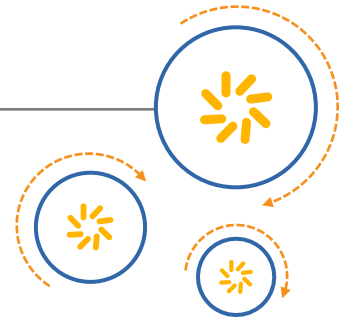




Qualcomm Technologies, Inc.



# Qualcomm® Snapdragon™ eXtended Reality SDK

## Source Guide

January 22, 2019

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## Revision history

Revision	Date	Description
A	January 2019	Initial release

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# 1 Introduction

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## 1.1 Purpose

This document provides information regarding the source distribution of the Qualcomm® Snapdragon™ Virtual Reality (XR) SDK.

## 1.2 Background

High performance, low latency virtual reality on Android requires access to numerous new features and software optimizations on the target platform. The Snapdragon XR SDK provides access to these features which would otherwise be unavailable to developers.

In addition, the Snapdragon XR SDK implements many of the core low latency XR rendering functionality developers require to create high quality XR content.

The core Snapdragon XR SDK features include:

- Asynchronous timewarp
  - Barrel distortion
  - Chromatic aberration correction
  - Display stabilization/reprojection
  - Single buffered rendering
  - Layering (masks/overlays)
- 3DOF/6DOF sensor fusion (DSP, 800 Hz)
- CPU/GPU power management (via Qualcomm Symphony System Manager SDK power APIs)

## 2 Installation

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To install the Snapdragon XR SDK, unzip the distribution package to any preferred location.

### 2.1 System requirements

A Snapdragon 845-based device running Android 8.0 (Oreo), loaded with the LA 1.3 (00015+) CRM, is required to utilize the Snapdragon XR SDK libraries.

### 2.2 SDK contents

The Snapdragon XR SDK contains the items listed in [Table 2-1](#).

**Table 2-1 SDK contents**

<b>/3rdParty</b>	3 <sup>rd</sup> party libraries used by the SDK
<b>/doc</b>	SDK API documentation
<b>/framework</b>	Common utility code used by the SDK samples
<b>/samples</b>	Samples demonstrating use of the SXR SDK APIs
<b>/include</b>	Core headers for interfacing with the SDK APIs
<b>/sxrApi</b>	Native C/C++ headers and libraries for interfacing with the SDK APIs
<b>/sxrApi/etc</b>	Device configuration files

# 3 Building Core Libraries

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## 3.1 Dependencies

- Android SDK
  - Set ANDROID\_HOME environment variable to the SDK path
  - Add %ANDROID\_HOME%\tools to the system path
- Android NDK r13
  - Set ANDROID\_NDK\_ROOT environment variable to the NDK path
  - Add %ANDROID\_NDK\_ROOT% to system path
- Java JDK 1.8
  - Set JAVA\_HOME environment variable to the root of the JDK installation
  - Add %JAVA\_HOME%\bin to system path
- SXR HOME
  - Set SXR\_HOME to the root of the project

## 3.2 Building sxrApi archive

- From ./sxrApi/build/gradle directory run 'gradlew build'

Upon completion archive files will be in the ./sxrApi/libs/ folder

# 4 Building Samples

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## 4.1 Building Native Samples

All of the native samples in the `./samples` folder can be built with Gradle method

- From `./samples/(sample name)` run “gradlew build”

Resulting APK will be in `./samples/(sample name)/build/outputs/apk` or `./samples/(sample name)/app/build/outputs/apk`

# 4 Device Configuration

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## 4.1 Snapdragon VR845 SDK Configuration

The source distribution includes an example configuration file for the Snapdragon SVR845 reference hardware. The configuration file can be found in `./sxrApi/etc/SVR845/sxrapl_config.txt`. This configuration modifies the behavior of the SDK for all XR SDK based applications running on the device.

The complete list of options available for use in the configuration file can be found in the API documentation (`./doc/index.html`) under “Related Pages -> Configuration”.