



# NWinfo

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**NWinfo** is a Win32 program for collecting system and hardware information.

## Features

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- Retrieves detailed information about SMBIOS, CPUID, S.M.A.R.T., PCI, EDID, and more.
- Supports exporting in JSON, YAML, and HTML formats.
- Gathers information directly without relying on WMI.

## Download

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- Source code: <https://github.com/a1ive/nwinfo>
- Latest release: [GitHub Releases](#)
- Nightly build: [GitHub Actions](#) | [Direct link](#)
- Libraries: [Direct link](#)

# GUI (gnwinfo)

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## OS Support

Windows 7 and later

## Language Support

- English
- Chinese (Simplified)
- Chinese (Traditional)
- French
- Italian
- Japanese
- Korean
- Polish
- Portuguese (Brazil)
- Slovenian
- Swedish
- Turkish

## Command-Line Options

- /debug  
Print debug information to stdout.

# CLI (nwinfo)

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## OS Support

Windows XP and later

## Usage

```
.\nwinfo.exe OPTIONS
```

## Example Commands

```
.\nwinfo.exe --format=json --output=report.json --cp=UTF8 --sys --disk
```

Exports system and disk information to `report.json` in JSON format.

```
.\nwinfo.exe --pci=03
```

Prints information about all PCI devices in the class code `03` (Display Controllers).

```
.\nwinfo.exe --format=html --output=report.html --net=active,phys,ipv4
```

Exports active physical network interfaces with IPv4 addresses to `report.html` in HTML format.

## General Options

- `--format= FORMAT`  
Specify output format.  
`FORMAT` can be `YAML` (default), `JSON`, `LUA`, `TREE`, or `HTML`.
- `--output= FILE`  
Write to `FILE` instead of printing to the screen.
- `--cp= CODEPAGE`  
Set the code page of output text.  
`CODEPAGE` can be `ANSI` or `UTF8`.
- `--human`  
Display numbers in a human-readable format.
- `--temp-unit= UNIT`  
Specify the temperature unit.  
`UNIT` can be `C` (Celsius, default), `F` (Fahrenheit), or `K` (Kelvin).
- `--bin= FORMAT`  
Specify binary format.  
`FORMAT` can be `NONE` (default), `BASE64`, or `HEX`.
- `--debug`  
Print debug information to stdout.
- `--hide-sensitive`  
Hide sensitive data (MAC & S/N).
- `--driver= NAME`  
Specify the driver name.  
Available drivers are `CPUZ162`, `NwHwIo`, and `PawnIO`.  
Use `NONE` to disable driver usage.  
By default, the program searches for and loads drivers in the order shown above. See [Supported Drivers](#) for details.

## Hardware Details

- `--cpu[= FILE ]`  
Print CUID info.  
A driver is required to access sensors, such as temperature sensors.  
Intel, AMD, and VIA/Zhaoxin CPUs are supported.  
`FILE` specifies the filename of the CUID dump.
- `--net[= FLAG, ... ]`  
Print network info.
  - `GUID`  
Specify the GUID of the network interface, e.g., `{B16B00B5-CAFE-BEEF-DEAD-001453AD0529}`.
  - `FLAGS`
    - `ACTIVE` Exclude inactive network interfaces.
    - `PHYS` Exclude virtual network interfaces.
    - `ETH` Include Ethernet network interfaces.

`WLAN` Include IEEE 802.11 wireless addresses.

`IPV4` Show IPv4 addresses only.

`IPV6` Show IPv6 addresses only.

- `--board`

Print mainboard info.

- `--acpi[= SGN ]`

Print ACPI info.

A driver is required to access some ACPI tables.

`SGN` specifies the ACPI table signature, e.g., `FACP` (Fixed ACPI Description Table).

- `--smbios[= TYPE, ... ]`

Print SMBIOS info.

`TYPE` specifies the SMBIOS structure types, e.g., `2` or `2,4,17`.

- `--disk[= FLAG, .. ]`

Print disk info.

- `PATH`

Specify the disk path, e.g., `\\.\PhysicalDrive0` or `\\.\CdRom0`.

- `FLAGS`

`NO-SMART` Do not print disk S.M.A.R.T. info.

`NO-VOL` Do not print volume info.

