平头哥 RISC-V

2023 RISC-V 中国峰会

Android ART for RISC-V

夏立方

01 Android ART for RISC-V

02 What we does in XUANTIE

03 AOSP mainline

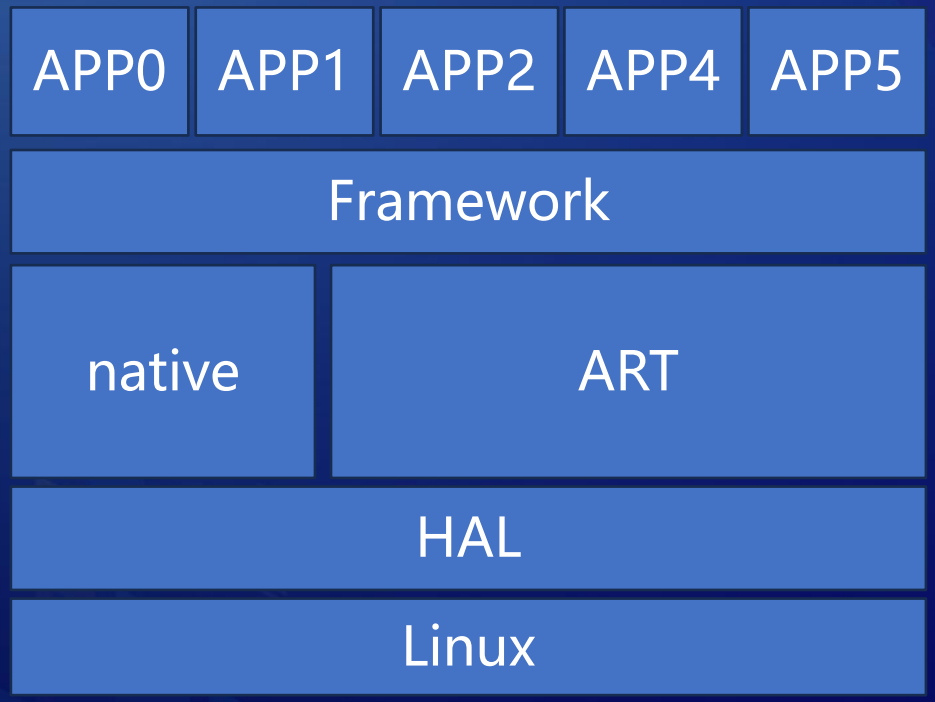
04 Future

Android ART For RISC-V

