



TiVo for Android TV

Amplify the value of Android TV.

TiVo for Android TV provides a superior, future-proof entertainment experience on managed Android TV devices. It leverages the Android TV Operator Tier and is powered by TiVo Service™, which is cloud-based, scalable and easy to integrate with operator back-office systems. TiVo for Android TV brings the full suite of IPTV services, including IP Linear, IPVOD, Start-Over, Catch-Up and nDVR. It runs TiVo Experience 4 – our award-winning user experience with hyper-personalization and advanced recommendations via TiVo's Personal Content Discovery Platform; seamless integration of content and rich unified metadata for universal search and discovery across linear, OTT, on-demand and DVR platforms; unmatched conversational voice control that combines TiVo's deep expertise in the media space; and natural-language understanding with the power of Google Assistant to get users to their content even faster than traditional methods.

HYPER-PERSONALIZED, STUNNING, SEAMLESS UX

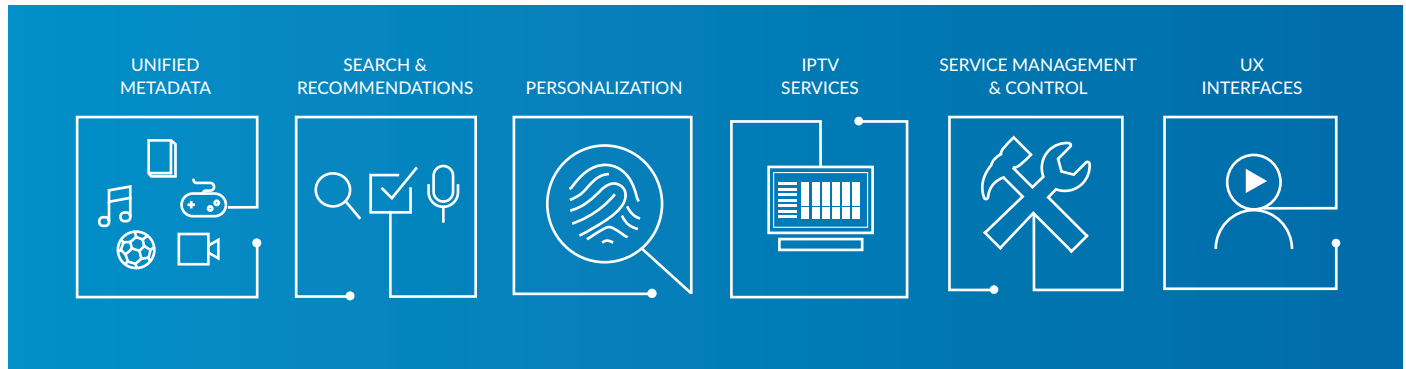
TiVo Experience 4 enables subscribers to eliminate content clutter to quickly find what they want to watch across any content source. It is a modern, appealing experience enabling intuitive navigation for highly personalized, immersive viewing that is seamlessly unified across content sources. To get personalized recommendations using natural-language voice controls, a subscriber can simply say, "Show me movies with Tom Cruise," then refine the query by saying, "Only the comedies" or "The one where he says, 'Show me the money!'"

Spot-on predictions are delivered in the SmartBar®, leveraging the subscriber's viewing patterns, predicting what he or she may want to watch at a given time, on a given day, on that given device.

For example: children's TV might be recommended in the afternoon, and programming for parents in the evening. TiVo Experience 4 remembers the last episode a subscriber watched, and much more.

POWERED BY TIVO SERVICE

At the core of TiVo for Android TV is TiVo Service, which is cloud-based, scalable and easy to integrate. In addition to powering the UX, it enables content discovery, search, recommendations, personalization, IPTV including IP Linear, IPVOD, Start-Over, Catch-Up and nDVR. Client software management, provisioning and service management functions as well as providing integration interfaces into the operator's back-office and other third-party systems are also provided by TiVo Service.



TiVo Service has six functions delivering cutting-edge infrastructure:

UNIFIED METADATA aggregates content catalogs to support a single universal search and discovery experience drawn from all available providers, including linear, on-demand, TV Everywhere and OTT content.

BUILT-IN SEARCH & RECOMMENDATIONS delivers algorithmic and curated content recommendations. Consumers get rapid, hyper-personalized results across content sources and can use natural conversational voice to further refine queries for even more precise results. Text searches predict results on a character-by-character basis, further accelerating choice of desired content.

IN-HOUSE PERSONALIZATION services via TiVo's PCD platform deliver personalized content recommendations and spot-on SmartBar predictions based on a subscriber's viewing habits, as well as the ability for pay-TV operators to use a simple UI to easily customize and configure feeds based on their business needs.

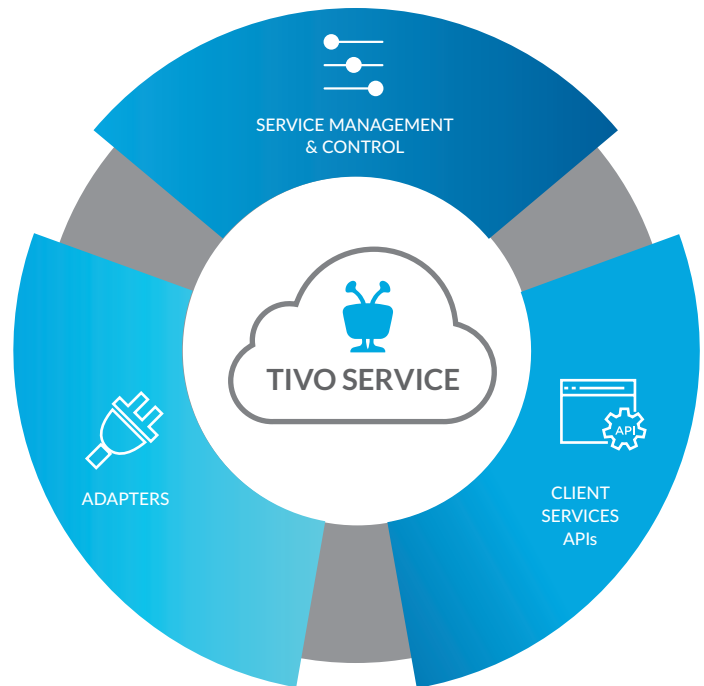
IPTV SERVICES enable IP-based functionality, like IP Linear, IPVOD, Start-Over, Catch-Up and nDVR for rapid innovation and faster feature velocity. IPTV services not only provide configuration and management of services for the above, but they also interface with on-premises nDVR storage, VOD and DRM systems as well as OSS/BSS back-office systems.

