

The logo features the AMD logo (a stylized 'A' with a triangle) in white, followed by 'RADEON PRO' in a smaller, spaced-out white font, and 'Software' in a large, white, sans-serif font. The background is a dark blue, abstract, leaf-like pattern.

AMD  
RADEON PRO  
Software

# AMD Radeon ProRender plug-in for Universal Scene Description

**Installation Guide**

This document is a guide on how to install and configure  
AMD Radeon™ ProRender plug-in for Universal Scene Description (USD).

The AMD logo, consisting of the letters 'AMD' in a bold, white, sans-serif font, followed by a white stylized 'A' logo element.

AMD

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# OVERVIEW

This plug-in allows fast GPU or CPU accelerated viewport rendering on all OpenCL™ hardware for the open source USD and Hydra system. This document will guide the user on how to install and configure AMD Radeon™ ProRender plug-in for Universal Scene Description (USD).



**Note:** The implementation of this solution is not intended to be performed by end users of USD supported applications. In addition, an intermediate level developer knowledge base is expected from the users following this guide. End users should proceed with support from their IT department.

For more details on USD, please visit the web site [here](#).

# Supported Platforms

## Operating System

- Microsoft Windows® 10 (64-bit)
- Ubuntu® 16.04.3
- CentOS 7.5
- MacOS® High Sierra 10.13.3+

## Requirements

- Python 2.7

## Join the Discussion

Provide feedback [here](#) for all AMD Radeon ProRender plug-ins.

# USD Setup

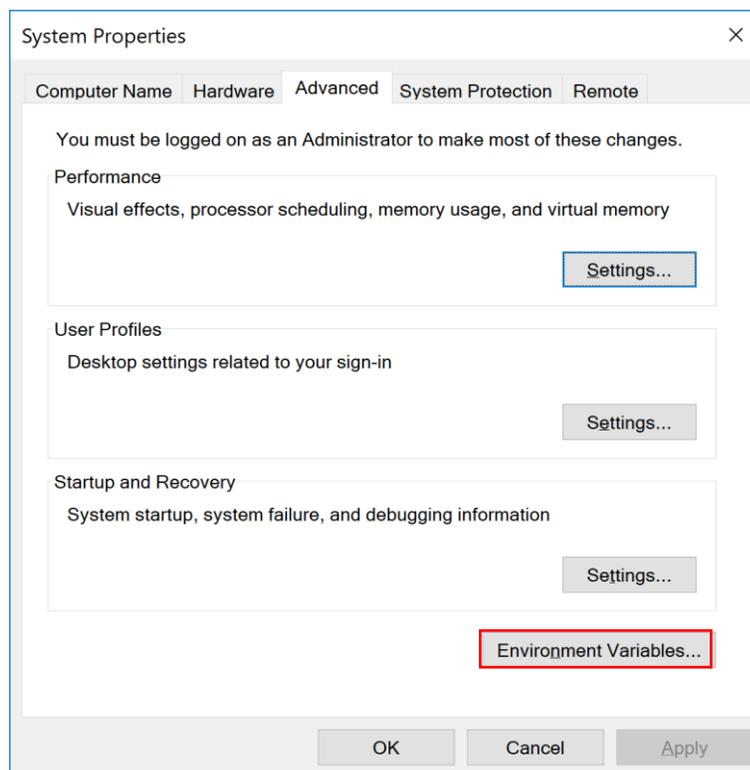
The following steps should be followed by the setup a demo build of Pixar USD including AMD ProRender™ for testing on Windows®:

