



arm

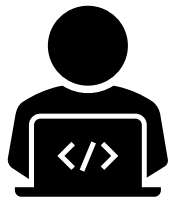
Arm Optimized Routines

Linaro Connect San19 - 511

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Problem Statement

- Arm and partners have optimized library implementation but
 - Some has no idea of how to share as open source
 - Others create multiple open-source projects (e.x. cortex-string, arm math routines)
- Even shared, they are unknown to other groups/companies, thus unused



Glibc maths
functions



Android maths
functions

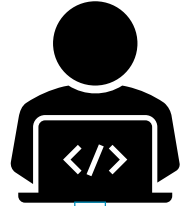


Glibc memory
functions

One library that rules all

Write in your subtitle here

- Establish and sustain a single open source library community to share all high quality library implementations from Arm and Arm partners to the whole Arm ecosystem



Arm Optimized Routines

Maths functions

Glibc maths functions

Android maths functions



Memory functions

Glibc memory functions

Android memory functions

Optimized Routines

- <https://github.com/ARM-software/optimized-routines>
- Licensed under MIT, with Arm Copyright Assignment Agreement
- Currently contains maths and memory/string functions (merged from the original cortex-strings)
- Successful story of reuse
 - All maths functions are in glibc and newlib
 - Migrated to Arm performance library (part of Arm commercial compiler for Linux)
 - Migrated to bionic boosted Geekbench performance

Current List of functions

Maths	String/memory
Cos	Memchr
Exp	Memcpy
Exp2	Memmove
Log	Memset
Sincos	Strchr
Pow	Strcmp
	Strcpy
	Strlen

Plan & Call for Action

- Plan
 - Add vect_math functions
 - Optimize more memory/string functions for latest architectures
- Call for action
 - Reuse: go [optimized routines](#) to find functions reusable to you
 - Contribute: contribute more functions to it
 - Extension: extend beyond maths, memory/string functions



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