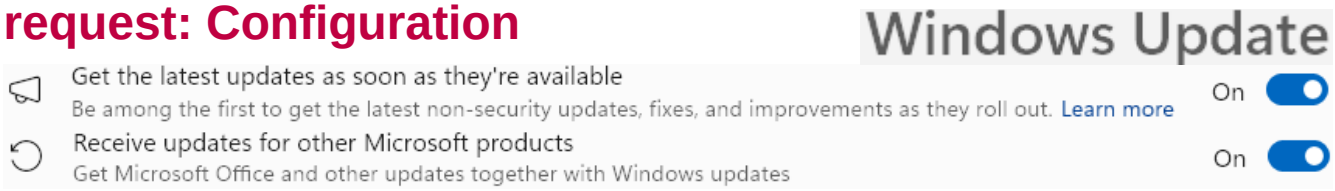
Congrats on installing extendedInterface !

Performance

Disable efficiency cores. The effect has been as much as a ~3x difference in the latency from beginning a large bash script to completion.

Disabling HyperThreading can result in a significant performance improvement as well, especially for such very heavy single-threading tasks as flight sim.

request: Configuration



As a particular example, ‘other’ updates may include the MSW component WSL.

If you are a developer of hardware/software design scripts…

Pin this to Start . You mostly just want: **C:_bash.bat.lnk**

Includes sshf/vncf/_vnchost , git , sane defaults , and the extra powerful scripting capabilities of ubiquitous_bash . YubiKey/SSH , symlinks , end-of-line , are properly supported.

Dependencies…

Install all of these dependencies if possible – the ‘ubcp’ prompt will start faster and the functionality is useful. Use the default install locations for these dependencies, or they may not be found.

In particular, *some dependencies may not be bundled* with the extendedInterface installer due to practical issues with their copyright licenses, due to other issues, or due to lack of usual utility.

‘gh’ ‘Program Files/GitHub CLI’
'ykman' 'Yubico/YubiKey Manager'
'yubico-piv-tool' 'Yubico/Yubico PIV Tool/bin'
'nmap' 'Nmap'
'qalc' 'Qalculate'
'vncviewer' 'TigerVNC'
'kate' 'Kate/bin'
'VBoxManage' 'Oracle/VirtualBox'
'OpenSSH/'
'VeraCrypt' 'VeraCrypt'

‘sdelete’

'ykman' 'Yubico/YubiKey Manager'
'yubico-piv-tool' 'Yubico/Yubico PIV Tool/bin'
'nmap' 'Nmap'
'VBoxManage' 'Oracle/VirtualBox'
'VeraCrypt' 'VeraCrypt'

Some dependencies may not be bundled.

Enable AI, Confidentially and Securely

AI can now automate workflows, especially the data mangling needed for basic illustration, photo manipulation, and concise writing, as well as drastically improve use of CI APIs for complete coverage of programming defects, catch programming mistakes in real time, and provide programming code solutions at a much lower rate of mistakes due to vastly greater diligence.

AI confidentiality issues can be fully mitigated if necessary by legitimate SecureKVMs, stateless firewalls, and properly cautious sanitation. Improved programming and IT configuration defect rates outright mitigates overall risks, not to mention that legitimate security always manages overall risk which is negatively affected by performance below the point of causing more human error.

Absolute harmlessness has never been relevant given the urgent needs of society, along with simplicity of ‘attention is all you need’ tokenizing AI, widely available rich training data, and inevitably increasingly available computing power.

Embedding AI within applications and developing applications using AI graphics and coding also has the potential to obviate existing software and software services, so the cost of not implementing AI quickly is absolutely becoming noncompetitive.

MSW Copilot

If MSW Copilot is not enabled, then the command line tool ViVeTool and also possibly installing a relevant MSW update, has been known to correct this issue.

https://github.com/thebookisclosed/ViVe/releases/tag/v0.3.3

```
C:\ViVeTool.exe /enable /id:44776738 /priority:test /store:both
```

https://www.catalog.update.microsoft.com/Search.aspx?q=%20%28KB5031455%29

If security (specifically integrity) is at all important...

