SBOM Tool Classification Taxonomy

NTIA SBOM Formats & Tooling Working Group – March 30, 2021

Software is constructed based on other software components. A software bill of materials, or SBOM, is effectively a nested inventory of these components.[1] Suppliers and consumers of software need a set of well recognized formats for exchanging metadata to help manage their software supply chain, licensing, and vulnerability risks. The standard set of information and tooling related to the software, evolves with the software supply chain as a bill of materials.

Below is a categorization of the different types of tools that the NTIA Formats & Tooling[2] Working Groups identified as being critical to the range of use cases in SBOM generation and consumption. This should cover most relevant tools in the open source and commercial world. This taxonomy can be used by tool creators and vendors to easily categorize their work, and can help those who need SBOM tools understand what is available.

Category	Type	Description
Produce	Build	SBOM is automatically created as part of building a software artifact and contains information about the build
	Analyze	Analysis of source or binary files will generate the SBOM by inspection of the artifacts and any associated sources
	Edit	A tool to assist a person manually entering or editing SBOM data
Consume	View	Be able to understand the contents in human readable form (e.g., picture, figures, tables, text, etc.). Use to support decision making & business processes
	Diff	Be able to compare multiple SBOMs and clearly see the differences (e.g., comparing two versions of a piece of software)
	Import	Be able to discover, retrieve, and import an SBOM into your system for further processing and analysis
Transform	Translate	Change from one file type to another file type while preserving the same information
	Merge	Multiple sources of SBOM and other data can be combined together for analysis and audit purposes
	Tool support	Support use in other tools by APIs, object models, libraries, transport, or other reference sources

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[1] For more information on SBOM and its value in vulnerability management and software development and use, please see https://ntia.gov/SBOM.

[2] More information about the Working Group is available at https://ntia.gov/SoftwareTransparency.