Next-generation voice switching platform from IBM and CIRPACK

Highlights

- ***Developed in collaboration with IBM***
- ***Can handle as many as 264,000 subscribers from a single node – plus millions of call attempts per hour – at an approximate cost of US$12 per subscriber***
- ***Integrates CIRPACK's advanced voice-switching software and gateway hardware within IBM's carrier grade @server® BladeCenter™ T system***
- ***Unmatched density, modularity, functionality, integration and cost-efficiencies***
- ***Complies with IMS architecture, providing standard interfaces for delivering value-added services and seamlessly integrating wireline and mobile networks***
- ***Opens the way for consolidating other applications onto the same platform – generating even greater economies and flexibility***

Over recent decades, numerous technological advances have been developed for telecommunications service providers and carriers. Yet, rarely have the costs of those technologies followed the downward trend that is common to other industries, including information technology.

The chief reason for this anomaly is the proprietary, industry-specific approach to technology that telecom vendors have traditionally taken, which limits the production volumes they can achieve. In contrast, information technology vendors typically spread their costs over hundreds of thousands, if not millions, of units. Telecom network solutions based on architectures pre-dating the recent advances in open industry standards and the pervasiveness of commercial off-the-shelf products could not achieve similar economies of scale and benefits.

That's why the joint announcement by IBM and CIRPACK of a next-generation voice switching platform, the MultiNode-B, signals good news – both technologically *and* financially – for service providers and carriers.

"CIRPACK's MultiNode-B has all the features of the largest legacy switches, without the cost or the limitations of those outdated systems."

– Michael Boukobza, CEO, Free.fr

Technologically, the MultiNode-B offers a most powerful voice SoftSwitch and gateway, capable of replacing the largest legacy switches with a far more flexible and scalable platform. From a cost perspective, some service providers estimate that the MultiNode-B could enable them to reduce the costs for next-generation switching and gateways from approximately US$40 per subscriber to around US$12.

All told, industry analysts estimate that the capital expense of a MultiNode-B solution can be three to four times lower than other next-generation technologies, and, in some cases, six to eight times lower than legacy voice switching.

New freedom and flexibility

The CIRPACK MultiNode-B is a Class 4/Class 5 telephony switch that runs on a compact, off-the-shelf, carrier grade IBM @server BladeCenter T system. It is one of the latest products from CIRPACK, the second largest SoftSwitch supplier in the European, Middle Eastern and African marketplace, with more than 40 customers in 12 countries, and more than 1.2 million Class-5 licenses deployed.

CIRPACK's MultiNode-B consists of the company's field-proven SoftSwitch software running on carrier grade Linux® and CIRPACK's voice gateway hardware specifically adapted to the BladeCenter enclosure. This comprehensive, standards-based solution delivers far greater freedom and flexibility for deploying new, value-added services and getting them to market faster, at very favorable costs.

The MultiNode-B on the BladeCenter T platform is designed on open standards which (unlike ATCA) are not limited to telecommunications-specific applications. That enables it to serve as the foundation for consolidating infrastructures and applications that deliver value-added telecom services to very large numbers of subscribers. The CIRPACK MultiNode-B complies with the IMS architecture, an industry initiative to provide standard interfaces for delivering value-added services to the mass market. It can use any third-party software platform, and it enables the seamless integration of wireline voice networks with mobile networks.

The modular BladeCenter T system can support not only switching and gateway solutions, but also multi-CPU servers for running database, service, provisioning, billing and other applications from a wide range of vendors delivering value-added services. And it's all contained in a compact, easily maintained and quickly scalable shelf.

Because it is made from standard hardware and software components, and uses standard interfaces, it is also easy to deploy, easy to operate and easy to expand – further contributing to partially lower total costs of ownership than with legacy switching systems. Telecoms can gain a powerful, reliable and economical platform for handling highly demanding network requirements, and also for simplifying large-scale infrastructure consolidation, helping drive cost reductions and accelerating revenue generation.

The product of a partnership

The CIRPACK MultiNode-B is a high-density system for building advanced telephony switches across any type of legacy or broadband local loop or core network.

Why Linux?

The MultiNode-B's carrier grade Linux operating system – based on open standards and an open architecture – offers a wealth of advantages in terms of cost, flexibility, deployment and, ultimately, return on investment.

Reduced Total Cost of Ownership (TCO)

Linux users can immediately benefit from the partially lower licensing costs of open source software, as well as competitive pricing from a broader range of application developers. Linux can also support the consolidation of a full range of mission-critical telecom applications onto a common, open platform. This can free telecoms from the constraints imposed upon them by proprietary operating systems and help improve resource utilization by simplifying requirements for data center staffs, space, cabling, utility budgets, maintenance and security. Users can also choose from a large pool of available professionals.

