

**About Arm Academic Access**

Arm Academic Access simplifies free licensing to universities with an institutional agreement. IP is provided on a needs basis and can be extended to different research groups and/or in scope simply and easily.

For no fee, you can accelerate your research using Arm’s extensive portfolio of IP and join one of the world’s largest and most innovative research ecosystems.

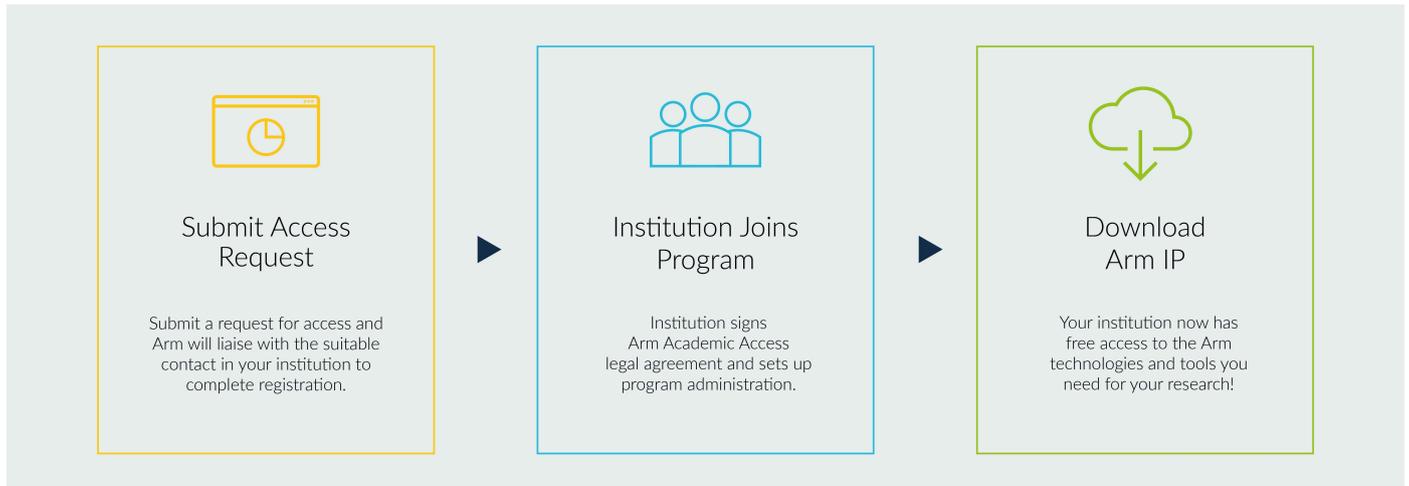
For more information, contact the Arm Research Enablement team today.

**What can be included in Arm Academic Access?**

In addition to the most comprehensive Artisan physical IP library for those who need it, Arm Academic Access can include the following products. Our team will discuss your needs and identify the most suitable place to start.

| Access to entire mainstream product package, including CPUs, GPUs, Corstone foundation IP and system IP | Y  |
|---|--|
| Number of online training seats for introductory training on a selection of mainstream IP products      | 5  |
| Seats of Arm Development Studio (Arm DS Gold)   | 10   |
| Seats of Arm configuration tool - Socrates  | 10   |
| Seats of Arm virtual system models (fixed and cycle-accurate)   | 1  |
| Arm Service Tokens (can be used for training, design reviews and onsite support)                        | Available separately on a case-by-case basis |

## How does Arm Academic Access work?



| Product                   | Description   | Learn more about this product   |
|---------------------------|---|---|
| <b>CPU Processing</b>     |   |   |
| Cortex-A53 Processor      | Low-power processor with 64-bit capabilities, applicable in a range of devices requiring high performance in power-constrained environments.                        | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a53">https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a53</a> |
| Cortex-A35 Processor      | Ultra-high efficiency smart home processor, the smallest and most power-efficient 32-bit and 64-bit Arm application processor.                                      | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a35">https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a35</a> |
| Cortex-A34 Processor      | Low-power 64-bit only processor with ultra-high efficiency.   | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a34">https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a34</a> |
| Cortex-A32 Processor      | Low-power 32-bit only processor with ultra-high efficiency, suitable for diverse embedded and IoT markets.  | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a32">https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a32</a> |
| Cortex-A7 Processor       | Power-efficient processor, designed for a wide range of devices with differing requirements demanding balance between power and performance.                        | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a7">https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a7</a>   |
| Cortex-A5 Multi-Processor | Smallest Cortex-A processor designed for applications that require virtual memory management for high-level operating systems within a low-power, low-area profile. | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a5">https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a5</a>   |
| Cortex-A5 Uni-Processor   |   | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a5">https://www.arm.com/products/silicon-ip-cpu/cortex-a/cortex-a5</a>   |
| Cortex-R52 Processor      | Designed for advanced silicon processes requiring high-performance and cost-effective processing. It delivers real-time performance for functional safety.          | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-r/cortex-r52">https://www.arm.com/products/silicon-ip-cpu/cortex-r/cortex-r52</a> |
| Cortex-R8 Processor       | Designed for products where performance requirements and timing deadlines must always be met, or where functional safety is critical.                               | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-r/cortex-r8">https://www.arm.com/products/silicon-ip-cpu/cortex-r/cortex-r8</a>   |
| Cortex-R5 Processor       | Offers high-performance computing solutions for embedded systems needing reliability, high availability, fault tolerance, and real-time responses.                  | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-r/cortex-r5">https://www.arm.com/products/silicon-ip-cpu/cortex-r/cortex-r5</a>   |

