



NVIDIA® SHIELD™ Android TV

SHIELD Experience Upgrade 3.2 -Reviewer's Guide

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NVIDIA® SHIELD™ Experience Upgrade 3.2

Based on Android TV, NVIDIA SHIELD is the most powerful smart TV platform ever built, and it delivers amazing entertainment experiences and apps to your living room. NVIDIA SHIELD has established itself as the best Android TV box, and enables the best Android TV experience with personalized entertainment recommendations, instant access to your entire Android media collection, powerful and versatile voice search capabilities, the best 4K and media playback support, and the best gaming experience compared to all other smart TV boxes.

Since its launch SHIELD has been continually updated to deliver exciting new experiences and features. SHIELD Android TV's latest **SHIELD Experience Upgrade 3.2**, the tenth upgrade since launch just over a year ago, brings a slew of new features and apps. The key upgrades are:

- **Plex® Media Server** – Enables SHIELD to be used as a media server and stream your personal media collection to all your devices, anywhere.
- **Samba support** – Enables you to mount a network storage device (NAS) to SHIELD and also access SHIELD's storage from your PC or laptop.
- **High Dynamic Range (HDR)** – SHIELD becomes the first smart TV box to support HDR – supported in Netflix and local media players.
- **VUDU App** – SHIELD becomes the first Android TV device to support VUDU. Rent movies and shows up to 4K Ultra HD with Dolby Atmos sound. Includes support for Ultraviolet, Disney Movies Anywhere, Universal Search and Voice Search.
- **Dolby Atmos** – Enables pass-through support in VUDU and several local media players.
- **Netflix Universal Search** – Voice search from the SHIELD home page now returns results from Netflix, in addition to 60 additional apps including VUDU, YouTube, HBO, HULU, and more.
- **Plus more enhancements** such as HDMI-CEC support to turn off your TV automatically, YouTube now streaming up to 4K 60fps, and support for YCbCr 4:4:4 color space.

Plex® Media Server

Plex is a popular media application that organizes your video, music, and photo collections and streams them to all your screens. It enables you to enjoy your videos, movies, TV shows, music and photos anytime, anywhere.

The Plex Media Server application is the server side application of the Plex solution and streams content to your Android, iOS, Windows Phone or Windows device. The Plex Media Server application typically requires the performance of powerful and expensive desktop computer or an expensive NAS device to transcode and stream content to these devices. Current hardware devices that are capable of running the Plex Media Server application typically cost north of \$500.

SHIELD Experience Upgrade 3.2 delivers Plex Media Server capability on SHIELD Android TV and enables users to stream content from their SHIELD to other devices within or outside their home networks. Users who have low end NAS devices that are incapable of transcoding and streaming content, can now upgrade to SHIELD and get excellent media server capabilities for just under \$200.

SHIELD Experience Upgrade 3.2 also includes support for Samba, which enables users to mount their existing NAS devices as an external storage on to SHIELD and along with the new Plex Media Server capability, seamlessly upgrade to an excellent media server experience.

With SHIELD acting as a Plex Media Server, your content can reside on the local storage of SHIELD, on a connected external USB drive or on a NAS device in your home network. SHIELD works with most NAS devices and is capable of streaming content from the NAS to your big screen TV or to other screens such as phones and tablets.

As with all Plex Media Servers, the number of supported concurrent streams will vary based on your network bandwidth and the bit-rates of your video files. In general, SHIELD users can expect to concurrently stream one Direct Play (non-transcoded) video stream and one transcoded video stream. You can use SHIELD as a dedicated Plex Media Server, or concurrently as a living room entertainment device. SHIELD is capable of running a variety of living room entertainment applications such as Netflix 4K, YouTube, GameStream, GeForce Now, and most Android games while it is also streaming videos in the background to other devices. However, since the most graphics intensive Android games play best with full CPU and GPU performance available, users should expect reduced frame rate in games like Borderlands: TPS, Metal Gear Rising, and Resident Evil 5.

Getting Started with Plex Media Server

Getting start is easy since Plex Media Server comes preinstalled on SHIELD and can be accessed using the existing Plex app. If you don't already have a Plex account, go to plex.tv/signup to create an account.

