

The newsletter from Bull

EDITORIAL

Achieving our objectives



Rising revenues during the first half of 2007 have confirmed that the action plan Bull set in motion during 2006 were the right one. We have indeed seen the performance of our Products division improve, and our Services business has grown at twice the current rate of the market (+13.5%). Finally, we have seen

3.2% growth in our Maintenance activities: the first increase for two years. I want to take this opportunity to highlight a few key points.

- Major innovations in our infrastructure solutions, deliver better performance for lower energy consumption. Our NovaScale¹ and Escala server ranges have been overhauled and rank among the most powerful servers on the market.
- Further successes in business-critical applications and complex infrastructures. Two examples : in the USA, following in the footsteps of the States of New York, Michigan and Illinois, California has now opted for our Business Intelligence solutions for its Medicaid program. In France, we have secured one of the largest infrastructure tenders ever issued, for Chorus, the nation's new financial information system.. And finally, we have strengthened our Services business with the acquisition of Siconet in Spain, and the creation in Morocco of an 'offshore' services center for major telecommunications and e-government projects.
- Breakthrough in High-Performance Computing (HPC). Large companies including Alcan, as well as European research centers, among them the Universities of Düsseldorf and Reims, and the German D-Grid network, have chosen Bull's HPC solutions. Moreover, our teams can be proud to have achieved an outstanding early delivery of France's most powerful civil supercomputer to the CCRT1².
- Consolidation of our advances in Open Source with several initiatives, including the launch of NovaForge, our open collaborative software development platform, and the alliance with major European, Brazilian and Chinese players under the auspices of the QualiPSo project.

So, our strategy of refocusing Bull towards a resolutely solutions-oriented business model continues, combining open technologies and services with high added value. The new initiative we will be announcing shortly, designed to help you improve the flexibility of your data centers, is absolutely in line with this. And further initiatives are set to follow.

Didier Lamouche,
Bull's Chairman and CEO

(1) NovaScale under Microsoft SQL Server: best price/performance ratio in the industry with the TPC-H benchmark.

(2) CCRT: the Center for Research and Technology Computing, which operates on behalf of the French Atomic Energy Authority (the CEA), EDF, SNECMA, Techspace Aero and Turbomeca.

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EXECUTIVE OPINION

Environment: a priority for Bull

By Bruno Pinna, Marketing Director, Bull

Many commentators are today observing that environmental issues are fast becoming vitally important to the IT industry, often referring to the boundless growth of the datacenters that are powering the Internet. Should we now be preparing for the environment to become a vital and permanent issue for our industry? (page 2)

GUEST SPEAKER

"Combining technical and business expertise"

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IT Director of EDF's Business and Domestic Customer division (page 3)

You have deployed an ambitious business intelligence solution. Can you tell us why?

We first started thinking about the question of business intelligence about six years ago. Given the fact that the energy market was being opened up to competition, it was essential that we could anticipate how our customer portfolio might evolve, and optimize our products and services accordingly. We wanted, above all, to refine our capability to segment and predict, in order to reflect consumption profi-

les. We also wanted to make it easier to control the performance of our marketing and communications activities.

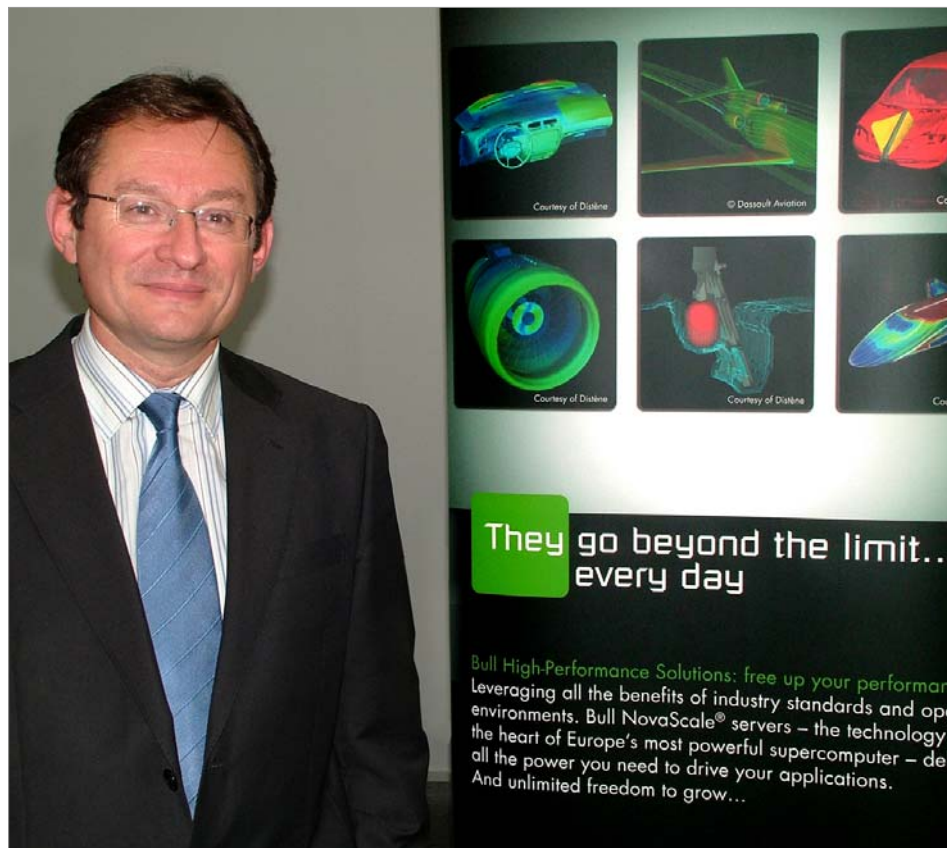
So what BI architectures have you implemented to meet these needs?

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EXECUTIVE OPINION

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Many commentators are today observing that environmental issues are fast becoming vitally important to the IT industry, often referring to the boundless growth of the datacenters that are powering the Internet. Should we now be preparing for the environment to become a vital and permanent issue for our industry?

Looking at it objectively, the IT industry is by no means the greediest player when it comes to energy consumption. At the beginning of August 2007, the US Environmental Protection Agency (EPA) published a report¹ showing that the energy consumed in the sum total of all computing centers in the USA only represents 1.5% of the country's global consumption. So, at national level, IT only uses the same amount of energy as all the television sets in people's homes. This level of consumption would never threaten the environment equilibrium, even though to this figure we should add the carbon footprint for the manufacturing of the technologies themselves, data which has yet to be published.

It's difficult, moreover, to guess at the global figure. Since if IT consumes energy, it is above all in order to automate and

computerize processes that used to consume much more energy than the digital ones that are replacing them.

