

Proton

Up And Down The Stream

by Arek “ivyl” Hiler

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The Story So Far

The Ancient Times

- **Windows 3.0** being popular.
- **Windows Application Binary Interface** and **Public Windows Interface** by Sun Microsystems working with IBM, HP and Novell.
- Proposed by **ECMA** as **ISO standard**.
- It has not happened.

The Summer of 1993

- **Wine** has emerged from discussions on comp.os.linux.
- **Alexandre Julliard** is the maintainer since 1994.
- Originally MIT but later **LGPL 2.1**.

Gaming On Wine

- **Hit and miss.** Huge variability from release to release.
- **AppDB** - messy but helpful for figuring out which version to use.
- **Triple A rarely did work.**
- **A bunch of downstreams and ad hoc community patches.**
- **No proper QA** focused on games.
- I was playing **Guild Wars on Wine in early 2010s.**

Winex / Cedega in 2000s

- **Proprietary fork** of Wine.
- Contributed to re-licensing **MIT** → **LGPL 2.1**.
- Within a few years it **fell behind upstream** and is no more.

Enter Proton

- A **Valve** project.
- August 2018 - **Proton 3.7** releases.
- Included **DXVK** for DirectX 10 and 11.
- **OpenVR** and **Steamworks API** bridges.
- Focus on game compatibility.
- **Dedicated QA.**
- Regularly rebased. Developed by **upstream Wine developers.**

27 Supported Games on Launch

Beat Saber, Bejeweled 2 Deluxe, Doki Doki Literature Club!, DOOM, DOOM II: Hell on Earth, DOOM VFR, Fallout Shelter, FATE, FINAL FANTASY VI, Geometry Dash, Google Earth VR, Into The Breach, Magic: The Gathering - Duels of the Planeswalkers 2012, Magic: The Gathering - Duels of the Planeswalkers 2013, Mount & Blade, Mount & Blade: With Fire & Sword, **NieR: Automata**, PAYDAY: The Heist, QUAKE, S.T.A.L.K.E.R.: Shadow of Chernobyl, Star Wars: Battlefront 2, Tekken 7, The Last Remnant, Tropico 4, Ultimate Doom, Warhammer® 40,000: Dawn of War® - Dark Crusade, Warhammer® 40,000: Dawn of War® - Soulstorm.

Protoning Intensifies

- **vk3d** and later **vk3d-proton** (fork)
- **D9VK** merged into DXVK, used for D3D9.
- **Media Foundation** implementation on top of gstreamer.
- **DXVK-NVAPI** with contributions from Nvidia and support in their Linux driver.

Supported Games Nowadays

- **4063** Deck Verified
- **8056** Deck Playable

ProtonDB:

- **77% of Top 1000** are Gold/Platinum

Proton Flavors

- **Proton Stable** – e.g. 8.0-4 – extensive QA testing, public RCs.
- **Proton Experimental** – public testing of experimental features. Games that run only on experimental are tested for regressions.
- **Proton Hotfix** – targeted fixes for new, important games. Short-lived, retired after fix matures and lands in Experimental.
- **Proton Bleeding Edge** – automated and untested. Latest DXVK, DXVK-NVAPI, vkd3d-proton and Proton's wine changes.

Hardware





Other Downstreams

PLEASE DO NOT REPORT BUGS ENCOUNTERED WITH THIS AT WINEHQ OR VALVESOFTWARE, REPORT HERE INSTEAD ! [↗](#)

(2) If you have an issue that happens with my proton-GE build, provided FROM this repository, that does -not- happen on Valve's proton, please DO NOT open a bug report on Valve's bug tracker. Instead, contact me on Discord about the issue: [↗](#)

Wine Staging

- Collection of **patches that haven't made it upstream yet.**
- **Maintained by Wine developers**, including people working on Proton.
- 78 patches used by Proton.

wine-tkg

Wine to rule them all ! [↗](#)

You must be logged in to GitHub in order to download Wine or Proton nightly builds.

Wine nightly builds [↗](#)

- wine-staging patchset applied

Wine	Arch Linux	Fedora	Ubuntu	LoL
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Valve Wine	Exp Bleeding Edge Arch Linux	Exp Bleeding Edge Other distro
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The Exp Bleeding Edge Other distro and LoL versions are built on Ubuntu latest, which should work fine on most distros not using years old packages

! The LoL version should only be used for League of Legends !

Proton nightly builds [↗](#)

- wine-staging patchset applied
- built on Arch current, making glibc 2.36 a requirement

Proton	Valve Exp Bleeding Edge	Wine Master
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(drop the extracted folder in `/$HOME/.steam/root/compatibilitytools.d/` or, for Ubuntu/Debian based, the `/$HOME/.steam/compatibilitytools.d/` dir)

proton-ge-custom

Overview [↗](#)

This is my build of Proton with the most recent bleeding-edge Proton Experimental WINE.

