

Belcarra SPDX SBOM Overview

Belcarra's OEM Driver Kits now include an SPDX SBOM to satisfy the NTIA Executive Order 14028.

Description

Belcarra licenses a *Windows 11 NDIS/USB Filter Driver* to OEM's, allowing them to distribute the driver to their customers to use with their hardware. The driver kit is branded with the OEM's name, customized with the Vendor and Product IDs that their device(s) use.

Both kits include an SPDX SBOM manifest, in JSON format, that describes the contents of the kit. The manifest is generated using the Microsoft sbom-tool, version 4.1.5, and conforms to the SPDX 2.2 specification. The manifest is signed with Belcarra's EV Code Signing Certificate signature, and includes a SHA256 hash of the manifest file for integrity verification.

Belcarra SBOM Verifier

Belcarra makes available a browser-based SBOM verifier that can be used to verify the manifest included in the kits.

To use the Belcarra SBOM verifier open this URL: [Verifier URL](#)

The verifier will:

- unpack the kit,
- extract the manifest,
- verify the manifest's integrity using the SHA256 hash,
- verify the manifest's signature using WebCrypto and PKI.js,
- if there is a driver catalog file it will verify the manifest's signature using the catalog file signature,
- display the results with showing the SPDX SBOM Manifest.

End-User Kit

The end-user kit, a zip file, contains the driver files, installation instructions, license. Two bat scripts are provided:

- `setup.bat`: uses the Microsoft pnputil utility to install the driver on the end-user's system.
- `verify-release.bat`: uses the Microsoft sbom-tool-x64.exe to verify the SPDX SBOM _manifest included in the kit

```
belcarradem0-02-05-01-001-Production-amd64_arm64-drivers.zip
├── _manifest/
│   ├── spdx_2.2/
│   │   ├── manifest.spdx.json
│   │   ├── manifest.spdx.json.cat
│   │   └── manifest.spdx.json.sha256
│   └── drivers/
│       ├── amd64/
│       │   ├── btddblan.pdb
│       │   └── btddblan.sys
│       ├── arm64/
│       │   ├── btddblan.pdb
│       │   └── btddblan.sys
│       ├── belcarradem0.cat
│       └── belcarradem0.inf
├── License.txt
├── README-INSTALL.txt
├── setup.bat
└── verify-release.bat
```

- [_manifest/spdx_2.2/manifest.spdx.json](#) is the SPDX SBOM for the End-User kit.
- [report-kit.json](#) is the sbom-tool verification report for the End-User kit.

Field	Value
SBOM Author	Belcarra Technologies (2005) Corp.
Component Name	BelcarraDemoUSBLAN
Component Version	02-05-01-001
Dependency Relationship	BelcarraDemoUSBLAN 02-05-01-001 DESCRIBES BelcarraDemoUSBLAN 02-05-01-001
Tool Name	Microsoft.SBOMTool-4.1.5
Timestamp	2026-02-13T07:43:32Z

Dependency Relationship

The End-User kit manifest describes the relationship between the End-User kit and its components, indicating that the End-User kit describes the driver files (arm64 and amd64) as components.

OEM Kit

The oem kit, a password protected zipfile, contains a README, the cfg files used to configure the release package, the End-User kit, zip file, and a single bat script:

- `verify-release.bat`: uses the Microsoft sbom-tool-x64.exe to verify the SPDX SBOM _manifest included in the End-User kit, zip file.

```
belcarradem0-02-05-01-001-Production-amd64_arm64.zip
├── _manifest/
│   ├── spdx_2.2/
│   │   ├── manifest.spdx.json
│   │   ├── manifest.spdx.json.cat
│   │   └── manifest.spdx.json.sha256
├── belcarradem0-02-05-01-001-Production-amd64_arm64-drivers.zip
├── belcarradem0.cfg
├── belcarradem0.xlsx
├── License.txt
├── README-belcarradem0-02-05-01-001-Production-amd64_arm64-drivers.txt
└── verify-release.bat
```

- [_manifest/spdx_2.2/manifest.spdx.json](#) is the SPDX SBOM for the OEM kit.
- [report-oem-kit.json](#) is the sbom-tool verification report for the OEM kit.

Dependency Relationship

The OEM kit manifest describes the relationship between the OEM kit and the End-User kit, indicating that the OEM kit contains the End-User kit (zip file) as a component.

