



ISP delivers VOD services with Advanced IP Video Distribution System

Overview

Country or Region: South Africa
Industry: Telecommunications

Customer Profile

Headquartered in Johannesburg, Goal Technology Solutions (GTS) is a black owned, South African company, specializing in delivering value added services over dedicated broadband GTS networks to communities on the African continent. The purpose of GTS is to change the way people communicate in Africa, making affordable services available to all.

Business Situation

GTS also wants to provide VOD (video on demand) services to community subscribers over the GoalNet hybrid fiber and PLC (power line communication) IP network.

Solution

Araneo AVDS™ (Advanced Video Distribution System) integrated solution of video servers, content distribution, set top boxes and advanced middleware.

Benefits

- Low total cost of ownership
- Highly efficient network utilization
- Advanced subscriber functionality
- Capacity to process more traffic
- No additional manpower required
- Linux video servers
- Linux set top boxes
- Single-vendor integrated system of video servers, content distribution and IPTV set top boxes.

“AVDS flexibility and open architecture enabled us to rollout a new VOD service on our hybrid IP network and shorten time to revenue.”

Jaco Naude, Chief Technology Officer, GTS.

GTS is one of the standout innovators in the South African Telecom industry in recent years. Competition in a regulated market and low-bandwidth subscriber environment drove the provider to see how it could capture additional revenue with VOD services over it's hybrid state-of-the-art fibre optic and Power Line Communication (PLC), which uses existing electricity lines as carrier for communications.

The Araneo AVDS (Advanced Video Distribution System) is a unique, single-vendor, end-to-end solution that distributes video on demand from the network core via a Metro area network to neighborhood POPs and video servers. AVDS uses an innovative architecture based on TCP/IP Unicast, hierarchical content distribution services, network PVR and Linux IPTV set top boxes.

In a market with a wealth of competing IPTV solutions from large vendors, the flexibility and efficiency of AVDS made Araneo a clear choice for GTS business, network and performance requirements.

AVDS™ is a registered trademark of Araneo Ltd.

Situation

Goal Technology Solutions (Pty) Ltd (GTS) was founded by Adrian Maguire, Patrice Lasserre and Jaco Naude in mid 2004. The company is a spin-off of a leading ICT company in Africa, where the team was responsible for introducing new and innovative technologies. The rapid growth of the GTS was facilitated by the investment of Mikcor Investment Holdings (MIH). The founder of MIH, the late Mr Miko Rwayitare was a leader in deploying GSM networks throughout Africa

To create a network, GTS deploys a hybrid of state of the art technologies including fibre optic and Power Line Communication (PLC), which uses existing electricity lines as carrier for communications. Within a PLC-enabled area, the mere plugging of the PLC modem into a 220 Volt socket, nearly anywhere in the community, gives the user telephone, high speed always-on Internet and access to security services. IPTV services were planned to interactive television, video streaming and video-on-demand.

In South Africa, due to the monopoly of subscriber and pay television offerings to be viewed at home, a unique market opportunity exists for VOD services.

Therefore, when Araneo introduced AVDS to Mikcor, the GTS infrastructure group was eager to begin using this IPTV solution to see if it would meet their objectives for video on demand.

System requirements

- Work efficiently on the hybrid fibre, PLC network

- Provide highly-responsive and high-quality VOD service on 5MB links
- Rollout as quickly as possible
- High system stability, low cost of maintenance
- Network PVR
- Small, diskless, IPTV set top box
- Support video standards – MPEG2, MPEG4, H.264
- User friendly user interface
- Support browser and additional interfaces such as mouse and keyboard
- Low initial CapEx cost
- Low variable cost per subscriber
- Long-term commitment for vendor support
- Future support for live content

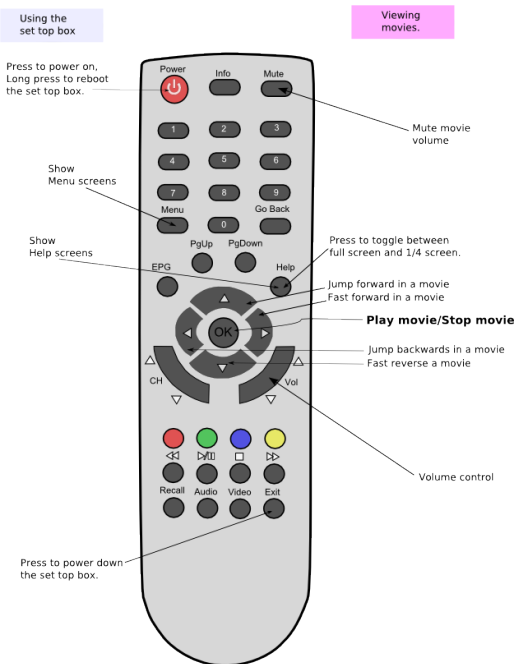
The GTS team quickly grasped the power offered by AVDS, and recognized how this technology could provide them with the platform they needed for their VOD service.

Solution

In early 2007, following meetings with the customer, Araneo began the project implementation. The project team's objectives were:

- Meet all GTS business, technical and performance requirements
- Use Linux technology
- Open source the set top box User Interface application

Araneo AVDS™ Customer Case Study



In summer 2007, Araneo provided a technology preview to the customer – meeting all requirements and exceeding performance and stability expectations. A beta field test was performed in September 2007 with a selected set of subscribers and movies in order to measure quality of the user experience.