LSA Protection through Group Policy

Run -> gpedit.msc ->

Computer Configuration / Administrative Templates / System / Local Security Authority ->

Configure LSASS to run as a protected process -> Enabled

Options DropDown -> Enabled with UEFI Lock

After reboot, you want to see this:

Instead of this:

Beware the warning badged icon may appear for a while before the green check mark badged icon appears.

Exploit Protection

Enable as many mitigations as possible, disabling only temporarily and only as necessary. In particular, usually only ‘Force randomization for images (Mandatory ASLR)’ must be default for some older programs.

Security Technical Implementation Guides

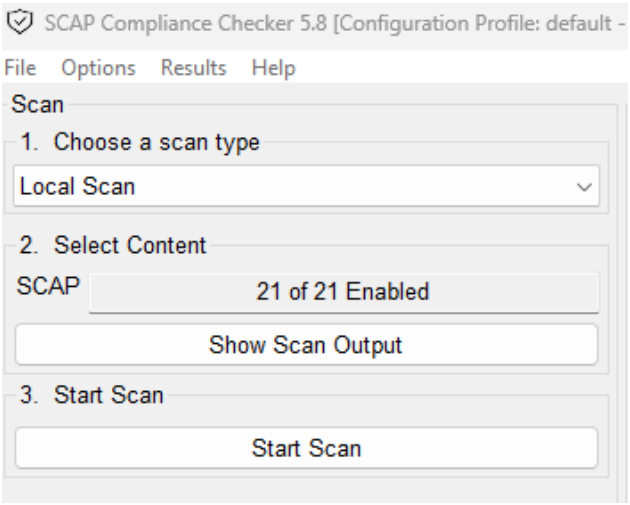
Especially High and Medium STIG results must be considered against relevant CVE history, tested with essential software, and added with any workarounds for essential software, to a scripted installer with manual steps as necessary, which is then used organization wide. Long proven mitigations may eventually be released as an open-source MSW installer, similar to extendedInterface .

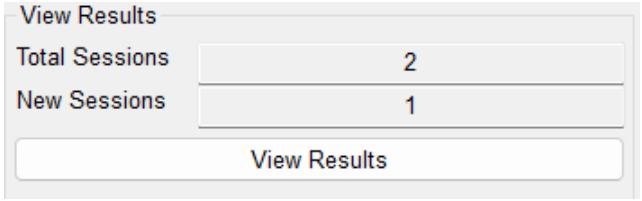
https://en.wikipedia.org/wiki/Security_Technical_Implementation_Guide

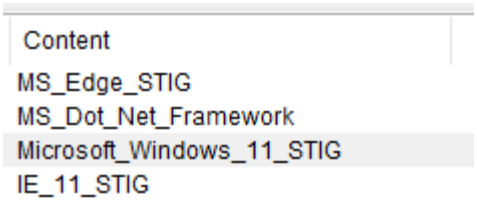
Download the SCAP Tool for MSW . Later, maybe download any needed non-included SCAP content.

https://public.cyber.mil/stigs/scap/

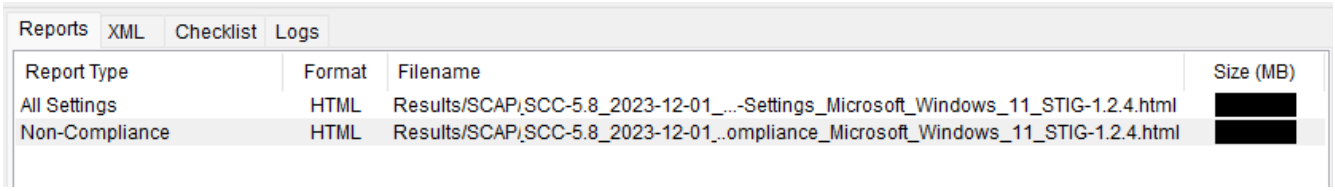
Run a scan and view results.







Read the relevant reports. Especially High and Medium STIG results.



If you are a legacy gamer...

You now have:

C:\core\infrastructure\extendedInterface\README-installer.pdf

C:\core\infrastructure\extendedInterface\support\joystickgremlin
C:\core\infrastructure\extendedInterface\support\voiceattack

C:\core\infrastructure\extendedInterface\app

Dependencies

C:\core\infrastructure\extendedInterface_local\ops.sh

Add your own Bash scripting here, or overload functions provided to change functionality .