But in a world where sensitivity to environmental issues is becoming – quite rightly – essential, it has now been accepted that controlling energy consumption for IT infrastructures is essential. The power consumption of servers installed worldwide doubled between 2000 and 2005², increasing from 6.7 gig watts to 14 gig watts, and this corresponds to the power requirement of 14 nuclear reactors. And the same doubling of consumption is on the agenda for the next five years. Of course, the performance of these servers in the same timeframe has, itself, more than doubled. According to Moore's law, it has evolved by a factor of 6 to 7. While this result is highly respectable in itself, should we be constructing

the equivalent of another 14 nuclear power stations between now and 2010 just to serve the IT industry?

In December 2006, in his blog www.rougtype.com, American analyst Nick Carr drew our attention to the fact that each of the 15,000 on-line avatars in Second Life (which is hosted on 4,000 servers) consumed, on average, as much energy as a real person!

Too many servers? Perhaps not... Servers that are poorly distributed or inadequately optimized? Almost certainly.

Many of our customers say the same thing: that it is more and more difficult for them to upgrade their data centers. Restrictions on power supplies and air-conditioning facilities, coupled with a finite amount of available space: we've reached the limits on all these factors a lot more quickly than anticipated. According to Gartner Group, the cost of electrical power could rise to 30% of IT budgets in a few years' time if no action is taken.

Why? There are two main reasons.

Firstly, the energy cost of each server. Eight years ago, a standard high-volume server consumed 35 Watts. Today, that figure is almost ten times higher, with x86 bi-socket servers consuming close to 250W.

But the biggest factor is really just the sheer numbers of these servers being deployed across the average infrastructure. Over the last few years, we have seen millions of standard servers deployed in this way, and mostly using x86 technology. The principle underlying their implementation was more often than not "one application, one server".

This principle was often chosen for one of its essential virtues: that of limiting inter-dependences between organizations, and in the short term making both management and systems administration easier. In this context, sharing a server could be seen as introducing more complexity. Or it can simply make the "owner" (whether real or virtual) feel they are being dispossessed.

Nevertheless, for larger datacenters the alarm bells are already ringing. And the

EXECUTIVE OPINION (CONTINUED)

time has come to face the fact that these thousands of servers deployed in the space of just a few years throughout the worlds' organizations will have to be better utilized, without even considering for the moment the task of overcoming the difficulties they present from a management point of view.

So, the first item on the CIO's agenda must be a more efficient infrastructure. This is a key factor for individual enterprises. It is also vital when it comes to constructing "mega-datacenters" serving the Internet. If these vast "computing factories" do come into existence, it will only be possible by adopting an industrial approach, with rationalization, consolidation, and virtualization at the top of the list of best practices requiring urgent implementation.

The good news is that today's technologies allow us to consolidate infrastructures at reasonable cost. So does this mean we are going to see another industrial revolution in the world of IT? Definitely.

Over the last few years we have lived through the revolution of standard high-volume servers, which are now designed to handle the majority of the workloads in terms of applications, from scientific computing to large-scale databases. And this was all driven, essentially, by cost factors.

We are about to enter a period where rationalization and virtualization technologies will become standardized, once again driven by the same cost considerations. In the first instance, this will apply in the short term to hardware and basic middleware, but increasingly, to the whole of the infrastructure. Environmental efficiency will be driven, at least to begin with, by cost-effectiveness.

So what does Bull's agenda look like in this context?

We take a very favorable view, evidently, of the new moves towards environmental awareness, both because of the impact it will have on society and on our customers' competitiveness.

As a socially responsible enterprise, Bull has been involved in initiatives in this area for a long time. Our production centers have been ISO 14001³ certified since 2001. All our products have confor-

med to European RoHS⁴ directives since 2006 (these directives were defined by Europe in 2003). Our recycling procedures enable us to recycle 50% of the products we deliver, as well as 90% of our packaging every year.

Our technological agenda includes a large number of initiatives, all designed to limit the carbon footprint of our products and services. The main ones are as follows:

- Our NovaScale and Escala servers already integrate the most advanced technologies as regards energy management, starting with processors, from Intel's Xeon and Itanium processors to the Power6 processor, all of which enable reductions in consumption while optimizing performance, and also technologies enabling allocation of an "electricity budget" to a group of servers via one of the datacenter's administration tools.
- The optimization of the cooling chain, with water-cooled racks due to appear by the end of 2007.
- The optimization of the power distribution chain, by limiting the deployment of converters and adaptors.
- Native virtualization technologies made available for all our high-end servers should enable server capacity to be much better utilized.

The above does not include future developments in the technologies underpinning the datacenter itself. As a European leader in the operation of major IT centers, we will be making significant advances in this area. Infrared detection of overheating at specific points, optimized air circulation, integration of fire-proofing systems posing no danger to humans or the environment, limiting the use of particles in suspension... these are just some of the areas we are investing in. We are also focusing on the engineering side within the framework of programs to restructure the data center, as this is vital to improving its electricity distribution and cooling capability. Since tomorrow's data center will be much more energy efficient, it will also be much more powerful, and Bull will be one of the few IT players capable of mastering this complexity.

In the short term, we are making consolidation and virtualization approaches our priority, where the hidden resources of

productivity and economy have the greatest potential. This is the main driver of our "increasing flexibility" initiative, due to be launched at the end of September.

Rather than playing out our arguments on the media stage, Bull is going straight to the point... We have just installed the largest High-Performance Computing (HPC) center in Europe, for which the constraints of power consumption are particularly high. Above all, we will be helping our customers to optimize the increasingly complex IT architectures that they have to manage. Because, at the end of the day, their real efficiency is going to be conditioned by their environmental efficiency, pure and simple.



(1) : See http://www.energystar.gov/index.cfm?c=prod_development.server_efficiency#epa

(2): According to a study published in February 2007 by Jonathan G Koomey, Staff Scientist of the Lawrence Berkeley National Laboratory and Consulting Professor of the University of Stanford

(3): The international ISO 14001 standard was drawn up under the aegis of ISO. It dictates the requirements for an environmental management system (E.M.S.).

(4): The European RoHS directive aims to restrict the utilization of six dangerous substances. RoHS signifies "Restriction of the use of certain Hazardous Substances in electrical and electronic equipment", such as lead, mercury, cadmium, hexavalent chrome, etc.

GUEST SPEAKER

"Combining technical and business expertise"

Interview with Gilles Chauveau

IT Director of EDF's Business and Domestic Customer division

The EDF Group, one of the leaders in Europe's energy industry, is an integrated energy provider with activities covering all aspects of the sector: energy production, transport, distribution, trading and sales. With more than 40 million customers worldwide, EDF achieved a consolidated turnover of 58.9 billion in 2006.

As a systems integrator, Bull has been actively contributing to the implementation of Business Intelligence (BI) at EDF.

