Cryptographic Bill of Materials
(CBOM)

OpsMx Delivery Shield provides Cryptographic Bill of Materials (CBoM) capabilities as part of its comprehensive application security solution. OpsMx's CBOM functions are powered by CBOMkit, an open-source toolset developed by IBM Research to facilitate the management of cryptographic assets based on the Cryptography Bill of Materials (CBOM) standard. OpsMx CBOM automates the detection, documentation, visualization, and compliance assessment of cryptographic components within software projects, thereby enhancing security and ensuring adherence to cryptographic policies.

Cryptographic Bill of Materials Core Capabilities:

CBOM Generation from:

Source Code Analysis: This component scans Git repositories to identify cryptographic invocations in source code, supporting languages such as Java and Python. It detects the use of cryptographic libraries like Java Cryptography Architecture (JCA) and pyca/cryptography, generating a CBOM that details the cryptographic assets utilized.

Container Image Analysis: Analyzes cryptographic assets within container images and directories. It supports various image sources, including local directories, Docker images, and OCI images, and identifies elements like certificates, keys, and secrets. The tool also verifies the executability of cryptographic assets, enriching the CBOM with this detailed information.

CBOM Compliance Check:

Delivery Shield Cryptographic Bill of Materials includes a compliance checking mechanism that evaluates CBOMs against predefined policies, such as quantum-safe standards. This feature assesses whether the cryptographic components adhere to specified security policies, offering detailed compliance status reports. The framework is designed for extensibility, allowing for the implementation of additional or custom compliance checks.

CBOM Database:

Delivery Shield Cryptographic Bill of Materials provides a repository to collect and store CBOMs, enabling efficient maintenance and retrieval across projects through a RESTful API. This centralized storage facilitates integration into existing development and security workflows, promoting consistent cryptographic asset management. This also makes CBOM compliance reports available on demand for audit and reporting.

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Additional Features:

Automation: By automating the scanning of repositories and generation of CBOMs, Delivery Shield Cryptographic Bill of Materials reduces the manual effort involved in documenting cryptographic usage, minimizing the risk of human error.

Observability: The CBOM Viewer provides clear visualization and statistics, helping teams quickly understand their cryptography landscape and make informed decisions regarding security and compliance.

Extensibility: The modular design of Delivery Shield Cryptographic Bill of Materials allows for future expansion to support additional languages, cryptographic libraries, and compliance policies, ensuring adaptability to evolving security requirements.

In summary, OpsMx Delivery Shield Cryptographic Bill of Materials offers a comprehensive solution for managing cryptographic assets within software projects. Its suite of tools streamlines the process of detecting, documenting, visualizing, and assessing compliance, thereby enhancing security and ensuring adherence to cryptographic policies.