Things it contains that Valve's Proton does not:

- Additional media foundation patches for better video playback support
- AMD FSR patches added directly to fullscreen hack that can be toggled with `WINE_FULLSCREEN_FSR=1`
- FSR Fake resolution patch details [here](#)
- Nvidia CUDA support for PhysX and NVAPI
- Raw input mouse support
- 'protonfixes' system -- this is an automated system that applies per-game fixes (such as winetricks, envvars, EAC workarounds, overrides, etc).
- Various upstream WINE patches backported
- Various wine-staging patches applied as they become needed

Launchers

Library

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Sources

🍷 Lutris

🎮 GOG 

🎮 Humble Bundle

🎮 Epic Games Store

🎮 Steam

🎮 Steam for Windows

🐬 Dolphin

Runners

🎮 Adventure Game Studio

🎮 Atari800

🎮 Colem

🐬 Dolphin

🎮 DOSBox

🎮 FS-UAE

🎮 Hatari

🎮 Libretro

🐬 Linux

🎮 MAME



LEGO Batman: The Videogame



Oddworld: Munch's Oddysee



Oddworld: Stranger's Wrath HD



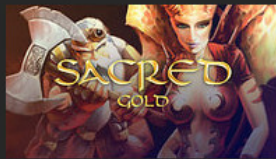
Agony UNRATED



Far Cry® 2: Fortune's Edition



SiN Gold



Sacred Gold



Silent Hill 4: The Room



Legacy of Kain: Soul Reaver 2



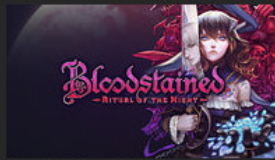
Jazz Jackrabbit 2: The Christmas Chronicles



Bad Mojo Redux



Beyond Good & Evil™



Bloodstained: Ritual of the Night



Horizon Zero Dawn™ Complete Edition



STAR WARS™ Starfighter™



Blood Bowl: Chaos Edition



Kingpin: Life of Crime



Shadow Man



Messiah



Tomb Raider Chronicles



Tomb Raider: The Angel of Darkness



Tomb Raider: Legend



DethKarz



Deadly Premonition: Director's Cut



Legacy of Kain: Soul Reaver



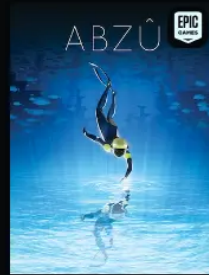
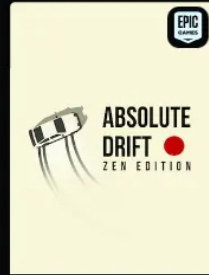
Search for Games

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All Games 438

ADD GAME



Heroic Version: 2.7.0



Home

BOTTLES

- Counter-Strike 2
- Cyberpunk 2077
- Diablo II Resurrected
- Diablo IV
- EA App
- Notepad++
- Quicken 2020
- Steam
- Ubisoft Connect Installer (UPlay)

+ Install

Home



Battle.net

Diablo II Resurrected



Counter-Strike 2

Counter-Strike 2



Cyberpunk 2077

Cyberpunk 2077



Diablo II Resurrected

Diablo II Resurrected



Diablo IV

Diablo IV



EA

EA App



Notepad++

Notepad++



Quicken

Quicken 2020



Steam

Steam



Ubisoft Connect

Ubisoft Con...aller (UPlay)

Unexpected Places

Intel Graphics

- Intel Xe has **no native D3D9** support.
- **D3D9On12** used by the driver.
- Updated driver released in December 2022 that **includes DXVK** which provides a performance uplift in a lot of games.

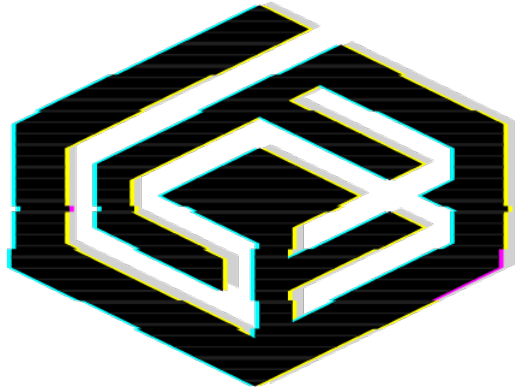
Apple Game Porting Toolkit

```
class GamePortingToolkit < Formula
  version "1.0.4"
  desc "Apple Game Porting Toolkit"
  homepage "https://developer.apple.com/"
  url
  "https://media.codeweavers.com/pub/crossover/source/crossover-
sources-22.1.1.tar.gz", using: TarballDownloadStrategy
  ...
```

The license for **D3DMetal** compatibility layer shouts out **DXVK** as an inspiration.

VirtualBox

- **Wined3d** for guest DirectX support.
- Direct3D 11 acceleration on non-Windows hosts via **DXVK-Native**.



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