Then, simply launch the Plex app from the apps row on your SHIELD. The app will walk you through the setup experience.

By default, Plex Media Server will find movies, videos, and pictures in those folders on SHIELD.

Advanced users should visit <https://app.plex.tv/web/app> to add additional libraries to the device (for example for a mounted NAS) or to change advanced Plex Media Server settings. Helpful guides and resources for advanced settings are available on the Plex website at Plex.tv

Plex Media Server Web App

- Adding additional libraries to Plex Media Server is done using the web app, which is found at <https://app.plex.tv/web/app>
- You need to be signed into your Plex account to access the settings page and modify the settings. After signing in, you can add additional media libraries to your Plex server.

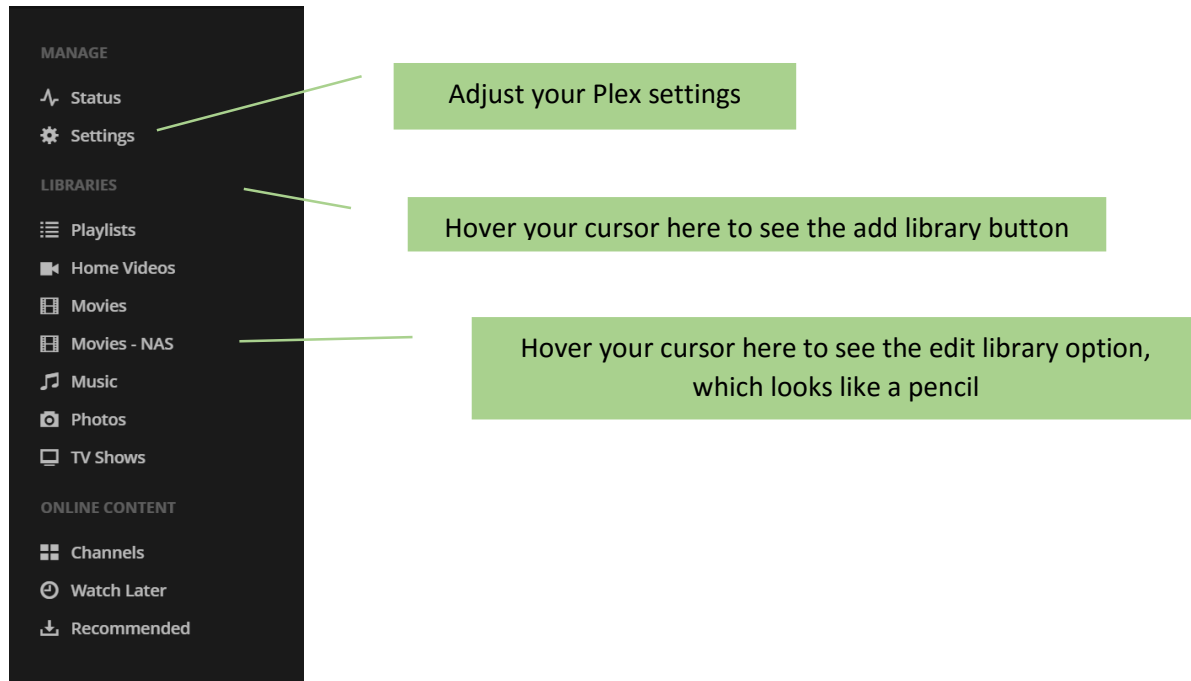


Figure 4 Navigating the Plex Media Server web app

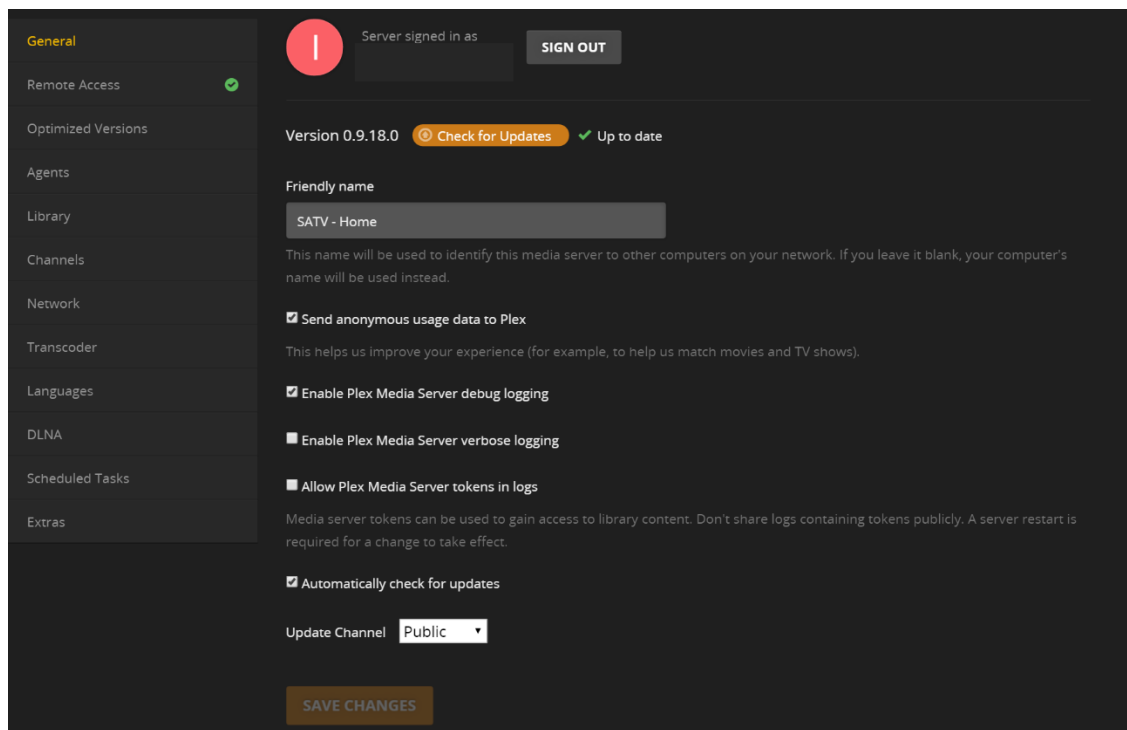


Figure 5 A quick look at some of the available settings

- Adding additional libraries is easy. Start with clicking on the + button that appears next to “Libraries” when you hover your cursor over it. When you do you will see the below screen. You will need to select the type of content you’re adding followed by specifying a location for the content.