One common use case will be to configure shell variables corresponding to your own joystick/throttle USB UIDs .

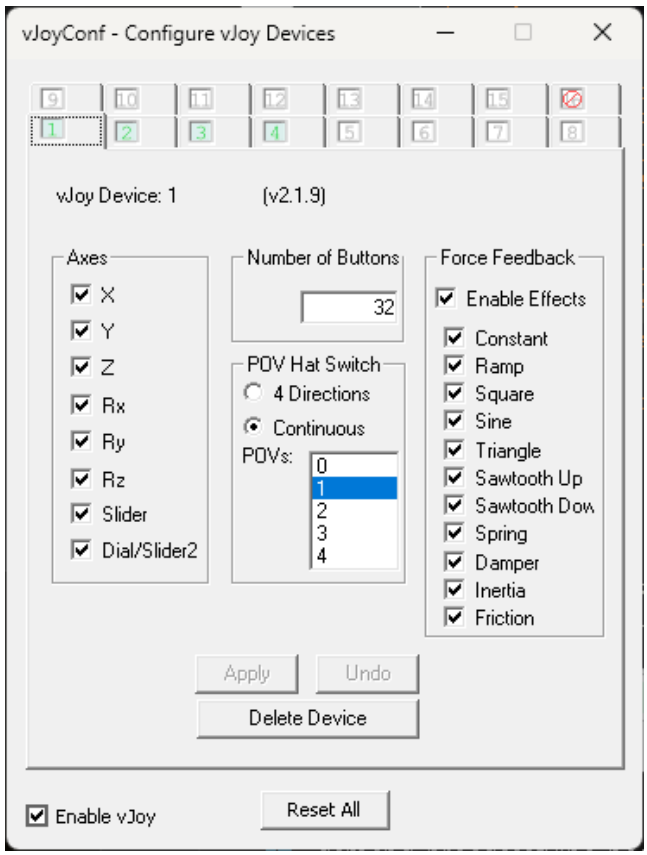
JoystickGremlin

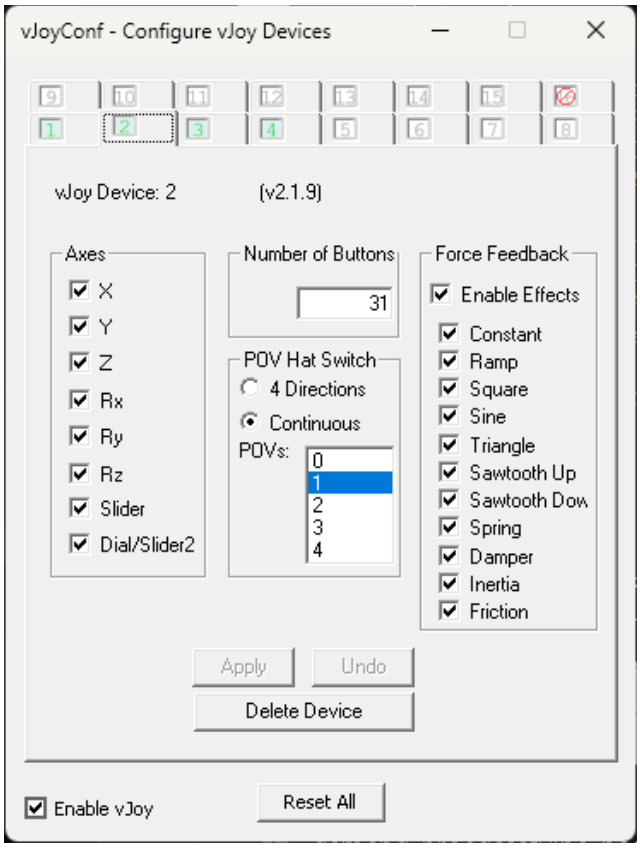
The USB UIDs are configured for a particular MS SWFFB2 joystick and a Thrustmaster TWCS throttle. You will need to change these. Scripts have done this automatically before, and a general purpose converter will be added.

