**Product Security
Advisory – Mifare Classic**
2023-04-01

Yale smart lock products that support
MIFARE CLASSIC® cards

Yale-PA-2023-01

Overview

As the global leader in access solutions, safety and security are at the core of what we do as a company. Product security is of utmost importance for us, and we take any potential issues regarding our products very seriously.

With this in mind, we have become aware of a potential vulnerability affecting the RFID implementation within Yale smart lock products that support MIFARE CLASSIC® cards, which are sold throughout Asia Pacific.

According to a thorough risk analysis by internal experts, the risk to the overall security of our Yale Smart Lock customers is not high. We are not aware of any instances where the vulnerability has enabled unauthorised access to a property.

Our investigation followed our Product Security Incident Response (PSIR) Policy that outlines a process to identify affected products, assess any potential implications for our customers, determine what mitigation steps should be taken and to notify customers.

As part of this investigation, ASSA ABLOY would like to thank security researcher Lennon Chia for his expertise and assistance following his responsible disclosure of the potential vulnerability and subsequent collaboration with us in relation to this issue.

Advisory Status

Investigation Complete

While our product investigation is complete, we will continue to monitor any security risks and will provide updates should the situation change.

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Vulnerability Description

The implementation of the RFID within certain smart lock products sold throughout Asia Pacific use MIFARE CLASSIC® cards, which are vulnerable to cloning attacks.

IMPACT

According to a thorough risk analysis by internal experts, the risk to the overall security of our Yale smart lock customers is medium.

Successfully cloning a vulnerable credential allows a possible threat actor to gain unauthorised access to the same locks as the original credential holder. Close proximity, or direct physical access, is required to read an unprotected physical credential to obtain its data. Cloning the credential does not allow a possible threat actor to modify the data in such a way as to grant additional access from that stored on the original credential.

We are not aware of any instances where the vulnerability has enabled unauthorised access to a property.

SEVERITY

Severity of the vulnerability calculated according to CVSS v3.1
https://www.first.org/cvss/v3-1/cvss-v31-specification_r1.pdf

Score 4.6/10 (Medium) CVSS:3.1/AV:P/AC:L/PR:N/UI:N/S:U/C:N/I:H/A:N/E:F/RL:W

MITIGATION

Based on our risk assessment, we recommend the following mitigation actions in order to reduce the potential risk to our customers:

- Switch to using one of the other credentials available for your smart lock (e.g. PIN, Fingerprint, App as applicable), which are unaffected by this vulnerability.
- Always keep your card out of reach of people you don't know and trust (especially in public places), keep your card safe and secure.

You might also consider the following additional precautions:

- Never print identifiers such as names or property details on the physical credential itself and ensure users keep the physical credential safe.

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OUR COMMITMENT TO YOU

We are committed to creating safe and reliable products. As part of that commitment, we consistently monitor, assess and optimise our technology to better ensure the safety and security of our customers and products.

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Contact Information

For further information, please do not hesitate to contact our Security Team via the following emails:

- product.security@assaabloy.com

Thank you for your continued support and trust in Yale products.

The Yale Team

REVISION	DATE	DESCRIPTION
1.0	2023-04-01	Initial publication of the advisory