1. Download and unzip the “usd.zip” file at any location i.e. C:\USD
2. Install Python 2.7.

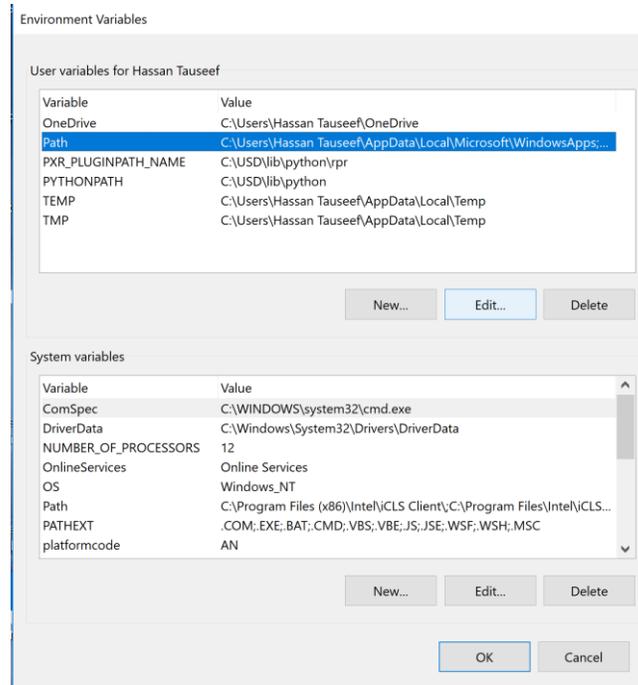


**Note:** Python 2.7 can be downloaded from [www.python.org](http://www.python.org)

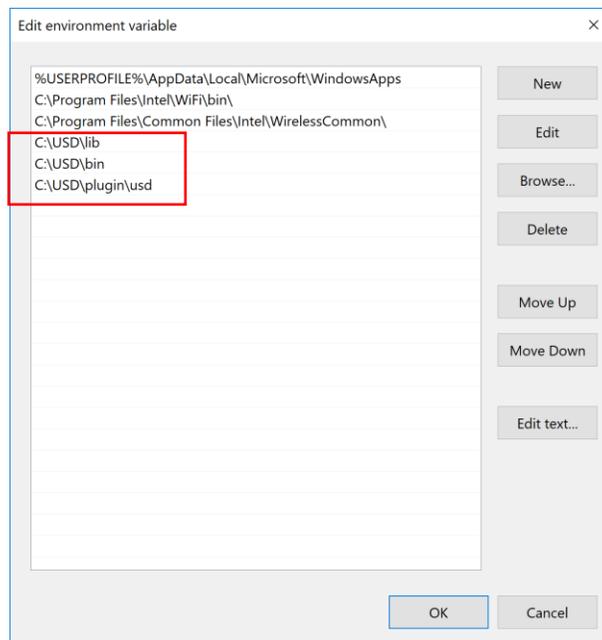
3. Open Command Prompt and run “C:\Python27\Scripts\pip install PySide” and “C:\Python27\Scripts\pip install OpenGL”
4. The user will need to set the needed environment variables. All the environmental variables will use the C:\USD location in them. To set the environment variables:
  - a. Open Start Menu and type “**Environment variables**”.
  - b. Click on “**Edit the system Environment variables**”.
  - c. Click on “**Environment variables**” button on the bottom right of the window.



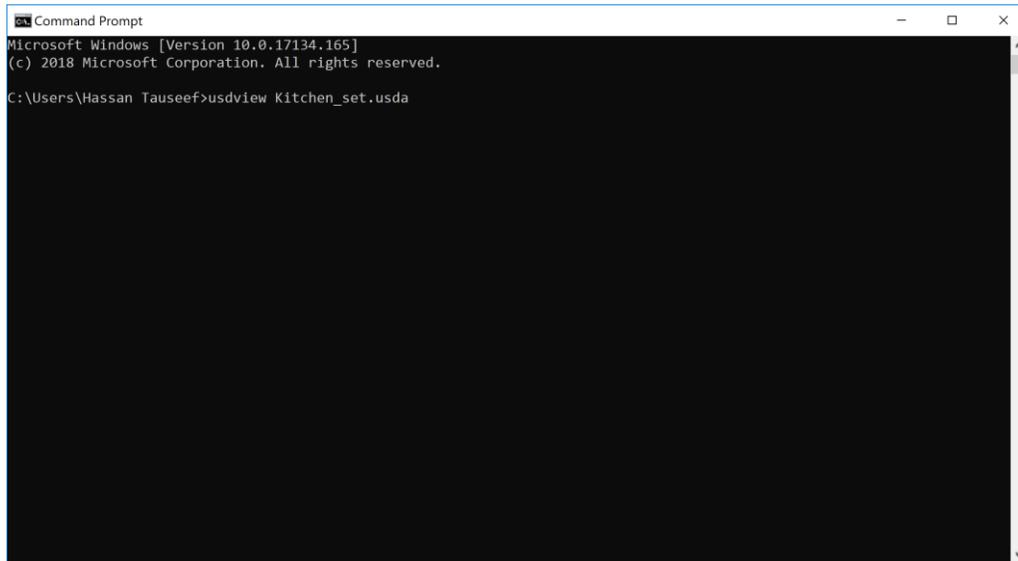
- d. Click on “New” for user variables to add these user variables below:
- i. **Name:** PXR\_PLUGINPATH\_NAME, **Value:** C:\USD\lib\python\rpr
  - ii. **Name:** PYTHONPATH, **Value:** C:\USD\lib\python



