

Bull Direct

Bull's monthly newsletter

EDITORIAL

An extremely proud moment



The twice-yearly TOP500 list of the world's most powerful supercomputers has just been published, and TERA-10*, which Bull delivered to CEA (French Atomic Energy Authority) in December 2005, has taken the lead among Europe's supercomputers, and claimed the N°5 slot overall!

Bull is on the winners' podium alongside the world's giants, as the number three IT maker. Given the enormous complexity of this type of system, this is a real achievement, which we have accomplished in just three years whereas the two makers ahead of us in the list have been present in the HPC (High Performance Computing) market for decades. It is an extremely proud moment that I especially wanted to share with you. For the first time in the history of the world-famous TOP500 ranking, Europe occupies one of the leading positions with a system that was entirely designed in Europe, by the only European IT maker, Bull. Europe dreamed about it, and we made it happen!

The announcement came on 28 June at ISC, the International Supercomputer Conference that was staged in Dresden last week.

So Bull has been catapulted into the big league of HPC, with a technological potential recognized worldwide. This enormous success confirms that our strategic choice to focus on open platforms based on industry standards was right. It clearly demonstrates that Bull is once again a force to be reckoned with on the international computing scene.

And it is absolutely undeniable proof that Bull has the talents to win.

Didier Lamouche,
Chairman and Chief Executive Officer

* TERA-10 is made up of 602 NovaScale nodes, representing 4,532 Dual-Core Intel® Itanium® 2 "Montecito" processors, managing 30 Tera bytes of core memory and one Peta byte of disk space. The performance of 42.9 Teraflops of power was measured on 4,000 processors.

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EXECUTIVE OPINION

Michel Lepert,
General Manager, Bull Products and Systems

Free up your applications!

When IT directors are asked what their priorities are in terms of infrastructure, reducing complexity regularly features among their main preoccupations. It goes hand in hand with cost reduction, improvements in flexibility and closer alignment of IT with business processes.

But why are information systems complex? That's a vast subject. Perhaps most simply because information systems reflect the

complexity of the world in which we live, a world that is more and more open and in which exchanges are multiplying. *(Continued on page 2)*

GUEST CONTRIBUTORS

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Minister for Infrastructures and Technological Development,
Extremadura Regional Government, Spain

"Open source helps narrow the digital divide"

Extremadura has taken advantage of European Union Cohesion Funds to implement a number of projects covering educational, social and business issues...

Why did your regional government decide to make a significant investment in IT?

We were convinced that New Information and Communication Technologies (NICT) would give

the world a different way of doing things, and our region had to be part of this journey to the future right...

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But why are information systems complex? That's a vast subject. Perhaps most simply because information systems reflect the complexity of the world in which we live, a world that is more and



more open and in which exchanges are multiplying. In fact, this complexity can largely be explained by the huge increase in the range of needs and their variety – market globalization,

the growth of e-commerce, new regulatory demands... plus the need to take existing applications into account. Responding to the variety of demands made by users, while reducing the complexity of systems, is becoming a major challenge for IT management. The fact that standard and open technologies have achieved such an important position in the information systems landscape underlines what an important contribution they make.

Standard and open technologies –combined with “multi-core” technologies and virtualization functions – are paving the way to reduced complexity and increased flexibility of infrastructures:

- **Standard technologies** meet the needs both for centralization and distribution of resources; they make applications interoperable wherever they sit within the information system organization, and they facilitate the development of hardware and software infrastructures while keeping costs under control.
- **Multi-core technologies of the Intel® Itanium® and Intel® Xeon® processors** bring the benefits of more powerful servers to data centers, with higher density, reduced heat loss, and lower electricity

consumption. Because they are more compact, consume less power and dissipate less heat, there are fewer cables to connect, less floor space taken up and infrastructures are easier to manage.

- **New virtualization functions**, will enable several applications or operating systems to be isolated more effectively from physical constraints. They will enable to manage multiple applications on the same server, while guaranteeing their isolation and independence. They will enable infrastructures to be simplified and optimized.

When it comes to industry-standard open technologies, Intel type architectures for Microsoft® Windows® and Linux® operating environments have taken the lead. And we are developing our NovaScale range of servers around these technologies.

Today, not only is the NovaScale range at the core of the most powerful European supercomputer – and the 5th in the world – for scientific and industrial research, but it also enables you to deploy a stand-alone “departmental” server in a branch office or secured servers for your mission-critical applications.