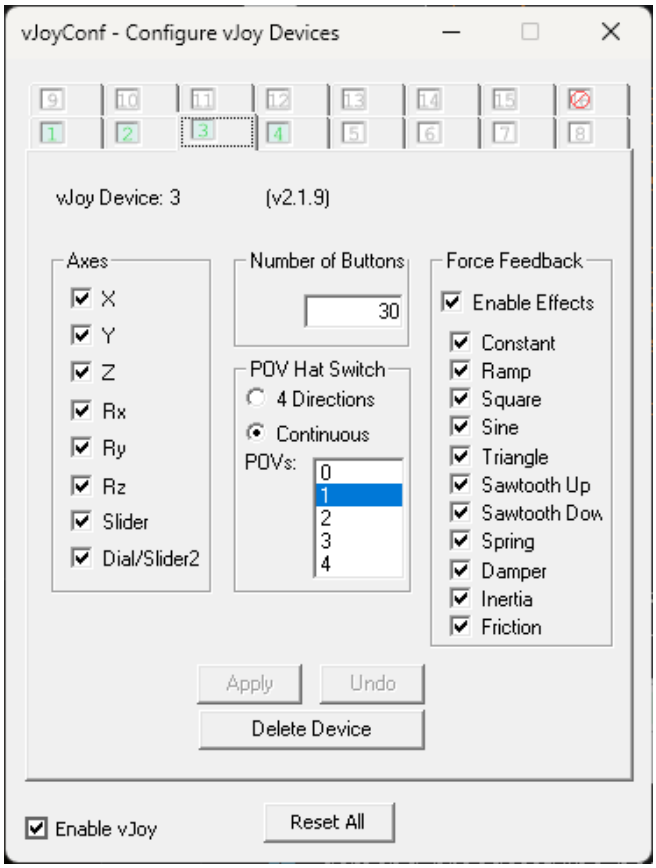
HidGuardian can be configured through JoystickGremlin -> Tools -> Options -> HidGuardian .

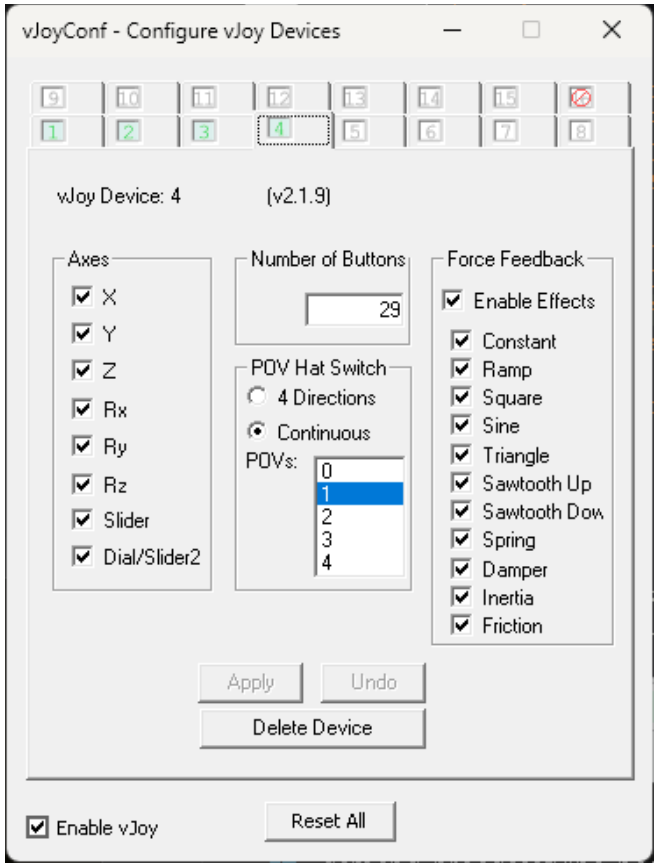
vJoy

Configuring vJoy is particularly difficult. Please attempt to match the following screenshots – four devices, 32buttons for first device, 31buttons for second device, 30buttons for third device, 29buttons for fourth device, POV Hat Switch continuous, POVs 1, Force Feedback – All .