You have deployed an ambitious business intelligence solution. Can you tell us why?

We first started thinking about the question of business intelligence about six years ago. Given the fact that the energy market was being opened up to competition, it was essential that we could anticipate how our customer portfolio might evolve, and optimize our products and services accordingly. We wanted, above all, to refine our capability to segment and predict, in order to reflect consumption profiles. We also wanted to make it easier to control the performance of our marketing and communications activities.

So what BI architectures have you implemented to meet these needs?

We moved forward in stages. In the event, we deployed a centralized data warehouse for the enterprise and small business market – which served as a test case – and then, more recently, we implemented another for domestic and private customers (handling 26.9 million customers!). These data warehouses are fed by legacy applications, and increasingly by the various mySAP utilities management modules – particularly ISU and CRM – and divided into various datamarts for special processing or restitution tasks, such as customer profiling. For historical reasons, some of our applications are still shared between the production and energy distribution businesses, and this means we have to maintain a number of specific datamarts that are not connected to the central data warehouses for the time being. Eventually, however, the target architecture will of course be unified. We should achieve this in 2008. The overall data

volumes involved are vast: around ten terabytes for enterprises and small businesses, and a dozen for domestic customers (going back two years).



How do you think you will go on to develop the solution in the future?

We have had excellent feedback from users –who are in the management control, marketing and sales functions – all the regions. To take things a stage further, in the future we would like to be able to provide operational managers with detailed restitutions using even more user-friendly tools. Reporting procedures need to be on line, and made very simple. That's our priority for the next three years.

Following on from this experience what, in your view, are the best practices that you need to follow?

Above all, I think it is important to establish a unified database with a centralized approach to business intelligence, even though we have to recognize that there is no "pure and perfect" model, and that there will always be 20% of cases that will require specific solutions. We also have to take care that performance indicators do not start to multiply: we want to select the ten key indicators, which will be really useful for each profile. All this, while of course trying to find the right compromise as to what is useful, and what the IT Department can reasonably provide! Because BI solutions can be complex and expensive, we always need to keep in mind the relationship between the cost and the value that's delivered. We also need to continue working towards getting these solutions deployed by teams that can command both technical expertise and business know-how. This is a rare combination, and one that is difficult to maintain over time. At EDF, we have put in place a structure that capitalizes on these skills, which we call the "AGRC", which acts as a business intelligence center of expertise. Finally, we have to monitor data quality. False data will yield false results. It is important to convince operational teams and managers of the importance of data collection and management. These are a vital part of the enterprise's resources!

BUSINESS NEWS

The European Commission awards a consortium with Bull a € 9.6 million IT support services contract

A consortium including Bull has been selected to be the one of the two contractors to cascade a framework contract for the provision of "IT Service Support on a Times and Means basis" for the European Commission's General Directorate for Informatics (DIGIT).

DIGIT is the body responsible for defining the IT strategy of the European Commission and coordinating the development of the technology and the information systems required by the Commission to provide services of the highest quality to its

employees as well as to the citizens of the European Union.

This four year contract is valued at some 9.6 million for the three partners: Econocom (Consortium Leader), Cronos International and Bull – Bull's share repre-

senting around 30%. It applies to Corporate Service Support through the provision of IT professionals, who have high level of expertise and technical certifications, for assignments to be executed on the Commission's premises in Brussels, Luxembourg, Strasbourg, Dublin, and in the locations of the Joint Research Centers (JRC) in Italy, Spain, Netherlands, Belgium, Ireland and Germany.

Barnsley on target for 20% savings after first twelve months of joint ICT venture with Bull

ICT service improved with workforce and local skills benefits through innovative service partnership.

Barnsley Metropolitan Borough Council (BMBC) is on target to achieve ICT operations savings rising to 20% over the next decade, having successfully operated a joint venture ICT company called Bull TCL for the last twelve months. The new company is also laying the foundations for local skills enhancement and community regeneration in the South Yorkshire town.

BMBC and Bull formally joined forces last summer to turn the government's ongoing Efficiency Agenda into a positive platform for system-based cost savings. BMBC harnessed its existing ICT operations and Bull's technology infrastructure for the company, the council transferring 106 ICT staff while Bull has committed to delivering 86 new jobs over the agreement's lifetime. The venture's profits will help to reduce council ICT services costs over the years ahead. The venture is worth £70 million over its ten year lifetime.

As well as already meeting and exceeding central government Efficiency Agenda savings targets, the new company is a 21st century business infrastructure for the town and beyond. It is hosting ICT services and online communications for a county council schools' ICT support organisation, the UK's largest provider of online MBA qualifications and a large international bank.

The venture is bringing new impetus to Bull TCL's workforce and local residents' skills improvement. After a workforce skills audit, Bull TCL HR managers enacted a customised performance management programme for employees. This encompassed ITIL-standards based ICT training as well as "soft skills" instruction modules such as workplace assertiveness. The venture's HR programme has already expanded modern apprentice training opportunities for Barnsley College in ICT and business administration courses. The programme has also identified six month work placements for five local students at Bull's Paris headquarters. In addition, the venture has also been acclaimed by schools inspectorate Ofsted for its technology project at Greenacre special needs school in Barnsley, which has used innovative learning technologies to enable pupils to participate more actively in the education process than ever before.

As well as the non-cashable savings noted, Bull TCL has a range of detailed performance management targets, with "penalties" applicable where targets are missed. Wider performance elements also include contribution to local regeneration and provision of robust ICT services to different public and private sector organisations.

Ken Rutt, BMBC assistant chief executive, explained: "We are pleased with the progress made during the first 12 months. We

have completed the upgrade of over 700 PC desktops, extended service desk support hours, and implemented the first phase of an enterprise wide Document Management Solution. All projects were delivered on time and on budget. The reliability and performance of the IT infrastructure has exceeded our initial targets while we are pleased to act as an ICT hub for different businesses. The key factor was the way the two organisations have worked together to ensure continual improvements. Our surveys show that workplace customer satisfaction is approaching 99% to date." Phil Coppard, chief executive at Barnsley MBC commented: "We have established an innovative partnership to meet the needs of both the council and the wider community. A reliable ICT infrastructure has already proven vital in supporting transformation of local services, re-skilling and attracting business to Barnsley. This is clear evidence of true partnership working based on shared goals."

Jenny Newton, Bull's chief executive officer, UK and Ireland, said: "Local government is increasingly being tasked with developing citizen centric service delivery models that both improve local services and help to shape a geographical area and its wider public services. The Bull TCL partnership is an innovative approach to this challenge that is already bringing tangible results for the local authority as it addresses its complex service, efficiency and wider regeneration needs."