Bull's objective, with the newly extended range of NovaScale servers, is to respond perfectly to IT directors' imperatives in terms of flexibility, costs, power and robustness. And most importantly, choice.

Choice of infrastructures, choice of “packaging” – tower, rack, blade, large-scale servers, and entry-level servers – choice of hundreds of thousands of applications available under Windows and Linux: NovaScale servers allow application infrastructures to be built to suit the individual company, and enable the system to evolve in response to demand, whether it is made up of shared systems, consolidated systems, dedicated servers or large centralized multi-tasking systems.

From July 2006, the NovaScale range has been further extended to include:

- **The NovaScale Intensive line**, targeted at HPC and mission-critical applications based on Intel® Itanium® 2 processors and operating under Windows, Linux or GCOS. For business intelligence applications, data analysis and scientific computing, we are launching the new NovaScale 3005 servers based on Intel® Itanium® 2 “Montecito” dual-core processors. These complement the large-scale SMP NovaScale 5005 servers which are also “ready” for the new “Montecito” processors.
- **The NovaScale Universal line**, to meet the needs of IT departments with servers based on Intel® Xeon® processors operating under Windows or Linux. For mission-critical applications, we are launching the new fault-tolerant NovaScale R600 servers, and for workgroups, the new NovaScale R800 servers. The NovaScale Universal line will be soon be completed with blades, rack and power servers.

All these servers – whether they are running Windows, Linux or both – are administered using NovaScale Master, a powerful application that we have developed, which substantially simplifies system management: yet another way in which we are reducing complexity and building in flexibility.

Free up your applications!

Information systems are complex because they must take account of the past, the present and the future, of the central and the local, of the specific and the general. That's why introducing new flexible application infrastructures – sustained by the maturity of the Windows and Linux environments, by the development of Open Source applications and the dynamic of servers based on industry-standard components – represents a major challenge – and a great opportunity – for businesses and public sector bodies alike.

The engineers of Bull – Architect of an Open World™ – are designing and developing the family of NovaScale servers so everyone can reap the full benefits of open, standard systems.

GUEST CONTRIBUTORS

Interview with Luis Millán Vázquez de Miguel, Minister for Infrastructures and Technological Development, Extremadura Regional Government, Spain

“Open source helps narrow the digital divide”



Why did your regional government decide to make a significant investment in IT?

We were convinced that New Information and Communication Technologies (NICT) would give the world a different way of doing things, and our region had to be part of this journey to the future right from the beginning with an unshakeable belief that we should not leave anyone out. Conceived in the early half of the 1990s, and launched in 1999, our strategic project to access the information society covered the fields of education, health, the public sector and the creation of new technology-based companies. The region started by equipping itself with a powerful communications infrastructure. Our Regional Intranet is capable of interconnecting over 1,400 points spread throughout the 338 towns and villages. It was the first such Intranet in Europe, covering all public services throughout the region (notably schools, health centers, hospitals, administration offices and job centers).

Why did you opt for Open Source?

Our government had discovered the value of open source software when it built its Educational Technology Network.

Extremadura has taken advantage of European Union Cohesion Funds to implement a number of projects covering educational, social and business issues. Designed to help ensure the region plays a full part in the new technology and knowledge revolution, these projects are advancing the region's development – and promoting equality and freedom – thanks to the choice of open source, as well as ensuring that Extremadura can confidently cope with whatever changes this new revolution may bring about in the years to come. Bull, as a preferred partner, is helping Extremadura to develop and deploy its IT infrastructure.

It was initially a question of savings but it very soon became much more an issue of freedom and equality of opportunity. The success of the project depended to a great extent on the software that was going to be used. Open Source guarantees complete control and universal access to technology for all citizens. It was essential that the software was available freely for all citizens, as well as for SMEs and the regional government itself. This is what prompted the creation of GNU/LinEx: legally available to be copied and used for free, it helps overcome economic barriers such as the high cost of software licenses. This is already benefiting companies who were quick to see new business opportunities in open source software. For the local authority, the independence and cost savings are also significant. GNU/LinEX creates the space for everyone to be creative and helps Extremadura narrow the digital divide, investing in projects where benefits can be shared by everyone.

How did you implement your various projects?

