



Introduction to ROCm

ROCm Tutorial – Part 1

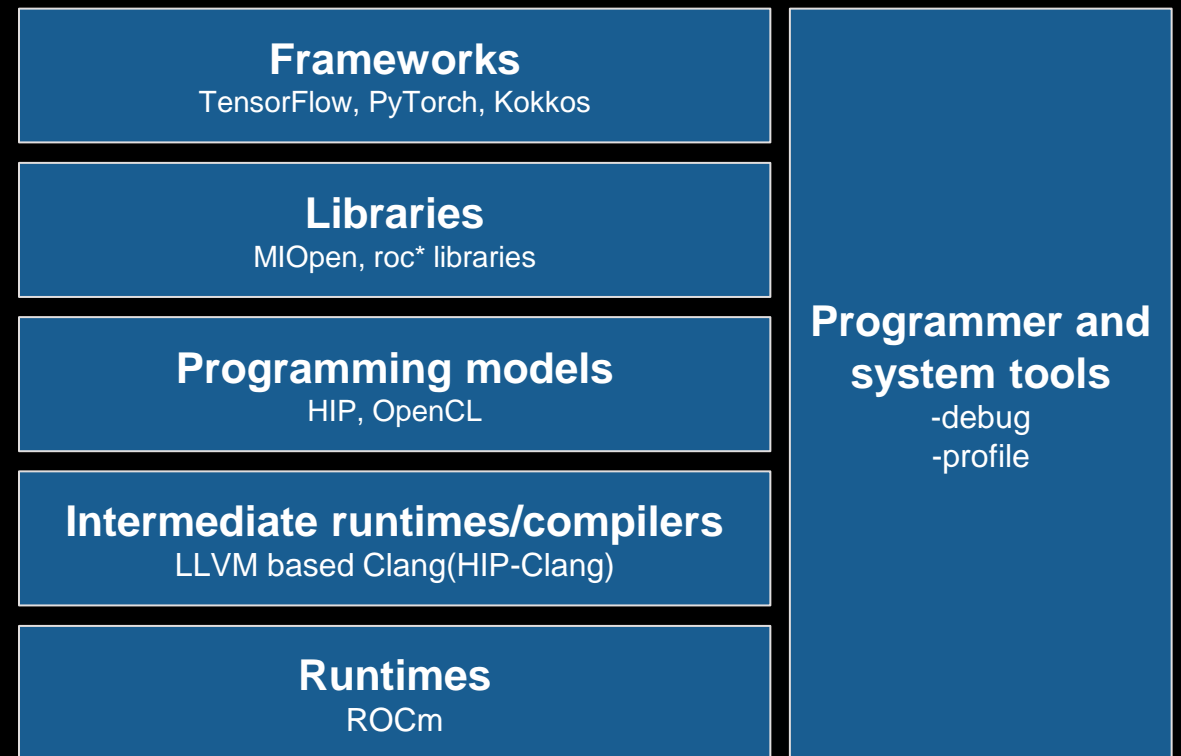


Part 1: ROCm™ and ROCm™ modules

What is ROCm™?

*An Open Software Platform for
GPU-accelerated Computing*

AMD
ROCm



Supported GPUs

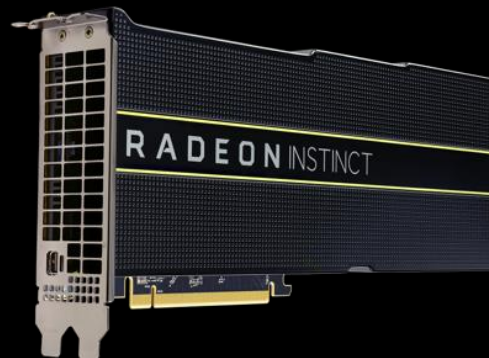
▲ Radeon GPUs



- ▲ R9 Nano & R9 Fury X (Fiji)
- ▲ R9 480 & R9 580 (Polaris 10)
- ▲ RX Vega 56 & RX Vega 64 (Vega 10)
- ▲ Radeon VII (Vega 20)

▲ Radeon Instinct GPUs

- ▲ MI8 (Fiji)
- ▲ MI6 (Polaris 10)
- ▲ MI25 (Vega 10)
- ▲ MI50 & MI60 (Vega 20)