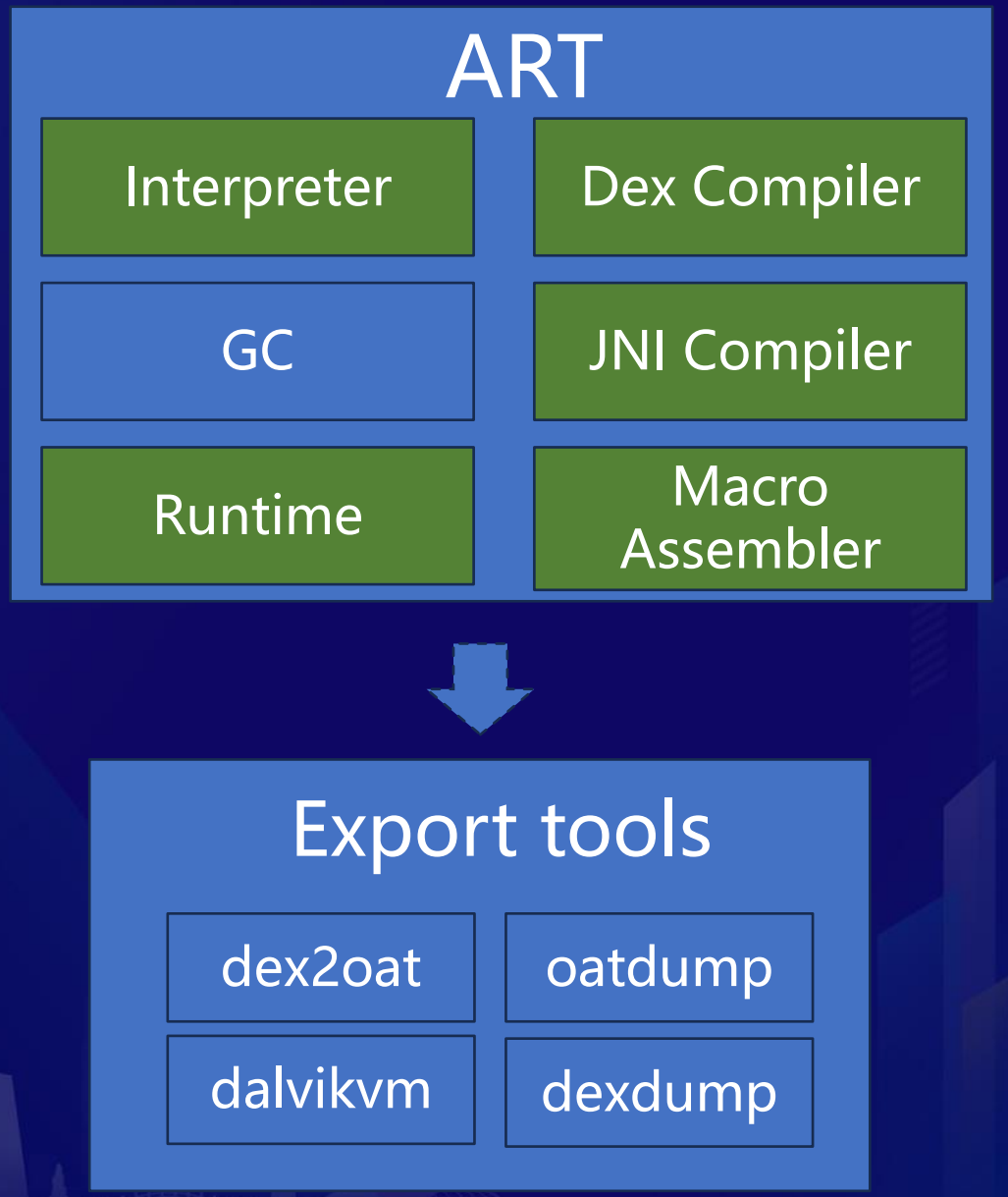
Background

2021.4
Android 10
2021.8
Android Sig
2021.12
Android12 on TH1520
2022.9
AOSP mainline
2022.12
CTS&VTS on TH1520
2023.1
Google start
RISC-V
2023.7
2 Dev-Board
2024
Android Product
on RISCV