The first step was to deploy an Educational Technology Network to provide one computer for every two pupils in secondary schools. In parallel, the Techno-literacy Plan was designed to educate the population (the elderly, young people, women, professionals, students, etc.) through 33 New Centers of Knowledge regardless of where they live, with a focus on latecomers to the IT world. Since 1999, 80% of the citizens

have been trained either on site or online, fostering social and cultural integration. There are also significant educational rewards from pupils using the open source software over the Internet and sharing a great collaborative spirit and knowledge.

And for businesses?

We have set up Vivernet, which acts as a business incubator for the new digital era. Vivernet was designed to facilitate the development of new businesses within the Information Society by making available the necessary resources for young entrepreneurs to put their ideas into practice. It is also a tool to accelerate the technological conversion of traditional SMEs, by highlighting the new business opportunities that NICT offers. Vivernet was created in mid 2000 and since then, we have been contributing to the development of IT companies, providing them with support services and encouraging them to co-operate with us. Vivernet has won two international awards and helped over 50 companies.

What is the next step?

International cooperation. We have already signed agreements with international research institutions, associations and local, regional and national governments, in countries as diverse as Argentina, Brazil, Colombia, India, Malaysia, Peru and Uruguay, who are interested in sharing our experience and using GNU/LinEx to propel themselves, their citizens and businesses into the new paradigm.

GUEST CONTRIBUTORS (CONTINUED)

Interview with Frederic Taieb, Project Director

France Telecom's new generation of services are based on Open Source


The telecoms world is still going through some profound changes: how does France Telecom see the years ahead?

France Telecom has launched its NEXt (New Experiences in Telecoms) program, designed to enable the Group to develop integrated offerings and convergent services very rapidly. Our strategy of convergence aims to exploit the Group's position within the various networks to establish services that are as independent as possible for adjacent networks. Our customers will have totally technology- and channel-independent access to our services. Each individual's media 'content' will follow them from the workplace to the home and back again. The Group is capitalizing even further on its significant capacity for innovation thanks to its new innovation center and a shared product development center to accelerate the process of bringing new services to the market. A unified network management structure for each country has also been implemented.

With all these transformations, will your information systems have to be adapted to increase the Group's responsiveness still further?

A major program to update the technical infrastructure for our information systems was launched in 1998, under the name of 'Archimedes'. Its aim was to take advantage of the best Internet technologies and standardize components to the maximum. Flexibility and openness should enable us to adapt rapidly to changes in business processes and give IT teams greater crea-

tive freedom when it comes to building new services for France Telecom. Since 2004, our information systems have been serving 200,000 users and feature some 15,000 UNIX and MVS servers, as well as more than a thousand applications.

The Archimedes program has defined a new technology platform, and has provided the basic building blocks for application projects including standard networks and servers, along with infrastructure tools (UNIX, administration and middleware). This effectively prevented each of the businesses within the Group from having to design their own. Development rules were also defined, with the aim of sharing development work to the maximum to deliver the same kinds of services to all our customers. As a result, we are distributing the services that have been created and the know-how acquired as part of this major program at Group level to support our end customers, as we have with the management and development of Address+.

Can you tell us what are the main benefits of Address+ for your customers?

Address+ is a typical example of a convergent service that makes our customers' lives easier. It is a secure address book to which customers have direct access at any time, from anywhere, through whatever means of access is most convenient at the time. It is a perfect illustration of the type of service France Telecom can offer its customers; it is unique on the market for all three main channels: fixed phone lines, mobile phones and the Internet. Of course, the infrastructure behind this type of service is highly secure, with extremely high levels of availability to guarantee continuous service, and also high levels of performance in terms of response times. It is based on Bull's NovaScale servers, Linux and Oracle 9i RAC for the database, which already contained 8,000,000 users by July 2006.

But we have plenty of other services, such as the distribution of TV content, music, and VoD (Video on demand), all of them also accessible via all of the three chan-

nels I've already mentioned. We also offer a bundle of free TNT channels, others dedicated to special events and bundles that can be bought from France Telecom. That's where we really deliver added value: we offer our customers integrated services that are truly innovative, powerful and easy to live with.