Development/Management Tools

Application Frameworks

Libraries

Programming Frameworks

System Runtime

Device Driver

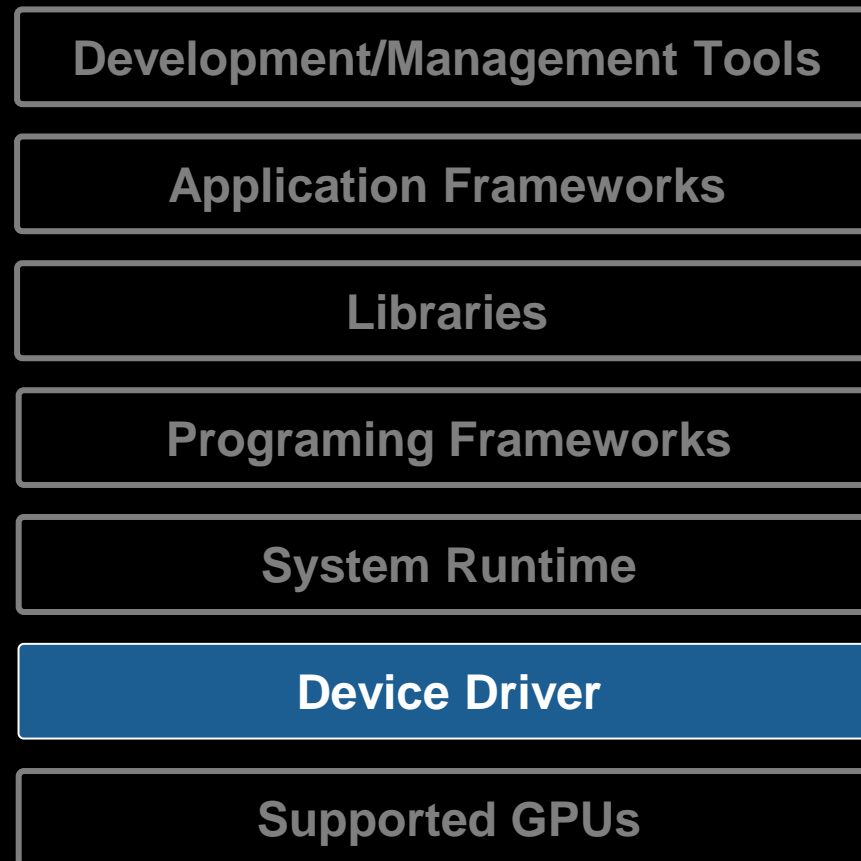
Supported GPUs

Device Driver

- ▲ ROCm GPU Driver
- ▲ Supported in:



- ▲ Thunk Driver Interface



System Runtimes – HSA Runtime

- ▲ Low-level device manipulation
- ▲ Interoperability for layers above



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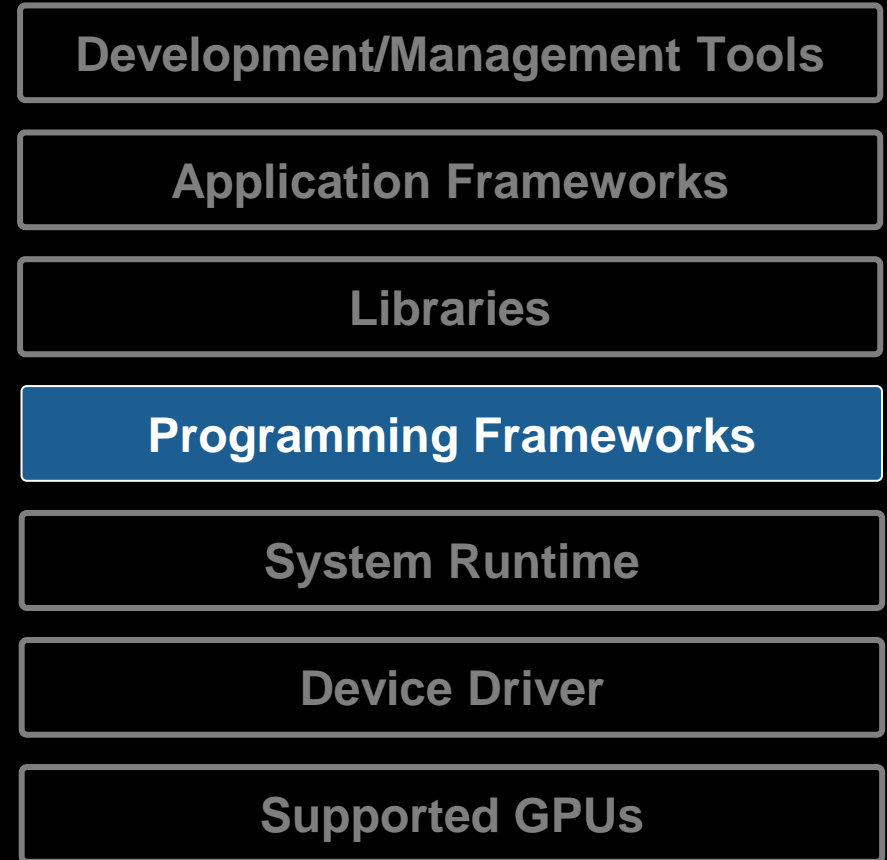
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Programming Frameworks

- ▲ HIP
- ▲ OpenCL



Libraries

- ▲ MIOpen
- ▲ MIOpenGEMM
- ▲ rocBLAS, hipBLAS
- ▲ rocSPARSE, hipSPARSE
- ▲ rocFFT
- ▲ rocRAND
- ▲ RCCL

ROCm

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TensorFlow

Caffe



PyTorch

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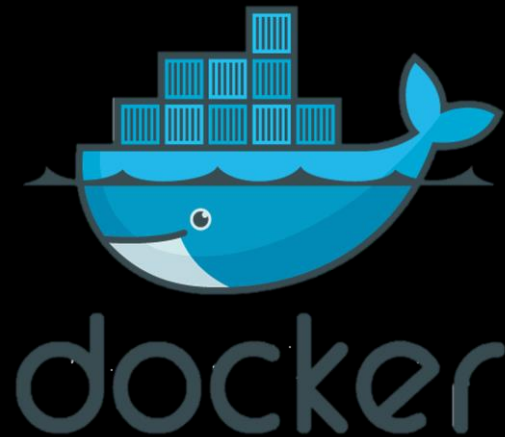
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Development Tools

- ▲ Assembler and Disassembler
- ▲ roc-prof, roc-tracer
- ▲ ROCr Debug Agent
- ▲ rocm-smi



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Conclusion

- ▲ In this module we have looked at what is the ROCm framework
- ▲ We looked at the different layers involved in the framework
- ▲ ROCm supports numerous application frameworks and provides lots of useful libraries
- ▲ ROCm enriches the programming experience through debugging and profiling tools
- ▲ In the next module, we are going to take a look at what are the basics involved in installing ROCm on a system with supported hardware