Flexibility

The wide availability of Linux-based applications enables users to quickly respond to fast-breaking opportunities with new off-the-shelf or *customized solutions. As service providers enter new markets and embrace new technologies, the broad compatibility of Linux can provide the fast traction companies need to reach their most ambitious goals.*

Faster deployments

Linux offers access to a wealth of off-the-shelf software. And new Linux applications are continually being released.

Performance

Carrier grade Linux is ready to support telecoms' most demanding, most mission-critical requirements for reducing infrastructure costs and deploying new, revenue-generating services to attract and retain customers.

"The CIRPACK platform is very cost efficient to target the consumer market and is also capable of delivering a full set of advanced voice services to enterprise customers."

– Jesper Hansen, CTO, Cybercity

Developed by CIRPACK in collaboration with IBM, the MultiNode-B system liberates call control, signaling and gateway functions from costly, telecom-specific platforms. It combines CIRPACK's field-proven High Velocity SoftSwitch (HVS) and Public Telephony Gateway (PTG) technologies with the IBM BladeCenter T, enabling telecoms to build powerful long distance networks and subscriber services capable of delivering the same voice features and reliability as legacy switches but with incomparable modularity, ease of management and economies of ownership.

CIRPACK is committed to support standard protocols and interfaces such as those described in the IMS architecture. This gives service providers the freedom to choose other network components to build their voice architecture. CIRPACK and IBM have built an extensive ecosystem of vendors who share the same vision, enabling service providers to easily deploy the right network for them at the best cost.

Using carrier grade Linux, the CIRPACK MultiNode-B offers the foundation for easy integration with a wide array of other mission-critical, open source-based telecom applications from numerous innovative developers – paving the way for application consolidation and simplification. And the widespread popularity of Linux provides telecoms with access to a broad, deep and growing pool of talent to meet staffing requirements.

CIRPACK's SoftSwitch advantage

Telecoms looking for advanced call-control functions are no longer bound to telecom-specific devices. Carriers, service providers and local loop operators around the world are now building their successes with SoftSwitch-based voice networks. CIRPACK is at the forefront of this evolution, having deployed the largest SoftSwitch-based PSTN as early as 1998, as well as, today, some of the largest European VoIP networks serving millions of subscribers.

The MultiNode-B is the most powerful solution of them all. With its call control functions handled by the CIRPACK High Velocity SoftSwitch (HVS) solution, advanced services can be delivered across any type of legacy or broadband local loop or core network. The CIRPACK HVS can handle 264,000 subscribers from a single node, and several million busy hour call attempts (BHCA).

The CIRPACK HVS serves as the MultiNode-B's call controller, delivering telephony services through a wide range of PSTN protocols: CAS, CCS and ISDN Basic Rate Interface (BRI) over V5.1 and V5.2, ISDN Primary Rate Interface (PRI) and R2 signaling, together with almost all SS7 variants (ISUP, TUP, INAP, etc.). Also, due to its full compatibility with ATM BLES, as well as with major VoIP protocols such as SIP, MGCP, H.323, H.248 and SIGTRAN, it can simultaneously deliver advanced voice services over packet infrastructures of all kinds (cable, DSL, fiber or Wimax, for example).

Your gateway to performance and savings

The MultiNode-B also includes one or more CIRPACK Public Telephony Gateways (PTGs), which provide STM-1 connectors to link the MultiNode-B to telecom networks. The PTG blades convert VoIP/RTP traffic to TDM circuits or ATM cells, enabling service providers to connect their IP infrastructures to any other local loops or core backbones.

Packed with DSPs and employing the latest designs from silicon chip vendors, the CIRPACK PTG is ideally suited to today's heterogeneous networks of optical fibers and mixed ATM, IP and TDM protocols. It can be configured to simultaneously handle 2.048 VoIP channels and 63 E1s over SDH, or 1,024 VoIP channels and 1,024 AAL2 VoATM channels, all from a single slot in the BladeCenter T. A BladeCenter T fully populated with CIRPACK PTGs can handle 1,000 physical E1s. Never before has so much port density been available through such a compact footprint – and so easy to install, manage, adapt and expand. Telecoms gain unprecedented flexibility and economies in keeping pace with new demands.

The BladeCenter T: The next-generation building block

The IBM BladeCenter T system that hosts the MultiNode-B's HVS and PTG solutions is a high-density, NEBS III- and ETSI-compliant computing platform optimized for next-generation networks. It includes proven, off-the-shelf components designed to provide carriers and service providers with tremendous economies of scale that industry-specific legacy technologies simply can't match.