France Telecom, is one of the world's leading telecommunications operators, serving 147 million customers across five continents (220 countries or territories) as at 31 March 2006, with a consolidated turnover of 49 billion euro under IFRS accounting regulations (12.8 billion euro in Q1 2006). Launched in June 2005, the NEXt program (New Experiences in Telecoms) is enabling the operator to continue its transformation as an integrated operator, with the aim of ensuring that France Telecom is the benchmark operator for new telecoms services in Europe. So, on 1 June 2006, Orange became the Group's one and only brand for Internet, television and mobile services in France and the UK, while Orange Business Services, the brand for the Group's services to businesses worldwide, France Telecom is the second largest mobile telephony and Internet access provider in Europe, and one of the leading global providers of telecommunications services to multinational companies.

Address+

Bull is one of France Telecom's main IT partners, and has been entrusted with a number of projects, among them providing support for Address+, a complete solution featuring address books that are shared by all the networks (fixed, mobile, IP), and as of July 2006 already has some eight million subscribers. Bull has been responsible for: integrating the PIM (Personal Information Management) product supplied by its partner Voxmobi; developing the convergence platform, notably using Java and Open Source applications (Apache, JOnAS...); and providing the Itanium® infrastructure with its Bull NovaScale® servers. Address+ manages 7.6 million address books and 12,000 synchronizations a day, with 1.6 million pages being visited each day.

HOT TOPICS

French Atomic Energy Authority's TERA-10 supercomputer – developed with Bull NovaScale servers – is confirmed No.1 in Europe by TOP500's latest edition

TERA-10 is ranked number one in Europe and number five in the world in the 27th TOP500 listing of the world's supercomputers, published at the International Supercomputer Conference (ISC2006) in Dresden, Germany. Installed in 2005, the supercomputer is made up of 544 NovaScale computing nodes and 58 I/O management and system administration nodes, representing over 4,500 Dual-Core Intel® Itanium® 2 'Montecito' processors. The new ranking underlines Europe's return to the fore in the high-performance computing (HPC) technologies that are so strategic in terms of national sovereignty and competitive advantage in business.

The 27th edition of the TOP500, listing the world's 500 most powerful supercomputers confirms TERA-10 – the supercomputer developed by Bull and installed at the French Atomic Energy Authority (CEA) – as the number one in Europe and number five in the world. The latest version of the list was unveiled in front of the world's greatest supercomputing experts, meeting in Dresden, Germany for ISC2006.

TERA-10 is used for the Simulation Program run by the CEA's Military Applications Directorate (CEA/DAM). The program is designed to ensure the continuing effectiveness of the French nuclear deterrent following the cessation



of nuclear testing.

"TERA-10's position, as the number one supercomputer in Europe and fifth in the world, confirms Bull's strategy to concentrate on industry-standard, open technologies. This clearly illustrates Bull's expertise in complex, large-scale IT architectures." said Michel Lepert, Bull's General Manager, Bull Products and Systems.

Designed by Bull, TERA-10 comprises a cluster of 544 NovaScale computing nodes, each featuring eight new-generation Dual-Core Intel® Itanium® processors, code-named "Montecito".

The NovaScale servers are interconnected via an ultra high-performance Quadrics QsNet II network, the world leader in supercomputing networks. Overall,

TERA-10 provides the processing capacity of 4,532 dual-core processors and 30TB of core memory. The performance of 42.9 Teraflops of power was measured on 4,000 processors, which demonstrates TERA-10's infrastructure outstanding efficiency.

Over and above the computing power, the implementation of TERA-10 requires enormous storage capacity for the data produced by the Simulation Program. So the TERA-10 configuration also features 56 NovaScale I/O servers managing a PB (one million, billion bytes) of disk space, with 100GB of bandwidth. It also includes two NovaScale system administration servers.

TERA-10 runs Bull's HPC software platform which most notably features the Linux® operating system and Lustre parallel global file system. The platform is built around a number of Open Source software components that have been fully integrated and optimized by Bull at its HPC Competence Center at Echirrolles in France.

The complete TOP500 report is available at : www.top500.org



The CEA – a major player in technology research, development and innovation – operates in three main areas: energy, information technology and healthcare, defence and security, and building on its excellence in fundamental research.

BUSINESS NEWS

National Oceanographic Centre boosts processing power by 60% with Bull

The National Oceanography Centre, Southampton (NOCS), one of the top five oceanographic research institutes in the world, has increased its number of High Performance Computing (HPC) processors with the purchase of three NovaScale systems with 40 processors from Bull.

