Content Delivery
with Digital Rights Management
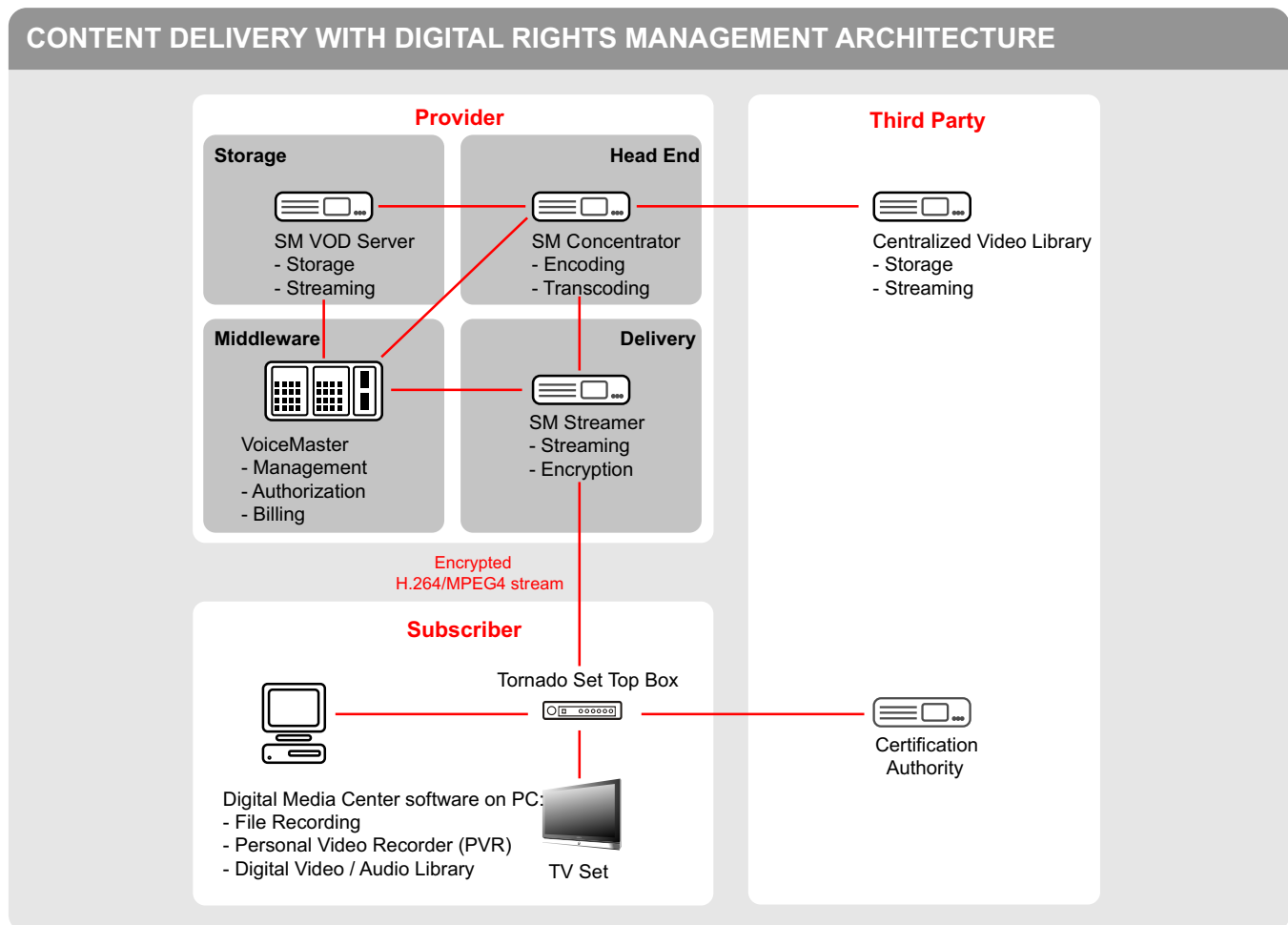
Business Opportunity

The increased popularity of the Internet as a global network for delivery of audio and video content creates both opportunities and challenges to content providers. Because the Internet is a global network, it offers the opportunity to deliver content to a worldwide customer base. But because the Internet is also an open network, it presents challenges with regard to protecting content from unauthorized use and distribution. Therefore, content providers willing to take advantage of that opportunity need to identify the right technology for secure delivery of both streaming and on-demand content to end-users. Such technology should address multiple digital rights management (DRM) issues, such as secure content distribution, protection from content re-distribution, copy protection, and control of play-limit and content expiration.

