



Arm® Mobile Studio 2022.1

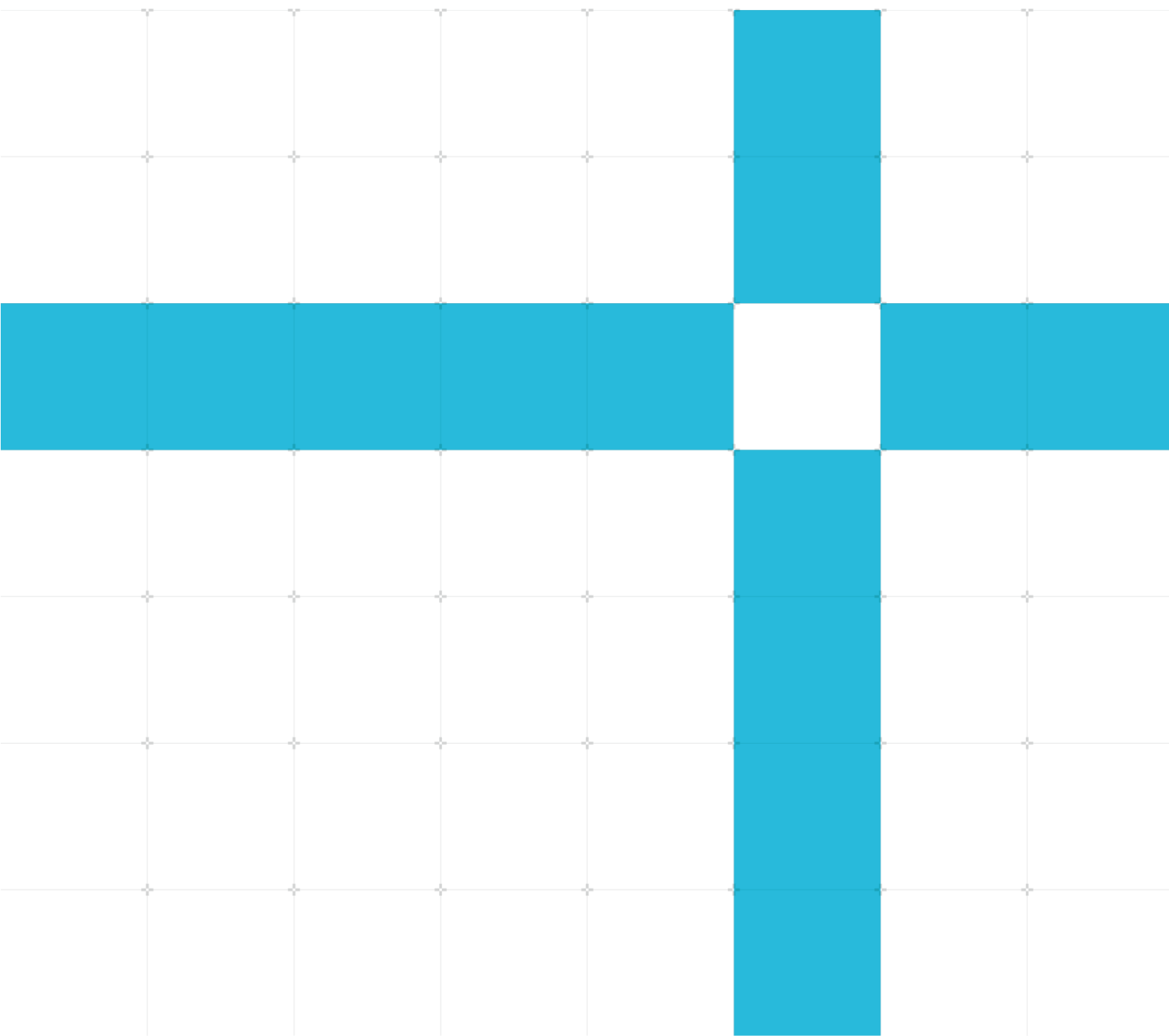
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Release Note

Non-Confidential

Issue 00

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Arm Mobile Studio

Release Note

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1 Release overview

The following sections describe the product and its quality status at time of release.

1.1 Product description

Arm Mobile Studio is a tool suite enabling Android application developers to detect performance bottlenecks in their Arm CPU software and Arm® Mali™ GPU rendering. Profiling is provided through analysis of performance counters from the hardware, and the target application's graphics API usage.

