



## **IBM BladeCenter — HTTP/WAP Dynamic Content Filtering Solution featuring:**

- **Adamentium**
- **Red Hat Linux**
- **Intel**

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**Overview**

Cellular/mobile phone use by children and young people continues to grow at an astounding rate. European studies indicate that mobile phone usage by children in some age groups are reaching 100%. For example in Germany, approximately 92% of children between the ages of 12-19 and 47% ages of 6-13 had a mobile phone in 2005<sup>1</sup>. In Italy, a “Save the Children” survey indicated that 31% of children between the ages of 5-13 and nearly 100% of 14-18 year-olds had mobile phones. In Poland, a survey by “Nobody’s Children Foundation” found 92.1% of 12-17 year olds owning a mobile phone. In the UK, the average age for children to be given their first mobile phone has fallen to eight<sup>2</sup>.

By some estimates, there are over 122 million websites<sup>3</sup>, with an approximate 30% of the web content deemed to be of an adult nature<sup>4</sup> and inappropriate for minors.

In the United States, federal legislation such as the Child Information Protection Act (CIPA), is driving content filtering into educational institutions. The CIPA requires content filtering in schools and libraries that are supported by federal government funding<sup>5</sup>. Similar laws and regulations have been enacted in Europe, Australia and other regions around the world.

The pervasiveness and dynamic nature of the Internet requires a filtering solution that can adapt to the ever changing and rapid growth of the Internet. Given this ever increasing use of mobile devices by minors, many service providers and content providers are pursuing content filtering initiatives to provide for the safer use of mobile phones, specifically for younger teenagers and children. Dynamic content filtering solutions, like Adamentium’s LiveMark, is no longer an option for many telecommunication service providers – it is now an absolute imperative.

[1] JIM Studie 2005 Mediapädagogischer Forschungsverbund Südwest  
<http://www.mpfs.de/studien/jim/JIM-Studie2005.pdf>

[2] Mobile Youth Report 2005, Wireless world forum  
<http://www.mobileyouth.org>

[3] Netcraft, Jun 2007 Web Survey  
[http://news.netcraft.com/archives/web\\_server\\_survey.html](http://news.netcraft.com/archives/web_server_survey.html)

[4] IBM Research, WebFountain project  
<http://battellemedia.com/archives/000428.php>

[5] United States - Federal Communications Commission  
<http://www.fcc.gov/cgb/consumerfacts/cipa.html>

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**Highlights**

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*IBM BladeCenter family provides a scalable open standards based platform for next generation networks applications*

Adamentium has developed a new and innovative method for dynamic content filtering. Adamentium was able to deliver this critical function and accelerated its time-to-market by leveraging the strengths of the IBM BladeCenter family, including:

- IBM BladeCenter H platform provides the carrier-grade Red Hat Linux platform
- With a dual, Quad-Core Intel® Xeon® processor, the Adamentium LiveMark solution was shown to deliver a 6.6ms response time supporting 50,000 simulated subscribers on a single HS21 server blade or approximately 600,000 simultaneous subscribers using a fully configured IBM BladeCenter H chassis.

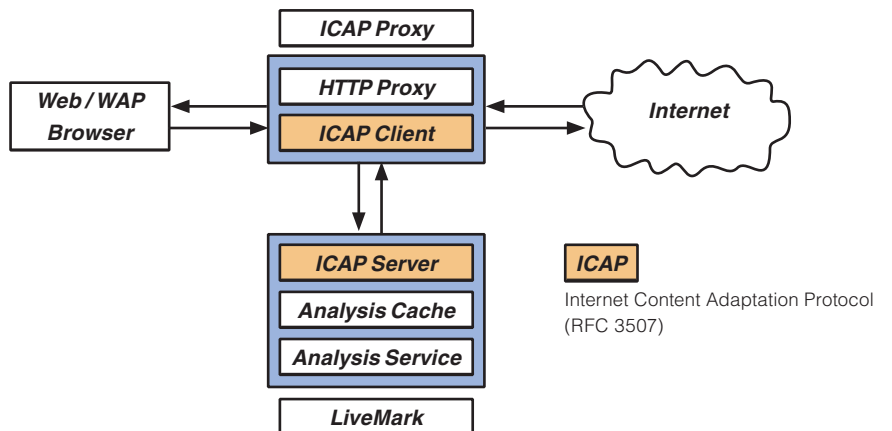
**Adamentium LiveMark solution**

Adamentium’s LiveMark Mobile is a unique filtering solution that can be used to filter inappropriate mobile web content for minors. LiveMark can dynamically analyze the web content, instead of relying on mere URL blacklists compiled from yesterday’s usage. Dynamic web content filtering requires the accurate detection of dynamic content behind an ever changing set of URL addresses. Because LiveMark is an intelligent security solution based on content learning, it does not require daily URL updates and does not leave an open door to push URL blacklists. Even though LiveMark is a sophisticated and intelligent solution, it’s high performance design can be as fast as competing, simple URL blacklist matching solutions.