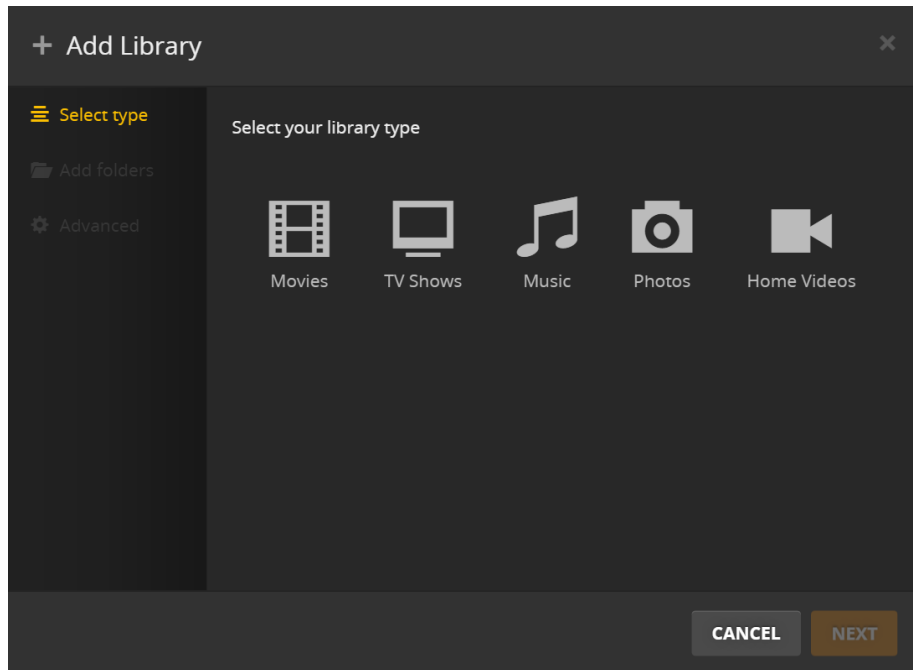


Figure 6 This selection will determine how Plex organizes your libraries

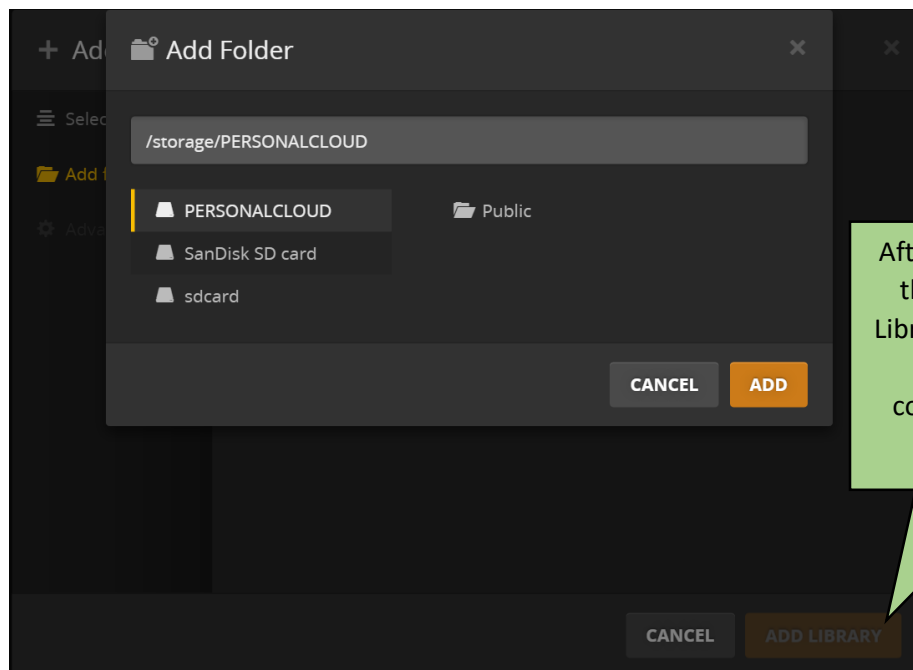


Figure 7 You will need to specify a location for the content, which includes external storage devices such as NAS, USB drives, and SD cards

Samba support and adding content to SHIELD Plex Media Server

SHIELD Experience Upgrade 3.2 includes support for Samba, enabling you to mount network storage devices such as NAS systems on SHIELD and also access SHIELD's internal folders from network attached Windows PC.

Adding content to your SHIELD Android TV Plex Media Server

Adding content to your SHIELD Android TV for use with Plex Media Server can be done multiple ways. You can transfer content from your PC directly to your SHIELD Android TV, you can use an external USB drive, or you can connect an existing NAS device over your existing home network.

Accessing SHIELD from a network attached Windows PC

Using the newly added Samba capability, you can now directly access your SHIELD Android TV on your Windows PC that is connected to the same network. This will allow you to drag and drop files from your PC to your SHIELD Android TV.

To do this, first go to **Settings > Storage & reset** and under **"Removable storage"** select **"Access SHIELD folders on PC"**. Turning that on will present a username and password that you will then use to login to the device on your PC.

On your Windows PC that is connected to the same network as SHIELD, open a file navigator and click on "Network". Your SHIELD Android TV device should be visible as either "SHIELD" or with the custom name you chose under **"Settings -> About -> Device"**. When you click on the SHIELD device name, you will be prompted for a username and password. Enter the same username and password that was displayed when you enabled the "Access SHIELD folders on PC" feature. You will now be able to access internal folders of SHIELD and will be able to drag and drop files from your Windows PC on to SHIELD and vice versa.

Just drag and drop movies, music and photos from your PC on to corresponding folders in SHIELD and Plex Media server will automatically scan these folders on SHIELD and enable you to access this content on other supported devices through the Plex app.

Note: It can take some time for computers to be shown on the network. Try refreshing the Network page and restarting your PC if needed. To immediately connect to your SHIELD, type "[\\SHIELD](#)" into the Windows Explorer address bar. If you changed your device name (found in Settings > About on your SHIELD), replace "SHIELD" with your device name (without any spaces). Alternatively, you can type your SHIELD's IP address into the Windows Explorer address bar: [\\192.168.1.X](#) (find your IP address on the "Access SHIELD folders on PC" page).

