

# Llama3

## Llama3

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### Demo Environment

**Development board:** Jetson Orin series motherboard

**SSD:** 128G

**Tutorial application scope:** Whether the motherboard can run is related to the available memory of the system. The user's own environment and the programs running in the background may cause the model to fail to run.

Motherboard model	Run directly with Ollama	Run with Open WebUI
Jetson Orin NX 16GB	√	√
Jetson Orin NX 8GB	√	×
Jetson Orin Nano 8GB	√	×
Jetson Orin Nano 4GB	×	×

Meta Llama3 is a series of advanced open source large language models (LLMs) developed by the Meta AI department.

## 1. Model size

Model	Parameters
Llama3	8B
Llama3	70B

## 2. Performance

## Meta Llama 3 Instruct model performance

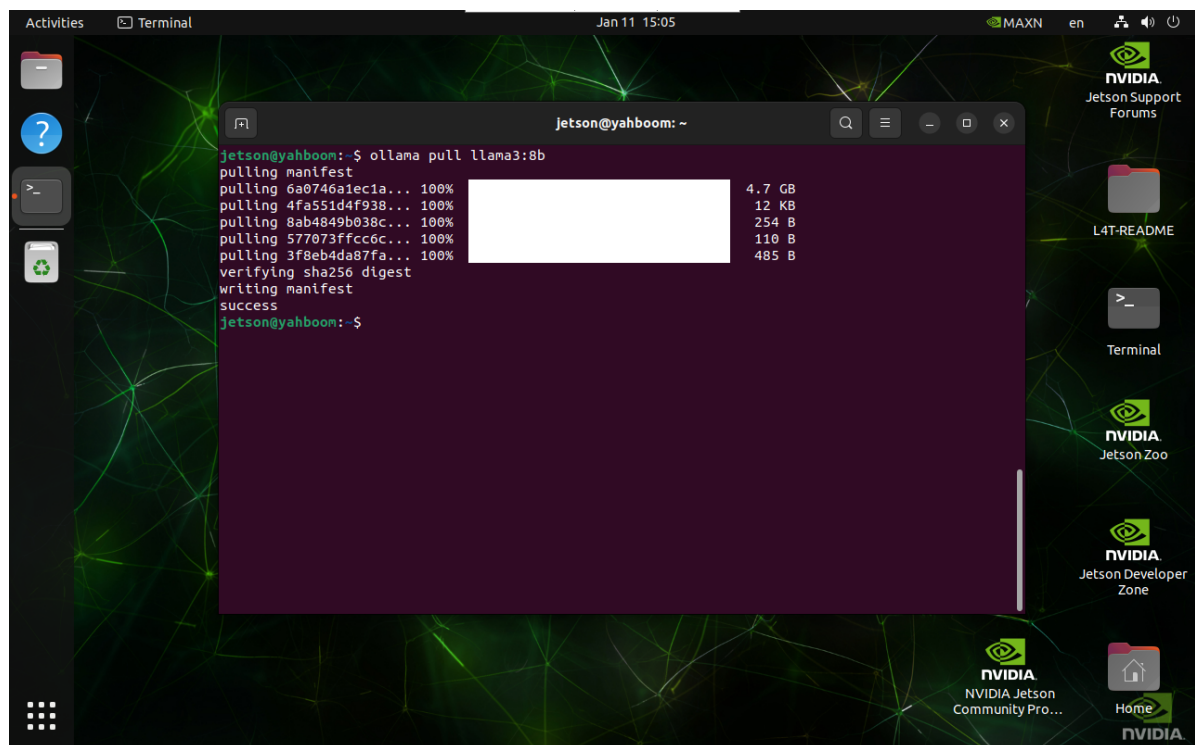
	Meta Llama 3 8B	Gemma 7B - It Measured	Mistral 7B Instruct Measured
MMLU 5-shot	68.4	53.3	58.4
GPQA 0-shot	34.2	21.4	26.3
HumanEval 0-shot	62.2	30.5	36.6
GSM-8K 8-shot, CoT	79.6	30.6	39.9
MATH 4-shot, CoT	30.0	12.2	11.0

	Meta Llama 3 70B	Gemini Pro 1.5 Published	Claude 3 Sonnet Published
MMLU 5-shot	82.0	81.9	79.0
GPQA 0-shot	39.5	41.5 CoT	38.5 CoT
HumanEval 0-shot	81.7	71.9	73.0
GSM-8K 8-shot, CoT	93.0	91.7 11-shot	92.3 0-shot
MATH 4-shot, CoT	50.4	58.5 Minerva prompt	40.5

## 3. Pull Llama3

Using the pull command will automatically pull the model of the Ollama model library:

```
ollama pull llama3:8b
```



## 4. Use Llama 3

### 4.1. Run Llama 3

If the system does not have a running model, the system will automatically pull the Llama3 8B model and run it:

```
ollama run llama3:8b
```