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**Adamentium LiveMark architecture**

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Source: Adamentium

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**Highlights**

*As services converge, the underlying infrastructure is also converging onto a common COTS based platform*

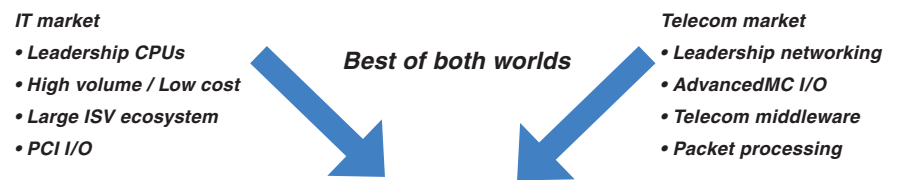
**The IBM BladeCenter family**

The IBM BladeCenter T chassis supports hardware redundancy (power supply, I/O modules, management modules, L2 switching, mid-plane, etc.) thereby minimizing potential points of failure in the solution.

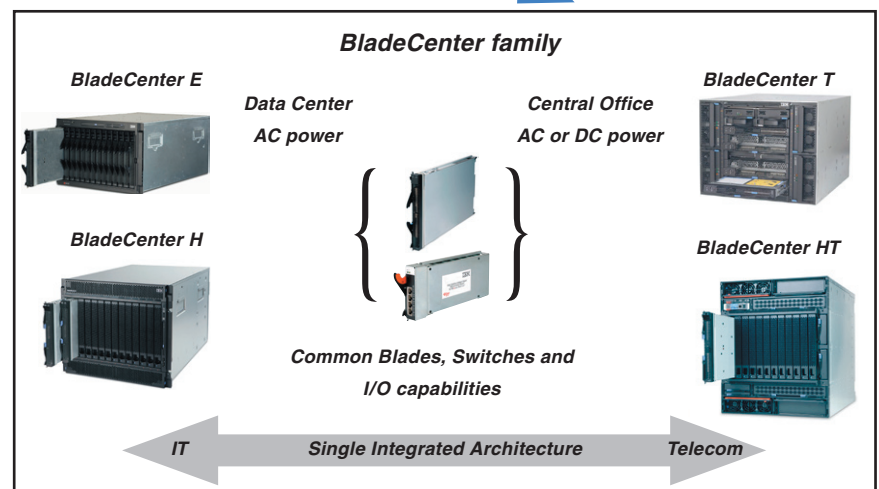
The IBM BladeCenter is an advanced blade system which integrates servers, storage and networking into a single chassis – yielding significant simplification, improved density and potential TCO savings . A single family of common server blades, storage, I/O, switches and networking modules are fully supported and interchangeable across the entire 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.

**Advantages of the IBM BladeCenter**



*The use of interchangeable blades across the BladeCenter family, allowing service providers to deploy both network and IT functions on this common platform*



Source: IBM

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**Highlights**

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*IBM systems, software, services and partners delivers a comprehensive portfolio that helps accelerate the NGN transformation*

*The BladeCenter family offers choice of processors, connectivity, power and form factors to simplify the deployment of solutions in the telecom central office or data center*

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 in a 20” deep chassis. 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 NEB Level 3 / ETSI requirements<sup>6</sup>.

**Harnessing the power of the Intel Xeon processors**

The Quad-Core Intel® Xeon® processor series surpasses most other processors by providing excellent computational density and value.

The new Intel® Core™ Microarchitecture further improves performance by increasing the size of the L2 smart cache, increasing the instructions per cycle by upto 33% and doubling the width of the SSE3 engine for media-intensive calculations. Lastly, the associated Intel® 5000P Chipset supports 21 GB/s of memory bandwidth to Fully-Buffered DIMMs (FB-DIMMs) and 21 GB/s of peak system bus bandwidth through its Dual-Independent Buses (DIBs). The combination of 4-cores per socket, the new Intel® Core™ Microarchitecture, and the high-throughput chipset supporting FB-DIMMs allows the BladeCenter HS21 to bring unrivaled performance to the blade market segment.