vJoyConf - Configure vJoy Devices
vJoy Device: 1 (v2.1.9)
Axes
X
Y
Z
Rx
Ry
Rz
Slider
Dial/Slider2
Number of Buttons
32
POV Hat Switch
4 Directions
Continuous
POVs:
0
1
2
3
4
Force Feedback
Enable Effects
Constant
Ramp
Square
Sine
Triangle
Sawtooth Up
Sawtooth Dow
Spring
Damper
Inertia
Friction
Apply
Undo
Delete Device
Enable vJoy
Reset All


vJoyConf - Configure vJoy Devices
vJoy Device: 2 (v2.1.9)
Axes
X
Y
Z
Rx
Ry
Rz
Slider
Dial/Slider2
Number of Buttons
31
POV Hat Switch
4 Directions
Continuous
POVs:
0
1
2
3
4
Force Feedback
Enable Effects
Constant
Ramp
Square
Sine
Triangle
Sawtooth Up
Sawtooth Dow
Spring
Damper
Inertia
Friction
Apply
Undo
Delete Device
Enable vJoy
Reset All


vJoyConf - Configure vJoy Devices
vJoy Device: 3 (v2.1.9)
Axes
X
Y
Z
Rx
Ry
Rz
Slider
Dial/Slider2
Number of Buttons
30
POV Hat Switch
4 Directions
Continuous
POVs:
0
1
2
3
4
Force Feedback
Enable Effects
Constant
Ramp
Square
Sine
Triangle
Sawtooth Up
Sawtooth Dow
Spring
Damper
Inertia
Friction
Apply
Undo
Delete Device
Enable vJoy
Reset All


vJoyConf - Configure vJoy Devices
vJoy Device: 4 (v2.1.9)
Axes
X
Y
Z
Rx
Ry
Rz
Slider
Dial/Slider2
Number of Buttons
29
POV Hat Switch
4 Directions
Continuous
POVs:
0
1
2
3
4
Force Feedback
Enable Effects
Constant
Ramp
Square
Sine
Triangle
Sawtooth Up
Sawtooth Dow
Spring
Damper
Inertia
Friction
Apply
Undo
Delete Device
Enable vJoy
Reset All

If you are a legacy VR gamer…

You now have:

C:\core\infrastructure\extendedInterface\param.ods

Use this spreadsheet as a calculator and a checklist to ensure an optimum resolution at the best clarity available with your VR heatset at a minimal number of pixels for your high-end PC to render.

Configure your In-App/In-Game, SteamVR, and NVIDIA Control Panel settings to match.

If you are a legacy VR flight sim enthusiast...

Then you have a lot of learning to do.

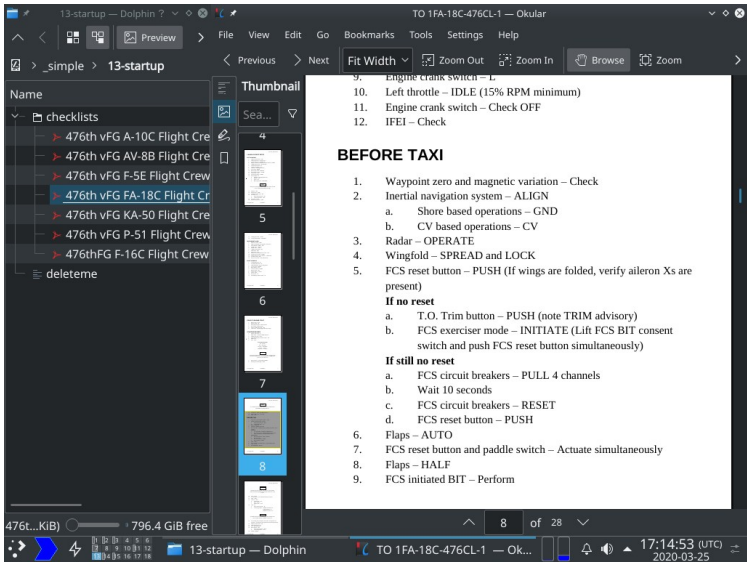
All of ‘C:\core\infrastructure\extendedInfrastructure’ is a template of:
* Documentation. Begin with ‘README.md’ and ‘commonControlScheme.pdf’ .
* Startup sequences to run supporting applications (eg. SIMFFB, DCS SRS) .
* Configuration files (eg. for JoystickGremlin, VoiceAttack) .
* Batch scripts .
* Bash scripts integrated with MSW through ‘ubcp’ .
* Python scripts (at least eventually, maybe) integrated with MSW through ‘ubcp’ .