The NOCS uses its HPC capacity to monitor and model processes in the deep sea. Jointly owned by the Natural Environmental Research Council and the University of Southampton, the NOCS supports more than 450 scientists and 600 students as they research local, national and international projects that help to monitor and predict climate change.

Vic Cornell, IT systems architect for the

NOCS, said: "Our researchers model trends and changes in ocean currents. A single time step in an ocean model can represent 10-12GB of data as we model with lat-long grid-points at intervals of 15 miles in three-dimensions; that's no mean feat when you consider that the Pacific Ocean alone covers over a third of the Earth's surface. Our local mass store is in itself, 100TB, so we need access to very large processing capabilities. This is why we turned to Bull."

This investment from the NOCS will bring its total number of Bull NovaScale processors to 96, configured into two large 32 CPU SMP systems and eight four-way SMP systems.

Cornell said: "Our initial investment in Bull NovaScale servers, made three years

ago, provided us with a solution that has proved flexible, efficient and popular. The team at Bull has stayed close to us and its support services have been excellent with engineers on site in a matter of hours whenever we have needed them. Bull is the HPC company that really understands us. When we came to upscale our processing environment, Bull was the obvious choice to return to."

Mike Dunk, CEO, Bull UK & Ireland, said: "Bull are proud to support a world-class ocean modelling centre such as the NOCS – especially given the importance of climate change to today's world. We are pleased to be able to offer the NOCS another 40 processors and to continue to support the organization."

Bull helps the Registrar of the Paris Commercial Court deliver on-line services

Digigrefe* chose Bull to implement and host the MetaPKI public key infrastructure solution.

The Registrar of the Paris Commercial Court (Grefe du Tribunal de Commerce de Paris), a pioneer in on-line delivery of business processes, has chosen Bull to implement a comprehensive electronic certification solution, as part of its drive to conform to the new recommendations for harmonizing the use of digital certificates in the French public sector (the so-called PRIS regulations).

The Bull solution will provide the 315,000 entrepreneurs in Paris with a public key infrastructure (PKI) enabling them to make their official submissions on line and access public sector applications. and will equip some 15,000 veterinary surgeons who are members of the CSOV (the veterinary council).

"Today, the Registrar of the Paris Commercial Court is at the leading edge when it comes to putting processes on-line. Being able to offer good service quality – that is both proven and well res-

pected – is a vital element, since any dysfunction in the system could have direct repercussions on the life of businesses. Our partnership with Bull enables us to implement a useful mechanism for delivering digital certificates in a totally secure way," explains Pascal Beder, Assistant Registrar.

This new five-year contract confirms the value of Bull's solutions outsourcing strategy in a highly secure, high-tech environment.

"Bull offers a range of global value-added solutions including integration, operational services and application support, capitalizing on the company's wide range of security and outsourcing resources and expertise. As a result, our customers have all the benefits of a single point of contact who can anticipate their business requirements well in advance and put forward highly secure and scalable hosting solutions to meet those needs," confirmed Jérôme Belley, Director of Outsourcing Services at Bull Services and Solutions.

Bull's solution includes:

- Implementing the Bull's MetaPKI public

key infrastructure, including migrating the existing solution to MetaPKI and then ensuring that the whole system evolves towards the new PRIS V2 infrastructure required by the certification authorities

- Integrating Bull's TrustWay CryptoBox** for the sequestration of the certification authority's keys
- Hosting the MetaPKI solution and the dedicated certification portal at Bull's outsourcing center, to provide guaranteed 24/7 continuous service
- Support for and evolution of the solution.

* Digigrefe is an association that brings together the Registrar to the Paris Commercial Court, the Registrar to the Commercial Court in the Southern French town of Alès and the French National Council of Veterinary Surgeons (CSOV).

** Cryptobox guarantees a very high level of security and trust; it is based on Bull's CryptoCard that is evaluated EAL4+ level by DCSSI (Central Directorate for Information System Security)/Prime Minister's Office).

BUSINESS NEWS (CONTINUED)

NovaScale adopted by local authorities in the German state of Saxony

In the German state of Saxony, many local authorities rely on the advanced triple architecture of Bull NovaScale® servers, Oracle 10g and Intel® Itanium® processors, to meet the ever increasing demands for dataflow. As a result, local people can rely on higher standards of service from their councils.