`PHYS` Exclude virtual drives.

`CD` Include CD-ROM devices.

`HD` Include hard drives.

`NVME` Include NVMe devices.

`SATA` Include SATA devices.

`SCSI` Include SCSI devices.

`SAS` Include SAS devices.

`USB` Include USB devices.

- `--smart= FLAG, ...`

Specify S.M.A.R.T. features.

Features enabled by default:

`WMI`, `ADATA`, `HIDENOSMART`, `ATA`, `SAT`, `SUNPLUS`, `IODATA`, `LOGITEC`,  
`PROLIFIC`, `USBMICRON`, `CYPRESS`, `JMICRON`, `ASMEDIA`, `REALTEK`,  
`MEGARAID`, `VROC`, `HIDERAID`, and `CSMIAUTO`.

Use `DEFAULT` to specify the above features.

Other features are `ADVANCED`, `HD204UI`, `MEMORY`, `RTK9220DP`,  
`ASM1352R`, `AMDRC2`, `NOCSMI`, and `CSMIRAID`.

- `--display[= FILE ]`

Print EDID info.

`FILE` specifies the filename of the EDID dump.

- `--pci[= CLASS, .. ]`

Print PCI info.

`CLASS` specifies PCI device class codes, e.g., `0c05` or `03,0c05`.

- `--spd[= FILE ]`

Print DIMM SPD info.

A driver is required to access SPD data.

⚠ This option may damage the hardware.

`FILE` specifies the filename of the SPD dump.

- `--usb`  
Print USB info.
- `--battery`  
Print battery info.
- `--uefi[= FLAG, . . ]`  
Print UEFI info.
  - `FLAGS`  
`MENU` Print UEFI boot menus.  
`VARS` List all UEFI variables.
- `--audio`  
Print audio devices.
- `--gpu`  
Print GPU utilization and sensors (e.g. temperature).  
GPU drivers are required to access this information.  
NVIDIA (NVAPI), AMD (ADL2), and Intel (IGCL) are supported.
- `--device[= TYPE ]`  
Print device tree.  
`TYPE` specifies the device type, e.g., `ACPI` , `SWD` , `PCI` , or `USB` .
- `--sensors[= SRC, . . ]`  
Print sensor readings.  
`SRC` specifies the sensor provider.  
Available providers are:  
`LHM` , `HWINFO` , `GPU-Z` ,  
`CPU` , `DIMM` , `GPU` , `SMART` , `DISK` , `NET` , `IMC` , `INTEL` , and `ZEN` .

## System Information

- `--sys`  
Print system info.
- `--shares`  
Print mapped network drives and shared folders.
- `--public-ip`  
Print public IP address.
- `--product-policy[= NAME ]`  
Print ProductPolicy.  
`NAME` specifies the product policy name.
- `--font`  
Print installed fonts.

## PowerShell Script for System Diagnostics

`hw_report.ps1` is a PowerShell script that generates and displays a detailed hardware and system report using `nwinfo` .

You might need to temporarily allow script execution by running the following command:

```
Set-ExecutionPolicy -Scope Process -ExecutionPolicy Bypass
```

# Supported Hardware

## CPU

| Vendor        | CPUID | Temperature | Voltage | Power | Clock |
|---------------|-------|-------------|---------|-------|-------|
| Intel         | ✓     | ✓           | ✓       | ✓     | ✓     |
| AMD           | ✓     | ✓           | ✓       | ✓     | ✓     |
| VIA / Zhaoxin | ✓     | ✓           | ✗       | ✗     | ✗     |

## GPU

| Vendor  | API   | GPU Usage | VRAM | Temperature | Power | Frequency | Voltage | Fan Speed |
|---------|-------|-----------|------|-------------|-------|-----------|---------|-----------|
| NVIDIA  | NVAPI | ✓         | ✓    | ✓           | ✓     | ✓         | ✓       | ✓         |
| AMD     | ADL2  | ✓         | ✓    | ✓           | ✓     | ✓         | ✓       | ✓         |
| Intel   | IGCL  | ✓         | ✓    | ✓           | ✓     | ✓         | ✓       | ✓         |
| Generic | D3D   | ✓         | ✓    | ✓           | ✓     | ✗         | ✗       | ⚠         |

Notes:

- `VRAM` refers to the dedicated video memory only.
- `Frequency` refers to the GPU core frequency.
- `Power` refers to the board power draw.