ResizeBar has a large performance benefit (which can be directly put into higher resolutions for better VR visual clarity). Enable this for your application (eg. DCS World) if possible.

Consider whether Hardware GPU Scheduler may be helpful or harmful to performance.

https://www.majorgeeks.com/content/page/hardware_accelerated_gpu_scheduling.html

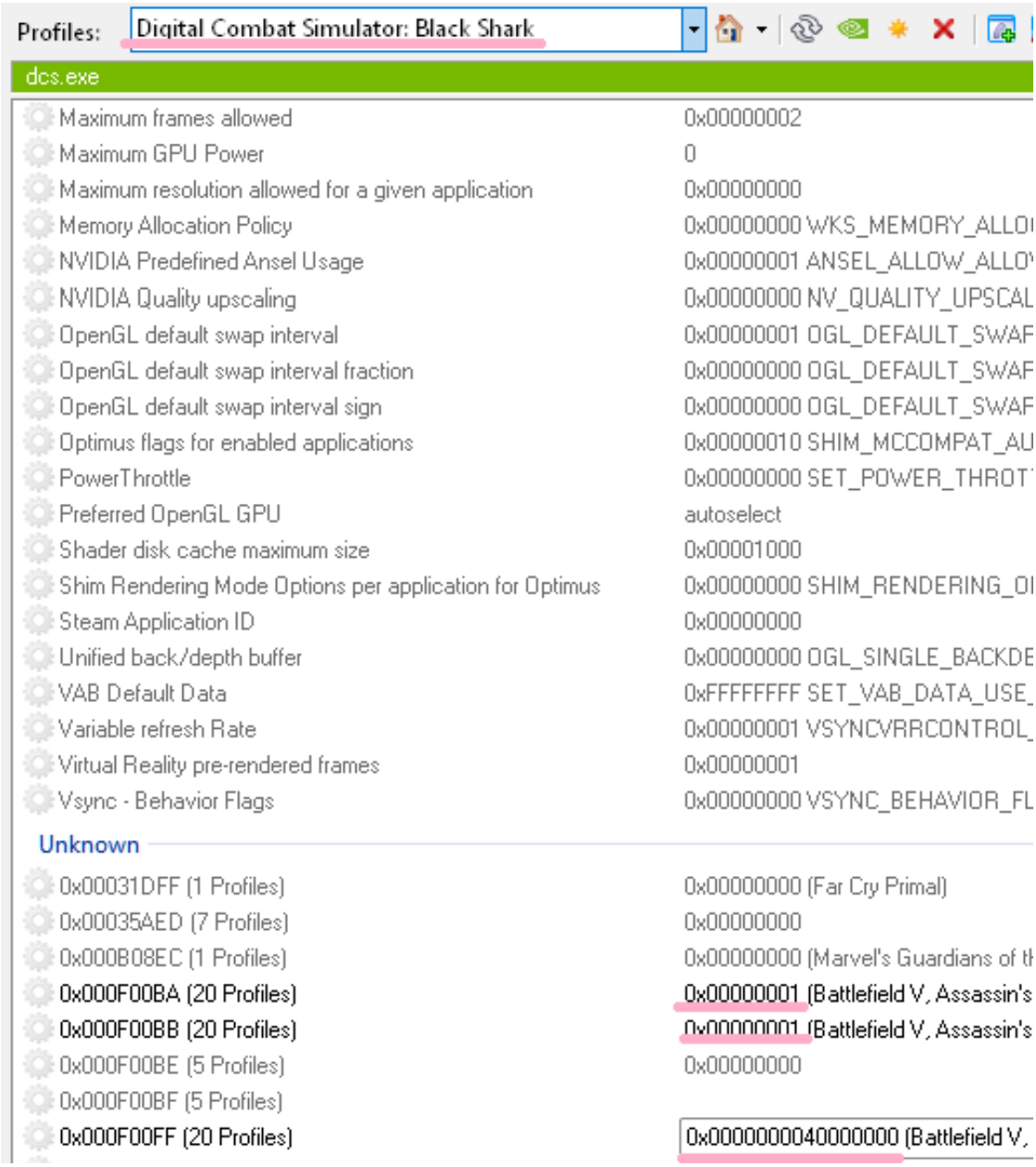
PanelBoard is a part of any ‘ubdist’ dist/OS, and uses scripting to cause a Virtual Machine Linux Desktop (at least KDE Plasma), to arrange and switch to windows as an IDE-like interface to rapidly interact with a standardized set of files/folders (eg. approach plates, checklists, waypoints lists, notes, etc). Specifically intended for use with OVRDrop .