SERVICE MANAGEMENT & CONTROL allows operator-defined controls for provisioning, activation and deactivation of Android TV devices, and device software updates. A simple cloud-based UI helps manage service health and performance, as well as obtain diagnostics and usage analytics to streamline operations.

UX INTERFACES include core APIs enabling clients to communicate with TiVo Service for search, recommendations, recording and more. Not only are these highly available and highly robust, they are extensible to support new features while maintaining backward compatibility. A single cloud backend is scalable to support millions of TiVo for Android TV clients.

TiVo Service has six functions delivering cutting-edge infrastructure:

- 1. Service Management & Control APIs** provide the interfaces to manage, operate, configure and monitor various parts of the TiVo Service functions, including:
 - Device and service configuration
 - Provisioning, activation and deactivation
 - Channel lineup
 - Client software management
 - Service analytics
 - Policy management (including nDVR policies, streaming controls, IFTTT implementation)
- 2. Adapters** facilitate integration with third-party systems, including VOD, nDVR, DRM, billing, back office, content catalog metadata and voice.
- 3. Client Services APIs** enable all TiVo clients to access the full power and feature set of TiVo Service.



CONTINUOUS INNOVATION

TiVo's continuously evolving roadmap reflects our long-time commitment to meeting and staying ahead of global trends and consumer demands. As updates and new features are available, operators can easily deploy and manage them with the Service Management & Control tool. Introduction of new features builds on prior success to enhance the consumer television experience.

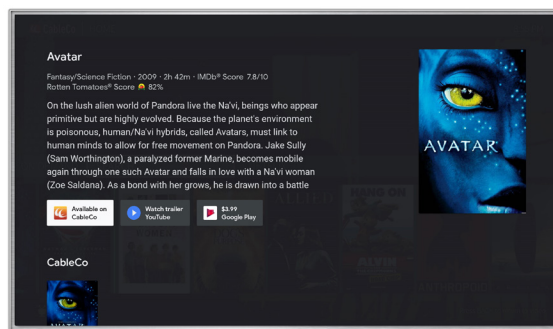
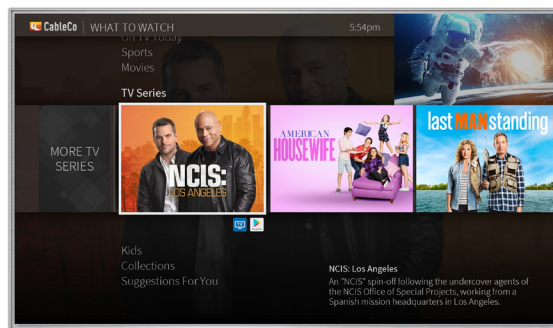
ANDROID TV FROM GOOGLE

Leverage the benefits of Google's Android TV platform, including:

- **Apps and games:** Huge amounts of content availability; apps and games can be developed by anyone
- **Flexibility to differentiate:** Operator Tier Custom Launcher; free choice of technology stack; built on common code base
- **Android's innovation:** Via Google Assistant on TV; IoT integration; cast content from 1,000+ Android and iOS apps

TIVO FOR ANDROID TV CORE FEATURES

- **Universal Search and Browse** – TiVo Experience 4 enables users to search and browse a single catalog of available entertainment, apps and games aggregated by TiVo Service from any content provider. This one single discovery tool is a major advance over other technologies which require a piecemeal experience of searching multiple catalogs.
- **SmartBar** – Users receive spot-on recommendations in the SmartBar section of the UI. SmartBar connects the user with content he or she is mostly likely to watch at a particular time.
- **Conversational Voice Control** – TiVo combines its deep expertise in the media space, natural-language understanding and integration with operator content and subscriber entitlements with the power of Google Assistant to deliver an unmatched voice search experience on Android TV. The TiVo voice experience gets users to their content even faster than traditional methods by allowing them to search using free-flowing conversational dialogue.
- **What to Watch** – This feature enables users to take recommendations to a deeper level by offering sub-categories to find great entertainment.
- **My Shows** – A feature of TiVo Experience 4, My Shows is a list of programming including recordings and streaming available on TiVo for Android TV.
- **Deep-Linking Into OTT Content** – Users in an OTT app can go directly to a desired episode which immediately starts playing.



- **Channel Guide** – TiVo Experience 4 delivers a program guide that allows users to switch between a full guide with options like date, time and sort controls, and Mini Guide, which allows sorting by channel name or number.
- **OnePass™** – Collects every available episode of the viewer's favorite programming across all sources.
- **Trick Play®** – Control features like pause, rewind and fast-forward are all included.
- **IPTV Suite of Solutions** – TiVo for Android TV brings services like IP Linear, IPVOD, Start-Over, Catch-Up and nDVR to managed Android TV devices.

Supported Hardware:

- Evolution Digital eStream 4K
- Technicolor Sapphire
- Arris VIP6102W