ART for RISC-V



Android Overview



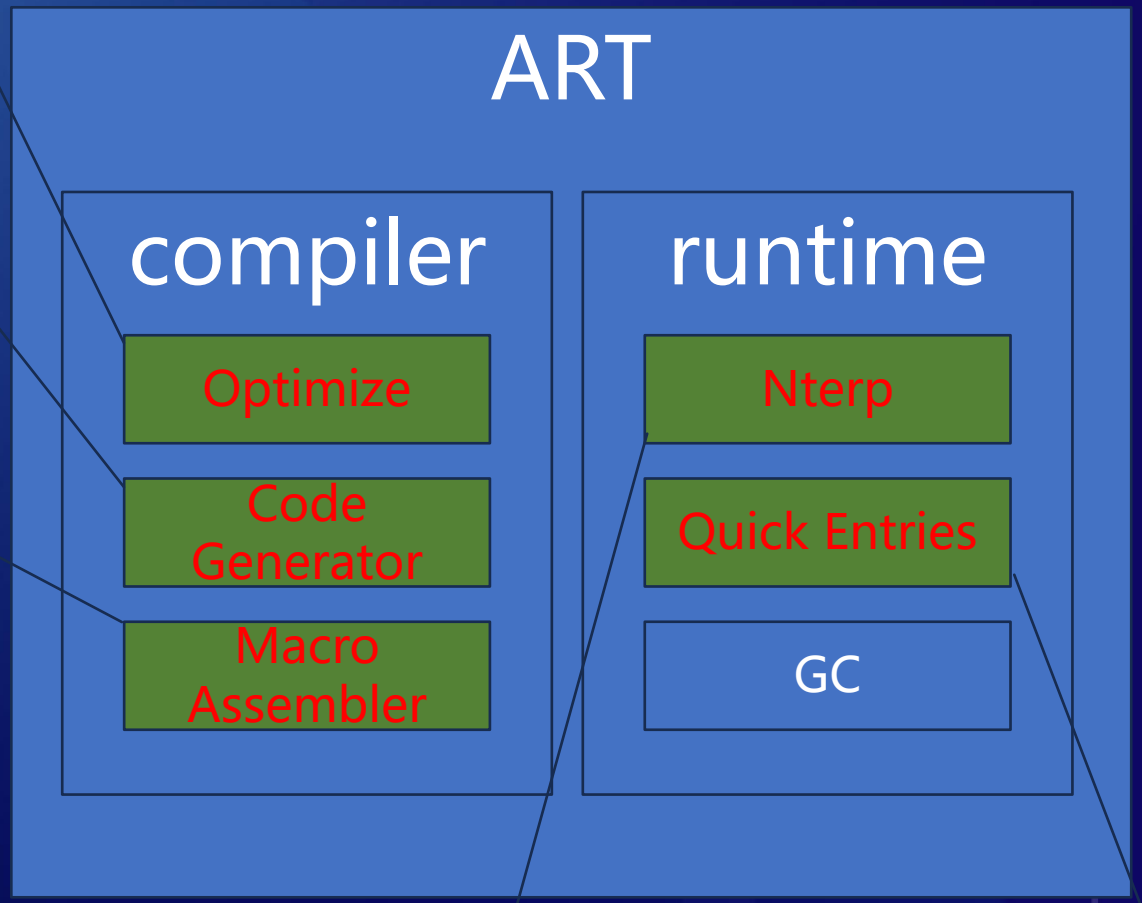
Android ART Optimizing in Xuantie

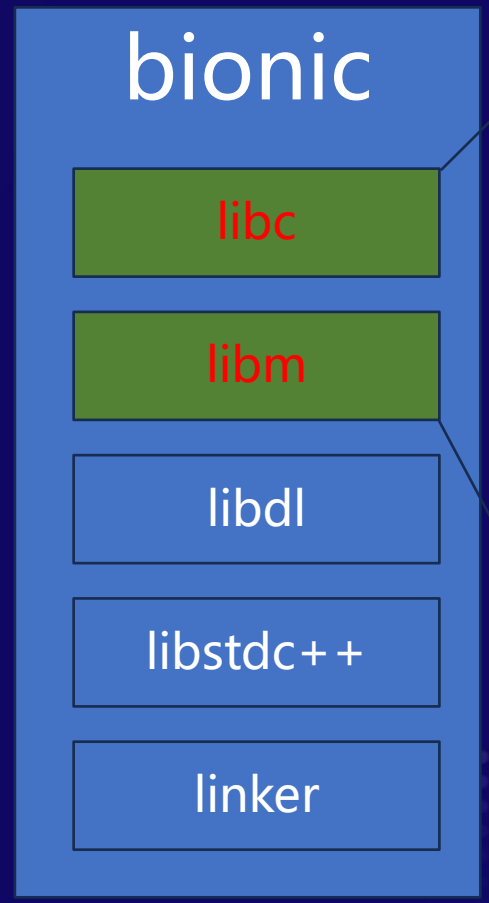
