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IBM BladeCenter — Voice & Video IP Messaging Solution featuring:

- **StreamWIDE**
- **Intel**
- **Oracle**

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Overview

As a mission-critical adjunct of traditional TDM systems, voice mail remains an important application in the migration to converged communications. However, IP-telephony and VOIP infrastructures are causing next-generation voice mail to be converged with Web access, e-mail and other text messaging applications, as well as with multi-modal user interfaces for wireless mobility into a new unified messaging platform.

StreamWIDE built this core network element and accelerated its time-to-market by leveraging the strengths of key IBM Business Partners, including:

- *IBM BladeCenter H platform provides the carrier-grade platform for Linux*
- *With the Dual-Core Intel® Xeon® processor, the StreamWIDE Engine can handle 1000 simultaneous calls per front-end server.*
- *Oracle 10G RAC database stores subscriber information, tracks service profile and call detail records.*

StreamWIDE Messaging Solution

Voice transport is increasingly carried over IP networks. This change impacts both transit network (Class 4) and subscriber line management (Class 5). Interactive voice services used to be handled by servers with TDM extension boards connected to the PSTN via E1 or T1 links. In a VOIP network this no longer makes sense and value added services can go directly into the network without complex intelligent network (IN) functions. StreamWIDE provides end-to-end IP connectivity for all value added applications.

StreamWIDE Messaging is a solution developed with commercial-off-the-shelf (COTS) software delivering IP, voice, video and fax in a single integrated solution running in a carrier-grade platform based on the IBM BladeCenter and Red Hat Linux. The solution is based on the StreamWIDE Engine, a patented VVoIP (Voice and Video over IP) Engine, that can be integrated into existing TDM networks and emerging NGN networks. The StreamWIDE Engine handles voice and video calls using SIP VOIP protocol and can handle both the signaling stack and media (RTP) to answer or generate a call. The StreamWIDE Engine server appears on the network as a user agent (SIP UA), media server or application server depending on the application.

Highlights

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

The StreamWIDE Messaging solution enables fixed and mobile telecom service providers to deliver voice or video messaging on their networks, using NGN switch interfaces or TDM gateways. This solution delivers a comprehensive set of voice, fax and video messaging features, including:

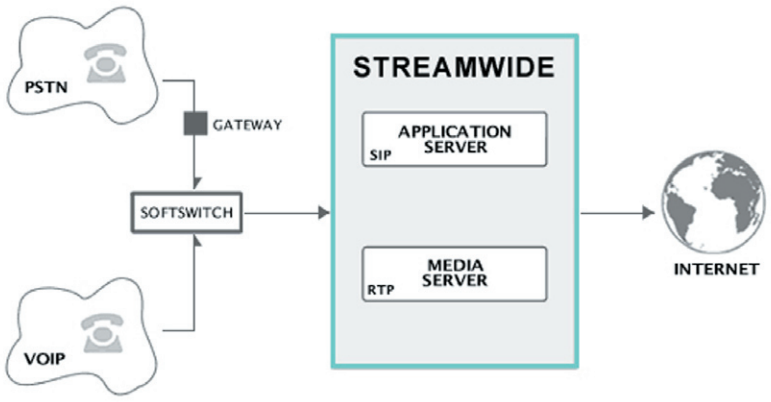
- *Message deposit and message checking management (phone, web and video interfaces)*
- *Communications features (message forwarding, call-back, hear&decide, missed calls alerts, follow me/find me, etc.)*
- *Advanced Configuration tools (denial lists, multiple language support, customized greetings, etc.)*
- *Rich notifications suite (call and video call alerts, email, SMS, MWI)*
- *MVNO Support*
- *Video Call Completion feature*

StreamWIDE Messaging offers unified messaging features such as messages checking through web or TV interfaces, e-mail or SMS notifications, Internet-based profile management, and convergent mailboxes such as family/group mailboxes or converging fixed/mobile mailboxes.

"Supplying top telecom providers with 99.999% availability, Streamwide needs hardware solutions that exceed these reliability levels. The NEBS Level 3 / ETSI tested, IBM Blade Center HT is definitely the best market equipment to run StreamWIDE's carrier-grade software services solutions."

— Pascal Béglin, CEO, Streamwide

StreamWIDE architecture



Source: StreamWIDE

Highlights

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

"Red Hat is working with IBM to deliver integrated telecommunications platforms and solutions based on the IBM BladeCenter platform. The introduction of the IBM BladeCenter HT will accelerate telecommunications convergence to standards-based technologies like Red Hat Enterprise Linux and BladeCenter."

