



≡ SeaChange® DVD On Demand Solution™

The SeaChange DVD on Demand Solution™ enables your digital set top boxes to emulate full DVD experiences streamed from a wide array of standards-based Video on Demand Systems—complete with video-rich menus, extra scenes, chapter navigation, subtitles and every other DVD capability outlined in the DVD Book specification.

DVD on Demand can improve subscriber experiences with more than movies:

- Movie & programming promotion
- TV series compilation
- Interactive DVD games
- Long-form advertising
- Local content (ex. Little League)
- Community & government access
- Customer care tutorials
- Karaoke and specialty DVD's
- Customer care tutorials

Of all the interactive authoring options there is only one choice available that is a standards-based format, provides low cost approaches to production and is basically ubiquitous – DVD.



The DVD on Demand Solution includes a client / server application with an optional porting kit and a Transport DVD conversion station.

DVD on Demand Player

On the set top box a light weight (less than 50K) DVD player software application is installed as a plug-in to the interactive program guide or middleware. This software is an interpretive engine that “decodes” the DVD-formatted data stream.



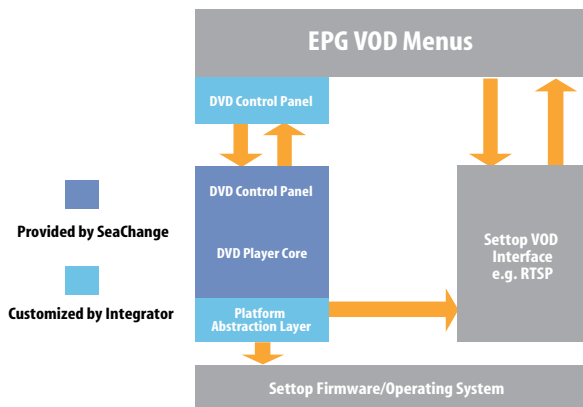
The server component manages the client applications using IP gateway services to send viewer requests to the Video on Demand system.

Porting SDK

In order to facilitate the ease of porting the player to new platforms as they are deployed, SeaChange provides a DVD on Demand Player Porting Kit. This kit supports the creation of a software module that interconnects the core DVD Player with the client platform.

The DVD on Demand Player requires the integration to provide connectivity to VOD streaming, the ability to pass in-band data to the DVD on Demand Player and the ability to access the on-screen display so graphics can be rendered. The platform layer usually makes API calls to the box's operating system or firmware.

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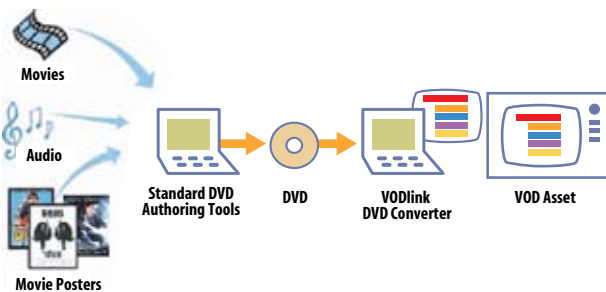
The content with ADI metadata can be transferred to VOD Systems using pitcher/ catcher infrastructure or any IP connection that can support large file transfers (2+GB).

Once loaded into the VOD System, viewers can access the content through program guides and portal user interfaces. When a DVD asset is requested the program guides or other set top box applications activate the DVD player.

As a DVD asset is streamed to the set top box, the software interpreter processes the data PID of the MPEG stream for DVD navigational information and sends seek commands to the VOD server through the gateway, treating the DVD asset on the server as a "virtual" DVD disc. The DVD Player interprets the sub-picture commands and overlays the graphics synchronized with the underlying video.

SeaChange® QuickSilver™ Transport DVD Station

The un-encrypted output of the DVD authoring tool is ingested into a conversation station. The processing software separates the DVD project into its components, then the video is transcoded into the target MPEG format and the audio passed through unchanged. The menu and interactivity are injected into the data PID. The video, audio and data are muxed into a single CableLabs-compliant asset.



The viewer has complete control of the video with pause and multi-speed rewind and fast forward. Beyond VCR functions the viewer can access any DVD controls provided with the content. Most existing set top box remote controls do not have a full complement of DVD buttons, so the DVD player software implements on-screen controls that allow easy access to items, like menus, chapters and sub-titles.

DVD on Demand Explained

Since DVD on Demand applications are packaged into a single, standards-based MPEG file distribution to viewers is the same as any other type of VOD content, including encryption



With the DVD client / server software installed video on demand servers become highly scalable application servers, sending all the data and audio/ video in-band as one stream – efficiently using network bandwidth to present subscribers interactive experiences developed directly by the hands of the storytellers. And regardless of the type of set top box the DVD experience will remain consistent, just like consumer electronics DVD devices.