Optimizing in Xuantie

80+ intrinsics instruction simplifier

90+ Instruction visitor

rv64imafd_xthead c





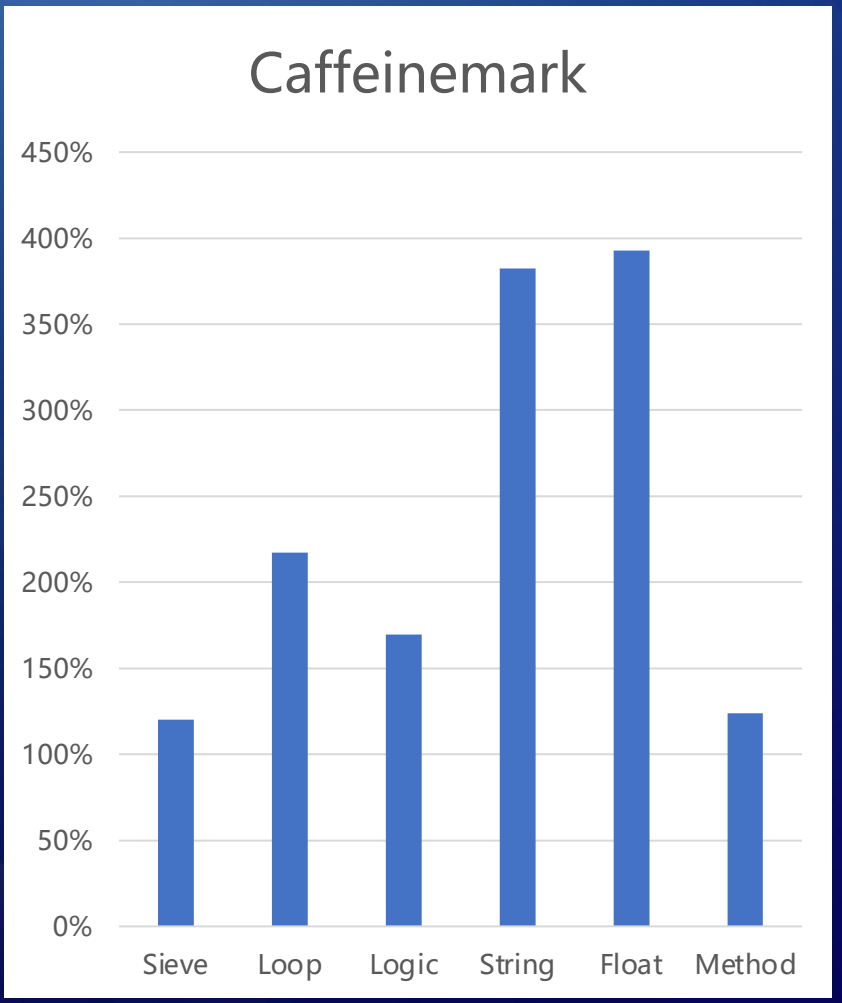
memset
memcpy
memcat
strcmp
stcpy
...

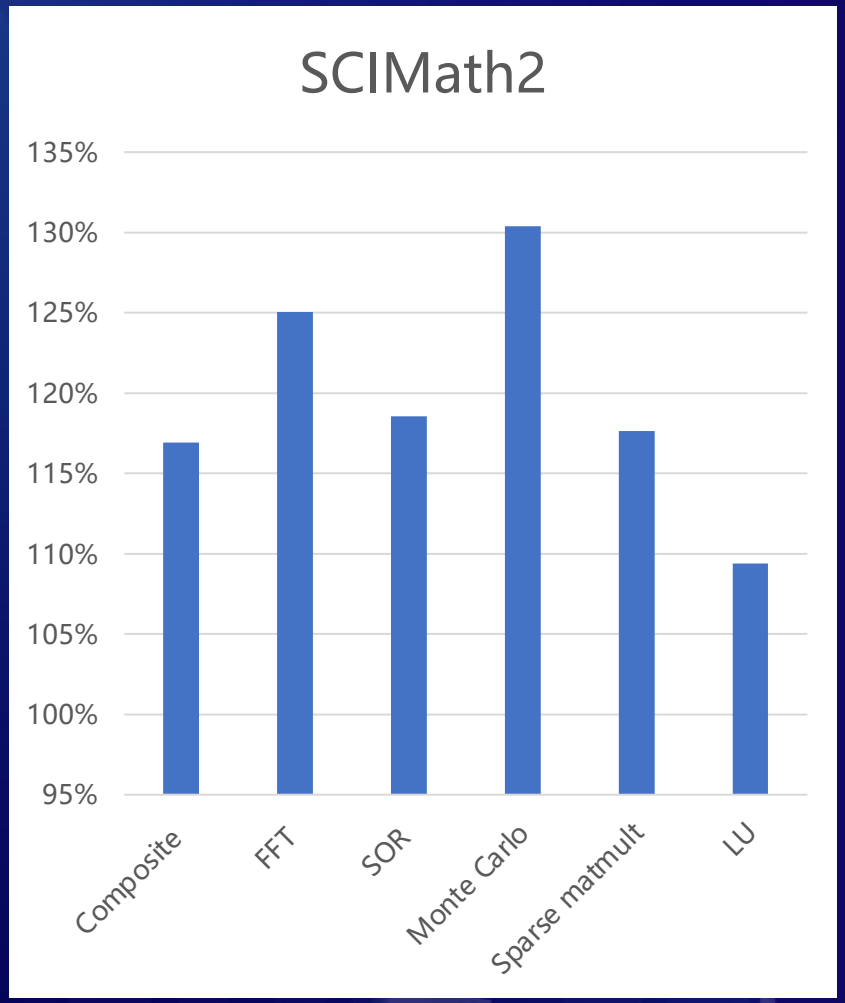
sqrt
round
ceil
floor
sin/cos
...