SBOM Minimum Elements (CISA 2025 Draft)

Field	Value
SBOM Author	Belcarra Technologies (2005) Corp.
Component Name	BelcarraDemoUSBLAN
Component Version	02-05-01-001
Dependency Relationship	belcarradem0 02-05-01-001 CONTAINS ./belcarradem0-02-05-01-001-Production-amd64_arm64-drivers.zip belcarradem0-02-05-01-001-Production-amd64_arm64-drivers.zip
Tool Name	Microsoft.SBOMTool-4.1.5
Timestamp	2026-02-13T07:43:37Z

Screenshots

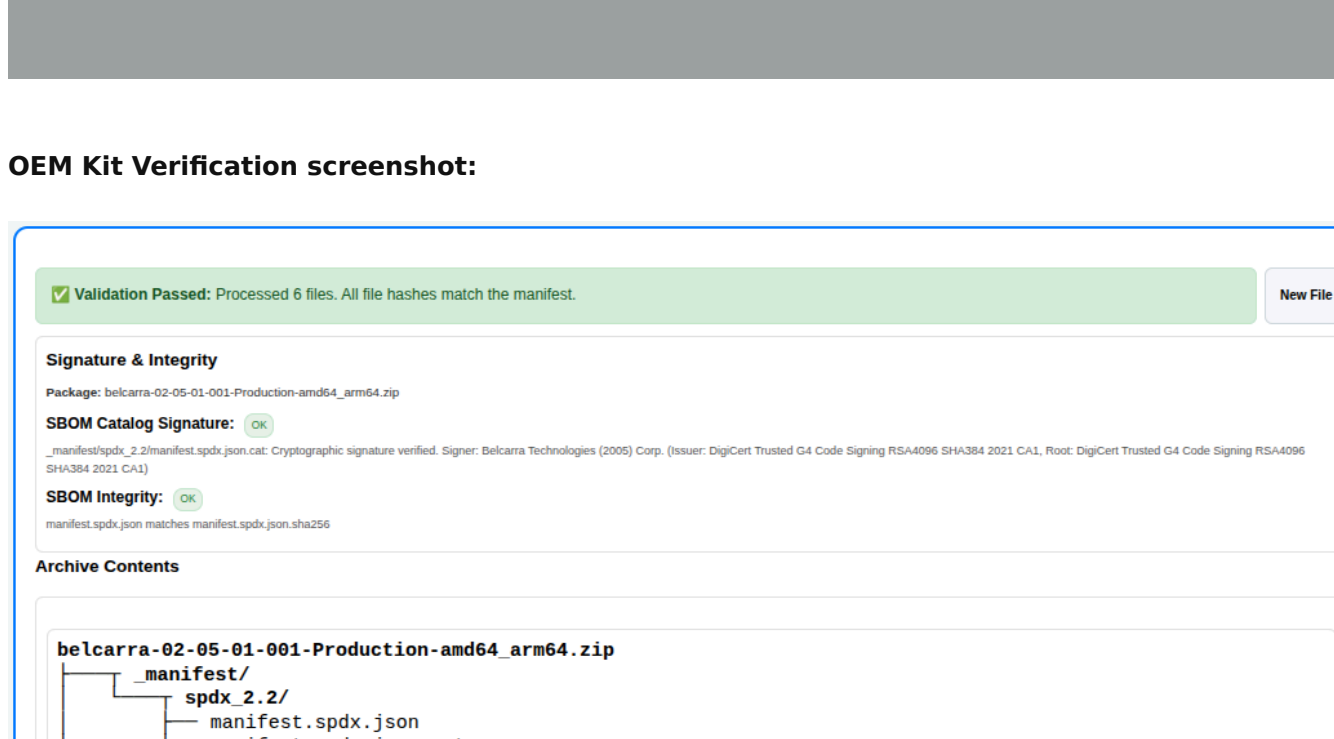
Drag and drop the OEM kit zip file onto the webpage. You may be prompted for a password.

This will verify the manifest included in the OEM kit.

