**Download sbom-tool**

Download sbom-tool CLI tool using any method shown in the readme file for the github repository, <https://github.com/microsoft/sbom-tool>. The method below is using Windows(Powershell).

Open powershell, change directory to where you want sbom-tool to be saved to, run the command:

Invoke-WebRequest -Uri "https://github.com/microsoft/sbom-tool/releases/latest/download/sbom-tool-win-x64.exe" -OutFile "sbom-tool.exe"

Note: it might be preferable if the tool location is within system or user paths. To see a document on how to do this see, [How to Add to Windows PATH Environment Variable (helpdeskgeek.com)](https://helpdeskgeek.com/windows-10/add-windows-path-environment-variable/#:~:text=Go%20ahead%20and%20click%20on%20the%20Environment%20Variables,you%20have%20to%20decide%20which%20one%20to%20edit.)

**How it works:**

Microsoft's sbom-tool is an SBOM generator tool that generates SPDX 2.2 SBOMs. It carries multi-language support and is capable of adding support for other languages with minimal difficulty.

The sbom-tool calls the [Component-Detection](#component-detection-tool) tool on a directory. The sbom-tool uses the information gathered to generate the spdx manifest file. The tool takes in, as required parameters, [`generate`, -`b`, -`bc`, -`pn`, -`pv`, -`ps`, -`nsb`] with notable optional parameters of [-`m`, -`D`]. For more information on these parameters enter: sbom-tool -h.

**Basic use:**

We will try this tool on a C# project. For this project .NET 7 is needed. See: [Install .NET on Windows, Linux, and macOS | Microsoft Learn](https://learn.microsoft.com/en-us/dotnet/core/install/)

Clone the repository  
git clone <https://github.com/Ryujinx/Ryujinx>  
Build the project  
cd Ryujinx  
dotnet build -c Release -o build  
cd ..  
Generate sbom using sbom-tool, replace the values in <>  
sbom-tool Generate -b Ryujinx -bc Ryujinx -m . -pn <package name> -ps <package supplier> -pv <package version> -nsb <https://NamespaceURIBase.com>

In the current directory there should be a new directory labeled \_manifests, the generated sbom can be found within this directory.

**Build sbom-tool from source**

Requirements: .NET 6.0

Download the sbom-tool repository from <https://github.com/microsoft/sbom-tool>

In the root of the project open *Microsoft.Sbom.sln* to open the project in Visual Studio.

Build the project ctrl-shift-b

In the solution explorer, open *properties* for *Microsoft.Sbom.Tool*. Go to debug. Click on *Open debug launch profiles UI.* Give parameters for the tool in command line arguments.

Run or debug the tool with green play buttons at top.

**Build component-detection from source**

Requirements: .NET 6.0

Download the component-detection repository from <https://github.com/microsoft/component-detection>

In the root of the project open *ComponentDetection.sln* to open the project in Visual Studio.

Build the project - ctrl-shift-b

In the solution explorer, right click *Microsoft.ComponentDetection* and cliuck “Set as Startup Project”

In the solution explorer, open *properties* for *Microsoft.ComponentDetection*. Go to debug. Click on “Open debug launch profiles UI”*.* Give parameters for the tool in command line arguments.

Run or debug the tool with green play buttons at top.

**Component-detection parameters**

Required: [scan, SourceDirectory:<root of project directory>]

Example: component-detection scan SourceDirectory .

**How it works**

The component-detection tool iterates through each file within the source directory and any sub directories. For each file it will check if the file contents match with a pattern for a detector, if it does it passes the file contents to the detector to find components.

**Detector**

The detectors are used to find all components within files, currently making use of package managers. To add support for a language or package manager a new detector, or changes to an existing detector, is required. To add a detector follow the instructions given by Microsoft in https://github.com/microsoft/component-detection/blob/main/docs/creating-a-new-detector.md.