## Memory Module SPD / IMC

- SMBus: Intel PCH, PIIX4 / AMD SB / Hygon
- Memory Module: SDR, DDR, DDR2, DDR3, DDR4, DDR5
- Thermal Sensor: DDR4, DDR5
- IMC: Intel Core 2nd Gen and later / AMD Zen and later

## HDD / SSD S.M.A.R.T.

NWinfo uses `libcdi` to access S.M.A.R.T. data.

`libcdi` is a dynamic library based on [CrystalDiskInfo](#).

Note: NVMe requires Windows 10 or later.



## Supported Drivers

The program searches for and loads drivers in the following order: **CPUZ162** -> **NwHwlo** -> **PawnIO**.

| Driver  | Filename       | Bundled | CPU Sensor | SPD | IMC |
|---------|----------------|---------|------------|-----|-----|
| PawnIO  | PawnIO.sys     | ✓       | ✓          | ✓   | ✓   |
| CPUZ162 | cpuz162x64.sys | ✗       | ✓          | ✓   | ✓   |
| NwHwlo  | NwHwlox64.sys  | ✗       | ✓          | ✓   | ✓   |

**Note:** The program can still run normally without a driver, but some hardware information may not be accessible.

## PawnIO Driver Installation

Install the PawnIO driver silently using the following command:

```
.\PawnIOSetup.exe -install -silent
```

Uninstall the PawnIO driver silently using the following command:

```
.\PawnIOSetup.exe -uninstall -silent
```

Delete the PawnIO driver from the Windows DriverStore:

```
REM Find the <OEMXXX.inf> name of the PawnIO driver
pnputil /enum-drivers
REM Delete the driver (replace oemXXX.inf with the name identified in the previous step)
pnputil /delete-driver <oemXXX.inf> /uninstall
```

## File List

This section describes all files included in the final release package.

| File Name       | Category      | Description                                |
|-----------------|---------------|--|
| nwinfo.exe      | Executable    | Main executable (x64)                      |
| nwinfox86.exe   | Executable    | Main executable (x86)                      |
| gnwinfo.exe     | Executable    | GUI executable (x64)                       |
| gnwinfox86.exe  | Executable    | GUI executable (x86)                       |
| libcdi.dll      | Library       | S.M.A.R.T. data access library (x64)       |
| libcdix86.dll   | Library       | S.M.A.R.T. data access library (x86)       |
| hw_report.ps1   | Script        | Example PowerShell script                  |
| gnwinfo.ini     | Configuration | Configuration file for the GUI             |
| pci.ids         | Database      | PCI database                               |
| usb.ids         | Database      | USB database                               |
| pnpiids         | Database      | PnP (monitor) vendor database              |
| jep106.ids      | Database      | JEDEC memory module vendor database        |
| PawnIOSetup.exe | Driver        | PawnIO driver installer (x64)              |
| IntelMCHBAR.bin | PawnIO Module | Intel MCHBAR module for the PawnIO driver  |
| IntelMSR.bin    | PawnIO Module | Intel MSR module for the PawnIO driver     |
| AMDFamily0F.bin | PawnIO Module | AMD K8 MSR module for the PawnIO driver    |
| AMDFamily10.bin | PawnIO Module | AMD K10 MSR module for the PawnIO driver   |
| AMDFamily17.bin | PawnIO Module | AMD Zen MSR module for the PawnIO driver   |
| RyzenSMU.bin    | PawnIO Module | AMD Ryzen SMU module for the PawnIO driver |
| SmbusPIIX4.bin  | PawnIO Module | PIIX4 SMBus module for the PawnIO driver   |
| SmbusI801.bin   | PawnIO Module | I801 SMBus module for the PawnIO driver    |
| LpcIO.bin       | PawnIO Module | LPC I/O module for the PawnIO driver       |

# Licenses & Credits

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- [libcpuid](#)
- [CrystalDiskInfo](#)
- [Nuklear](#)
- [stb](#)
- [optparse](#)
- [hwdata](#)
- [PawnIO](#)