BUSINESS NEWS (CONTINUED)

Nottingham City Council Supports Better Services and Reduces Carbon Footprint with Bull Blade Server Infrastructure

Server upgrade boosts performance and cuts energy use by at least 40%

Nottingham City Council is set to further improve service delivery to 640,000 local residents while reducing its overall IT infrastructure energy consumption by at least 40 per cent using a high performance blade server infrastructure from Bull. The new, upgraded computing environment, based on Bull NovaScale blade servers, is part of the council's overall strategy of balancing the growing proportion of local services accessed online with the need to deliver 3% system-based savings in line with the government's continuing Efficiency Agenda.

The new infrastructure's reduced energy consumption will provide further momentum for the energy saving measures enacted by the city council under its Climate Protection Strategy launched last year. The carbon reduction elements of the strategy will make all council operations carbon neutral within ten years. It has already made such a contribution to reducing the council's carbon footprint that it has been officially endorsed by UK energy standards body, the Energy Institute, in May. Nottingham City Council is basing its improvements to local services on a series of key corporate ICT programmes. These include building CRM platforms to provide customer-centric services as well as electronic document management systems to streamline processing of incoming and internal documents. The programmes also feature new GIS (Geographical Information Systems) and replacement of the authority's existing e-mail system.

Comprising 43 Bull NovaScale blade servers as well as EMC Clarion CX3 storage arrays, the new computing infrastructure will provide faster processing, retrieval and storage capabilities across these "back office" administrative processes that support local services. The server upgrades also pave the way for greater standardisation of computing environ-

ments across departmental operations. The blade server technology will deliver energy savings of between 40 and 60% over the previous server infrastructure.

Nottingham City Council specified Bull's server-based environment as the latest stage in a continuous technology refresh delivered in partnership with Bull. This improvement programme started 7 years ago, as part of a corporate strategy to replace mainframe structure with an independent infrastructure running Unix and Oracle, further enhanced by Citrix 2AD, Active Directory and VMware and actively aided by Bull. The upgrade programme has enabled the council to standardise on AIX, Microsoft Windows 2003 and Oracle applications for major corporate applications. Over the last few years, Bull has provided core infrastructure elements including Unix platforms, disk arrays and tape back up to the council, backed by project consultancy and technical support.

Jas Padam, Head of ICT Infrastructure at Nottingham City Council, said: "As our services move online or are run through contact centres operating 24/7, we are pursuing higher application performance with reduced maintenance – basically, we want more for less. We have used the reduced maintenance inputs to refresh

technology and alter the way we work by, for example, putting more people on customer service tasks. We are increasingly shaping our services around the customer."

Drawing on Intel dual core processors, Bull NovaScale blade servers deliver more processing power in reduced server rack space. This improves performance and reduces the need for additional cabling installations. In addition, the new servers' imaging capability enables Nottingham's ICT team to keep an overview of different applications running on the infrastructure and quickly restore them should there be any technical problems.

The IT department's decision to specify a Bull blade server infrastructure was supported by Bull's ability to provide technical support during the installation and certify all applications. Bull's seven year track record working for the council's IT team - covering work such as Unix® operating system and disk arrays - was also a key factor in the decision. Jas Padam commented: "Bull is a good organisation to work with. They have been very good at responding to our different requirements as the work has progressed."

Jenny Newton, CEO, Bull UK & Ireland, said: "Nottingham City Council has put a great deal of planning into rationalising its infrastructure to accommodate more accessible service delivery and the ongoing Efficiency Agenda. We are providing the platform for the authority to provide increasingly customer centric applications with the added benefit of greatly reduced energy consumption."

BUSINESS NEWS (CONTINUED)

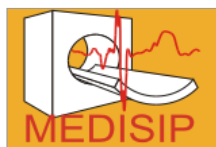
University of Ghent chooses a Bull NovaScale supercomputer to accelerate medical research

Within the framework of the medical imagery and signal processing research (MEDISIP), the group of the Professor I. Lemahieu, Doctor. S. Staelens and Doctor. S. Vandenberghe chooses a supercomputer Bull NovaScale.



This supercomputer will be used for the simulation of medical scanners with the aim of optimizing the process of early cancer detection. They selected NovaScale NS421, equipped with the new generation of Intel quad core processors, and optimized for parallel calculations.

The NovaScale supercomputer has an excellent value for money/performance/consumption, which is ideal for large scale parallel clustering systems. This new success is proof again of Bull's expertise and know-how in High Performance Computing, and reinforces its position among the leaders of the market in the field of parallel systems.



About MEDISIP

MEDISIP is a research group of the department for Electronics and Information Systems of the Faculty of engineer Sciences at the University of Ghent, mainly focusing on the digital signals research and image processing for the medical sector.

Some examples:

Some examples:

- The image rebuilding of PET (Positron Emissions Tomography) and SPECT (Single Photon Emission Computed Tomography) acquisitions
- The modeling and simulations of the scanners PET and SPECT
- Magnetic Resonance Imagery (MRI) and design of gradients sequences
- Material of nervous tractography using diffusion tensor images
- Treatment of the biomedical signals (ECG – ElectroCardioGram, EEG – ElectroEncephaloGram, ERP – Event-Related Potential)

<http://medisip.elis.ugent.be/>

EXPERT VOICE

Virtualization offers much more than just back-up cost reduction



By Philippe Schreck, Product Marketing Director, Storage BU, Bull

Philippe has devoted much of his professional life to data storage: having started his career in charge of Bull developments of storage products, he went on to be technical director of the Bull 2AI subsidiary dedicated to storage, and is today Product Marketing Director for the storage Business Unit.

Huge increases in the volumes of data being handled as a result of putting business processes on line, globalization of exchanges, new regulations requiring backup and recovery times that are increasingly hard to achieve within the allotted time windows... At the same time, infrastructures are becoming more and more complex, and heterogeneity is becoming the norm.

The main issues faced today by CIOs and their staff include: guaranteeing access to back-up data whatever technologies have been used, and even in the longer term; meeting the challenges posed by heterogeneous infrastructures; improving the performance of backup/recovery operations; optimizing available resources; reducing costs; and automating to secure procedures.

To respond to these problems, many customers are turning to VTL (Virtual Tape Library) type solutions. Since 1997 Bull has been marketing and constantly enriching its archive virtualization solution, StoreWay Virtuo.

What is a VTL?

The VTL, or Virtual Tape Library is a storage solution designed to emulate magnetic tape on a disc space. A VTL is integrated within a Storage Area Network (SAN) or IP storage network, and interfaces with the back-up server that configures the robotic resources, media and tape drives making up the magnetic tape library.