NVIDIA ResizeBar config for legacy flight sim…

NVIDIA Profile Inspector 2.3.0.13

DCS World



MSFS2020

'Microsoft Flight Simulator'

'0x00F00BA' '0x00000001'
'0x000F00BB' '0x00000001'
'0x000F00FF' '0x0000000040000000'

If you are a CARDinal user or gamer… or a native ‘ubdist’ dist/OS user… or an MSW user of ‘ubiquitous_bash’ compatible software (eg. ‘BOM_designer’)...

Then welcome to the future, you will not have needed to install ‘extendedInterface’ .

If you are using CARDinal, ‘ubcp’ would already be included, and user interface hardware would be used more directly without vJoy, etc. Voice commands would be directly sent to VirtualMachines through the CARDinal ‘queue’ (ie. ad-hoc shared wires) IPC bus, rather than translated to obscure reserved key combinations through VoiceAttack.

If you are using ‘ubdist’ natively, the legacy keyboard/mouse emulation provided by such hacks as vJoy, VoiceAttack, etc, would be better managed by relevant less constrained open-source software (eg. ‘wmctrl’), or by CARDinal (eg. for Virtual Machine use in VR, for joystick inputs, etc).

If ‘ubcp’ was needed for MSW compatibility, it would have been included with the installer for that software (eg. ‘BOM_designer’).

Limitations

Installation directory is hardcoded to C:\core\infrastructure . Installation is for all users (other users of ‘ubcp’ will be ‘root’ within the ‘Cygwin’ shell).

Eventually, it should be possible to edit configuration files used by software created for the MSW platform (eg. JoystickGremlin, VoiceAttack), and call these programs, thus enabling relative paths through Bash scripting through ‘ubcp’ .

For now however, changing these locations is officially unsupported (though some provisions may already be in place for some dynamic path finding).

If you can’t use hardcoded C:\ paths…

Back up your data redundantly, reinstall MSW. It’s worth it.

If you can’t afford an 8TB SSD for C:\ …

You probably will be able to afford an 8TB SSD (because the hardware gets cheaper) before us developers can afford to support your nonstandard installation to D:\ anyway.

Adding complexity is not doing you any favors, moreover. Many MSW apps these days, especially VR apps, ship with a huge set of dependencies, tens to hundreds of GB. There is a reason shared dependencies under the MSW OS is quickly going out of style: getting these apps to work with the unstable OS that is MSW is already asking for trouble. The common phrase for broken dependencies, refers to ‘DLL’, not ‘.so’, for a very real reason spanning many decades and persisting to the present day. By installing your programs under such a nonstandard path as D:\ , you are very much undoing the difficult efforts of developers to make your software supportable, so you shouldn’t expect support for doing so.

If you have multiple user accounts on the same MSW OS…

Unless you’re running a kiosk, with a very limited set of software, stop doing that. UNIX like distributions/OperatingSystems (eg. GNU/Linux) have the filesystem hierarchy, with all multi-user programs in PATH, and separate HOME directories for everyone. Shared ‘Program Files’ and such as MSW does, with start menu entries ‘Only For Me’, among other issues, does not work well.

At least give every user a separate Virtual Machine, a separate PC, a separate VPS, etc. And don’t rely on the OS permissions to keep things sane: keep your data on a protected server and keep the OS nonpersistent.

Special Situations

Force Larger Screen Space without Headless Ghost

https://www.monitortests.com/forum/Thread-Custom-Resolution-Utility-CRU

https://github.com/mirage335-colossus/extendedInterface_bundle/tree/main/cru

ReInstall/UnInstall

Reboot before ReInstall/UnInstall is recommended. File locking may persist, although detection and/or termination of relevant processes is attempted.