



Isaac Sim & WSL2 & ROS2 설치

□ Isaac Sim 설치

https://www.youtube.com/watch?v=uRdfy5lacOg&t=866s&ab_channel=KIMeLab

https://www.youtube.com/watch?v=WqVqiPqEyU0&t=257s&ab_channel=KIMeLab

- Omniverse Launcher 다운로드

https://docs.omniverse.nvidia.com/isaacsim/latest/installation/install_workstation.html

아래 링크로 들어가 양식 기입 후, Omniverse Launcher 다운로드

<https://www.nvidia.com/en-us/omniverse/download/>

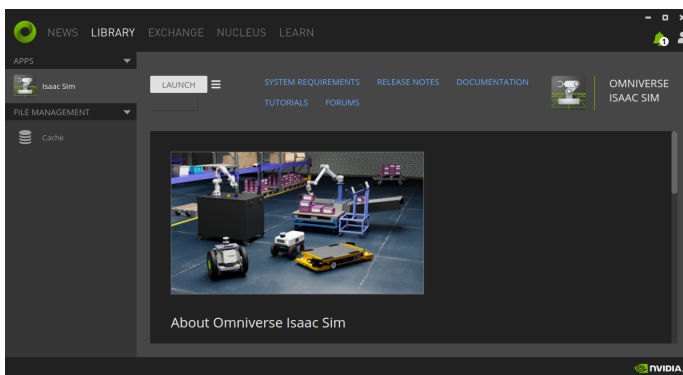
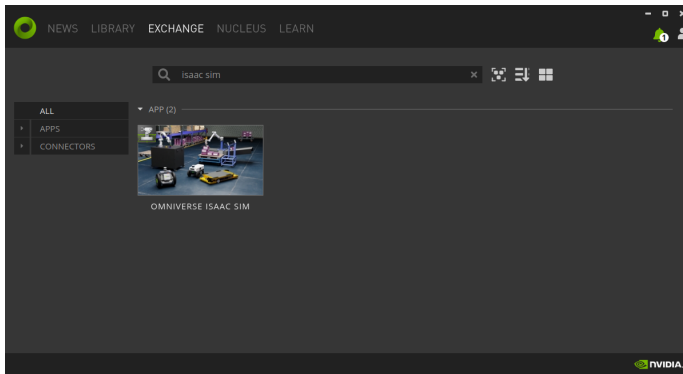
The screenshot shows the NVIDIA Omniverse website's registration page. At the top, there's a navigation bar with the NVIDIA logo and a search icon. Below the navigation bar, the page title is "Register to Download NVIDIA Omniverse Developer Tools". The form consists of several input fields: "First Name", "Last Name", "Business Email Address", "Organization / University Name", "Industry" (a dropdown menu), "Job Title" (a dropdown menu), "Location" (a dropdown menu showing "Korea Republic of"), and "Preferred Language" (a dropdown menu showing "English (US)"). Below these fields, there's a checkbox section for "Send me the latest news, announcements, and more from NVIDIA about:" with options for "Enterprise Business Solutions" and "Developer Technology & Tools". A note below the checkboxes says "(Optional). You can unsubscribe at any time." and a link to the "NVIDIA Privacy Policy" is provided. A green "Submit" button is at the bottom right of the form. A vertical "Feedback" button is on the far right edge of the page.

