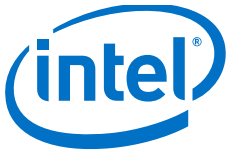
Technical Note

Intel® SGX Attestation Technical Details



Intel® SGX Technical Details for INTEL-SA-00289 and INTEL-SA-00334

One way to ensure that Intel® SGX platforms have been appropriately updated is through the process of attestation. The attestation process verifies that the platform is a valid Intel® SGX platform and the platform components meet a defined set of security requirements. In addition, the attestation process enables the application provider to verify the security version of the application.

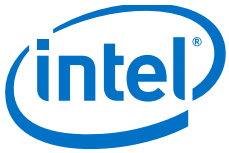
Intel will perform a TCB Recovery operation to enable parties utilizing Intel® SGX to determine whether the updates (microcode and SGX Platform Software) for these vulnerabilities have been applied on the platform from which the attestation request originated and whether the platform is affected by INTEL-SA-00334. API version 4 for the Intel® SGX Attestation Service (IAS) is required to receive information about whether the platform is affected by INTEL_SA_00334, Intel® SGX Attestation Service (IAS) API version 3 will not report whether the platform is affected by INTEL-SA-00334. For details on IAS API, please refer to the IAS API Specification.

- On **March 17, 2020**, API version 4 and the updates listed below will be enabled in the IAS Development Environment (DEV), and on **April 14, 2020** they will be enabled in the IAS Production Environment (LIV).

- A "GROUP_OUT_OF_DATE" response is returned for platforms without the BIOS-applied microcode update or the SGX Platform Software version required.

- An attestation response may report "SW_HARDENING_NEEDED" for attestation requests originating from Intel® SGX-enabled platforms that have applied the microcode and SGX platform software update and are properly configured but are affected by INTEL-SA-00334. In this case a Remote Attestation Verifier should evaluate the potential risk of an attack on these platforms and whether the attesting enclave employs adequate software hardening to mitigate the risk.

- An attestation response may report "CONFIGURATION_NEEDED" or "CONFIGURATION_AND_SW_HARDENING_NEEDED" for attestation requests originating from Intel® SGX-enabled platforms affected by INTEL-SA-00289 that have applied the microcode update, but where the BIOS did not disable the interface the privileged software can cause undervoltage to the processor. The "CONFIGURATION_NEEDED" response implies the platform is not affected by INTEL-SA-00334, while "CONFIGURATION_AND_SW_HARDENING_NEEDED" indicates the platform is affected by INTEL_SA_00334.



- An attestation response may still report “CONFIGURATION_NEEDED” or “CONFIGURATION_AND_SW_HARDENING_NEEDED” for attestation requests originating from Intel® SGX-enabled platforms that have applied the microcode and SGX platform software update, but where the platform’s configuration does not meet requirements identified in INTEL-SA-00161, INTEL-SA-00233 and INTEL-SA-00219. Again “CONFIGURATION_NEEDED” only response implies the platform is not affected by INTEL-SA-00334.

For Intel® SGX environments that are supporting the construction of their own attestation infrastructure with the Intel® SGX Platform Certificate Retrieval Service, updated verification collateral reflecting whether the platform is affected by INTEL-SA-00334 will be provided.

Further TCB Recovery Guidance for developers is available.

Revision	Date	Description
0.1	1/14/2020	Initial draft

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