

HDCP

Overview

HDCP, or High-bandwidth Digital Content Protection, is a technology that prevents the unauthorized copying of digital audio and video content. It works by encrypting the audio and video signal between the device sending the content and the device receiving it.

HDCP is required to stream content from services like Netflix, Amazon Video, and Virgin, and to play Blu-Ray discs. If a device doesn't support HDCP, or if the connection between devices isn't HDCP compliant, you might see an error message and not be able to play content. For example, if you try to connect a 4K streaming box to a TV that only supports HDCP 1.4, you might only be able to watch content in 1080p.

Here are some common HDCP error messages:

- "HDCP Unauthorized. Content Disabled"
- "HDCP Error Detected: To play this content, all HDMI connections must support High-bandwidth Digital Content Protection (HDCP)"
- "Your video will play in Standard Definition because your computer hardware, HDMI cables, and display must all meet content protection (HDCP) requirements for HD video"

HDCP Troubleshooting

HDCP can be unpredictable with various setups, break or “stripping” HDCP is considered illegal, but there are a number of ways to do this for “legal” reasons. When the HDCP “handshake” is made, both the sending and receiving device (TV, capture card, projector, etc.) agree that HDCP content is being transmitted and act accordingly. HDMI capture cards made by Elgato, BlackMagic Design, Magewell, Matrox, etc. will not “strip” HDCP content. In order to have their products sold and licensed in the USA, they agree to meet HDCP standards. When HDCP is enabled you may see a signal that drops, is all Black, Green, or Purple. For example, older HDCP standards tend to produce some image with a wash of green color over it.

Apple computers are known to have more issues with HDCP handshakes as Apple's integrated system may trigger an HDCP “event” when certain applications are open. For example, you are plugged into a projector that does not accept HDCP (perhaps an older projector), while performing, you open a web-browser and a Netflix tab launches. This can cause your signal to drop if the device you are connected to is not HDCP compliant. On Windows machines this is a mixed bag, as there are many manufacturers and software developers, doing things differently.

Oftentimes, unbranded, or “generic” HDMI splitters, HDMI Capture Cards, and HDMI monitors, will strip the HDCP chain. It is believed that they do this by declaring / cloning an EDID that is registered as HDCP compliant, when they are not. You can find these splitters on Amazon, Ebay, AliExpress, and so on, but by cloning the EDID of another licensed device. It is usually a matter of time before the EDID is reported and blacklisted in an OS or security update. For this reason, if you plan to use an HDMI splitter to break HDCP, it is best not to spend too much, as it may only work for a year or less before being blacklisted.

Valid reasons to break HDCP:

1. To record your own computer output / performances, content.
2. Stable connection to older projectors and screens.
3. Cloning multiple screens.
4. Connecting to devices with DVI (if you are converting HDMI to DVI)

VGA, RCA,DVI, SDI were not designed to carry HDCP (HDMI only). Most HDMI to SDI devices will “break” the HDCP chain, but if you are trying to send copy written HDCP content over HDMI to a name brand SDI converter, the signal may not be passed through, as your computer will withhold the signal to remain compliant. This can also happen with HDBaseT, NDI converters, and HDMI over RJ45 and HDMI over Ethernet converters. If stripping HDCP is important to you, when in doubt, “buy cheap!”-ProjectileObjects

Written by ProjectileObjects

Revision #2

Created 2025-04-07 19:02:12 UTC by Cam Vokey

Updated 2025-04-07 19:08:23 UTC by Cam Vokey