During the back-up operation, the VTL saves the data to a disc cache. The increase in the number of virtual drives simply enables the degree of parallelism to be increased. The data will be migrated later to magnetic tape, without transit and therefore without affecting either the application servers or the back-up servers, and so allowing the whole of the available time window to be utilized, while minimizing the number of real drives required. These data are then conserved in the disc cache once they have been written to tape, and this means data can be restored subsequently within a specified time, independently of their position on the tape, allowing Recovery Time Objective to be met.

VTL is designed, then, to compensate for

the disadvantages of tape storage, the most important of these being the inevitably low recovery performance, via an intermediate disc system sandwich layer within the configuration.

Why continue to use magnetic tape when discs are faster, especially where data recovery is concerned?

Magnetic tape is an eminently affordable medium, and has been the most commonly used system for data archiving in the past. These systems are therefore often found, particularly in larger organizations that have IT installations dating from many years ago.

Nevertheless, since the beginning of the first decade this century and the arrival of the SATA format, hard discs have been steadily dropping in price, and at the same time offering ever larger disc storage capacity. So this technology has been increasingly competing with magnetic tape in a market segment that until now has been quite protected.

Hence the idea of combining the two technologies to gain the advantages offered by both. VTL systems constitute a way of optimizing back-up and recovery perfor-

mance. Magnetic tape will still be the medium of choice for long-term data storage, but VTLs are becoming indispensable to guarantee the daily service quality.

Advantages of the Bull StoreWay Virtuo solution

StoreWay Virtuo is our back-up consolidation solution. Over and above the basic VTL functionalities, we have developed advanced functionalities that better fulfill the back-up needs of IT centers more effectively, whatever operating systems they use. The emulation of several magnetic tape libraries for the purpose of supporting simultaneous connection to several back-up servers, whether these are of the same type or not, enables heterogeneous back-up environments to be consolidated on a single storage space.

Configurable rules for transferring data from disc to tape enable intelligent management of storage resources, while remote copying functions enable deployment of automated continuous activity plans.

StoreWay Virtuo provides the means for data to be securely shared, and offers extremely high levels of performance, flexibility, and availability both for open and mainframe systems.

EXPERT VOICE (CONTINUED)



The most significant benefits to customers

The main advantages offered by StoreWay Virtuo are reduced costs, simplified archive management and more effective management of complexity.

High levels of performance

Using disc-based data caches enables rapid back-up and recovery, and as a consequence, shorter timeslot allocation. The cache storage lifespan is configurable, and this simplifies the management and administration of the data lifecycle while enabling archiving requirements to be tailored to suit current operational constraints.

Open architecture

Incorporating StoreWay Virtuo into existing environments is transparent, and customers can use their existing back-up strategy, whatever form this takes, once they have upgraded their protection system to StoreWay Virtuo.

StoreWay Virtuo operates both in open environments (Unix, Linux and Windows, NAS/NDMP) and on mainframes (Bull GCOS, and IBM MVS/zOS). It also supports the majority of back-up applications (Symantec NetBackup, EMC2 NetWorker, IBM TSM, etc.) and standard libraries (Sun/StorageTek, Overland and Quantum/Adic, etc.), whatever the drive technology being utilized (LTO, SDLT, 9x40...).

Business continuity planning

To respond to the needs of nearly 70% of customers, StoreWay Virtuo features a "vaulting" mechanism: this is the capacity to use a second library to create a copy of a second back-up event directly in a remote site. This option relieves systems administrators of the day-to-day tasks relating to the physical handling of magnetic tape cartridges, and particularly

transfers made externally between different sites. In addition, StoreWay Virtuo can operate in failover mode on different sites, enabling guaranteed service continuity in the event that one of the two sites is no longer accessible.

Cost reduction

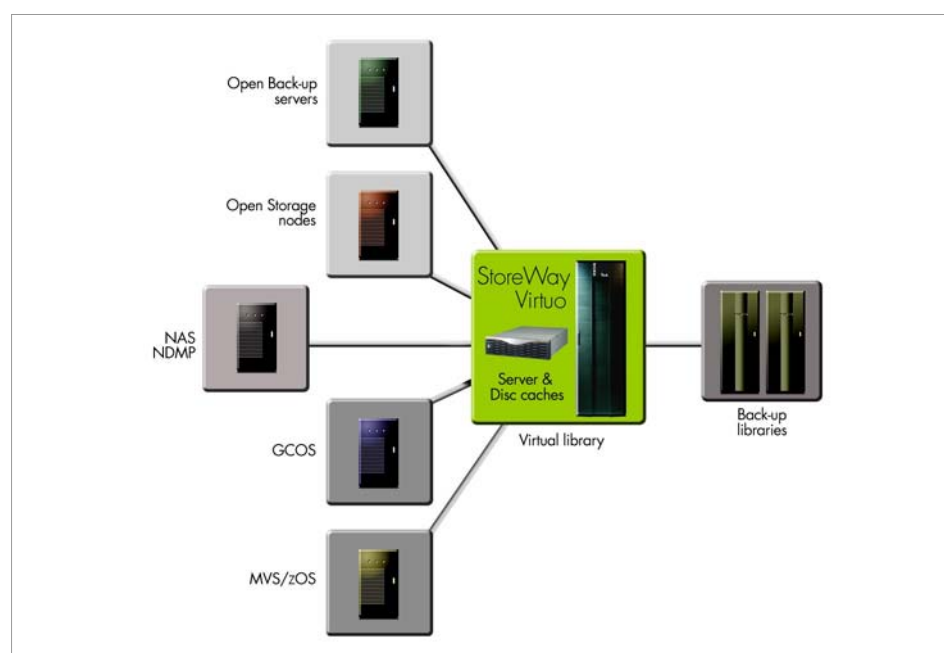
• **Consolidation and optimization of archiving resources.** StoreWay Virtuo gives the systems administrator transparent access to the full complement of back-up silos from a single point, even in heterogeneous environments mixing open and mainframe systems. This not only saves time but also saves money

• **Transparent utilization of new drive technologies in back-up environments.** StoreWay Virtuo supports various drive and tape technologies so customers can adopt new magnetic tape storage technologies without having to alter their existing environment. It also enables older environments to use new drive technologies which would not have been supported by the suppliers of these former environments.

• **Up to 80% reduction in the number of cartridges used** StoreWay Virtuo optimizes the filling up of physical cartridges, using the following techniques:

- Stacking: the writing of several logical volumes on a single physical tape
- Compacting: the recopying of valid back-ups stored on different physical tapes onto a new physical tape, so these physical tapes are re-useable.

These technical advantages enable substantial savings to be made in terms of physical cartridge consumption.



as there is no need for an application dedicated to this aspect of storage.

• **Easy administration.** Centralized administration, and one that is easy to use, facilitates all tasks related to data protection conformity.

• **Up to 90% reduction in the number of drives used** thanks to the optimized utilization of the physical drives present.