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|----------------------|--|---|
| Cortex-M33 Processor | Optimized for cost and power-sensitive microcontroller and mixed-signal applications. Designed to address embedded and IoT markets, especially those requiring efficient security or digital signal control. | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m33">https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m33</a>         |
| Cortex-M23 Processor | Smallest and lowest-power microcontroller with Arm TrustZone security, ideal for applications requiring software isolation and software security.  | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m23">https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m23</a>         |
| Cortex-M7 Processor  | The highest performance member of the energy-efficient Cortex-M processor family.  | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m7">https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m7</a>           |
| Cortex-M4 Processor  | Designed to address digital signal control markets that demand an efficient, easy-to-use blend of control and signal processing capabilities.  | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m4">https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m4</a>           |
| Cortex-M3 Processor  | Designed for cost-sensitive and power-constrained solutions in a broad range of devices. Balanced between area, performance, and power.  | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m3">https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m3</a>           |
| Cortex-M0+ Processor | The smallest footprint and lowest power requirements of all the Cortex-M processors, suitable for a wide variety of applications, including sensors and wearables.   | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m0-plus">https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m0-plus</a> |
| Cortex-M0 Processor  | Designed for smart and connected embedded applications, the smallest Arm processor available, ideal for simple, cost-sensitive devices.  | <a href="https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m0">https://www.arm.com/products/silicon-ip-cpu/cortex-m/cortex-m0</a>           |

## GPU Processing

|                             |   |   |
|-----------------------------|---|---|
| Mali-G52 Graphics Processor | Designed to bring premium visual experiences to mainstream markets, Mali-G52 provides heightened machine learning capabilities.     | <a href="https://www.arm.com/products/silicon-ip-multimedia/gpu/mali-g52">https://www.arm.com/products/silicon-ip-multimedia/gpu/mali-g52</a> |
| Mali-G31 Graphics Processor | The Arm Mali-G31 GPU is the first ultra-efficient GPU based on the Bifrost architecture targeting smaller applications such as IoT. | <a href="https://www.arm.com/products/silicon-ip-multimedia/gpu/mali-g31">https://www.arm.com/products/silicon-ip-multimedia/gpu/mali-g31</a> |

## CoreLink Interconnect

|  |  |   |
|--|--|---|
| CoreLink NIC-450 Network Interconnect        | Offers highly configurable topology with network-on-chip properties for building high-performance, optimized, AMBA-compliant SoC connectivity, including QoS and Thin links. | <a href="https://www.arm.com/products/silicon-ip-system/corelink-interconnect/nic">https://www.arm.com/products/silicon-ip-system/corelink-interconnect/nic</a>         |
| CoreLink NIC-400 Network Interconnect        | Offers highly configurable topology with network-on-chip properties for building high-performance, optimized, AMBA-compliant SoC connectivity                                | <a href="https://www.arm.com/products/silicon-ip-system/corelink-interconnect/nic">https://www.arm.com/products/silicon-ip-system/corelink-interconnect/nic</a>         |
| CoreLink CCI-400 Cache Coherent Interconnect | Provides full cache coherency between two clusters of multi-core CPUs. It enables big.LITTLE processing and I/O coherency for devices.                                       | <a href="https://www.arm.com/products/silicon-ip-system/corelink-interconnect/cci-400">https://www.arm.com/products/silicon-ip-system/corelink-interconnect/cci-400</a> |
| CoreLink CCI-500 Cache Coherent Interconnect | Full coherency with up to four clusters including big.LITTLE and coherent accelerators. Higher performance and power efficiency with integrated snoop filter.                | <a href="https://www.arm.com/products/silicon-ip-system/corelink-interconnect/cci-500">https://www.arm.com/products/silicon-ip-system/corelink-interconnect/cci-500</a> |