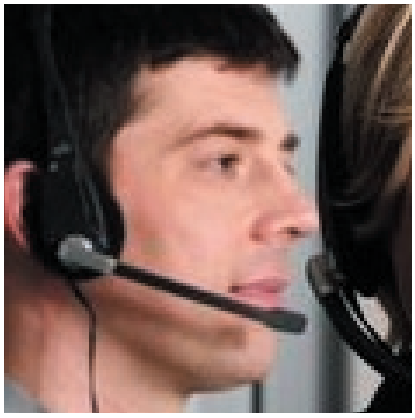
What's more, the BladeCenter T system can host other essential applications – enabling carriers to deliver interactive voice response, prepaid card management, billing and other services from a single platform. The BladeCenter T can alleviate the banks of racks and labyrinths of cables that can add so much to the space requirements and costs of network and switching centers, further reducing total cost of ownership.

Many critical components of the BladeCenter T are redundant and hot-swappable, including the cooling systems, power supplies, Ethernet controllers and switches, mid- and backplanes, hard disk drives and service processors. There is almost no single point of failure. This level of redundancy can translate into more resilient infrastructures and applications, helping lead to higher application and network availability, and, ultimately, improved customer service.

The blower modules feature uniquely designed Calibrated Vectored Cooling technology to help protect all critical system components for IBM's OnForever™ reliability. The high-availability, fault-tolerant midplane is designed to accommodate upgrades to future technologies while protecting your original investment.

Shared resources, lower costs

Within the BladeCenter T, the MultiNode-B solution shares power, fans and floppy drives with other blade servers supporting other telecom applications – helping save costs and space. It also supports CIRPACK HVS and PTG applications with dedicated, integrated processors, memory, storage, network controllers and operating systems – all within one blade.



The BladeCenter T supports the deployment of up to 80 processors within a telecom industry-standard, eight-bay rack. It can handle multiple IBM @server HS20 (2-way), JS20 (2-way) and HS40 (4-way) blade servers – making it a cost-effective, efficient solution for quickly responding to fast-breaking demands for scale and capacity in next-generation network environments.

Powerful management tools

Managing the MultiNode-B is easy. Built-in features include IBM Director management software, the industry-leading client/server workgroup manager designed to deliver maximum system availability and help lower operating costs while reducing skill-level requirements. Administrators can monitor the usage and performance of critical MultiNode-B and other BladeCenter T components, including processors, disks and memory. The single-click graphical interface simplifies both training and management, and improves staff responsiveness and efficiency.

Self-managing "smart tools" offer automated, self-diagnosing and self-healing capabilities to maximize uptime while helping reduce costs. IBM Predictive Failure Analysis® can further decrease unplanned downtime through proactive alerts that can give you as much as a 24- to 48-hour head start on taking corrective actions. LEDs even point the way to potential trouble spots.

A world of service

IBM Global Services can help you leverage your MultiNode-B solution and other BladeCenter T applications to address the full range of challenges and opportunities you face today – from timely and cost-effective network transformation and infrastructure consolidation to changing customer needs, increasing financial pressures, industry restructuring and beyond. IBM telecommunications specialists have the industry-specific knowledge and technology skills to quickly design and implement the needed changes to your business models so you can grow and prosper in today's on demand, next-generation environment. And through IBM Global Financing, you can arrange for a flexible financing package that makes it even easier to benefit from the performance and efficiencies of the MultiNode-B.

Find out more

The CIRPACK MultiNode-B is ready to free you from proprietary technologies, and open the way to cost reductions and other competitive advantages. Because it is hosted on the IBM BladeCenter T, its advantages can extend far beyond core voice switching functions to encompass your full range of applications. Get the full story today by contacting your IBM representative or visiting:

ibm.com/industries/telecom
or
www.cirpack.com

IBM telecom leadership

IBM has years of experience in helping the telecommunications industry economically develop standards and solutions necessary for next-generation leadership:

- *IBM is an active participant on standards-setting boards within the industry, such as Parlay and the Open Mobile Alliance.*
- *IBM is a founding member of the Open Communications Architecture Forum (OCAF).*
- *IBM worked with telecoms, network equipment providers and other key industry players to deliver the Carrier Grade Open Framework (CGOF), a structure enabling service providers to quickly align end-to-end, multi-vendor components into a complete value chain.*
- *IBM was a founder of the Open Standards Development Laboratory (OSDL) and a leader in developing carrier grade Linux, which now enables telecoms to capitalize on the stability, flexibility and other benefits of the world's fastest-growing operating system. IBM's Linux Technology Center employs more than 600 engineers dedicated full-time to Linux support, with thousands of other IBM professionals available to help clients make the most of Linux solutions.*

IBM Corporation
1133 Westchester Avenue
White Plains, NY 10604

Produced in the United States of America
2-05

GC10-4137-00