(To be continued on page 10)

EXPERT VOICE (CONTINUED)

Two significant operational examples

We have one French customer, for example, who wanted a back-up solution that would let them consolidate their entire storage environment between IBM mainframes and open systems, improve back-up and recovery time-windows while taking on board increased data volumes, conserve their existing tape handling systems, and continue using their usual procedures. In addition, they

wanted a performance warranty for the back-up virtualization solution until 2010 and the certainty of service continuity.

The Bull StoreWay solution has not only met these requirements, but has also enabled significant economies in operating costs to be made. Typically, the StoreWay Virtuo solution takes up 10 times less floor space than previously, and uses 20 times fewer cartridges!

Another customer based in the United States was highly impressed by the cost savings StoreWay Virtuo had brought about, reflected in economies not just in floor space and consumables, but also in systems administration (the system required just one operator working one eight-hour shift a day, to replace two operators working three eight-hour shifts).

The pictures below illustrate this example



Before Virtuo: library footprint solution



After Virtuo: footprint for the entire solution

To conclude

Bull is a pioneer in designing and developing VTL technology for heterogeneous IT environments. Its StoreWay Virtuo solution is particularly designed to:

- 1 - Consolidate heterogeneous, mainframe and open environments
- 2 - Guarantee the kind of transparent back-up needed to support Disaster Recovery operations
- 3 - Optimize resources, providing up to 90% reduction in back-up and recovery resources.

Bull continues to enhance the StoreWay Virtuo solution for the benefit of customers, and to adapt it to suit their constantly evolving environments.

SOLUTIONS

Performance, powerful consolidation and virtualization capabilities with the new NovaScale server designed to simplify data center management

To respond to the latest demands for enterprise server consolidation and virtualization, to provide scalable performance, high-level data protection and simplified systems administration, Bull launched its NovaScale R480 E1 quad-core four-socket server featuring the new Intel® Xeon® 7300 series processor (codenamed Caneland). Available in rack format, the NovaScale R480 E1 server further strengthens the NovaScale Universal range, which extends from entry-level to full-scale enterprise servers.

Powerful consolidation and virtualization capabilities

Broad capacity combined with the ability to run simultaneous processes thanks to the quad-core processors provides a solid springboard for consolidation and virtualization.

When it comes to virtualization, the NovaScale R480 E1 server also provides a wide bandwidth with 16 independent and interconnected cores, and with up to 1/4TB of scalable system memory, and 1.1TB of internal storage. Robust and scalable, the new NovaScale server helps boost datacenter efficiency, and enables the total cost of ownership to be

reduced by facilitating consolidation. VMware virtualization solutions are certified on these new servers.

Simplified systems administration and optimum data protection

The servers are administered using NovaScale Master, the applications suite developed by Bull to facilitate server deployment and reduce the cost of administering IT infrastructures.

The NovaScale R480 E1 server combines reliability, availability, and maintainability (RAS) and ensures data integrity thanks to the following functions and elements: memory mirroring and sparing, hot



pluggable PCI Express cards and SATA/SAS disks, redundant hot swappable power supplies and fans. The integrated RAID card, the I/O extension and remote systems administration leave PCI slots available, thus providing the headroom required for intensive I/O throughput.

Prices and availability:

The price of a configuration with one E7310 processor, 2 GB memory, one 36 GB/10k/2.5" disk plus DVD is €6,110.

Available end September 2007.

Open Source at the service of Bull customer support

Delivering on-line access to useful and accurate technical information about implementing and maintaining Bull's product ranges, and providing a 24/7 technical communication channel between operational customer support teams on the one hand and Bull's expert technical support staff on the other – these are the aims of the Bull On-line support service.

The new release of our on-line support service launched recently with the aim of improving ease of use, and notably featuring a more intuitive browsing facility and a more powerful search engine, is based on a 100% Open Source solution. The mission proved by no means straightforward, posing a few interesting challenges for Bull's project development teams as it involved migrating a particularly powerful proprietary documentary data-

base, and at the same time restructuring and streamlining both presentation and navigation for a constellation of sites built over the years using diverse technologies. Their final choice was for an open and innovative architecture built around a cluster of last generation Bull NovaScale "blade" servers, and an Open Source solution based on APACHE, SuSE Linux and the Zope/Plone professional Content Management System.

The result is right on time. Since it was launched, the service has been attracting an increasing number of registration requests: while open to the public, a special entry point is reserved for customers benefiting from maintenance and support contracts. Navigation is easier and more intuitive thanks to a homogeneous information presentation grid, and the service offers a powerful search engine allied to a comprehensive on-line content index, and an advanced publishing and administration facility, making Bull on-line support a powerful tool for handling and retrieving technical information, as well as a highly efficient service for Bull customers.

WHAT'S NEW

Social protection: the golden rules for successful personalization and consolidation projects in public services

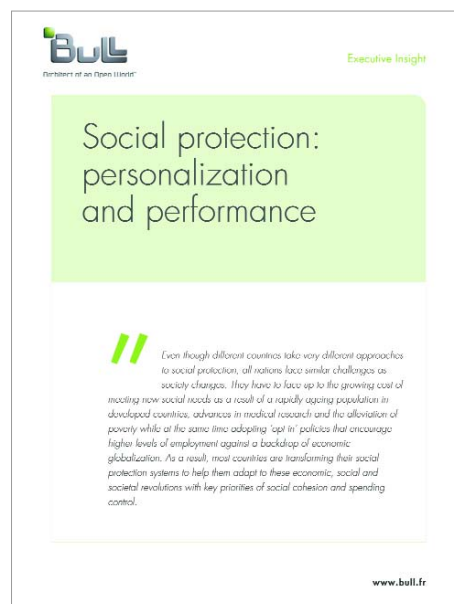
Capitalizing on its international experience in Europe, the USA, Latin America, and North Africa, Bull is today issuing a new business white paper on "Social protection: personalization and performance".

This white paper describes the challenges and best practices in relation to the consolidation and breaking down the barriers of IT infrastructures, the personalization of social services, and ongoing initiatives to combat fraud and abuses. Drawing on its experience as builder of production and business intelligence systems for major social protection players, Bull presents some golden rules for successfully managing these critical projects.

To illustrate key concerns and best practices, the white paper includes exclusive interviews with senior managers and IT directors from the largest social players in France, Spain and the USA, where Bull's Business Intelligence solutions handle one third of the total Medicaid budget program (110 billion dollars out of the

320 billion dollar allocation) benefiting some 15 million Americans out of a total of 60 million benefits claimants.

