



Llama 3.1 on OCI A1 VMs

OCI A1 VMs, powered by Ampere® Altra Cloud Native Processor and Ampere® Optimized AI Frameworks (AIO), deliver best-in-class AI inference.

Ampere Altra Powered Generative AI Inference

Ampere® **Cloud Native Processors** satisfy the performance requirements of widely used Large Language Models (LLMs), such as Meta’s Llama 3.1, in particular for the smaller versions of these models. Ampere CPUs provide the **best price-performance and optimized power draw** for LLM deployments.

Setup

Deployment of the fine-tuned version of the open-source **Llama 3.1** model running on an Ampere-based **OCI A1** cloud instance with **Ampere® Optimized AI Frameworks (AIO)** and **Ampere Optimized llama.cpp**. The demo showcases real-time chatbot interaction on internally developed Ampere chatbot called Serge. The chatbot supports a variety of other models, e.g., Mistral, and allows for testing with different input or output token length and a chosen number of threads among other currently configurable parameters.

Key Benefits Demonstrated

- Meets or exceeds the necessary **low latency** requirements for real-time generative AI chatbot interaction.
- Delivers the **best price-performance** in LLM inference in cloud deployment scenarios.
- Provides the token generation rate needed for quality end-user experience.
- Ampere Cloud Native Processors enable **easy scaling** and can be **dynamically provisioned** based on the performance requirements of the user’s applications.



Chat App | Powered by Llama.cpp+Serge



An easy way to chat with LLaMA based models.

Start a new chat

Download Models

The screenshot shows the 'Model settings' interface for the chat app. It includes several adjustable parameters:

- Temperature - [0,1]**: A slider control with a radio button on the left.
- top_k**: A text input field with the value '50'.
- Maximum generated tokens - [1024]**: A slider control with a radio button on the left.
- top_p**: A text input field with the value '0.95'.
- Context Length - [2048]**: A slider control.
- repeat_last_n**: A text input field with the value '64'.
- Model choice**: A dropdown menu showing 'Llama-3-11B-Instruct-v0.1'.
- n_threads**: A text input field with the value '64'.
- repeat_penalty**: A text input field with the value '1.3'.
- Prompt Template**: A text area containing the instruction: 'Below is an instruction that describes a task. Write a response that appropriately completes the request.'

Figure 1: Llama 3 11B (11 billion parameters) Serge chatbot deployment on an Ampere Altra-based OCI A1 instance

Real-time Chatbot

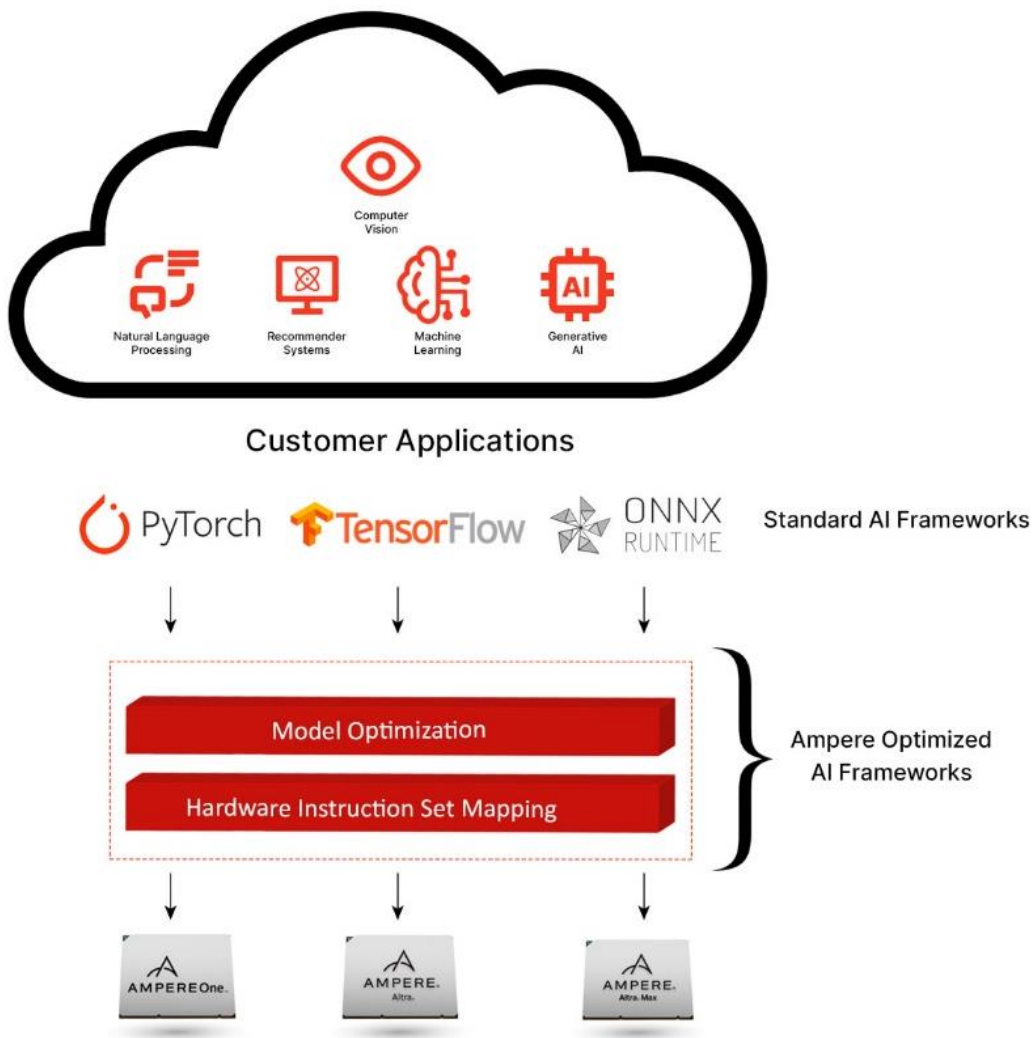
This demo shows a **generative AI chatbot deployment on OCI A1**. It processes incoming real-time input from in the form of a user prompt and generates the output per user's instructions. The demo runs at a **real-time performance level** with sufficient **low latency** and per second token generation rate to satisfy the user needs.

Resources

Ampere Optimized PyTorch, and other Ampere Optimized AI Frameworks (AIO), can be accessed directly from the [Oracle Cloud Marketplace](#).

The docker images are also available in the downloads section of [Ampere AI Developers Page](#). All software is available free of charge and runs straight out-of-the-box with no additional coding required.

Figure 2: The integration of Ampere Optimized AI Frameworks (AIO) with Ampere Cloud Native Processors



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