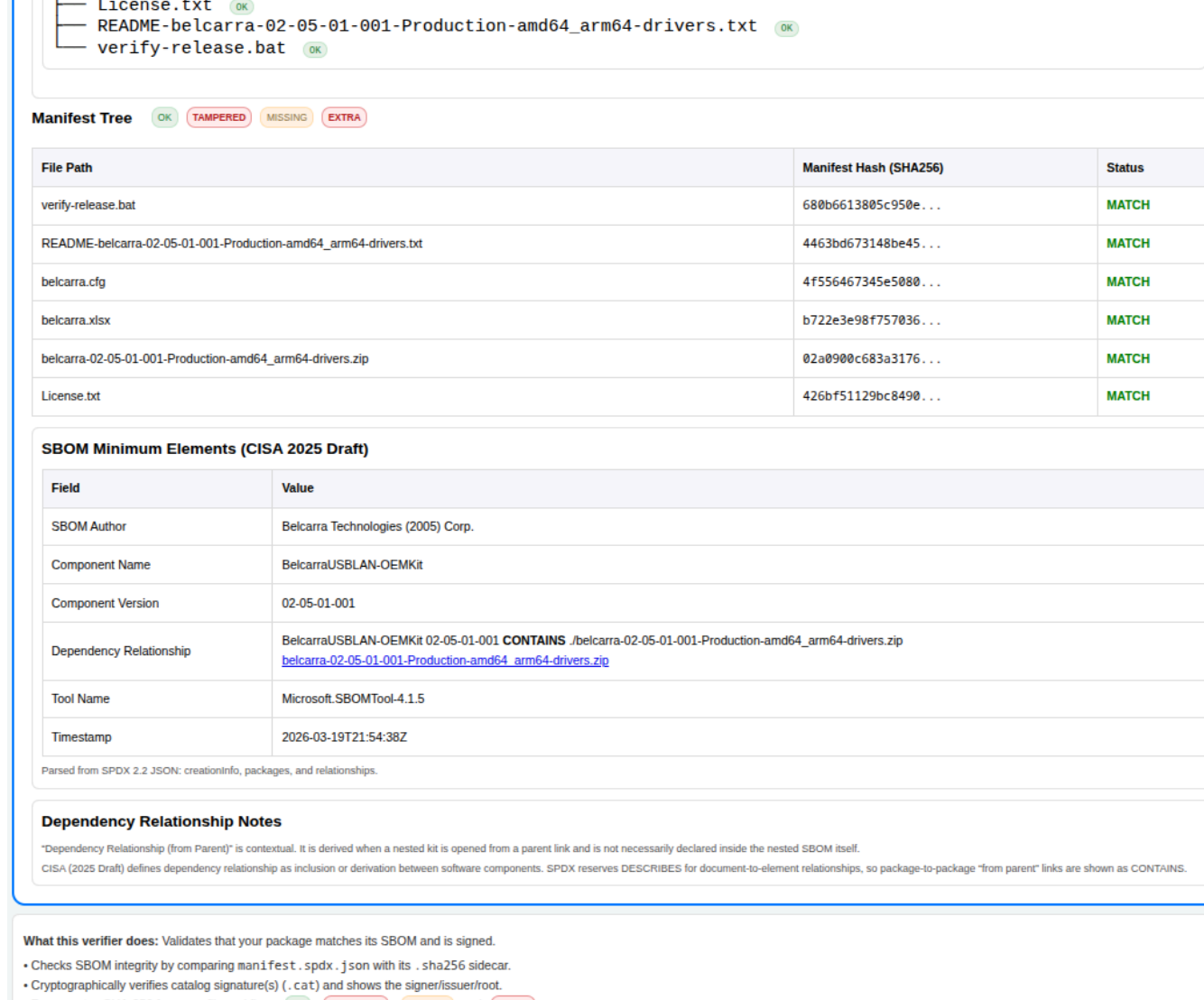
Dependency Relationship Verification

The OEM kit contains the end-user kit as a component. The verifier will show the OEM kit as the parent component, and the end-user kit as a child component. You can click on the end user kit name to have the verifier open the end-user kit zip file, and verify the manifest included in the end-user kit.