이후 설치 순서,

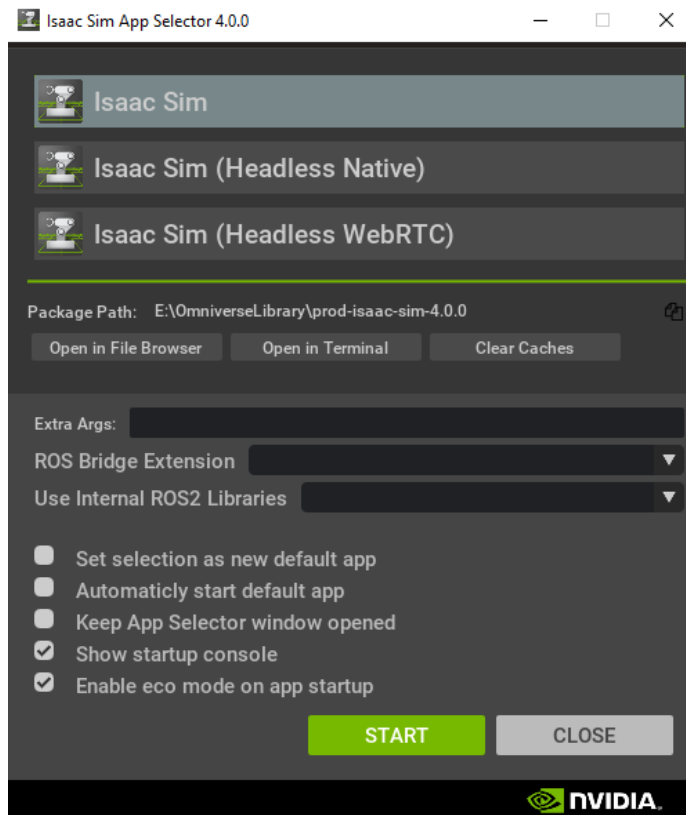
1. Omniverse Launcher 설치
2. Omniverse Launcher에서 Cache 설치.
3. Omniverse Launcher에서 Nucleus 설치.

4. 소스 코드를 보고 디버깅하기 위해 Visual Studio Code 설치.

Omniverse Launcher



Isaac Sim App Selector (Isaac Sim 설치 후)



□ Windows Terminal 설치

<https://github.com/microsoft/terminal>

- Microsoft Store 이용 설치

□ WSL2 설치

- (CMD) Linux용 **Windows** 하위 시스템 활성화 (**관리자 권한**)

```
dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart
dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart
```

```
관리자: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

새로운 크로스 플랫폼 PowerShell 사용 https://aka.ms/pscore6

PS C:\Users\User>
PS C:\Users\User> dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart

배포 이미지 서비스 및 관리 도구
버전: 10.0.19041.844

이미지 버전: 10.0.19042.1288

기능을 사용하도록 설정하는 중
[=====100.0%=====]
작업을 완료했습니다.
PS C:\Users\User> dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart

배포 이미지 서비스 및 관리 도구
버전: 10.0.19041.844

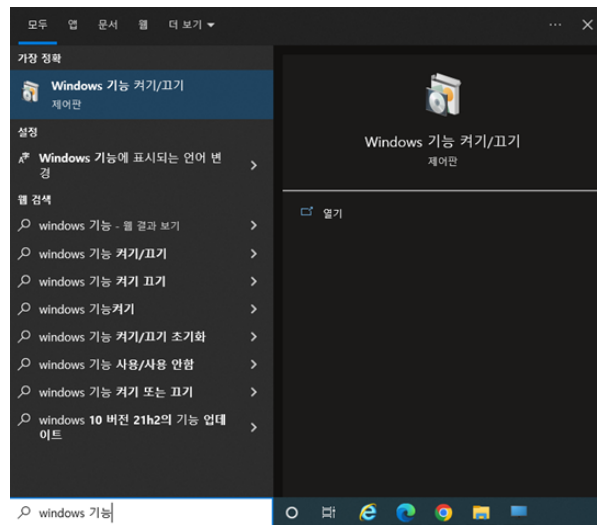
이미지 버전: 10.0.19042.1288

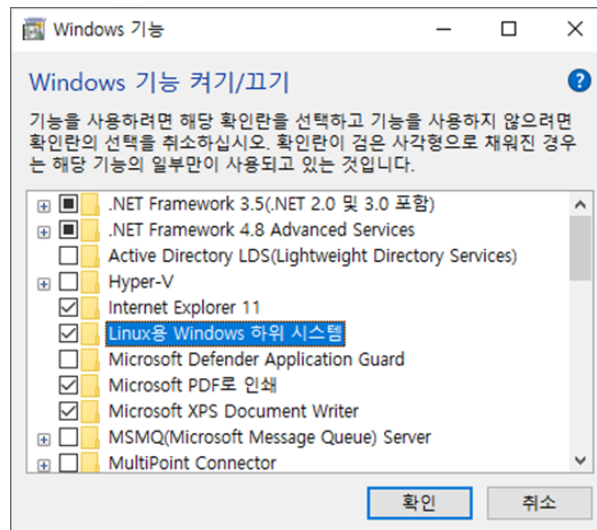
기능을 사용하도록 설정하는 중
[=====100.0%=====]
작업을 완료했습니다.
PS C:\Users\User> |
```