— Tim Yeaton, Senior Vice President, Enterprise Solutions, Red Hat

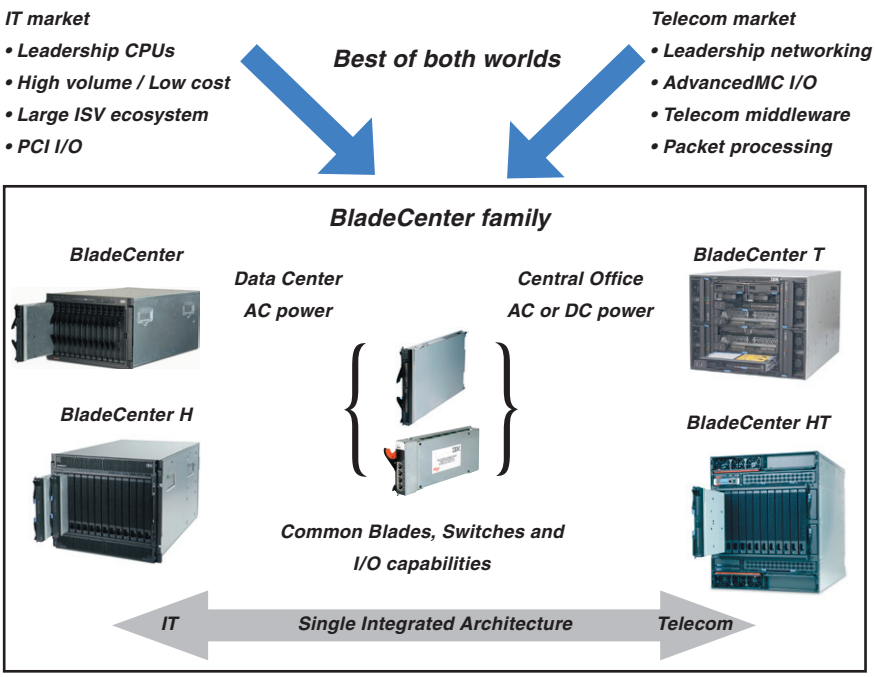
The IBM BladeCenter family

The IBM BladeCenter T chassis supports full 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



Source: IBM

Highlights

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

"The IBM BladeCenter support for the new Intel quad-core Xeon processors should help us substantially extend our solution scalability beyond today's 4 millions subscribers benchmark."

— Lilian Gaichies, COO, StreamWIDE

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 IBM BladeCenter T and BladeCenter HT have been designed and developed to meet the rigorous Network Equipment Building System (NEBS) Level 3 and European Telecommunications Standard Institute (ETSI) standards for 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 have been specifically developed to meet the robust reliability, power, form factor and extreme environmental needs for telecom central office deployments.

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 StreamWIDE Messaging solution heavy use of multitasking integer computations, means that the Quad-Core Intel® Xeon® processor can provide over double the performance of the next closest dual-socket competitor and over three times the performance of Intel® Xeon® Processors found in the previous generation blades.

The new Intel® Core™ Microarchitecture further improves performance by increasing the size of the L2 smart cache, increasing the instructions per cycle by 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 though 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.

Highlights

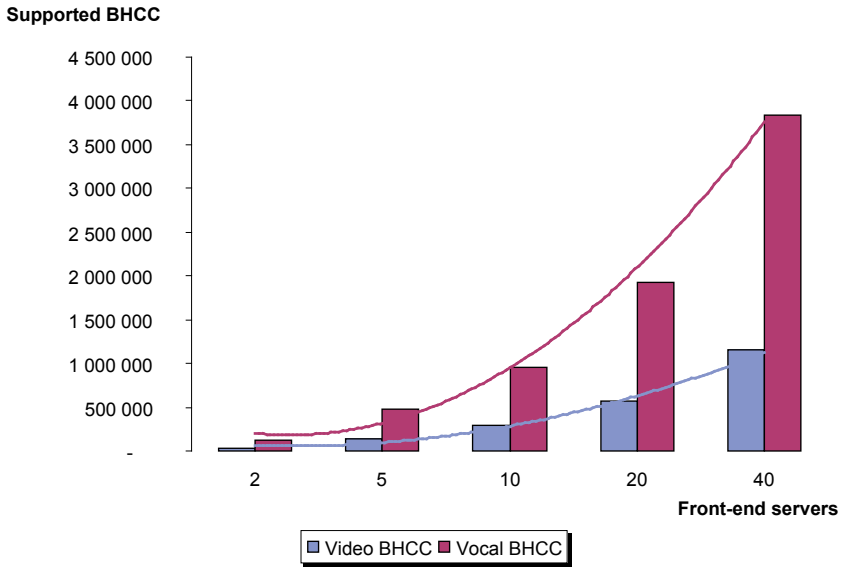
The use of interchangeable blades across the entire BladeCenter family, allowing service providers to deploy both network and IT functions on this common platform

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

Scalability

Recent scalability testing at the IBM Network Transformation Center in Montpellier, France demonstrated StreamWIDE Engine's impressive capabilities. Using a single IBM BladeCenter H system configured with 10 HS21 blades (8 were active and 2 served as backups) with Dual-Core Intel® Xeon® processors 5160 resulted in StreamWIDE Engine handling upto 1000 simultaneous voice calls or approximately 120,000 Busy Hours Call Completed per front-end server. Using the same configuration, the StreamWIDE Engine was able to handle upto 300 simultaneous video calls or approximately 36,000 Busy Hour Calls Completed per front-end server. The simulated test was based on 5 million subscriber base using traffic patterns over a 3 month period of time from a large European telecom service provider. The 3 week simultated test of mixed fixed and mobile subscribers demonstrated the StreamWIDE solution running on the IBM BladeCenter H had the ability to scale and handle 4 million subscribers within a single 42U rack clustered configuration with a supporting second 42U rack used for database and storage.

Benchmarked Vocal and Video Traffic Absorption (including redundancy)



Source: StreamWIDE

Highlights

Integrated platforms reduces 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

Unprecedented 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, Oracle and StreamWIDE addresses these issues with interoperability, flexibility, ease of use and cost effectiveness. The reliability of the IBM BladeCenter and the ability to use the Dual-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, feature-rich, Voice & Video IP Messaging Solution from StreamWIDE*
- *Reliable and highly available IBM BladeCenter platform*
- *Scalable, high performance subscriber database from Oracle*
- *Ease of Use for fast deployment, maintenance and the adding subscribers*
- *Greater cost effectiveness*

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