Broadcast International and IBM BladeCenter – accelerating video delivery for NGN

Highlights

- *Broadcast International provides superior quality encoded video and significant compression gains over current industry-standard solutions*

- *Real-time, software-based encoding allows for easy upgrades to new codecs and better scalability by repurposing hardware, thereby improving ROI*

- *IBM BladeCenter family provides a scalable, open standards based platform for next generation network applications*

Many telecommunication service providers are adding new IP-based, video services to their offerings lineup. As more video content becomes available, many network infrastructures become strained under the weight of this new digital content. Service providers must attempt to optimize their valuable network bandwidth.

High-definition (HD) video content takes considerably more bandwidth than legacy Standard Definition video. More efficient video encoders are needed to reduce the size of the video stream and bandwidth required to deliver digital content to the home. As IPTV providers bundle additional services of voice, Internet and television, the network bandwidth into the home can become extremely taxed. Households with multiple televisions, accessing the IPTV service simultaneously, can often experience

quality of service problems. With limited bandwidth for simultaneous data delivery and HD video, the user experience can suffer.

As the IPTV market continues to grow, new specialized video compression and transport methods are being developed to optimized valuable network resources. Many service providers are migrating from MPEG2 to MPEG AVC to further reduce bandwidth requirements and deliver digital content across their existing IP networks.

Video to mobile devices is presenting a growth opportunity to service providers. Wireless bandwidth is more constrainted than the broadband typically available at the home. To successfully deliver video content to mobile devices, many service providers are seeking advanced compression solutions. The delivery of video content to mobile devices requires new and advanced video encoding technologies.

A carrier-grade, cost-effective, real-time encoder for video delivery

The Broadcast International, CodecSys™ AVC, is a cost effective way for service providers to overcome many of these bandwidth challenges. The CodecSys AVC is a multi-channel, real-time encoder which

allows for a smaller form factor and better scalability than the typical multiple, single-channel encoders. The CodecSys AVC system is highly scalable being based on the architecture of the small foot print and energy efficient IBM BladeCenter.

The CodecSys AVC is unique in that it is a software based encoder that utilizes the advanced, Cell Broadband Engine™ (Cell/B.E.) processor available on the IBM BladeCenter QS21 and QS22 blade servers. As a software-based solution, the CodecSys AVC can be easily

upgraded with the latest encoding standards while preserving the initial hardware investment. By having the ability to virtualize this functionality, encoders can be used to maximum efficiency.

The architecture of the multi-core Cell/ B.E. processor provides a powerful tool for video encoding. When combined with Broadcast International's CodecSys AVC, the solution can produce high quality video at 20% to 30% lower bit rates when compared to other encoders.

Example of an IPTV network configuration
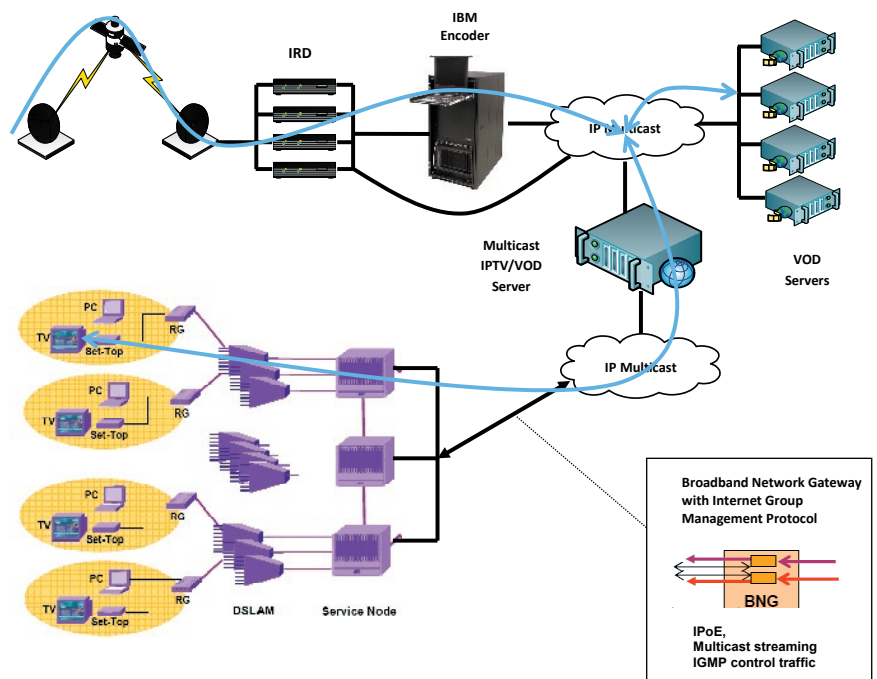
Source: Broadcast International

By utilizing these advanced capabilities, Broadcast International can deliver HD quality video at rates as low 3 Mbps. These lower bit rates translate to lower bandwidth requirements leading to more revenue opportunities and decreased network costs.

IBM BladeCenter family —
the IT and network convergence platform
The IBM BladeCenter T chassis provides hardware redundancy (power supply, I/O modules, management modules, L2 switching, mid-plane, etc.) thereby reducing potential points of failure in the solution.

The IBM BladeCenter is an advanced blade system which integrates servers, storage and networking into a single chassis — yielding significant simplification, improved density and potential TCO savings . A single family of common server blades, storage, I/O, switches and networking modules are fully supported and interchangeable across the family of BladeCenter chassis. The IBM BladeCenter chassis is designed as the ideal solution for data center deployments. The IBM BladeCenter H is for high performance computing platform, while the IBM BladeCenter T chassis is specifically designed for telecom central office deployments.

The new, IBM BladeCenter HT — a new, telecom optimized version of the BladeCenter H — opens new market opportunities with a new and powerful NGN platform ideally suited for telecom equipment and service providers.

The IBM BladeCenter T and BladeCenter HT deliver rich telecommunications features and functionality, including fault-tolerant capabilities, hot-swappable redundant DC or AC power supplies and cooling, and built-in systems management resources. The rigorous Network Equipment Building System (NEBS) Level 3 and European Telecommunications Standard Institute (ETSI) outline requirements typical of telecom central office environments in the areas of electromagnetic compatibility, thermal robustness, fire resistance, earthquake and office vibration resistance, transportation and handling durability, acoustics and illumination, and airborne contaminant resistance. The IBM BladeCenter T and BladeCenter HT chassis meet the NEBS Level 3 / ETSI requirements[1].

**Broadcast International and IBM:
a powerful combination**

The combination of Broadcast
International, the Cell/B.E. processor
and the IBM BladeCenter family
delivers the performance, reliability
and affordability demanded by
mission critical telecommunications
applications. The IBM BladeCenter is
the ideal platform for the deployment
of these services providing a single
platform to help reduce operating costs
and complexity.

For more information

Learn how IBM Systems can help your
company achieve more revenue and
reduce your costs, while helping you
keep your profitable customers.

Have questions? Contact the IBM
Telecommunications team today on
how we can help you take advantage
of our extensive industry expertise.
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For more information about Broadcast
International, visit:

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