**** 작업 완료 후, 반드시 재부팅 실시**

- (GUI) Linux용 Windows 하위 시스템 활성화

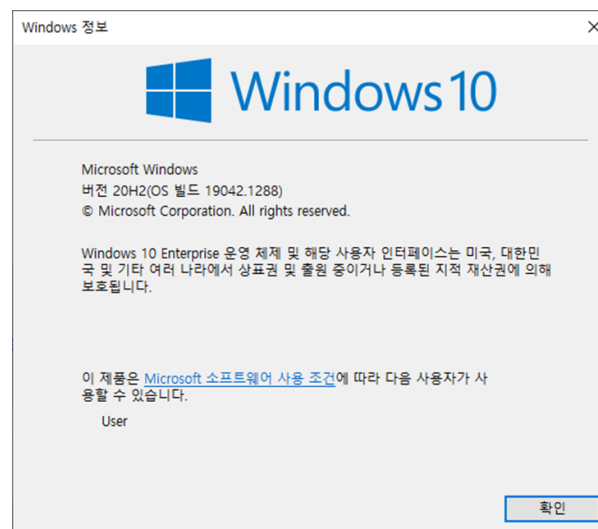
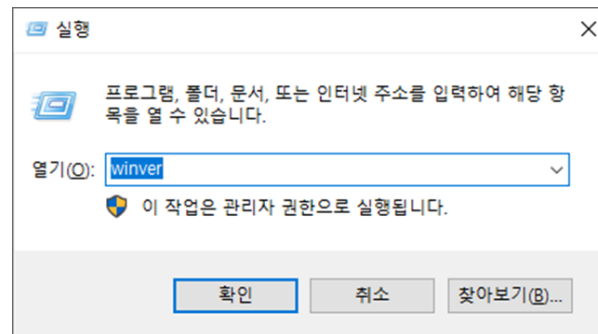
시작 - "Windows 기능 켜기/끄기" 검색 - Linux용 Windows 하위 시스템 항목 체크 - 재부팅





