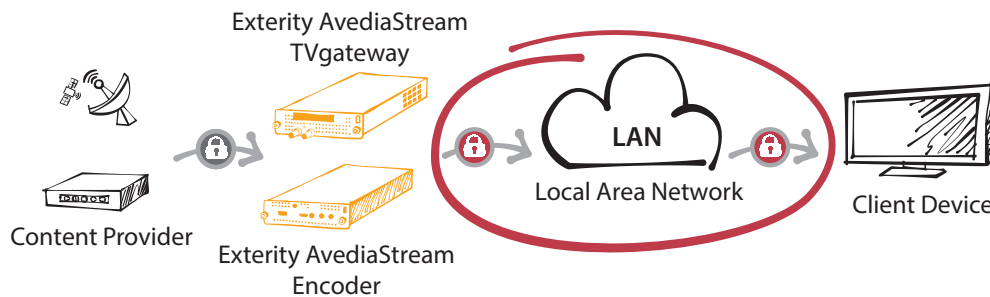


Exterity Content Protection Options

Content protection helps to protect high-value content such as premium channels when they are delivered over IP networks. The Exterity content protection options provide end to end protection, from source to display.



To prevent unauthorized viewing and illegal distribution, premium content delivered to an IPTV system is often copy-protected by the content owners. Within an Exterity IPTV system, both AvediaStream® Encoders and TVgateways capture and decrypt this content and re-encrypt it for distribution over the IP network to licensed displays. Exterity provides a number of content protection systems to ensure secure delivery in different markets and use cases.

Content Protection Options

For content delivered to the IP system over an RF Satellite input, AvediaStream TVgateways decrypt protected video using standard Conditional Access Modules (CAMs). They then re-encrypt it using studio-approved Content Protection for delivery on the IP network. AvediaStream Satellite and Cable/Terrestrial TVgateways can also descramble protected channels for streaming without protection, depending on the requirements of the content provider.

Some content providers do not allow the use of CAMs for descrambling. In this case, channels output from a provider’s set-top box on an HDMI interface protected by HDCPv1.x can be distributed locally by AvediaStream HDCP Encoders, using either the HDCPv2.2 or HDCP Professional specification.

The table below details the options offered by Exterity, and suggests appropriate sources and client devices.

	Source	Client Devices
HDCPv2.2 / Professional	Premium satellite set-top box (with HDMI output)	AvediaPlayer® Receivers ¹
Samsung LYNK™ DRM	Premium satellite service via RF connection	AvediaPlayer Receivers, Samsung SmartTVs ²
Verimatrix	Premium satellite service via RF connection	Samsung SmartTVs ³ , LG SmartTVs ³
ARRIS SECUREMEDIA®	Premium satellite service via RF connection, Video on Demand assets	AvediaPlayer Receivers, ArtioPortal® Desktop ⁴ , AvediaPlayer Plugin ⁴

1 - Receivers bought before 01/Feb/2016 must be licensed with avsvr-hdcp2-rxr 2 - Must support Samsung LYNK DRM 3 - Must support Verimatrix 4 - Requires AvediaServer® for license management

Structure of Content Protection Systems

TVgateway-based Content Protection

Content protection systems which use a TVgateway with an RF Satellite input tend to use a standard structure: content is descrambled by the TVgateway and re-encrypted internally for distribution using keys managed by a Key Management Server. This content is then only viewable on displays with an appropriate license.

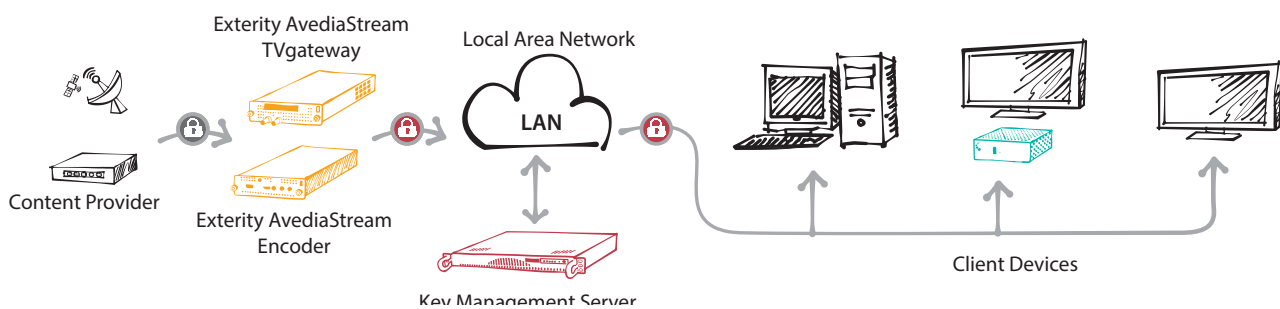
Exterity offers three variants of the AvediaStream g4415 TVgateway (see table below) which descramble and re-encrypt protected content, protecting these channels until they are shown on the intended display(s).