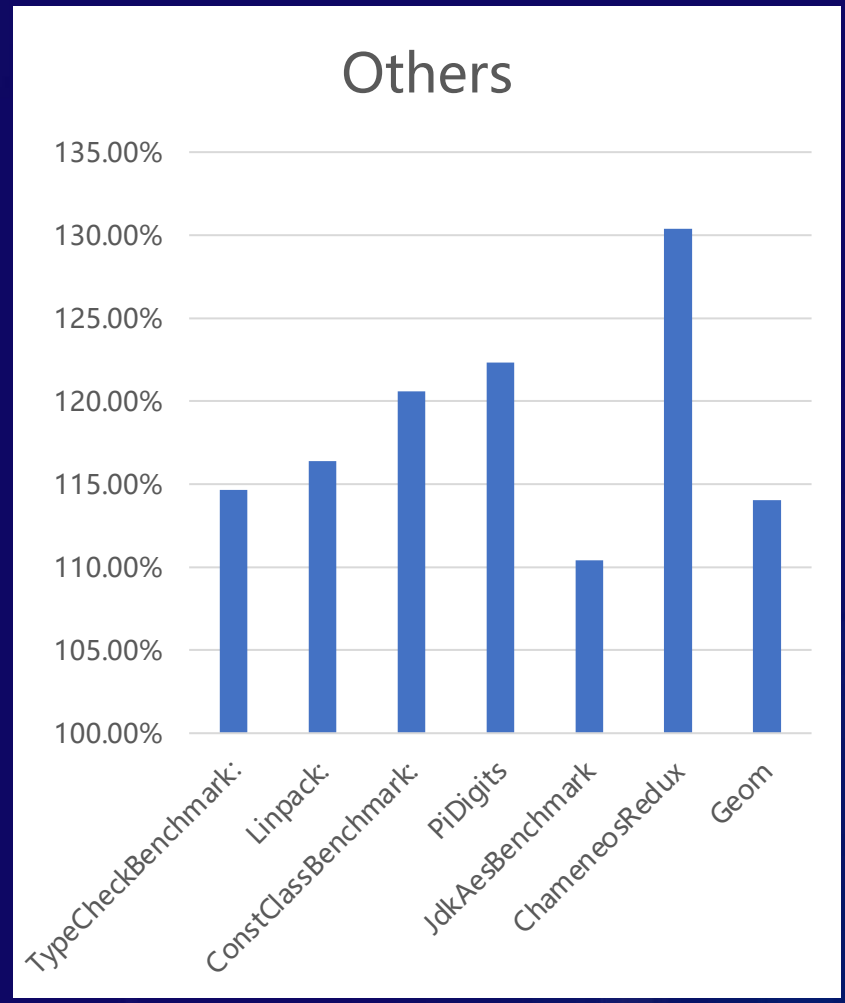
new interpreter

JNI stub
object get/set

Benchmarks After/Before Optimizing







Android ART Mainline

Android ART Upstream

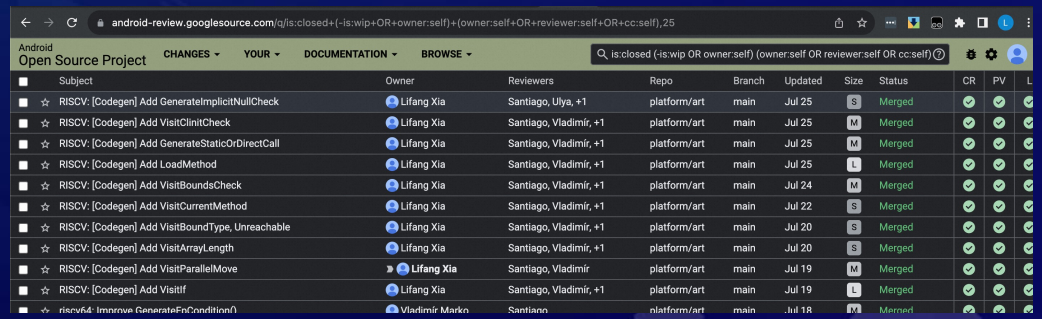
2022.9
Lunch aosp_riscv64

2023.3
CXX Interpreter

2023.5
Nterp

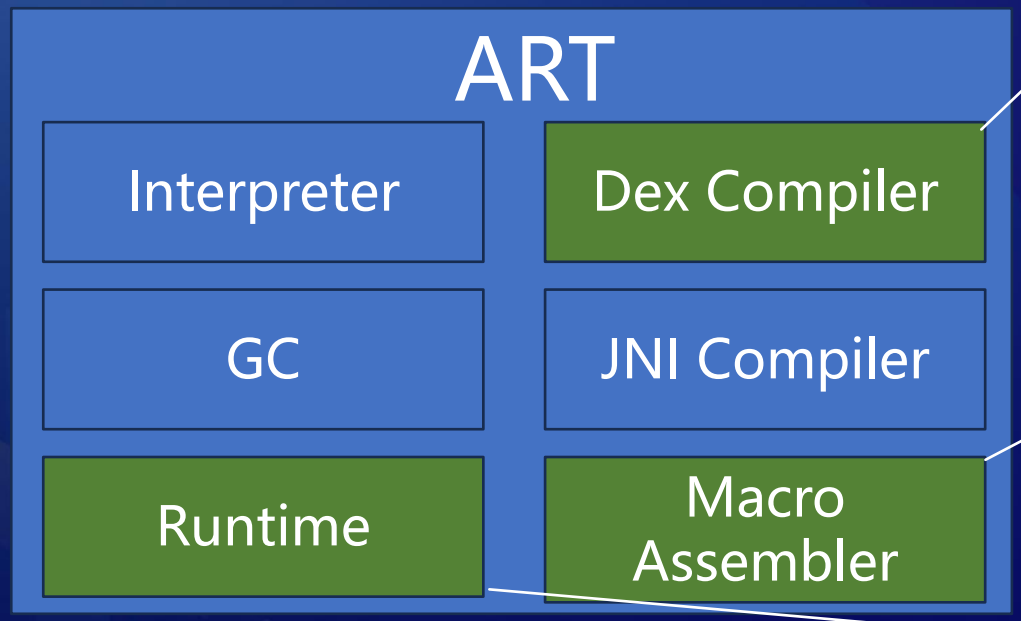
2023.6
Macro Assembler

Now
Compiler
Disassembler



Commit: 76+

Android ART TODO



- CodeGen
- Disassembler
- Intrinsics

- Vector 1.0
- Zb*

- QuickEntries

Find More

Xuantie @ GitHub