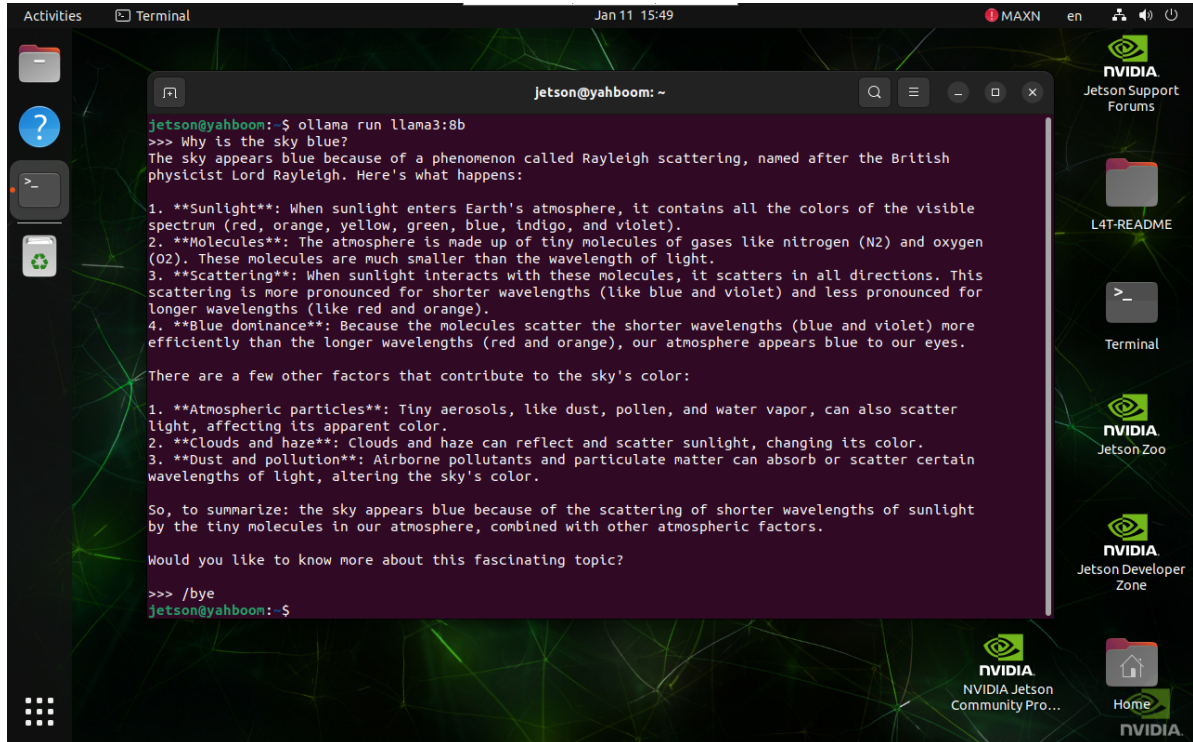
## 4.2. Have a conversation

```
why is the sky blue?
```

The time to answer the question depends on the hardware configuration, so be patient!

## 4.5. End the conversation

Use the `Ctrl+d` shortcut key or `/bye` to end the conversation!



```
Activities Terminal Jan 11 15:49 MAXN en NVIDIA Jetson Support Forums L4T-README Terminal NVIDIA Jetson Zoo NVIDIA Jetson Developer Zone NVIDIA NVIDIA Jetson Community Pro... Home NVIDIA

jetson@yahboom: ~
jetson@yahboom:~$ ollama run llama3:8b
>>> Why is the sky blue?
The sky appears blue because of a phenomenon called Rayleigh scattering, named after the British physicist Lord Rayleigh. Here's what happens:

1. Sunlight: When sunlight enters Earth's atmosphere, it contains all the colors of the visible spectrum (red, orange, yellow, green, blue, indigo, and violet).
2. Molecules: The atmosphere is made up of tiny molecules of gases like nitrogen (N2) and oxygen (O2). These molecules are much smaller than the wavelength of light.
3. Scattering: When sunlight interacts with these molecules, it scatters in all directions. This scattering is more pronounced for shorter wavelengths (like blue and violet) and less pronounced for longer wavelengths (like red and orange).
4. Blue dominance: Because the molecules scatter the shorter wavelengths (blue and violet) more efficiently than the longer wavelengths (red and orange), our atmosphere appears blue to our eyes.

There are a few other factors that contribute to the sky's color:

1. Atmospheric particles: Tiny aerosols, like dust, pollen, and water vapor, can also scatter light, affecting its apparent color.
2. Clouds and haze: Clouds and haze can reflect and scatter sunlight, changing its color.
3. Dust and pollution: Airborne pollutants and particulate matter can absorb or scatter certain wavelengths of light, altering the sky's color.

So, to summarize: the sky appears blue because of the scattering of shorter wavelengths of sunlight by the tiny molecules in our atmosphere, combined with other atmospheric factors.

Would you like to know more about this fascinating topic?

>>> /bye
jetson@yahboom:~$
```

## References

### Ollama

Official website: <https://ollama.com/>

GitHub: <https://github.com/ollama/ollama>

### Llama 3

GitHub: <https://github.com/meta-llama/llama3>

Ollama corresponding model: <https://ollama.com/library/llama3>