



arm

ROS 2 ON ARM

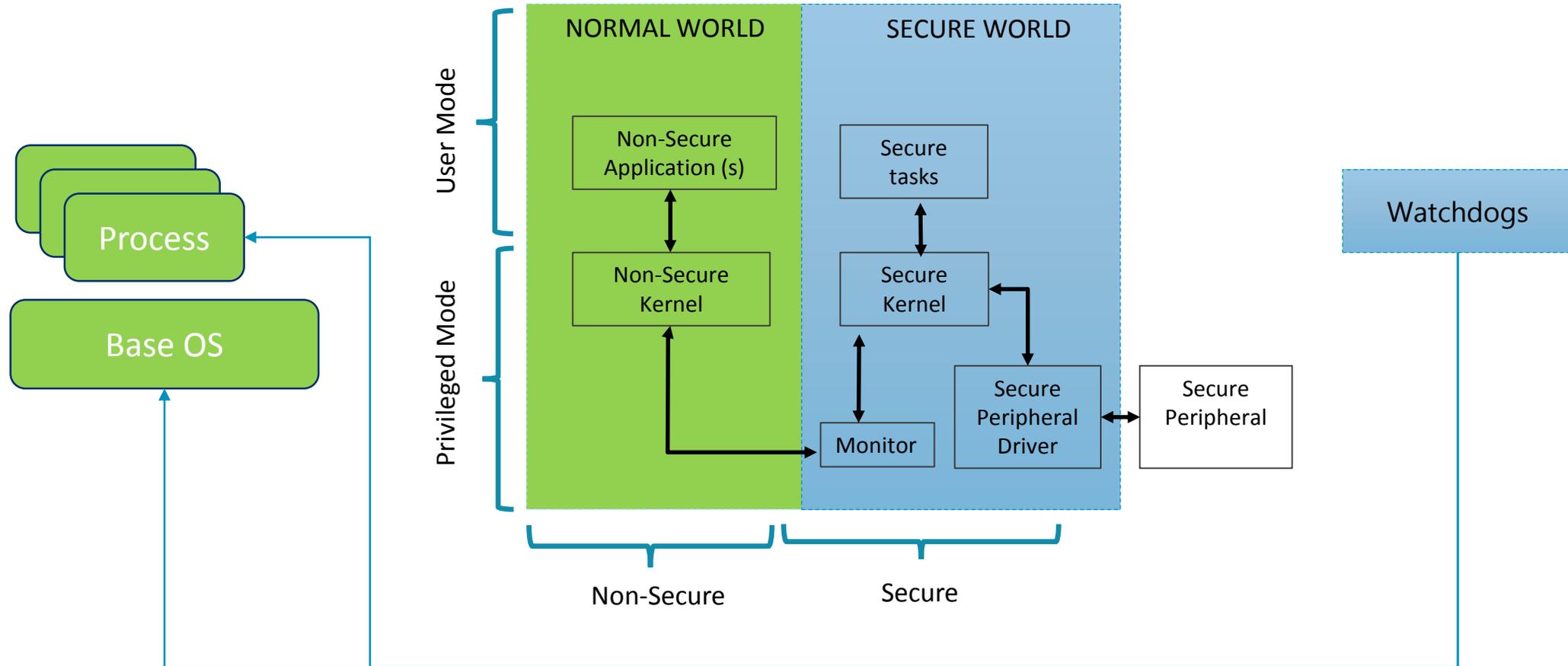
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Invisible enabler



Hardware Enforced Partitioning with ARM TrustZone



Source: <http://infocenter.arm.com/>

ROS2 on Cortex-A – easy to build

- Cross Compilation
 - Use x86 to build the ROS2 applications for arm architecture.
- Static linking
 - ROS2 application statically links with the dependent libraries.
 - Can run on any Linux distributions (same arch)
- ROS2 on light-weight Linux
 - Smaller code size, footprint – easier to integrate, lower power consumption
 - With the help of cross compilation and static linking

ROS2 on Cortex-M – code size and footprint

- Light-weight DDS implementation for Cortex-M
 - Enable and verify light-weight DDS implementation for Cortex-M
- Minimal ROS2 stack for Cortex-M
 - Scalable
 - Support RTOS

Hardware DDS Security

- Arm TrustZone secured DDS security plugin
 - Root key is stored in the secure world protected by the hardware. Can't forge the device(node) even if Kernel is cracked.
 - Secure OS is based on TEE (Trusted Execution Environment) defined by GlobalPlatform – minimum the attack surface

Thank You!

Danke!

Merci!

谢谢!

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Gracias!

Kiitos!

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