You can also permanently map your SHIELD as a network drive by right-clicking on "Network" in File Explorer and selecting "Map Network Drive". Select an unused Drive letter. In the Folder field, type your IP address and the folder path to map. Example: "[\\192.168.1.5\\internal](#)". Select "Reconnect at logon" and then Click "Finish".

We recommend that you use this feature to transfer media content and only use media folders such as Movies, Pictures and Music. We do not recommend that you add content or modify content in other internal Android folders as it may lead to system instability.

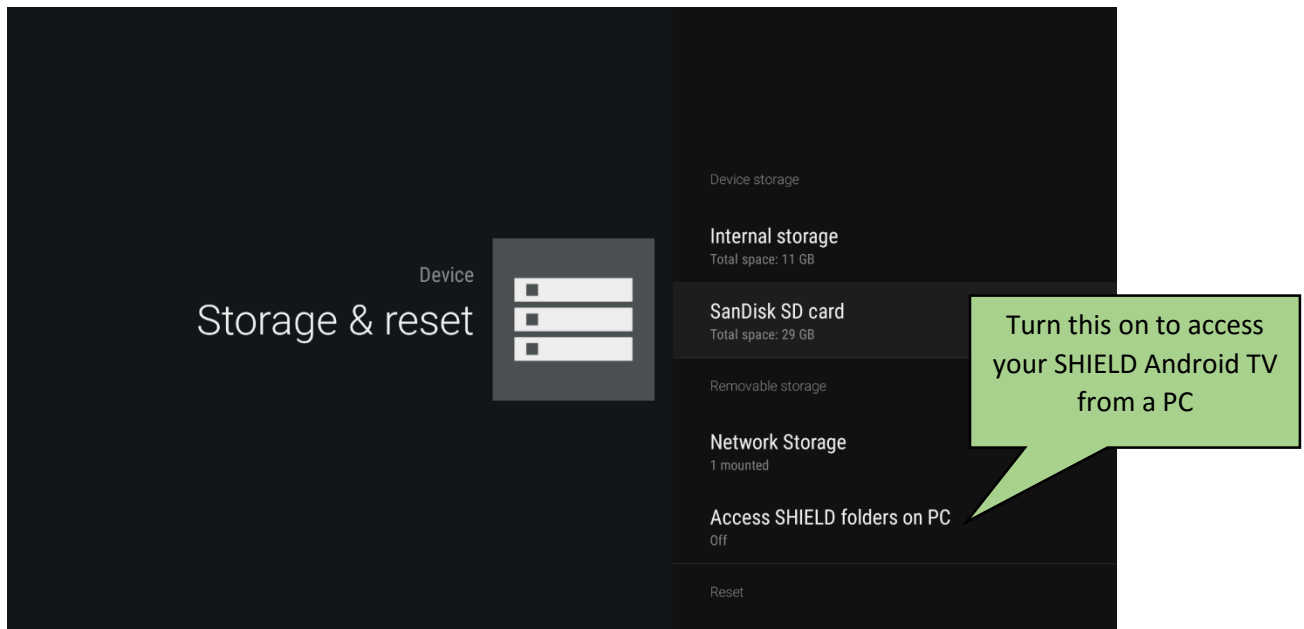


Figure 8 Storage settings, where you will manage NAS and PC connections

Mounting a Network Attached Storage (NAS) device on SHIELD Android TV

With the new Samba feature on SHIELD Experience Upgrade 3.2, you will be able to mount NAS devices on to SHIELD. To mount a NAS device on SHIELD, go to **Settings > Storage & reset** and under **Removable Storage** select “**Network Storage**”. Here you will see the available network storage devices.

Select the NAS (it will be named the same on SHIELD Android TV as it is when you access it from your PC). You have the option to connect as a guest or as a registered user. If you choose to connect as a guest you will only have access to content that is in the public folders. If you connect as a registered user you will be prompted for the username and password that you use to login to your NAS device on your PC.