|  |   |   |
|--|---|---|
| CoreLink CCI-550 Cache Coherent Interconnect | Full coherency with up to six clusters including big.LITTLE and coherent accelerators. Higher performance and power efficiency with integrated snoop filter | <a href="https://www.arm.com/products/silicon-ip-system/corelink-interconnect/cci-550">https://www.arm.com/products/silicon-ip-system/corelink-interconnect/cci-550</a>   |
| CoreLink ADB-400 AMBA Domain Bridge          | An asynchronous bridge between two components or systems that can be in a different power, clock, or voltage domains.                                       | <a href="https://developer.arm.com/ip-products/system-ip/corelink-interconnect/corelink-network-interconnect-family">https://developer.arm.com/ip-products/system-ip/corelink-interconnect/corelink-network-interconnect-family</a> |
| CoreLink XHB-400 AXI4- AHB Bridge            | Converts AXI4 protocol to AHB-Lite protocol and has an AXI4 slave interface and an AHB-Lite master interface.   | <a href="https://developer.arm.com/ip-products/system-ip/corelink-interconnect/corelink-network-interconnect-family">https://developer.arm.com/ip-products/system-ip/corelink-interconnect/corelink-network-interconnect-family</a> |

## System Controllers

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|---|--|---|
| CoreLink DMA-330 AXI DMA Controller                 | A high-performance DMA controller that can boost the performance and reduce the power consumption in AXI-based systems.  | <a href="https://www.arm.com/products/silicon-ip/system/embedded-system-design/dma-330">https://www.arm.com/products/silicon-ip/system/embedded-system-design/dma-330</a>                         |
| CoreLink DMA-230 AHB Micro DMA Controller           | Low gate count (3-10k gates) micro-DMA engine targeting AHB-based Cortex-M systems.  | <a href="https://www.arm.com/products/silicon-ip/system/embedded-system-design/dma-230">https://www.arm.com/products/silicon-ip/system/embedded-system-design/dma-230</a>                         |
| CoreLink GIC-500 Generic Interrupt Controller       | Detects, manages, virtualizes, and distributes interrupts for Armv8.0-A processors. Configurable up to 128 single-threaded cores and 960 shared interrupts.  | <a href="https://www.arm.com/products/silicon-ip-system/system-controllers/gic">https://www.arm.com/products/silicon-ip-system/system-controllers/gic</a>   |
| CoreLink GIC-400 Generic Interrupt Controller       | Detects, manages, and virtualizes interrupts for Armv7 processors. Configurable up to 8 cores and 480 shared interrupts.   | <a href="https://www.arm.com/products/silicon-ip-system/system-controllers/gic">https://www.arm.com/products/silicon-ip-system/system-controllers/gic</a>   |
| PL192 Vectored Interrupt Controller                 | An advanced vectored interrupt controller supporting up to 32 vectored interrupts with programmable priority level and masking.  | <a href="https://developer.arm.com/ip-products/system-ip/system-controllers/peripheral-controllers">https://developer.arm.com/ip-products/system-ip/system-controllers/peripheral-controllers</a> |
| CoreLink TZC-400 TrustZone Address Space Controller | Performs security checks on transactions to memory or peripherals, configurable wup to 8 regions.  | <a href="https://www.arm.com/products/silicon-ip-security/address-space-controllers">https://www.arm.com/products/silicon-ip-security/address-space-controllers</a>                               |
| CoreLink L2C-310 AXI Level 2 Cache Controller       | High-performance, AXI level 2 cache controller designed and optimized to address Arm AXI processors, normally used with Cortex-A5.   | <a href="https://www.arm.com/products/silicon-ip-system/embedded-system-design/l2c-310">https://www.arm.com/products/silicon-ip-system/embedded-system-design/l2c-310</a>                         |
| CoreLink MMU-500 System Memory Management Unit      | System memory management unit that includes caching and memory virtualization. It enforces memory protection and access, and is designed for use in a virtualized system where multiple guest operating systems are managed by a hypervisor. Supports Armv8-A and Armv7-A. | <a href="https://www.arm.com/products/silicon-ip-system/system-controllers/mmu">https://www.arm.com/products/silicon-ip-system/system-controllers/mmu</a>   |
| BP140 AXI Internal Memory Interface                 | AXI to on-chip SRAM interface.   | <a href="https://developer.arm.com/docs/dto0009/a">https://developer.arm.com/docs/dto0009/a</a>   |
| BP141 TrustZone AXI Memory Interface                | AXI to on-chip SRAM interface with support for Arm TrustZone protection for secure memory regions.   | <a href="https://developer.arm.com/products/system-ip/system-controllers/other-system-controllers">https://developer.arm.com/products/system-ip/system-controllers/other-system-controllers</a>   |

## Security IP

|                              |  |   |
|------------------------------|--|---|
| True Random Number Generator | A mandatory component in any system that generates cryptographic assets. | <a href="https://www.arm.com/products/silicon-ip-security/random-number-generator">https://www.arm.com/products/silicon-ip-security/random-number-generator</a> |
|------------------------------|--|---|