[6] For additional details, please refer to Underwriter's Laboratory (UL) certified NEBS Level 3 / ETSI test report.

**Highlights**

*“URL black-list based filtering technologies are bound to disappear as dynamic content filtering technologies provide improved security and coverage at a lower cost using the IBM BladeCenter family.”*

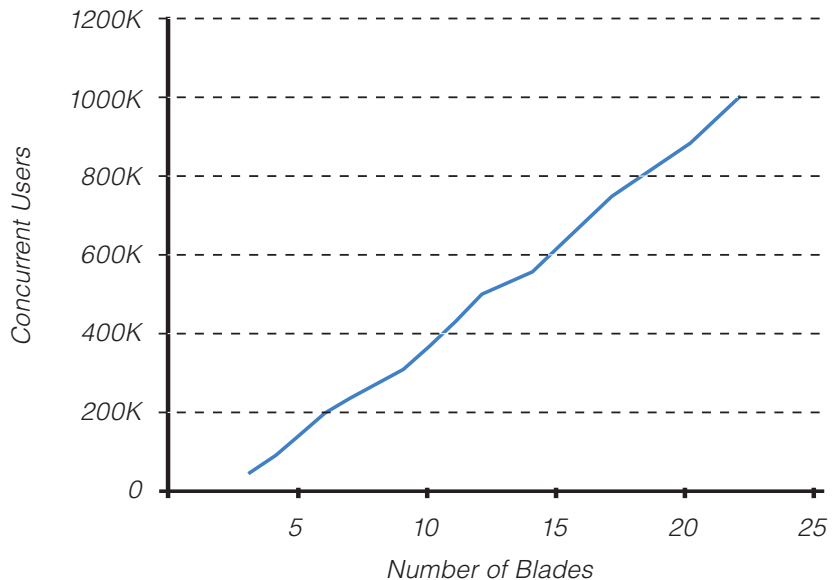
— Thomas Fraisse  
CEO  
Adamentium

**Scalability**

Recent scalability testing at the IBM Network Transformation Center in Montpellier, France demonstrated the impressive transactional performance of the Adamentium LiveMark. The simulation of dynamic content filtering for children accessing the web from handheld devices was performed using a 15 million wireless subscriber base. The testing showed that the Adamentium LiveMark solution delivered an average time of 6.6ms using the IBM BladeCenter H with 12 HS21 dual, Quad-Core Intel-based (X5355 @ 2.66Ghz) blades. Each HS21 blade was able to handle 50,000 simultaneous subscribers, or approximately 600,000 simultaneous subscribers using a fully configured IBM BladeCenter H chassis. These impressive performance results together with the carrier grade resilience and scalability make Adamentium’s LiveMark the ideal choice for service providers seeking an HTTP/WAP Dynamic Content Filtering solution.

**Benchmark results - Adamentium LiveMark solution**

*Adamentium scalability on IBM BladeCenter H using IBM HS21 Blades with Intel Quad-Core Xeon processors*



Special thanks to the dedication and hard work of the benchmark team, including:

- Erwan Auffret (IBM)
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- Eric Forestier (IBM)
- Ghislain Garçon (Adamentium)
- Pierre Perdaems (IBM)
- Maria Shiao (IBM)

Source: Adamentium

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**Highlights**

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*Integrated platforms helps reduce complexity while improving reliability*

*The IBM BladeCenter family offers telecom service providers with increased flexibility in how they choose to deploy applications in the central office or the data center*

**Exceptional performance, flexibility and reliability**

Today's telecom infrastructure and data center environments require greater processing capacity, lower power consumption and ease of use to deploy new services being deployed every year. The integrated COTS solution of IBM, Intel and Adamentium addresses these issues with interoperability, flexibility, ease of use and cost effectiveness. The reliability of the IBM BladeCenter and the ability to use the Quad-Core Intel® Xeon® processor is greatly enhanced with Red Hat Linux carrier-grade capabilities. The solution provides:

- *Greater throughput and energy efficiency using the Intel Xeon processors with low power consumption*
- *Carrier-grade, Dynamic Content Filtering from Adamentium*
- *Reliable and highly available IBM BladeCenter platform*
- *Highly scalable, open standards, Linux based solution*
- *Ease of Use for fast deployment, maintenance and the adding subscribers*
- *Greater cost effectiveness*

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IBM BladeCenter QS20 currently requires a separate chassis from other blade servers, and is currently supported only in the original IBM BladeCenter E chassis.

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