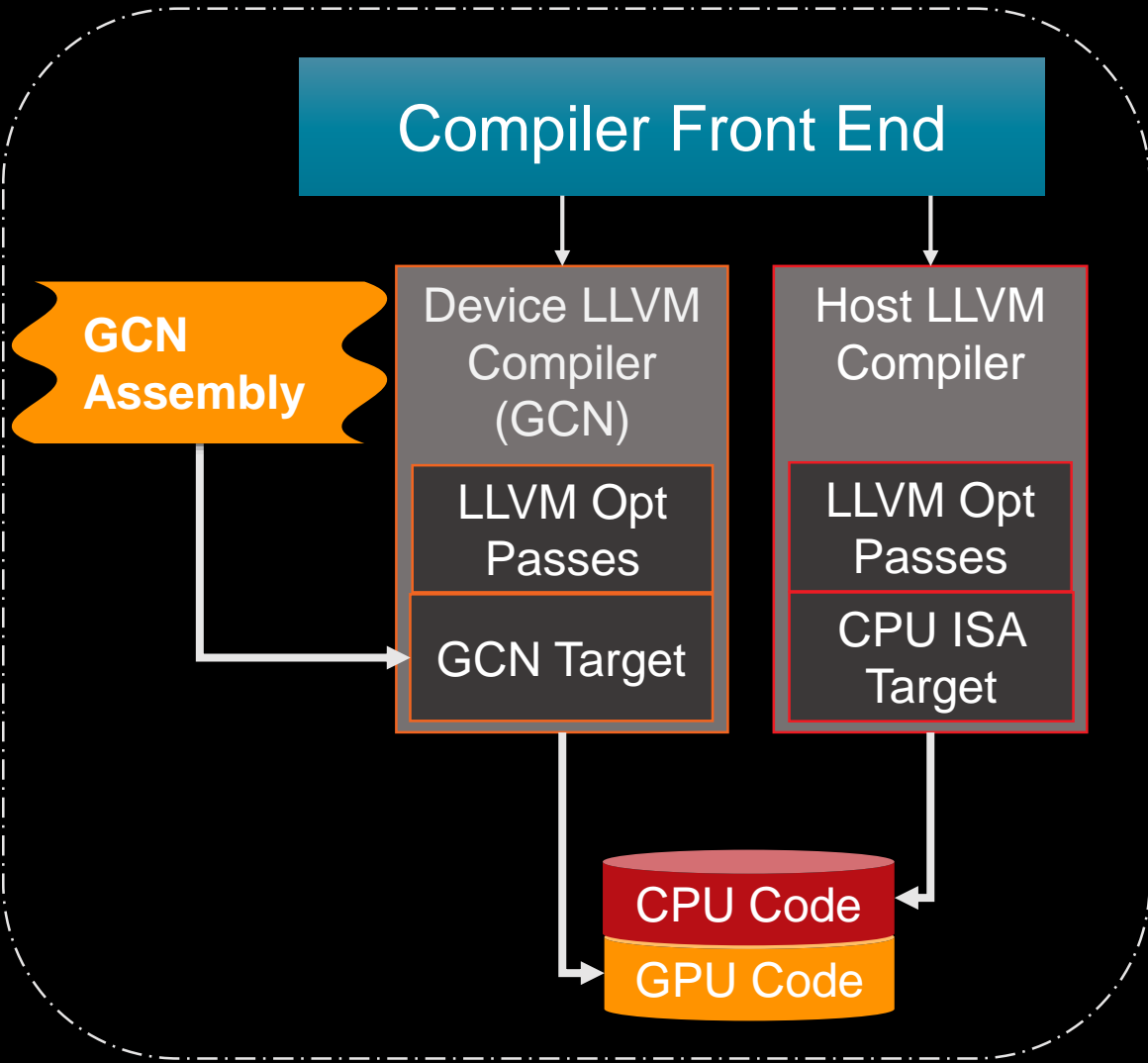




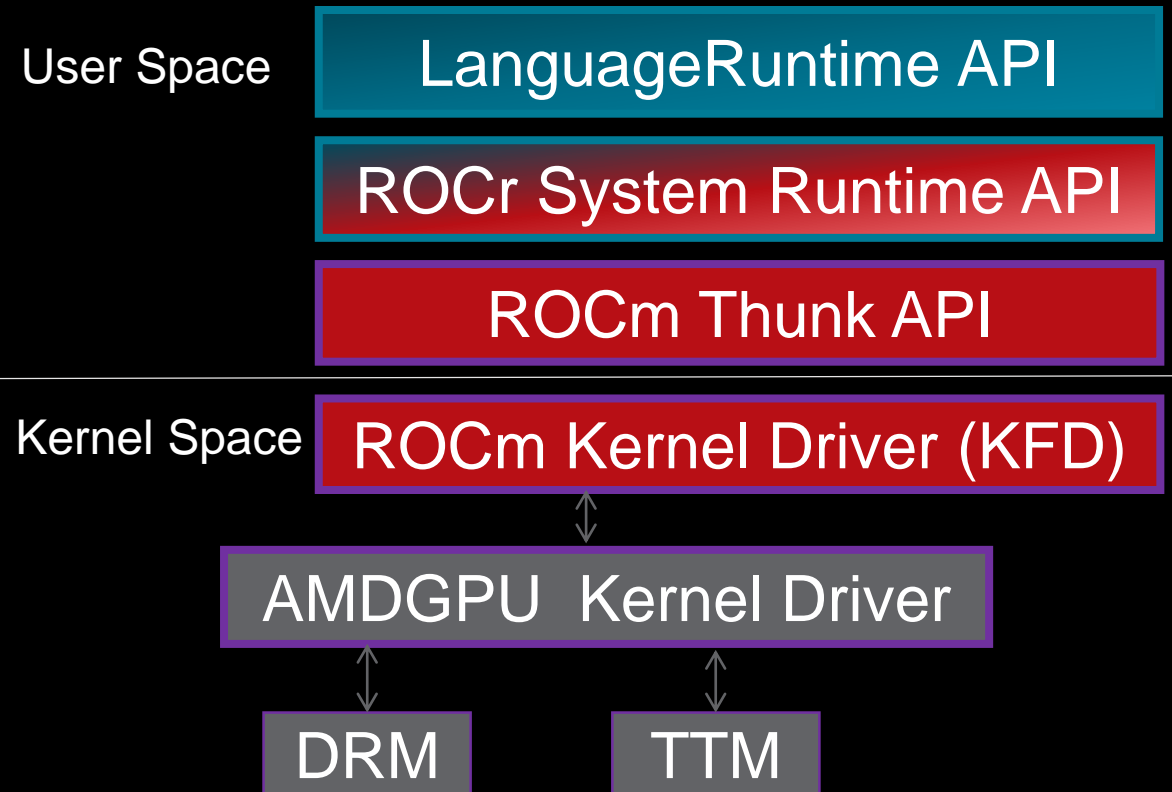
# AMD Radeon Open Compute Platform

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# ROCM PLATFORM ON LINUX



AMDGPU Driver Enabled with ROCm



# KFD FEATURES AND HW SUPPORT

## Upstreaming progress:

- 4.17: Fiji, Polaris
- 4.18: Vega10
- 4.19: Raven Ridge
- 4.20: Vega20

## Compatible with ROCm 1.9

- User mode queues
- Automatic memory residency management
- Multi-GPU memory mapping
- Shared Virtual Memory
- Device enumeration and properties (Topology)
- Asynchronous events

## Not yet upstream:

- Peer2peer memory mapping
- DMABuf import / export (GFX interop, IPC)
- GDB support
- (RDMA)

# ROCm PROGRAMMING MODEL OPTIONS

## HIP

*Convert CUDA to portable C++*

- Single-source Host+Kernel
- C++ Kernel Language
- C Runtime (CUDA-like)
- Platforms: AMD GPU, NVIDIA (same perf as native CUDA)

When to use it?

- Port existing CUDA code
- Developers familiar with CUDA
- New project that needs portability to AMD and NVIDIA

## HCC

*True single-source C++ accelerator language*

- Single-source Host+Kernel
- C++ Kernel Language