This release of Arm Mobile Studio includes:

- **Streamline**, for profiling application software and rendering performance.
- **Graphics Analyzer**, for debugging and inspecting usage of graphics APIs.
- **Mali Offline Compiler**, for static analysis of shader programs and compute kernels.
- **Performance Advisor**, for automating initial data analysis and reporting in continuous integration deployments.

1.2 Release status

This is the REL quality release of the Arm Mobile Studio 2022.1 (r22p1-00rel0) software.

1.3 Changes in this release

This release of Arm Mobile Studio contains the following changes.

1.3.1 Mobile Studio

- **Feature:** Support for Arm A-profile CPUs and Mali GPUs is now available in the first software release after IP is announced.

1.3.2 Streamline

- **Feature:** Added definitions for Cortex-A510 performance counters.
- **Feature:** Changed gator to use a new self-managed mechanism that can concurrently capture data from system and application sources. This changes how gator is deployed on the device, so ensure you use the versions of gator_me.py and lwi_me.py from this release, as well as updating any scripts that use manually created command lines.
- **Feature:** Updated Bifrost and Valhall GPU [performance counter guides](#).
- **Fix:** Streamline expression min/max functions are now correctly variadic.

1.3.3 Performance Advisor

- **Fix:** Performance Advisor report counter names now match Streamline.
- **Fix:** Performance Advisor light-weight interceptor is more reliable for OpenGL ES and Vulkan screenshot captures, although there are still remaining known issues.
- **Fix:** Multiple small improvements to lwi_me.py for consistency and robustness.

1.3.4 Graphics Analyzer

Graphics Analyzer has the following changes:

- **Fix:** The Mobile Studio installer on Windows will now include the MSVC runtime library needed for the GA5 Mali Offline Compiler integration.

1.3.5 Mali Offline Compiler

Mali Offline Compiler has the following changes:

- **Feature:** Added OpenCL 3.0 support for SPIR-V compute kernels.
- **Feature:** Added expected shader core thread occupancy in performance reports.
- **Feature:** Added filtering to remove duplicate compiler warnings in performance reports.
- **Feature:** Updated Bifrost and Valhall compiler to the r38p0 driver.
- **Feature:** Updated glslangValidator to support SPIR-V 1.6 features.
- **Fix:** Correctly parse SPIR-V instructions using extension opcodes.

1.4 Known issues in this release

This release of Arm Mobile Studio contains the following known issues.

1.4.1 Streamline

Streamline has the following known issues:

- **SDDAP-8095:** Streamline does not yet support the DWARF5 format for debug info. Applications must be built using the DWARF4 format.
- **SDDAP-11426:** Linux host installs using NVIDIA drivers can experience areas of the UI rendering as black rectangles when using monitor scaling. This can be worked around by setting the environment variable GDK_SCALE to 1 before launching Streamline. For ease of use, this can be set in the Streamline launch script.

1.4.2 Performance Advisor

Performance Advisor has the following known issues:

- **MGD-5164:** Vulkan screenshots can be very slow to capture.
- **MGD-5164:** Vulkan screenshots do not always capture the correct swap chain image.

- **MGD-5216:** OpenGL ES screenshots only capture images for the first context that uses `eglSwapBuffers()` in the application.

2 Support

To help you get started we provide a number of quick-start guides available online:

- [Getting Started Guides on developer.arm.com](#)

Technical support for Arm Mobile Studio Starter Edition is provided via our developer forums:

- [Developer forums on community.arm.com](#)

Technical support for Arm Mobile Studio Professional Edition is provided via our support team:

- [Support portal on developer.arm.com](#)

2.1 Host OS support

This release has been developed for the following host operating systems:

Table 2-1: Host operating system used in developing this release

Operating system	Version
Windows	10 or newer
macOS	10.13 (High Sierra) or newer
Ubuntu Linux	18.04 (Bionic Beaver) or newer

2.2 Target OS support

This release has been developed for the following target operating systems:

Table 2-2: Target operating system used in developing this release

Feature	Version
Streamline	Android 8 or newer
Performance Advisor OpenGL ES	Android 8 or newer with manual annotation Android 10 or newer to use the Light-weight Interceptor
Performance Advisor Vulkan	Android 9 or newer
Graphics Analyzer OpenGL ES	Android 8 or newer
Graphics Analyzer Vulkan	Android 9 or newer