- WSL2 사용을 위한 Windows 버전 확인

- Windows 키 + R → "winver" 입력 후 버전 확인

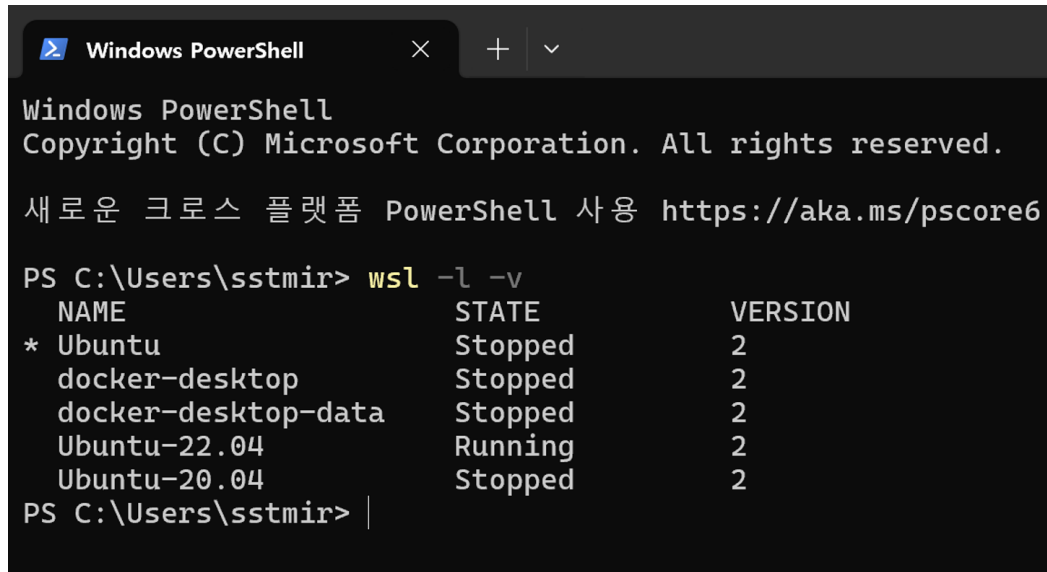


- x64 시스템의 경우: 버전 1903 이상, 빌드 18362 이상

- WSL 2 버전 설정

```
# WSL2 디폴트
wsl --set-default-version 2

# 버전 확인
wsl -l -v
```



The screenshot shows a Windows PowerShell window with the title 'Windows PowerShell'. The text inside the window reads: 'Windows PowerShell', 'Copyright (C) Microsoft Corporation. All rights reserved.', and '새로운 크로스 플랫폼 PowerShell 사용 https://aka.ms/pscore6'. Below this, the command 'wsl -l -v' has been executed, resulting in a table of WSL distributions. The table has three columns: NAME, STATE, and VERSION. The data rows are: Ubuntu (Stopped, 2), docker-desktop (Stopped, 2), docker-desktop-data (Stopped, 2), Ubuntu-22.04 (Running, 2), and Ubuntu-20.04 (Stopped, 2). The prompt 'PS C:\Users\sstmir>' is visible at the bottom.

NAME	STATE	VERSION
* Ubuntu	Stopped	2
docker-desktop	Stopped	2
docker-desktop-data	Stopped	2
Ubuntu-22.04	Running	2
Ubuntu-20.04	Stopped	2

- Ubuntu 설치

Microsoft Store 에서 Ubuntu를 검색하여 설치

□ ROS2 Humble 설치 (in WSL Ubuntu)

```
wget https://raw.githubusercontent.com/knowledge-intelligence/KIME-Tutorials/master/install_ros2_humble.sh && chmod 755 ./install_ros2_humble.sh && ./install_ros2_humble.sh
```

□ WSL ROS2 Humble + Isaac Sim ROS2 Bridge 연결 확인

https://docs.omniverse.nvidia.com/isaacsim/latest/installation/install_ros.html#running-ros-without-a-system-level-install

- Running ROS without a System Level Install (Windows CMD)

```
set isaac_sim_package_path=%userprofile%\AppData\Local\ov\pkg\isaac-sim-4.1.0
```

```
set RMW_IMPLEMENTATION=rmw_fastrtps_cpp
```

REM Can only be set once per terminal.

REM Setting this command multiple times will append the internal library path again potentially leading to conflicts

```
set PATH=%PATH%;%isaac_sim_package_path%\exts\omni.isaac.ros2_bridge\humble\lib
```

REM Run Isaac Sim with ROS2 Bridge Enabled

```
%isaac_sim_package_path%\isaac-sim.bat --/isaac/startup/ros_bridge_extension=omni.isaac.ros2_bridge
```

- **Setting in WSL2 Ubuntu**

1. 아래 `fastdds.xml` 파일을 `~/.ros/` 밑에 복사

```
fastdds.xml
```

2. 아래 내용을 `~/.bashrc` 에 추가

```
export FASTRTPS_DEFAULT_PROFILES_FILE=~/.ros/fastdds.xml
```

- Nucleus Launcher 이용해 Isaac Sim을 실행할 때는 `"Extra Args"` 에 위 구문 설정 필요.