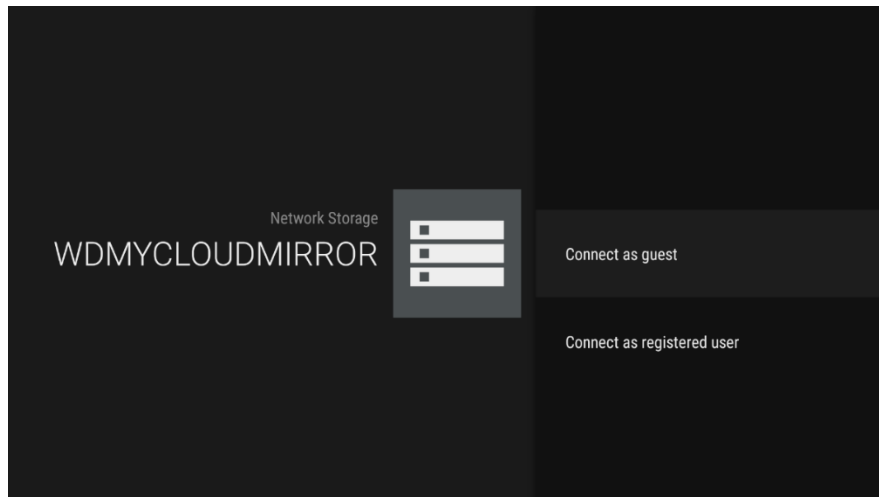


Figure 9 Connect as a guest or a registered user

Once you have successfully connected your NAS to your SHIELD Android TV it will be accessible on the Plex web app (<https://app.plex.tv/web/app>) on the PC when you're adding folders to your libraries.

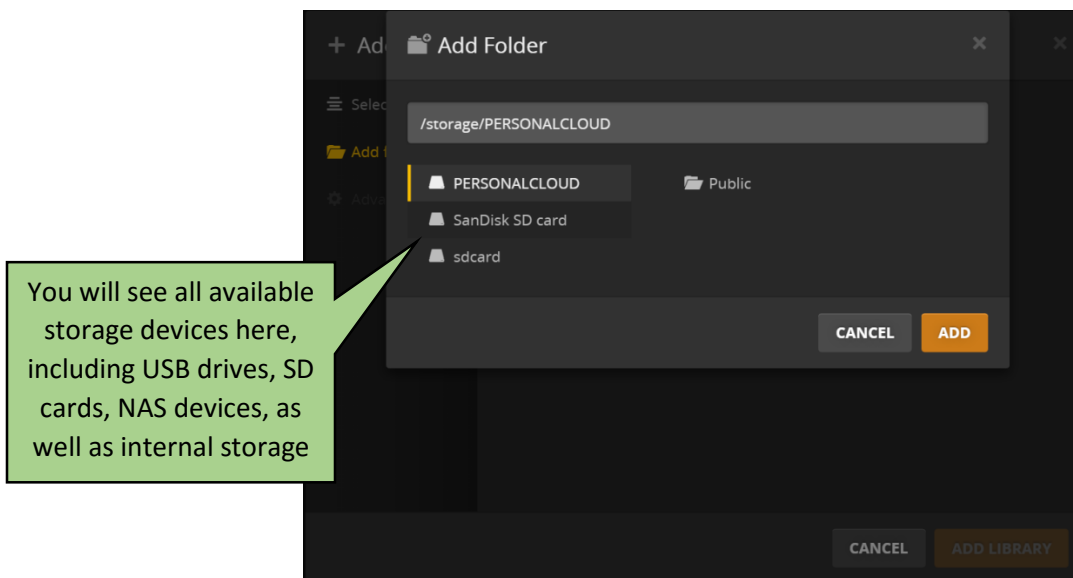


Figure 1 Available storage devices will be displayed on the left

Adding content to Plex Media Server from external USB and Hard drive

You can also add content to your Plex Media Server by simply connecting an external USB thumb drive or external USB hard drives that has your movies, music and photos to one of the USB 3.0 ports on SHIELD. When adding a library to Plex Media Server using the PC web app the USB drive will appear on the left side of the "Add Folders" screen.

