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Thales Secures Subscription Television Broadcasts

A large television broadcasting company has long provided on-demand video content, but as the media corporation expanded to develop live broadcast technology, they needed to ensure every drama, sit-com and sports match was encrypted – while ensuring a smooth viewing experience.

The organization

One of the world's leading communications services companies, this multinational corporation serves customers in more than 150 countries worldwide. Its services range from phone and internet, to networked IT services, and on-demand and broadcast television programming.

The business need

Almost ten years ago, the Company launched its innovative IPTV platform, allowing subscribers to watch television programming on-demand over their internet connection. But when they wanted to enhance its offering to add live channels, they needed a system that could deliver real-time programming securely. By ensuring broadcasts on its live channels were encrypted, only paid subscribers were able to watch its channels.

Challenge

To protect its intellectual property, this television provider needed to encrypt and decrypt its live TV broadcasts, as well as encrypt communications between multiple datacenters to ensure the security of its high-value TV transmissions. Most important, security measures could not interfere with the audience's seamless viewing experience.

Solution

Thales Luna Hardware Security Module (HSM) is a high-assurance appliance that generates, stores and manages encryption keys. Thales High Speed Encryption (HSE) solutions secure data in motion transmissions of data, video and voice between datacenters.

Benefit

With Luna Network HSM and High Speed Encryptors, the broadcasting company is confident that all television broadcasts and communications between datacenters are secure, while providing the seamless, high quality viewing experience its clients demand.

To ensure redundancy, the Company established several backup datacenters to host television broadcast data so that in case of failure, any datacenter could take over broadcasting so viewers wouldn't lose programming. They rapidly deployed Layer 2 Ethernet encryption to secure data in motion between those datacenters, ensuring the protection of their intellectual property.

Encrypting television programming between their broadcast center and viewers was more complex. the Company wanted a hardware security module (HSM) that could generate, store and manage encryption keys so that every time a viewer presses the button to change the channel, a key is requested, sent from the HSM, and the channel is decrypted for the viewer to watch – all transparently and nearly instantaneously so it does not disturb the viewers' experience.

Adding to the technical complexity, they regularly broadcast popular television shows and international sporting events. Millions of fans tune in each week to watch the games, meaning that there are millions of simultaneous channel changes at key moments of the broadcast. These channel changes cause massive spikes in workload on the HSM that is sending keys and decrypting channels in the background. HSMs would need to be able to handle these spikes in concurrency and maintain low latency in order to protect valuable content.

> " We knew we needed encryption for our live TV broadcasts, especially for popular shows and sporting events. We were constrained by a tight timeframe and strict performance requirements. Live broadcasting is essential to our subscription revenue and brand, so we needed to ensure continuity- you can't have a blackout on changing the channel. We turned to Thales for their encryption and data protection expertise. They responded rapidly, enabling to deliver the quality of broadcasts our viewers expect, while being confident our valuable content is secure. "
>
> – TV Integration and Test Project Director

The solution

After evaluating several alternatives, the Company chose Luna Network Enterprise HSM as their dedicated cryptographic module, and High Speed Encryptors to provide network encryption between datacenters.

Luna Network HSM is a high-assurance hardware appliance that generates, stores and manages cryptographic keys, and is able to handle the thousands of requests per second that the company required.

High Speed Encryptor solutions provide the assurance of FIPS and Common Criteria certified security. Designed to support the growing demand for increasing bandwidth, the Ethernet Encryptors secure sensitive data more efficiently than higher layer protocols, thereby lowering the cost of network security and compliance, and providing a means of encrypting communications between redundant datacenters.

The benefits

Thales worked with the company's developers and Professional Services around the globe, and was able to integrate encryption into the live broadcast environment, test the solution and formally launch the encrypted platform in time for the first football match of the season.

"Thales is very responsive," said the Company's TV integration and Test Project Director. "In a very short period of time, they turned around the quote and shipped test devices we could use to get familiar with the new technology. Making encrypted broadcasting work in our environment was more complicated than it sounds, and Thales gave us great support both pre- and post-sale."

High Speed Encryptors were simple to install in their backup datacenters. A 'Bump in the Wire' design made the Ethernet Encryptors easy to install across their data centers. Thales encrypts data transmitted over the Company's Ethernet connections, ensuring television programming cannot be intercepted and pirated en route between datacenters.

"The encryptors simply 'dropped in' within our network. They didn't require changes to other devices or network reorganization, and did not add load to the network operations or management. It was truly encryption made easy," explained the Project Director.

By deploying Luna HSM and High Speed Encryptor solutions, the company was able to meet their criteria to provide live, encrypted IPTV/television broadcasts with zero impact on the viewers' experience. Luna Network HSM and High Speed Encryptor ensure:

- **Valuable content security.** The company can confidently broadcast high-value programming knowing that that their television content is only available to those authorized to access it.
- **High volume.** Luna HSMs easily handle spikes in workload as viewers simultaneously tune in to matches and popular programming.
- **Low latency.** Encryption transactions happen transparently so users don't even notice its happening.
- **Resilience.** Redundant datacenters with encrypted communications ensure that the programming is consistently available, while maintaining its high levels of security.

About Thales

The people you rely on to protect your privacy rely on Thales to protect their data. When it comes to data security, organizations are faced with an increasing number of decisive moments. Whether the moment is building an encryption strategy, moving to the cloud, or meeting compliance mandates, you can rely on Thales to secure your digital transformation.

Decisive technology for decisive moments.