According to Frank Müller, System Administrator, Torgau Town Council: *"Our consolidated Oracle databases deliver more services, faster, smoother and more efficiently to our citizens. The migration, although very complex, was completed without any problems and we are sure that with our new IT system we have invested in an infrastructure that will deliver the best price/performance ratio for our needs."*

Even in idyllic locations such as the towns of Torgau and Eilenburg and the district of Riesa-Großenhain, local authorities are increasingly using the Internet to enable citizens to complete various official forms – such as local residence notifications, passport applications and motor vehicle registration requests – on line. Add to this the fact that the German federal government is insisting that many more official duties are going to be handled at a local level, by local councils. The result of all this is that local authorities need increasingly innovative IT solutions. *"From 2007, for example, we also need to transmit citizen relocation information to the federal government electronically"*, explained Kay-Uwe Balig, Systems Administrator at the Eilenburg Town Council. *"As a result, we face the challenge of delivering new functionality and processes, which will yet again involve a constant and proportionate increase in data processing and storage requirements."*

The most important goals of any IT consolidation project in this kind of environment are to ensure that the new infrastructure is scalable and designed to protect the council's investment over the long term because, of course, citizens will always expect new Internet-based services to be added to the existing ones. The underlying infrastructure and databases must not only be able to deliver against standard performance requirements, but should also be capable of supporting fluctuations and occasional peaks in demand, as well as distributing workload evenly. *"Because we have these very specific requirements, we very soon realized that the Bull server running Oracle was the perfect match,"* confirmed Frank Müller, who added: *"The combination of the Oracle grid database and the Itanium processors at the heart of the NovaScale servers provides a very flexible and powerful solution. Processes for over 350 users run on the same servers in about a third of the time required previously."*

All three local authorities now run a range of processes on central clusters connected to a high-availability data repository. In the past, each council maintained its own systems and databases. *"From an administrative point of view, we already achieved tremendous savings."* reported Kay-Uwe Balig. And that's even before the extra cost savings on licensing fees, which they have achieved by centralizing the Oracle database, are taken

into account. *"With the decision to centralize the Oracle databases, the three local authorities have really been able to protect their investment and will not be facing capacity issues in the foreseeable future, thanks to the economically sound investment model based on the Bull NovaScale servers and Oracle 10g Database,"* added Thomas Züfle, General Manager at HOST, Bull's integration partner. The Itanium® processors also meant the councils were free to choose which operating system they would use. *"We wanted to focus on Linux rather than Windows, and because of this the NovaScale Servers were definitely the right choice,"* confirmed Kay-Uwe Balig.

Eilenburg, Torgau, Riesa Großenhain...

... are all located in the Eastern German state of Saxony. Eilenburg has a population of 18,000 and Torgau 19,000. The district of Riesa Großenhain includes the towns of Gröditz, Großenhain, Riesa and Strehla. The restructuring of their IT infrastructure included migrating from various proprietary systems to Bull NovaScale servers featuring the latest Itanium® 2 processors and various blade servers based on Xeon processors. In addition to the new servers, the local authorities also upgraded their Oracle environment to the latest version of Oracle 10g. Apart from the citizen's portal services, the new IT infrastructure will also support the internal day-to-day work of up to 400 local authority employees.

BUSINESS NEWS (CONTINUED)

T-T Electric chooses Bull to implement its information system based on SSA Global's LN6 ERP

As part of a project to modernize its information system, T-T Electric, Europe's second largest manufacturer of electrical motors, has turned to Bull to implement the SSA LN6 ERP modules, migrating from Baan IV.

The main challenges of the project – taking into account the changing nature of the customer's business, integrating new services, updating the information system and transferring all existing data without any new development work – meant that T-T Electric was looking for a powerful product configuration solution that could ensure perfect data continuity.

As an SSA Global partner, and currently the only IT company in the market to offer a dedicated Baan IV to SSA LN6 ERP migration tool, Bull was able to advise and support T-T Electric in its move to modernize its information system. The migration was completed in just four months, enabling T-T Electric to rapidly start reaping the benefits of an open ERP,

used by all departments within the company, with an unchanged user environment. Bull also capitalized on its understanding of the manufacturing environment to ensure the successful integration of the finance, purchasing, production, warehousing and distribution modules.

The new ERP now enables the activities of all the company's various departments to be coordinated. The changes to the information system were as transparent as possible for all its users, with T-T Electric preserving all existing personalized versions to ensure that its customers' and suppliers' expectations were taken into account. Users were supported through the change by specific menus linked to each business process, and also received new user guides.