HDR Support comes to SHIELD Android TV

SHIELD Experience Upgrade 3.2 brings High Dynamic Range (HDR) Color support to SHIELD Android TV. HDR color is a new standard for Ultra HD TVs that brings image quality closer to the natural world. Your TV comes to life with richer colors, more details, and brighter objects. Filmmakers are able to maintain much more of the original image quality and deliver the look that they intended. In a single scene, you enjoy the full radiance of the sun without missing details in the dark shadows.

SHIELD Android TV supports the open standard HDR10. HDR10 allows TV's to support twice the number of visible colors, which will also appear more vibrant and true to life. Because of this, the picture will have fewer gradients between colors, adding to the true to life look of the content.

Netflix will be one of the first content providers to support HDR streaming and SHIELD Android TV is the first smart TV box to support HDR in Netflix. The Netflix original show Marco Polo is available today in HDR color with much more content coming later this year (Netflix has promised 100 hours of content by August). HDR gaming is also coming later this year with support for **NVIDIA GameStream** in HDR.

To take advantage of HDR you will need an HDR10 capable TV. Many of the latest TV's from Samsung, Sony, and LG support HDR10. If you are also using an AVR you will need to make sure that it also supports HDR. Please refer to your model's owner's manual to verify it supports HDR. If it does not support HDR you will need to connect SHIELD Android TV directly to a TV input. Also make sure that HDR feature is enabled on your HDR capable TV. Please refer to your TV manual for instructions on how to enable HDR.

Here are the settings that you need to enable for HDR support for some of the common TVs:

- **Samsung HDR TVs:** Menu->Picture->Picture Options->HDMI UHD Color->On->Restart
- **LG HDR TVs:** Home->HDMI->Settings->Advanced->Picture->HDMI ULTRA DEEP COLOR->On->Restart
- **Sony HDR TVs:** Home -> Settings -> External inputs -> HDMI signal format -> HDMI [select the SHIELD input] -> Enhanced mode (TV will reboot)

Note: If your receiver is in line between SHIELD and your TV, then your receiver must also support HDMI 2.0a and HDR. Your receiver should report this capability in the product manual.

Dolby Atmos Pass-through

This upgrade includes Dolby Atmos pass-through support, allowing you to enjoy the best audio experience when SHIELD is coupled with a home theater receiver that is capable of decoding Dolby Atmos content. Apps that support Dolby Atmos include VUDU, SPMC, MX Player, and the native Photos & Videos app on SHIELD.

Enhanced HDMI-CEC feature

This upgrade also improves the HDMI-CEC feature by allowing you to not just turn on your home theater setup when you wake SHIELD up, but also automatically turn off your TV and home theater receiver via HDMI-CEC when you put SHIELD to sleep. To enable this feature, make sure HDMI-CEC is enabled on SHIELD (go to Settings -> HDMI -> HDMI-CEC), TV and home theater receiver. Refer to the user manuals of your TV and receiver to learn how to enable this feature.

VUDU 4K with Ultraviolet and Universal Search

SHIELD was the first media streaming box to support 4K content. The variety and quality of 4K content available on SHIELD is growing every day. The availability of VUDU app on SHIELD Android TV further increases the number of movies and TV shows that are available to you. In addition to great variety of content, VUDU also has a large selection of movies available at 4K resolution.

VUDU also supports voice search and lets you view your Ultraviolet library, enabling you to watch your physical movie collection without needing to switch to your DVD player. The VUDU app on SHIELD Android TV supports cross app search and in-app voice search so you can easily find all the places to purchase movies and shows of interest and pick the platform of interest to you.

Netflix Universal Voice Search

Netflix Universal Voice Search is now available on SHIELD Android TV through a Google server update. You can now search for content from the SHIELD Android TV home page and see results from Netflix's (along with results from over 60 other apps that support universal search on Android TV). .

More cord-cutting Apps

Cord cutting has been made easier, with the addition of **WatchESPN** app, the must-have channel for sports fans.

Music streaming is also getting a big boost with the availability of **Spotify** and the announcement of **MTV** and **Deezer**.

When it comes content for the entire family, a variety of family friendly channels are coming soon to SHIELD Android TV: **Watch ABC, Freeform, Disney Channel, Disney Jr., Disney XD, Nickelodeon** and **Comedy Central**.

NOTE: Please refer to the SHIELD Android TV Reviewer's Guide for more details on all the features and capabilities of SHIELD Android TV.

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