Belcarra Verifier Opening and Password:



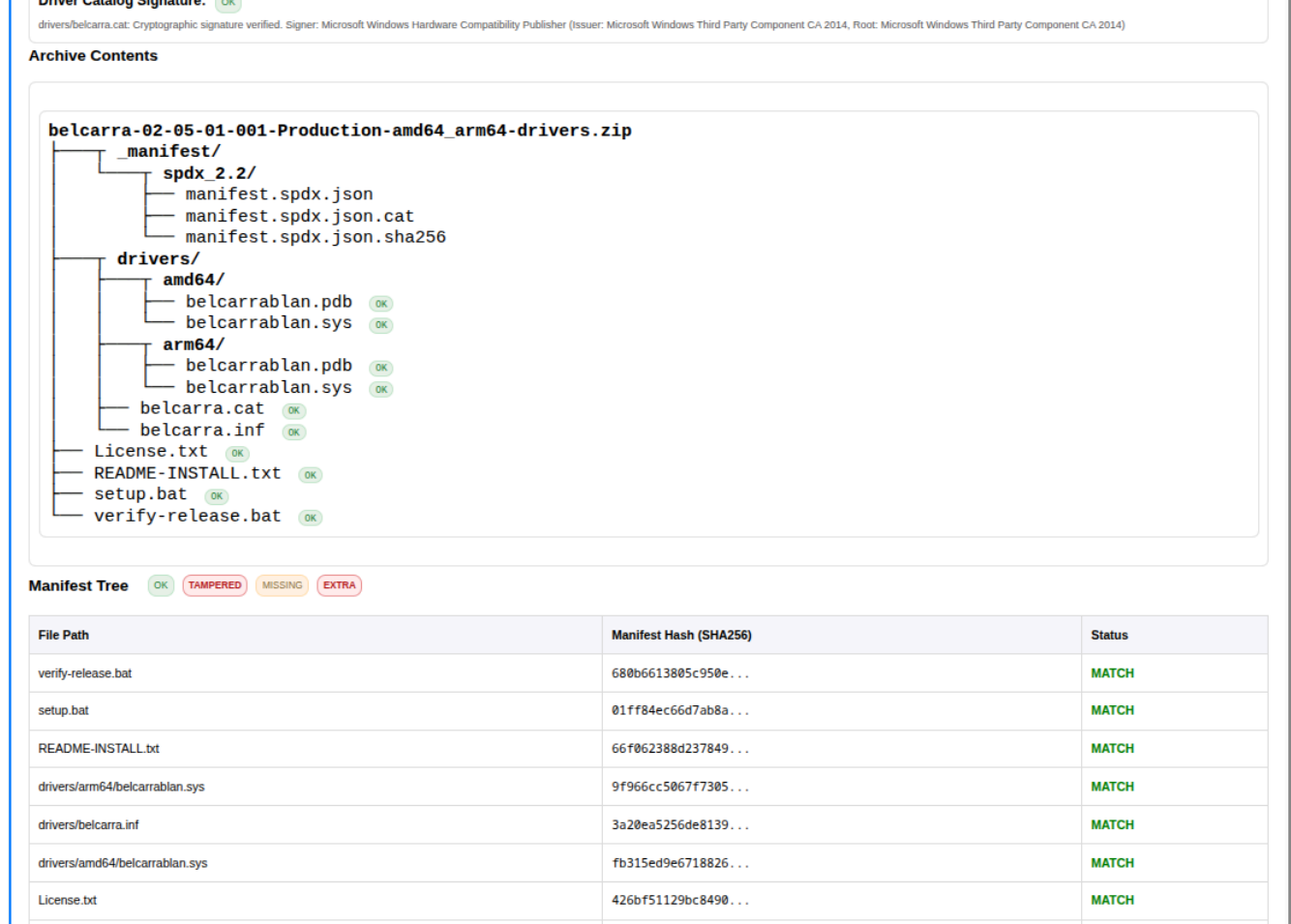
OEM Kit Verification screenshot:



What this verifier does: Validates that your package matches its SBOM and is signed.
 • Checks SBOM integrity by comparing manifest.spdx.json with its .sha256 sidecar.
 • Cryptographically verifies catalog signatures(s) (.cat) and shows the signature/secret.
 • Recomputes SHA-256 for every file and flags **OK**, **TAMPERED**, **MISSING**, and **EXTRA**.
 What it does not do: It does not consult the Windows trust store or perform revocation checks. For official Windows trust, use `signtool verify /k /v` on the catalog.
 All processing happens locally in your browser. No files or passwords are sent anywhere.
 Project: [git@github.com:Belcarra/sbom_artifact_verifier.js](#) | Version: 0.01 beta

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End-User Kit Verification screenshot:



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Reports

- [report-oem-kit.json](#) is the sbom-tool verification report for the OEM kit.
- [report-kit.json](#) is the sbom-tool verification report for the End-User kit.