- C++ Runtime
- Platforms: AMD GPU

When to use it?

- New projects where true C++ language preferred
- Use features from latest ISO C++ standards

## OpenCL

*Khronos Industry Standard accelerator language*

- Split Host/Kernel
- C99-based Kernel Language
- C Runtime
- Platforms: CPU, GPU, FPGA

When to use it?

- Port existing OpenCL code
- New project that needs portability to CPU, GPU, FPGA



# ROCm ML SOFTWARE STACK

Applications

Machine Learning App

Frameworks

Caffe

TensorFlow

Keras

*Caffe2*

*PyTorch*

*MxNet*

Middleware  
& Libraries

MIOpen

BLAS, FFT, RNG

RCCL

Eigen

Programming  
Models

HCC

HIP

OpenCL™

Python

ROCm

ROCm Platform



*Italics = Under Dev*

# LINKS

Online Documentation: <https://rocm-documentation.readthedocs.io/en/latest/>

ROCm 1.9 release notes: [https://rocm-documentation.readthedocs.io/en/latest/Current\\_Release\\_Notes/Current-Release-Notes.html](https://rocm-documentation.readthedocs.io/en/latest/Current_Release_Notes/Current-Release-Notes.html)

GitHub: <https://github.com/RadeonOpenCompute/ROCm>



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