## Peripheral Controllers

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|--|---|---|
| PL011 UART Universal Asynchronous Receiver/Transmitter | Peripheral controllers for UART, SPI and real-time clock. | <a href="https://developer.arm.com/ip-products/system-ip/system-controllers">https://developer.arm.com/ip-products/system-ip/system-controllers</a> |
| PL022 SPI Synchronous Serial Port                      |   | <a href="https://developer.arm.com/ip-products/system-ip/system-controllers">https://developer.arm.com/ip-products/system-ip/system-controllers</a> |
| PL031 RTC Real Time Clock                              |   | <a href="https://developer.arm.com/ip-products/system-ip/system-controllers">https://developer.arm.com/ip-products/system-ip/system-controllers</a> |

## CoreSight Debug & Trace

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|--|--|---|
| CoreSight SoC-400 Debug and Trace        | Offers configurable components, including debug access, trace generation manipulation and output, cross triggering, and time stamping.   | <a href="https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/soc-400">https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/soc-400</a>   |
| CoreSight SDC-600 Secure Debug Channel   | Addresses device security needs by allowing silicon and tool vendors to enforce protection and police debug access, and by working closely with cryptographic elements and debug certificate authentication.   | <a href="https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/sdc-600">https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/sdc-600</a>   |
| CoreSight STM-500 System Trace Macrocell | Trace source for real-time software instrumentation with no impact on system behaviour or performance. It extends the low-cost, real-time visibility of software and hardware execution to all software developers. Supports 64-bit memory interfaces. | <a href="https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/coresight-stm-500">https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/coresight-stm-500</a>   |
| CoreSight System Trace Macrocell         | System Trace Macrocell supporting 32-bit memory interfaces.  | <a href="https://developer.arm.com/ip-products/system-ip/coresight-debug-and-trace/coresight-components/system-trace-macrocell">https://developer.arm.com/ip-products/system-ip/coresight-debug-and-trace/coresight-components/system-trace-macrocell</a> |
| CoreSight Trace Memory Controller        | A configurable trace component to terminate trace buses into buffers, FIFOs, or alternatively, to route trace data over AXI to memory or off-chip to interface controllers.  | <a href="https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/coresight-tmc">https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/coresight-tmc</a>   |
| CoreSight SoC-600 Debug and Trace        | For high-bandwidth debug and trace solutions. Includes remote and local debug access, trace routing and termination, crosstriggering and time stamping.  | <a href="https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/soc-600">https://www.arm.com/products/silicon-ip-system/coresight-debug-trace/soc-600</a>   |

## Design Kits

|                            |   |   |
|----------------------------|---|---|
| Corstone-101 foundation IP | Contains a pre-integrated subsystem and system IP bringing together all core elements for an SoC. Includes the CoreLink SSE-050 subsystem built around a Cortex-M3 processor. Other elements include CMSDK, AHB Flash Cache, RTC, TRNG and a generic eFlash controller. | <a href="https://www.arm.com/products/iot/soc/corstone-101">https://www.arm.com/products/iot/soc/corstone-101</a> |
| Corstone-201 foundation IP | Incorporates the Arm SSE-200 subsystem for Cortex-M33 and the SSE-123 example subsystem built around the Cortex-M23. The subsystems provide a solid base for either mainstream or constrained device SoC design, with Arm TrustZone support for deep-rooted security.   | <a href="https://www.arm.com/products/iot/soc/corstone-201">https://www.arm.com/products/iot/soc/corstone-201</a> |

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| Corstone-500 foundation IP                              | Corstone-500 offers a proven and preintegrated reference package along with an extensive set of System IP, for building Linuxcapable, high-performance SoCs, based on Arm Cortex-A5. It includes FPGA image, out-of-box Linux support and simulation models, thus accelerating time to market and reducing development risk. | <a href="https://www.arm.com/products/iot/soc/corstone-500">https://www.arm.com/products/iot/soc/corstone-500</a>   |
| Corstone-102 Foundation IP                              | Arm Corstone-102 provides a flexible reference package and system IP for small, low cost and energy efficient SoC development. Based on the Arm Cortex-M23 processor, the Corstone-102 is targeted at the constrained market segment for secure IoT applications.  | <a href="https://www.arm.com/products/iot/soc/corstone-102">https://www.arm.com/products/iot/soc/corstone-102</a>   |
| <b>Corstone-201 foundation IP Virtual system models</b> |  |   |
| Virtual system models                                   | Fixed configuration systems for select CPUs within the mainstream package for benchmarking, performance analysis, and software development ahead of silicon. Fast and Cycle Model variants for each system. Software packages include prepackaged benchmarks and the ability to add own software.                            | <a href="https://www.arm.com/products/developmenttools/simulation/fixed-virtual-platforms">https://www.arm.com/products/developmenttools/simulation/fixed-virtual-platforms</a> |

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