Providing the strongest foundations for a customer-centered information system

In industry, back-office/front-office integration is vital, whether it involves managing billing, delivery or stock control. Against this backdrop, Bull was able to

provide three types of expertise linked to its own business as an integrator: its in-depth understanding of the manufacturing industry, its experience of SSA LN6 ERP integration and, throughout the project, its ability to provide a dynamic team bringing together developers and industry specialists.

According to Peter Turner, IS Director: *"This team was just what we needed to ensure that our needs were fully understood and that the software was adapted perfectly to meet our requirements. As a Baan customer, it seemed like a good idea for us to approach Bull, one of the main ERP specialists. We were very rapidly convinced of Bull's high levels of skill, and they were also the only ones that could offer a powerful product configuration tool to manage our data. Finally, Bull's commitment to results in bringing the new system into production was a determining factor in our choice of partner."*

EXPERT VOICE

Marc Appell, Director, Server Design and Development, Bull

The race for power: NovaScale and Montecito, a team designed to win



Marc Appell took part in several R&D programs which implied the development of successive generations of CMOS processors. Before his current involvement within the FAME (Flexible Architecture for Multiple Environments) projects of Intel-based servers, Marc managed Bull's hardware development team in Phoenix Arizona during the Olympus/DPS 9000 program.

The power paradigm: Moore's law overruled?

For decades now, processor computing power has been constantly growing. In 1975, Gordon Moore, one of Intel's founders, modeled this sustained growth in what has come to be known as "Moore's law". The new generation of Intel® processors in the Itanium® 2 family, code-named "Montecito" – after a small town of 10,000 inhabitants in Santa Barbara County, California – is no exception to the rule.

This ongoing increase in processor power goes hand in hand with the equally ongoing changes in semi-conductor etching techniques. Current versions of Itanium® 2 processors feature 130 nm transistor gate width technology (1 nanometer = 10^9 meter). Montecito processors feature 90 nm transistor gate technology: 30% smaller.

Montecito's promises and innovations or multi-core and multi-threading in Intel® Itanium® 2 processors

For quite some time now, this technological trend has given rise to additional performance through accelerated operating frequency whilst improving internal processor algorithms (branch predictions, multi-level caches, out-of-order instruction execution).

In pursuance of this trend, the mere number of logic gates and memory points that a single chip houses today opens the door to new innovations that Montecito is putting into play:

- **"Multi-Core"**: several full processors on a single chip. Montecito has two cores (dual core) – this is just a first step,

since in the near future processors will have four cores, or even more.

- **"Multi-threading" (Multiple instruction threads)**: the possibility for one core to execute several independent instruction threads at the same time. During a cycle, a core works for only one instruction thread, but since it has two full sets of context registers, it can rapidly switch to a second instruction thread.

Each Montecito core can thereby handle two instruction threads. This mechanism optimizes the use of all the core's units. As soon as an instruction thread has to be put on hold pending an event – for example to access a piece of data that is not immediately available – the core switches over to the execution of the other instruction thread.

Montecito features both mechanisms, calling for a change in our usual vocabulary. Traditionally no distinction was made between three concepts: **one chip** housed **one processor** able to execute **one instruction thread**.

With Montecito these three concepts are distinct: one chip (in its package) is connected to the electronic board via a connector (socket), it houses two cores, each of them behaving, from a software point of view, as two independent logic processors (two threads).

Thus, a NovaScale 5245 server with 24 sockets potentially becomes a multiprocessor server with 96 logical processors (24 sockets x 2 cores x 2 logic processors).

This explosion in the number of processors is fully transformed into available user power when those processors are efficiently put into use by software applications. Most server software – particularly database management, Web server and HPC applications – is already designed with this revolution in mind. Further progress can be expected in the future.

