Tripleplay’s IPTV and Video Streaming platform is a full AV/IT software solution built onto HP enterprise class server ensuring high resilience and reliability compared to black box alternatives. Our IPTV headend, which comes with a complete set of management tools, receives, encodes and distributes content across an IP network in digital format, securely to Set Top Boxes, Smart TVs, Personal Computers, Mobile Devices and Thin Clients.

The Tripleplay headend can capture and ingest content from a wide range of sources including DVB-T/T2, DVB-S/S2, DVB-C – all with the option of CI cards where needed, analogue SD and HD, HDMI, SDI & 3G HD-SDI, ASI, IP Multicast as well as external third party encoders such as IP cameras and external headends. The Tripleplay headend is designed as a server based solution with, in general, PCIe cards for the interfaces above, with the majority provided as QUAD input cards to maximise the number of interfaces available in one server – a standard server can host up to 9 interface cards.

This method allows Tripleplay to provide a single environment hosting all systems and services needed for the majority of solutions, removing the headaches of trying to integrate and support a number of receivers and encoders from different sources.

All streams are output as multicast IPTV transport streams using H.264 or MPEG-2. We do not recode DVB sources so there is no degradation of the quality that is output by the broadcasters. All analogue encoders use hardware encoding chips so that the load on the server CPU is minimal.

**System Management**

**Management**

Tripleplay solutions are all managed using standard web browsers over HTTPS allowing management and monitoring from almost anywhere there is an IP connection to the server. The system allows operators to configure the headend devices, tune receivers, select the services required, configure the network parameters such as address, port, TTL, QoS.

Tripleplay’s headend also provide an SNMP agent and MIBs to allow Network Operation Centres (NOCs) to monitor and report on the headend’s performance.

**Monitoring & Reporting**

The Tripleplay IPTV headend has a range of monitoring and reporting features designed to ensure continuous operation, and to alert operators when problems do occur. All incoming streams and all output streams are monitored for errors or drop outs and where possible the headend will attempt remedial action to try and recover the streams. Remedial actions range from restarting receivers, dropping back to alternate sources and, where provisioned, failing over to a second server. All stream failure detection events can be sent to external management systems as SNMP notifications.

**Clustering/High Availability**

Catering to the needs of the enterprise market we have developed a high availability solution for our Digital Signage and IPTV platform, with mirrored and clustered servers allowing automatic failover and continuity of service in operationally mission critical deployments.

**Content Management System**

Our in-built CMS allows the management of a wide variety of file types, images, videos, live TV and streaming sources, HTML, audio and document, creating a single interface for management of content for IPTV, Digital Signage and Media Portal solutions.

The TripleCMS content management system provides a wide range of features allowing users to upload, edit meta data, manipulate and search for content. Content uploading is available from the management tools as well as from client devices using the media portals. Multiple conversions can take place, for example, a WMV file can be converted into a supported H.264 format for local streaming and at the same time converted to HLS for mobile use.
The Tripleplay HD Encoder distributes HD video quality over IP networks with an encoder latency of 100ms and a glass-to-glass delivery time of 250-450ms. Tripleplay’s HD Encoder delivers full 1080p quality, a low price point and simple integration into the rest of our solution. Tripleplay’s HD Encoder is designed for use in live entertainment, education and sporting environments.

**Content Compatibility**

Our TripleCare client management interface allows full control of all end points on your IPTV and Video network, allowing you to run system diagnostics, manage LDAP permissions and control screens; a Tripleplay network manager’s essential tool.

**Quickdrop**

Our Quickdrop application allows content managers to quickly and easily ‘drop’ video and image files into our CMS, streamlining the process for users with large volumes of files to add into their Tripleplay platform.*

**Property Management System (PMS) Integration**

Tripleplay’s IPTV and Video on Demand solution can be integrated with most leading PMS. Enabling the ability to charge for content, create TV channel packages and personalise screens for the user, PMS integration creates an ideal platform for residential, hospitality and hotel environments.

**Content Casting**

Our TripleCast solution allows users to distribute video content from a central server, across their corporate network to other Tripleplay headends, allowing locally delivered content to be managed, uploaded and monitored from headquarters.

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*Available Q3 2016
**Distribution & Delivery (Continued)**

**Mobile Media Application (Tripleplay MMA)**
Tripleplay has been delivering video ‘off network’ for a number of years, using secure delivery methods and security encryption to stream live and recorded content to mobile devices. This facility is available via browser or through the Tripleplay Mobile Media Application (MMA), providing a variety of features including content download, upload and recording from TV. Available on iOS and Android.

**Media Video Player (Tripleplay MVP) - PC**
Our IPTV and Video on Demand solution is available via a standard web browser, or via our own Media Video Player browser. This provides access to EPG data, recording, upload of content, access to live TV and video streams and your own personal media library.

**Thin Client**
For users looking to implement video and TV solutions in thin client environments, Citrix for example, we deliver multicast video using our intelligent variable rate HLS streaming to Flash player solution. We intelligently adjust encoding parameters to ensure the best possible video quality in a challenging environment.

**High Density WiFi Streaming**
Our patented High Density WiFi video streaming solution enables the efficient and high quality delivery of video content across heavily congested and low quality wireless networks. Using a complex method of forward error correction (FEC) and client statistical analysis we deliver multicast HLS video in the most robust, stable and time efficient way possible to enable access to video where it would otherwise be unavailable.

**Set Top Box (STB)**
In environments without compatible Smart TV screens, or where such screens are deemed inappropriate, we deliver IP Television services via the Amino range of Set Top Boxes (STBs). The most powerful media player in our portfolio, Amino delivers the fastest, highest quality user experience, available in 720p and 1080p models, with option for Power over Ethernet (POE) too.

**Smart TV**
Tripleplay solutions can be delivered directly to H-Browser Smart TV screens from LG, Samsung and Philips for interactive TV portal services or to the Samsung Smart Signage Platform (SSSP) for Digital Signage and TV Portal. Both methods remove the requirement for use of a Set Top Box (STB) at the point of delivery, reducing cost of ownership and decreasing complexity for implementations.

**VOD Streaming**
Stored content can be streamed over local networks using the TripleVoD feature which provides a load balancing RTSP streamer. Content for this is managed by the TripleCMS content management system. Multiple streaming servers can be used to provide standard streams for hundreds of concurrent users. Full reporting of which assets have been viewed, by whom, when and for how long is available using the reporting tools.

A HLS streaming solution is also available which scales to thousands of concurrent users, given suitable networks for the delivery. The HLS solution is suitable for local and private internet links as well as remote content distribution over the public internet where this is allowed by the content providers.

**Electronic Programme Guide (EPG)**
Tripleplay’s IPTV solution comes complete with a customisable electronic programme guide. Unique to our solution, we can combine the Meta data and programme listings from multiple sources including free to air, satellite, free sat and subscription based TV channels.

**Digital Signage**
Our single platform IPTV solution has its own integrated Tripleplay Digital Signage solution; TripleSign. Through implementation of our IPTV solution any organisation’s investment will be future proofed; allowing Digital Signage to be delivered across the same IP network and screen network with a simple software upgrade rather than costly integration work.