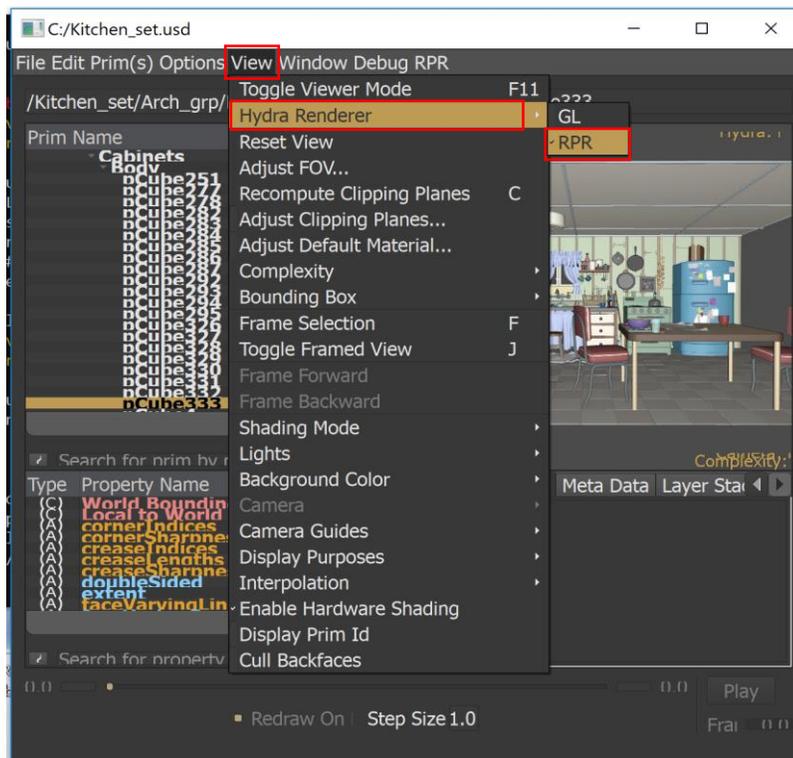
- e. Click on variable “Path” to select it, click edit and add these values below:
- i. **C:\USD\lib**
  - ii. **C:\USD\bin**
  - iii. **C:\USD\plugin\usd**