Encoder-based Content Protection

HDCP is appropriate specifically for protected content delivered to the IPTV network using an HDMI interface, such as a satellite TV set-top box. In this system, the content is delivered over HDMI to an encoder, where it is decrypted, encoded and re-encrypted for secure delivery over IP.

Exterity's HDCP Encoders ensure secure delivery of protected content over IP to Exterity AvediaPlayer Receivers.

The diagram and table below provide more detail on the hardware required for each of Exterity's content protection solutions.



	Source	Exterity Encoder/ TVgateway	Key Management Server	Client Devices
HDCPv2.2 / Professional ¹	Premium Satellite TV set-top box Using HDMI only	AvediaStream e3730/e3732 HDCP 32 (HDCPv2.2) AvediaStream e3730/e3732 HDCP Professional (HDCP Professional)	No extra server required	AvediaPlayer Receivers ²
Samsung LYNK DRM	Premium Satellite TV channels descrambled using CAMs (RF input)	AvediaStream g4415-1k	No extra server required	AvediaPlayer Receivers, Samsung SmartTVs ³
Verimatrix	Premium Satellite TV channels descrambled using CAMs (RF input)	AvediaStream g4415-vx	VCAS™ server required (available through a Verimatrix vendor)	Samsung SmartTVs ⁴ , LG SmartTVs ⁴
ARRIS SECUREMEDIA	Premium Satellite TV channels descrambled using CAMs (RF input) VoD content ⁵	AvediaStream g4415-sm	Encryptonite One server	AvediaPlayer Receivers Personal Computers: ArtioPortal Desktop ⁶ (artio-dk), AvediaPlayer Plugin ⁶ (artio-pg, avply-pg)

1 - HDCP Professional location restricted - see specific details section 2 - Receivers bought before 01 Feb 2016 must be licensed with avsrv-hdcp2-rxr 3 - Must support Samsung LYNK DRM 4 - Must support Verimatrix 5 - Requires pre-recorded VoD content and a link to Exterity Encryptonite server 6 - Requires AvediaServer for license management

HDCPv2.2 / Professional

Requirements

- No CAS server.
- HDCP Professional requires Legal Agreement.
- HDCP encoders and receivers must be located on the same premises.

Licensing

- Included on avstr-3730-hdcp-32, avstr-3732-hdcp-32, avstr-3730-hdcp-pro and avstr-3732-hdcp-pro.

Notes:

- HDCPv2.2 supports up to 32 AvediaPlayer Media Players (avstr-3730-hdcp-32, avstr-3732-hdcp-32).
- HDCP Professional supports up to 1000 AvediaPlayer Media Players per channel (avstr-3730-hdcp-pro and avstr-3732-hdcp-pro).
- Input from HDCPv1.x HDMI interfaces only.
- AES-128 encryption.

Verimatrix

Requirements:

- Separate VCAS server. Please contact Exterity Support for more information.
- Purchasable from Verimatrix directly or through Verimatrix system resellers.

Licensing

- TVgateway licensed at manufacture.
- TVgateway is integrated into Verimatrix system by Verimatrix or Verimatrix reseller.

Notes:

- AES-ECB Algorithm.

Samsung LYNK™ DRM

Requirements

- No separate CAS server - hosted on TVgateway.

Licensing

- TVgateway licensed at manufacture.
- No additional licenses required for Samsung SmartTVs.
- Client licenses required for AvediaPlayer Receivers (avply-lic-1k-***)

Notes:

- AES-CBC Algorithm.

ARRIS SECUREMEDIA®

Requirements

- Separate Encryptonite One server.
- ArtioPortal Desktop (artio-dk) and AvediaPlayer Plugin floating license (artio-pg) require an AvediaServer with m7200 (Producer) or m7300 (Creator). (All available from Exterity).
- AvediaPlayer Plugin fixed license (avply-pg) does not require an AvediaServer.

Licensing

- avstr-g4415-sm TVgateway licensed at manufacture.
- Client licenses required.
- AvediaPlayer Receiver, ArtioPortal Desktop and AvediaPlayer Plugin Licenses purchased separately.