Benefits

The high-performance, scalability, flexibility and open architecture make AVDS a robust and flexible VOD platform.

Standard video formats

As Jaco Naude explains: “The AVDS platform is unique in its simplicity and power to transcode video in standard formats at the head-end and provide a highly-responsive user experience from network core to IPTV set top.”

Pain-free deployment

The tightly integrated and extensible system is based on TCP/IP Unicast and hierarchical delivery of protected digital content. The ISP can start out with small neighborhood implementations and grow incrementally without large initial CapEX and systems integration costs.

“As we use it, the VOD service deployment proceeds as the subscriber base grows” says Naude.

GTS could not afford a large IPTV project with multiple vendors and expensive systems integration of content servers, conditional access, set top boxes and middleware.

Naude explains, “We didn’t want to bite off more than we could chew and we believe that a solid platform and Open Source tools are better than a strategy of integrating

individual components from multiple vendors. In the AVDS single-vendor solution, no changes to our network were needed. The installation was short and sweet; with no need to for complex conditional access systems”.

Highly scalable Network PVR

AVDS content distribution starts with a proprietary transcoding process of licensed content at the head end. The AVDS content distribution protocol transports protected-content on-demand from the network core to neighborhood video servers. Each video server is a commodity Ubuntu Intel box and supports 200 network PVR users. As subscribers are provisioned, an operator slots an Ubuntu box into a rack and AVDS will automatically recognize the new server.

Fast IPTV STB response time

A new IPTV STB automatically provisions itself on the IP network within less than 2 minutes. User response time to search, page and preview a trailer in a 2,000 movie VOD library is less than 2s .

Customizable user experience

The AVDS IPTV STB runs Linux and the UI is implemented using Qtopia 4.3 with full GPL source code licensing available for the customer. The Open Source UI gives a customer and Araneo business partners incredible flexibility for customized interfaces including multiple language support.

Subscriber satisfaction features

- Bookmark – Start now, finish later. A user can leave a movie and return to it at any time whenever she wants – to precisely the same moment in the movie.

“The key strength of this technology is the extensible AVDS protocol and open middleware architecture.”

Jaco Naude, CTO - GTS

- Search – a user can search the movie IMBD database by any field or by Google-style free text search with the remote control.
- Favorites – AVDS tracks favorite movies in the VOD library and shows viewers what's hot in *their* neighborhood.

External Interfaces

- User entitlement/ticketing
- Customer provisioning in CRM
- Transfer of billing files to accounting

Extensible Application Platform

AVDS is a powerful platform for rolling out additional services over the IPTV network.

Jaco Naude, enthusiastically explains, “The key strength of this technology is the extensible AVDS protocol and open middleware architecture”. For example,” Naude continues, “as our network continues to evolve, the engineering team can implement fiber to the home or additional distribution tiers in the Metro area network – completely transparent to the subscribers and the core ”.

Ensuring project success

Both GTS and Araneo believe that the information collected during the project planning and field engineering assessment phase was crucial in ensuring project success. The team summarizes 5 steps to ensure a successful implementation of a network PVR system:

- Examine your own network for performance issues; you may be surprised by the problems and issues you uncover.
- Evaluate behavior in a live IP network environment with 10 – 100 subscribers.

- Show UI examples to the decision makers; colors and fonts can be critical cultural factors.
- Start small & start early; allocate money and act quickly
- Implement incrementally, enables a small operator to test robustness of the market and the technologies.

For More Information

For more information about Araneo AVDS contact the Araneo sales information center at +972 9 957 5476.

To access information using the World Wide Web, go to: www.araneo.com

Software Associates

Software Associates is a professional consultancy that works with companies seeking to protect digital assets. Our expertise enables a business to analyze, mitigate and manage their operational risk. Visit us at www.software.co.il

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Araneo AVDS

If you're an ISP, Telecom service provider or operate a corporate network, Araneo AVDS functions inside your network infrastructure without requiring any network changes, server or user endpoint software installation. AVDS combines powerful content distribution with metadata descriptions, enabling you to deploy quickly and implement a successful Video on demand solution for both stored and live content.

Solution in a nutshell

Software

- Araneo AVDS content distribution
- Araneo AVDS-IPTV user interfaces
- Operating System - Ubuntu Linux 7.10

Hardware

- HP DL160 Intel servers

Professional Services

- Business vulnerability assessment
- Application threat analysis

STB Technology

- Manufacturer: Lunghwa Electronics - <http://www.lunghwa.com.tw/>
- NXP PNX 8550
- MIPS II architecture
- Storage – no HDD, 64MB flash
- H.264 Main Profile Level 3 SD PAL/NTSC resolution decoding with CABAC (up to 2 Mbps) or CAVLC (up to 2.5 Mbps)
- Dedicated hardware for demux and decode of 2 SD MPEG-2 or 1 HD streams
- High-quality image scaling and de-interlacing of all image resolutions
- Linux operating system
- Supports encryption: Multi2, DES/3DES, AES
- HDMI, Digital audio ports
- USB 2.0
- IR wireless keyboard