvidia.com/cuda/wsl-user-guide/index.html

Tahapan pada Windows:

1. Install MS Visual Studio
2. Unduh dan install Driver NVIDIA graphic, sesuaikan dengan spesifikasi NVIDIA GPU yang ada pada PC. Restart PC setelah NVIDIA Driver terinstall.
   https://www.nvidia.com/Download/index.aspx?lang=en-us
3. Unduh dan Install Cuda Toolkit 11.8 for Windows.
   https://developer.nvidia.com/cuda-toolkit-archive



4. Unduh dan ekstrak cuDNN 8.6 for Windows
   https://developer.nvidia.com/rdp/cuDNN-archive
5. Tambahkan path direktori Cuda Toolkit dan cuDNN pada Enviroment Variable
6. Install WSL2 dan Distro Linux
   Buka PowerShell atau Windows Command Prompt sebagai administrator kemudian masukan command berikut.
   wsl –install -d Ubuntu
   Setelah terinstall user akan diperintahkan untuk membuat akun UNIX. Masukan username dan password-nya. Akun Linux berhasil dibuat

Tahapan pada WSL2:

1. Setup WSL CUDA
   Masuk ke Ubuntu Prompt kemudian ketikan:
   sudo apt-key del 7fa2af80
2. Install CUDA Toolkit 11.8

https://developer.nvidia.com/cuda-toolkit-archive

Ketikan:

Wget https://developer.download.nvidia.com/compute/cuda/repos/wsl-ubuntu/x86_64/cuda-wsl-ubuntu.pin

sudo mv cuda-wsl-ubuntu.pin /etc/apt/preferences.d/cuda-repository-pin-600

wget https://developer.download.nvidia.com/compute/cuda/11.8.0/local_installers/cuda-repo-wsl-ubuntu-11-8-local_11.8.0-1_amd64.deb

sudo dpkg -i cuda-repo-wsl-ubuntu-11-8-local_11.8.0-1_amd64.deb

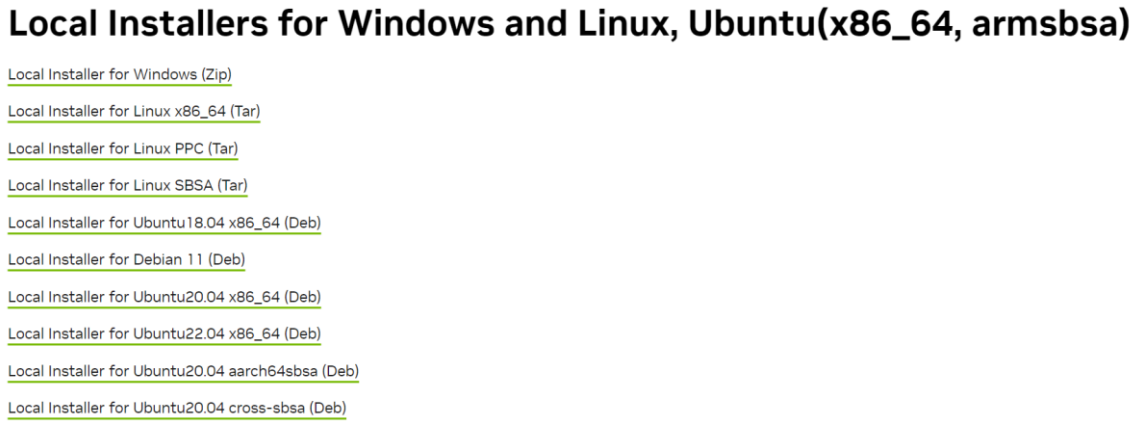
sudo cp /var/cuda-repo-wsl-ubuntu-11-8-local/cuda-*-keyring.gpg /usr/share/keyrings/

sudo apt-get update

sudo apt-get -y install cuda

3. Unduh cuDNN 8.6 kemudian pilih Local Installer for Linux x86_64 (Tar)

   https://developer.nvidia.com/rdp/cuDNN-archive



4. Extract downloaded packages

   https://docs.nvidia.com/deeplearning/cuDNN/install-guide/index.html#installcuda

   Install Zlib menggunakan command berikut

   sudo apt-get install zlib1g

Unzip cuDNN package menggunakan command berikut

tar -xvf namafile.tar.xz

5. Copy the exracted packages into CUDA Toolkit directory

   sudo cp cudnn-*-archive/include/cudnn*.h /usr/local/cuda/include

   sudo cp -P cudnn-*-archive/lib/libcudnn* /usr/local/cuda/lib64

   sudo chmod a+r /usr/local/cuda/include/cudnn*.h /usr/local/cuda/lib64/libcudnn*

6. Install Miniconda

   Ketik:

   curl https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh -o Miniconda3-latest-Linux-x86_64.sh

   bash Miniconda3-latest-Linux-x86_64.sh

7. Create conda environment

   conda create --name tf python=3.x

8. Activate conda environment

   conda activate tf

9. Install Tensorflow 2.12

   Upgrade pip:

   pip install --upgrade pip

   Install Tensorflow:

   pip install tensorflow==2.12.*

10. Verify Install

    Verify the CPU setup, ketik:

    python3 -c "import tensorflow as tf; print(tf.reduce_sum(tf.random.normal([1000, 1000])))"

    Verify the GPU setup, ketik:

    python3 -c "import tensorflow as tf; print(tf.config.list_physical_devices('GPU'))"

11. Install Jupyter Notebook

    Ketik:

    conda install -c anaconda jupyter

12. Menguji contoh program menggunakan GPU

    ```
    import tensorflow as tf
    if tf.test.is_built_with_cuda():
       print("TensorFlow is built with CUDA support.")
    else:
    ```

```
print("TensorFlow is not built with CUDA support.")
```