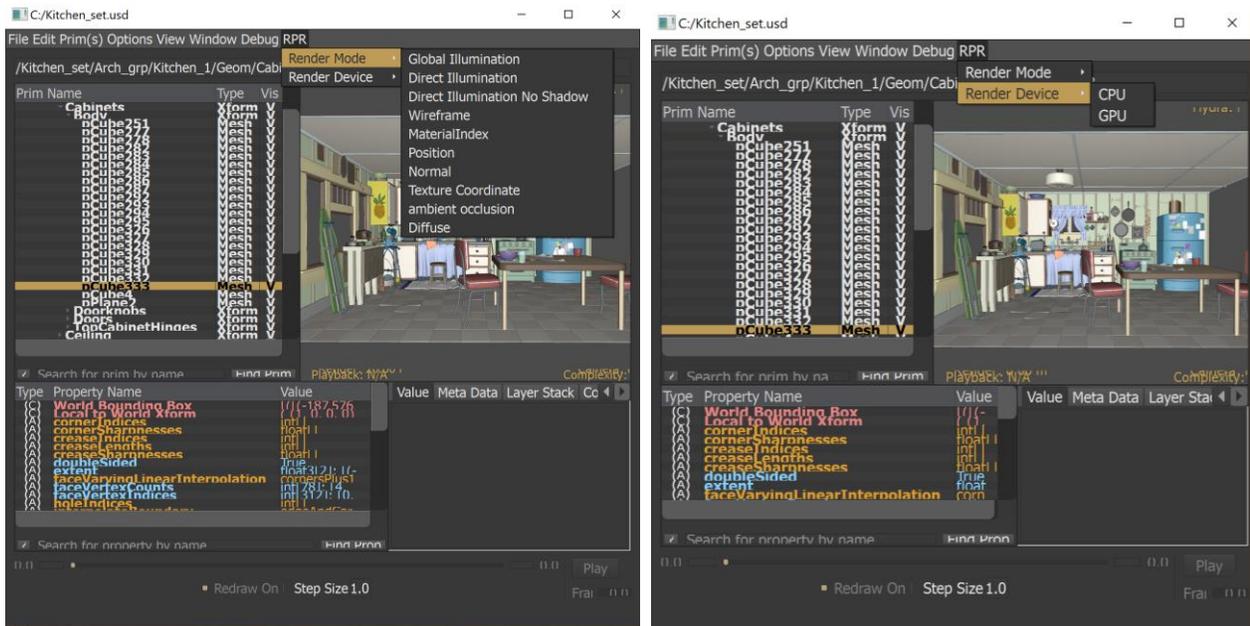
5. Open Command Prompt and run "**usdview some\_usd\_file.usda**".Where "some\_usd\_file.usda" can be any USD file. Using file "**Kitchen\_set.usda**" as an example below:



6. Once the USD file opens, In the View men, select "**VIEW -> Hydra Renderer -> RPR**"



7. Users can also click on the “RPR” menu to select render modes and the device to use.



8. Users can also use USDView controls/shortcuts to change camera views of the render screen e.g:
- ALT + Right-Click = Zoom Camera
  - ALT + Left-Click = Rotate Camera
  - ALT + Middle-Click = Scan Camera



**Note:** Aforementioned instructions are needed to use the USD plug-in as a demo for testing on windows®. However, Instructions from GitHub on the following page are listed to build the plug-in as a production version.

# Prerequisites (Production Version)

There are three main requirements for the AMD Radeon ProRender plug-in for USD to build a production version which are as follows:

## 1. An existing USD build/tree

It is possible for the USD users to get the USD libraries from different locations or compile their own. Users can download USD from [GitHub](#) to build themselves.

## 2. AMD Radeon™ ProRender SDK

Contact AMD for access to ProRender SDK libraries.

## 3. Building

The User can build the library using “**cmake**”. There are some necessary variables that the user needs to set before proceeding further. The variables are as follows:

- **USD\_ROOT** – This variable should be set to the USD installed directory.
- **RPR\_LOCATION** – This variable should be set to the AMD Radeon™ ProRender directory with include and library directories.
- **CMAKE\_INSTALL\_PREFIX** – This is the location where the plug-in will be installed. It is recommended that this location matches USD\_ROOT location.



**Note:** Variables below may be automatically detected.

- **BOOST\_ROOT** - These are necessary libraries to link the plugin. If the user installed USD, these libraries will already exist. However, if the Python build script was used to install USD, this is likely to be the same as **USD\_ROOT**.
- **TBBROOT**

Below is an example of a cmake build:

```
mkdir build
cd build
cmake -DUSD_ROOT=/data/usd_build -DRPR_LOCATION=/data/RPR_SDK/RadeonProRender -DCMAKE_INSTALL_PREFIX=/data/usd_build ..
make
make install
```

# AMD Radeon ProRender Setup

1. Set up the environment variables specified by the script as it finishes and launch “usdview” with a sample asset. For example:

```
> usdview extras/usd/tutorials/convertingLayerFormats/Sphere.usda
```

2. Select Radeon™ ProRender as the render plug-in.



**Note:** To add the AMD Radeon™ ProRender menu added to USDView, which would allow selecting devices and view modes, set up the environment variable as:

**PXR\_PLUGINPATH\_NAME=\${USD\_ROOT}/lib/python/rpr**

Where USD\_ROOT is the USD install directory set up by the use



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## Installation Guide

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