Business Solution

As a pioneer in the area of content distribution over the Internet, SysMaster has developed one of the best technology solutions for secure content delivery over the Internet. SysMaster's content delivery solution offers secure distribution of IPTV and Video-on-Demand (VOD) content directly to the TV sets of end users. It consists of set top boxes (STB), head-end servers, middleware, billing server, and video streaming servers.

SysMaster's content delivery solution with digital rights management is based on H.264 and MPEG4 video compression technology and utilizes 128 bit SSL encryption, similar to that used in SSL secured web sites, to protect content streams during distribution. The SSL technology ensures that content streams cannot be intercepted and decoded by unauthorized users. Additional layers of DRM include support for Certification Authority, encrypted content recording, personalized recording and others.

CONTENT DELIVERY WITH DIGITAL RIGHTS MANAGEMENT ARCHITECTURE

Provider

Storage
SM VOD Server
- Storage
- Streaming

Head End
SM Concentrator
- Encoding
- Transcoding

Third Party
Centralized Video Library
- Storage
- Streaming

Middleware
VoiceMaster
- Management
- Authorization
- Billing

Delivery
SM Streamer
- Streaming
- Encryption

Encrypted
H.264/MPEG4 stream

Subscriber

Tornado Set Top Box

Digital Media Center software on PC:
- File Recording
- Personal Video Recorder (PVR)
- Digital Video / Audio Library

TV Set

Certification
Authority

Content Delivery
with Digital Rights Management

KEY FEATURES

- ■ 128 bit SSL Encryption for All Content Streams
- ■ Support for Certification Authority (CA)
- ■ Personalized Recording
- ■ Anti-Recording Control
- ■ Encrypted Recording
- ■ Play Limit Control
- ■ Content Expiration Control

128 bit SSL Encryption for All Content Streams

SysMaster's content delivery solution utilizes 128 bit SSL encryption, commonly used to secure Web communications, for all content streams. The SysMaster's content streaming server utilizes a Certification Authority (CA) server, located at the provider's premises, to exchange Public and Private keys ("handshake procedure") before establishing an SSL stream. All keys are dynamically generated and personalized for each client connection to ensure the highest level of communication security.

Support for Certification Authority (CA)

SysMaster's content delivery solution supports a Certification Authority (CA) feature which ensures that video content streamed through alternative providers is properly authenticated with the CA and encrypted. That feature also allows content to be tracked and managed even when it is streamed outside the original network. For example, provider "A" can sub-license its stream to provider "B" and receive royalties on a per unique subscriber or per file access basis. Every time a subscriber from the network of provider "B" wants to gain access to the encrypted stream, he/she has to authenticate with the CA of provider "A". This way provider "A" knows in real-time how many subscribers of provider "B" have accessed particular stream or file. Such information can be used for billing, reporting and management purposes.

Anti-Recording Control

SysMaster's content delivery solution offers an anti-recording feature. When turned on, that feature prevents content recording via the set top boxes of the end-user. Service providers have the flexibility to centrally turn on or off the anti-recording feature.

Personalized Recording

SysMaster's content distribution solution supports Personalized Recording feature which allows recording of content but prevents distribution of recorded files. When such feature is enabled, the solution will allow end-users to record content but such content can only be played by the original device that recorded it. That prevents uncontrolled content sharing and distribution in open network environment.

Encrypted Recording

SysMaster's technology allows all recorded content to be encrypted in real-time utilizing 128 bit SSL encryption. The encryption of the recorded content guarantees that only Tornado devices or SysMaster's DMC software can decrypt and play it. Encrypted files cannot be shared or distributed openly, because they can only be decrypted using specialized and licensed hardware and software tools manufactured by SysMaster.

Play Limit Control

SysMaster's content delivery solution also supports play limit control, which is a standard features for most DRM implementations. Such feature allows placing restrictions on how many times recorded content can be played by the end-user.

Content Expiration Control

SysMaster's content delivery solution offers the ability to "expire" recorded content. For example, a service provider can allow end-users to record and play a particular content only for a predefined period of time (e.g. 48 hours); upon expiration of that period, recorded content cannot be played.