- **Dominique Libault**, Director of Social Security, France
- **Dave McLaury**, Vice Director of the Department of Public Health for Michigan, USA
- **Daniel Lefebvre**, CIO for AGIRC-ARRCO and Pierre Chaperon, Director of AGIRC-ARRCO GIE, and Associate Director of ARRCO, France
- **Jean-Pierre Revoil**, Managing Director of Unédic, France
- **Francisco Delgado Azuara**, CIO of the Instituto Nacional de la Seguridad Social (INSS), Spain
- **Gérard Russeil**, CIO of the French national family allowance service (CNAF), France



The white paper is a strategic guide, designed to help decision-makers from organizations involved in social protection to plan the future development of their information systems, which are so crucial to the success of business transformation programs aimed at meeting economic, social and societal challenges both now and in the future.

Availability: The white paper can be downloaded free of charge from this address: <http://www.bull.fr>

Hosted solution specialist Soft2You refocuses on Microsoft

Agarik, a subsidiary of Bull, has announced that it is refocusing its own subsidiary Soft2You around Microsoft® hosted solutions. This strategy is designed to take advantage of Microsoft® application software, a range that is currently the fullest and most up-to-date in Application Service Provide (ASP) mode on the French market. Soft2You has launched its new Web site that fully reflects this development in the company's business strategy.

Microsoft® expertise

In the space of just ten years, Soft2You has become an impressive player in the customized applications market. Its partnership with Microsoft® means it is now in a position to reaffirm its high-level expertise in Microsoft applications, and above all asserts Soft2You's position as the only player in the French market to offer a leasing arrangement for latest versions of the following products: Exchange 2007, SharePoint WSS 2007 and CRM Dynamics 3.0.

Soft2You has also developed its own



demonstration platform to test these solutions live over the Internet, on every conceivable kind of PDA (running Windows Mobile) or via Microsoft Outlook 2007. Subscribers enroll as platform users directly on-line, on the company's new Web site: www.Soft2You.com

Mobility and security

Always alert to new requirements from business users, Soft2You also offers flexible and powerful mobile computing and security solutions:

- **Mobile computing:** Soft2You solutions for Blackberry® and Windows Mobile® terminals.
- **IT security:** Anti-virus and anti-spam solutions for SMTP servers and Exchange Hosted Services®.

WHAT'S NEW (CONTINUED)

Polytech'Grenoble wins the first ever Bull Open World challenge

Being a new model for shared software development and a driver for technological innovation, Open Source is taking ever greater importance in the sphere of applications and information systems, and could represent 20% of the market by 2008. Open Source is also a great way for young talent to express itself.

In order to identify, encourage and support involvement in the Open Source movement by students at France's top technical universities (Grandes Ecoles d'ingénieurs), at the end of 2006 Bull decided to instigate an innovative competition: the Open World challenge. The main objective of this competition is to provide an initiation for student engineers in shared ways of working on software development, including exchanges with experts from different Open Source communities, particularly OW2.

"As Architect of an Open World, Bull sets out to support and encourage talented people. This competition fulfils our mission to set up a challenge involving students in a subject that is both innovative and delivers concrete results," said Patrick Semtob, Bull VP Human Resources. "This is the first time we have run the competition, and it has also enabled us to identify potential candidates for jobs at our Services centers. The Group's objective for 2007 is to recruit more than 1,000 staff, 400 of them in France. This first Open World challenge has been very successful. We are already preparing the second event of its kind, which will be promoted within the appropriate engineering universities in June 2008."



For this first round of the Challenge, Bull opened the competition to students from six engineering/technical universities: Supélec, ENSEIRB*, Polytech'Grenoble, EISTI, ECE and ESIEE.

With the assistance of teaching staff, each team of four or five students embarked on a three-month project to come up with a solution for one of three topics:

- Porting the administration console from the Open Source JOnAS application server to the Open Source eXo platform portal
- Developing an infrastructure for generating workflow execution reports for the Bonita project
- Enhancing a Bonita notification infrastructure for sending SMS events, instant messaging, mail and creating a task in Outlook.

This last subject was selected by both the teams in the final, from Polytech'Grenoble and Supélec, who presented their solutions to a jury made up of Open Source software entrepreneurs including Benjamin

Mestrallet, founder of eXo and Bertrand Diard, director of Talend, as well as several of Bull's own Open Source experts.

At the end of a neck-and-neck contest, Polytech'Grenoble was awarded the first prize of €5,000. The jury was so impressed by the investment and quality of Supélec's work that they decided in the end to award an exceptional prize of €2,500 to Supélec.

"Collaborative working and synergy between the worlds of education and business were at the heart of Polytech'Grenoble's approach. I was delighted that our students were able to take part in this competition," confirmed Philippe Morat, head of the multimedia communication and IT networks course at Polytech'Grenoble. "Collaborating with Bull has enabled them to experience a full-scale development project at first hand, and apply their theoretical training to a real business deliverable. This has been an innovative and motivational experience that has enriched them and supported their first steps into the Open Source community."

*ENSEIRB (Ecole Nationale Supérieure d'Electronique Informatique et Radiocommunications de Bordeaux)
EISTI (Ecole Internationale des Sciences du Traitement de l'Information)
ECE (Ecole Centrale d'Electronique)
ESIEE (École Supérieure d'Ingénieurs en Électronique et Électrotechnique).

EVENTS

Paris, September 20

GCOS 7 Regional days

The Regional meetings provide us with the opportunity each year to present news and events relating to GCOS 7.

Following the meetings held at Aix-en-Provence, Luxembourg and Nantes, the next GCOS 7 meeting will be held in

Paris on 20 September.

The agenda includes:

- DIANE: new offer with NovaScale 7005,
- DIANE: an open and interoperable application platform that take benefits of NovaForge Open Source development platform

- NEWFORM : the solution for shared prints
- VIRTUO : the virtual back up solution.

For further information:

<http://www.bull.com/fr/actu/jrgcos7/>

Paris, September 25

New breakfast seminars on Open Source

"BI and Open Source"

Each month Bull offers an open invitation to its breakfast-time seminars, each focusing on a theme linked to implementing Open Source software. Led by experts ready to share their experiences as regards methodologies, tools, solutions and best practices, these morning sessions offer pragmatic solutions to IT managers seeking to integrate Open Source software in their information systems.

After the Spring sessions dedicated respectively to software development, migration, workstations, and monitoring & administration, the forthcoming breakfast seminar dedicated to "Business Intelligence with Open Source software" will take place on Tuesday, September 25, from 8:30am to 11:00am, in Paris at NCI Com'Square, 57, La Défense.



For more information:

<http://www.bull.com/fr/mornings/>

Issy-les-Moulineaux (France), October 3-4

World e-Democracy Forum

On 3-4 October 2007, the Palais des Sports in Issy-les-Moulineaux, Paris, plays host to the 8th World e-Democracy Forum.

This year, the UK is the guest of honor at the Forum, with its numerous experiences shedding useful light on the debates, particularly for local authority representatives less than six months ahead of the French local elections.

The theme of this years event is "Digital society in the era of citizen 2.0" The focus will be on how to modernize the relationships between civil servants, elec-

ted representatives and citizens against the backdrop of Web 2.0, the second generation of the Internet which is faster – thanks to greater bandwidth and transmission speeds – and more interactive, with blogs, on-line video and podcasts, etc.

On Wednesday 3 October at 2:30pm, Bull, one of the Forum's sponsors, is taking part in the round-table discussion on "A collaborative approach to e-government?"

How to accelerate exchange of good practices? What are the best practices? Are Public-Private Partnerships a solution?



Jean-Pierre Barbéris, General Manager Bull France, will be speaking on new kinds of partnership to structure and professionalize best practices.

For more information, visit:

www.forum-edemocratie.com

EVENTS (CONTINUED)

Paris, October 9-12

Milipol 2007

The 15th edition of Milipol exhibition will be held in Paris this year on October 9-12.

Milipol is the worldwide exhibition of internal State security, limited to

professionals of the security sector. It will be welcoming representatives from the French government including Ministry of the Interior, Ministry of Defense, Ministry of Justice, French Customs, and Civil Defense.



Our experts will be pleased to welcome you on Bull stand 3Q120 to present our TrustWay secure solutions: VPN, HSM, PPS USB cryptographic token... tographique RCI.

Paris, October 23

Social protection: personalization and performance

Seminar organized by Bull and Ineum

Faced with major economic, social and societal challenges, players involved in social protection the world over have embarked on major transformation and modernization programs for their information systems in order to face up to these major upheavals.

How can ICT help them to personalize their services? How can they speed up processes and improve claimants' access to the system? How can they improve performance, and combat fraud and other abuses? How can they make it easier for people to return to employment? What technologies

are at their disposal? What skills are required, and what skills do they need to put in place (change management, security, hosting, regulatory compliance, breaking down barriers between business activities...)?

All these issues will be exploring during the

course of the seminar organized by Bull and Ineum, with a panel of decision-makers representing the world of social protection on 23 October from 9:00am to 12:30pm at the French Press Club, Paris (8^e district).

Featuring contributions from **Jean-Pierre Barbéris**, General Manager of Bull France, and **Renaud Vatinet**, Ineum Consulting Partner specialized in social protection issues.

London (UK), October 22-24

Gartner Data Center Summit 2007

From IT Efficiency to Business Innovation

Through virtualization, automation and new architectures (both hardware and software), you have been able to define a vision for Real-Time-Infrastructure (RTI) and plot your journey towards this.

Gartner's Data Center Summit 2007 offers fresh guidance on how to turn today's improvements in IT infrastructure and process efficiency into tomorrow's business advantage – leveraging the savings from RTI to drive radical new innovation that will benefit your enterprise.

Didier Lamouche, Bull's Chairman and CEO, will hold an executive keynote on **Wednesday 24 October, from 1:40pm to 2:25 pm** on the theme: *"Beyond consolidation: Managing Complexity Without Costing the Earth"*.

Enterprise data centers are facing growth

into tera-transaction and peta-storage with a spiraling complexity of user and system integration. Building on its experience in supplying and hosting enterprise and HPC data centers, Bull envisages the development of specialized, virtualized information processing fabrics hosted in shared resource data centers or distributed for geographic business continuity; designed to minimize environmental impact and maximize business benefit.

Berlin, October 23-24

1st European HyperWorks Technology Conference

Enterprise simulation is becoming strategic for manufacturing companies as a driver for product innovation.

Altair Engineering, a worldwide leader in CAE solutions, hosts the 1st European HyperWorks Technology Conference (HTC)

2007, which will highlight the latest trends, developments and applications in the important field of enterprise CAE.

The HTC 2007 will showcase cutting-edge methods, applications and industry examples of CAE-driven innovations. From modeling to simulation to optimization, presenta-

tions will cover all aspects of virtual product analysis. HTC 2007 is part of a WW conference program, with events in Asia, Europe and North America.

Bull, as a major European HPC solutions provider, will exhibit at HTC 2007.

EVENTS (CONTINUED)

Frankfurt, October 29-31

Storage Networking World, Europe

SNW Europe is the largest and foremost independent storage networking event in the region, where IT management and professionals learn, network and maximise their company's storage capabilities. At SNW Europe, delegates can choose from over 100 educational conference sessions and network with fellow storage professionals from across the continent and around the globe. Endorsed by the European Storage Networking Industry

Association (SNIA), this event is sponsored by 40 of the world's top storage vendors.



As SNW sponsor, Bull will exhibit its StoreWay solutions on its booth (S15).

On Wednesday, October 31 at 10:20am, UNEDIC, a Bull's customer, will hold a conference on the theme "Virtualization challenges in mainframe and open environments", with **Gérard Causse**, Project manager for virtualization as speaker.

For more information:

<http://www.snweurope.com>

Reno (USA), November 10-16

SuperComputing 2007

SC07 is the premier international conference on high performance computing, networking, storage, and analysis.

SC07 will host an exceptional technical program, tutorials, workshops, an expanded exhibits area, an exciting education program and many other activities. The SC conference series has grown to include scientists, researchers, software developers, network engineers, policy makers, corporate managers, CIOs and IT administrators from universities, industry and government from all over the world.

The SC07 conference demonstrates how high performance computing, networking, storage and analysis touch all disciplines to enhance people's ability to understand information and lead to new understanding, promote interdisciplinary projects, affect the educational process through the use of computers in modeling and simulation in the classroom, and solve heretofore unsolvable problems in nanoscience, biotechnology, climate

research, astrophysics, chemistry, fusion research, drug research, homeland defense, nuclear technologies and many other fields.

Visit the Bull booth (#2749) and meet our HPC experts!

More information:

<http://sc07.supercomputing.org>



Paris la Défense, November 21-22

InfoSecurity France

This year, the IT Security Salon is adopting the same branding as in other countries: "InfoSecurity" France, and is taking place on 22-23 November at the CNIT in Paris La Défense.

More than 6,000 attendees are expected. Numerous themes will be explored, both on the exhibitors' stands and in conferences, on subjects such as E-SSO, break-in, phishing, cryptography, audit, etc.



As in previous years, Bull and its subsidiary Evidian will both be present.

Our experts will be demonstrating new features of the Evidian IAM suite 8 on our stand (D26) with the accent firmly on

data synchronization, Data Privacy or again the latest version of Policy Manager, as well as the latest functionalities of the TrustWay range.

On Thursday 22 November, our experts will be holding two seminars: the first is at 10.15 am on new features for IAM8, followed by another seminar at 12.15pm, on new TrustWay features.

For more information:

www.infosecurity.com.fr