Last year's "Fall Processor Forum" in San Jose, California focused

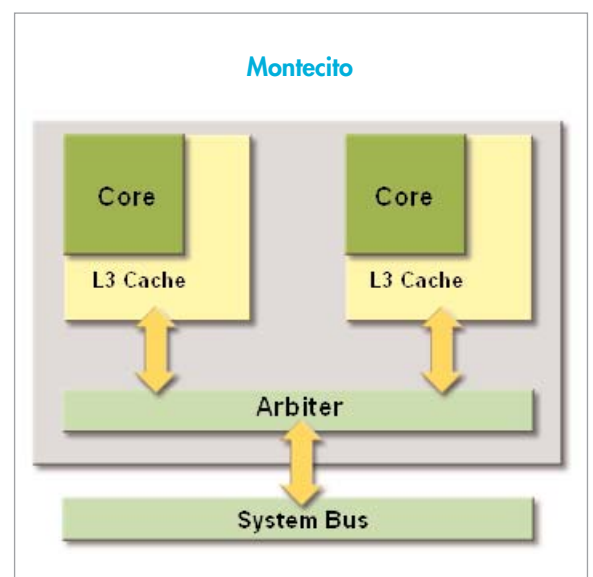
on "The Road to MultiCore". The opening speech to this annual hardware design workshop was delivered by Herb Sutter from Microsoft. Under the title "Software and the Concurrency Revolution", he described how this technological revolution challenges the "threads and locks" paradigm (parallel threads protected by software locks), on which most software applications currently base multiple parallel instruction thread management.

24 MB of cache and Pellston technology

Technological headway also allows Montecito to provide much larger on-chip caches, up to an impressive 12 MB for each core Level 3 Cache. By way of comparison, the equivalent maximum in current Itanium® 2 processors is 9 MB, over 30% more.

These caches allow masked-time memory access. The resulting improvement in performance depends on software application execution profile.

The two 12 MB caches occupy a large proportion of the Montecito chip silicon surface and are therefore sensitive to silicon defects or alpha radiations. To guarantee absolute data integrity, Intel has developed a dedicated technology called Pellston technology.



(concluded on page 10)

EXPERT VOICE (CONTINUED)

Pellston technology allows a faulty cache line to be disabled (one line of Montecito cache holds 128 bytes). During initialization, the BIOS tests all cache lines, and disables those presenting a fault. In addition, if an error is detected dynamically, the Pellston algorithm tests the faulty line and discriminates a transitory error from a solid one.

Accelerated memory access

Another major enhancement is the acceleration of transfers between Montecito cores and memory. These transfers go through a system bus, the Front Side Bus (FSB). The current Itanium® 2 processors connect to a 400 MHz FSB, (one exchange every 2.5 ns). Montecito currently allows the use of 533 MHz FSB and will soon allow the use of 667 MHz FSB.

Physical laws of electricity restrict these speeds to so-called 3 load bus configurations in which the FSB links a maximum of three elements. The memory-controlling chip must also be adapted to these new frequencies.

Controlled thermal dissipation

All these developments, while enabling increased processor computing power, also tend to increase electrical power consumption, and as a result, thermal dissipation. The thermal envelope for Itanium® 2 processors is 130W. Server cooling mechanisms have been designed to meet this specification.

Intel's engineers have used various techniques to limit the thermal dissipation of each Montecito chip to 100W (chip with 2 cores, 4 threads and 24 MB of cache). This is a significant technological improvement compared to earlier Itanium® 2 processors, which were closer to 130W.

Bull NovaScale® servers are Montecito-ready

The new NovaScale server range is the perfect partner for Montecito processors. One of the features of the recently announced NovaScale 3005, bi- and quadri-socket servers, is the potential use of a high speed FSB, particularly beneficial to High-Performance Computing applications which use all the memory bandwidth they can get.

The new range of NovaScale 5005 medium and large-scale servers, with modular configurations from 8 to 32 sockets, has been designed around a new version of the FAME Scalability Switch (FSS), developed especially by Bull for optimum use of Montecito and its successor Montvale.

Each NovaScale drawer includes 2 FSS. The FSS chip, 18.3 mm x 18.3 mm in size, uses 180 nm technology and communicates via four Scalability Ports (SP: 0.8 GHz bidirectional serial links) with the other components in the drawer. Each FSS chip can also communicate, via two eXtended Scalability Ports (XSP: 2.5 GHz serial links), with two other NovaScale 5005 drawers, allowing the ring inter-

connection of up to four drawers forming a 32-socket server.

The FSS chip contains a "directory" to limit the flow of requests between the various components of the server, a limitation vital to the effectiveness of any large-scale server. The 'directory' of the new-generation FSS chip is able to handle the caches of all connected cores with up to 13 MB cache per core.

Close co-operation with Intel

Throughout the Montecito project, Bull's engineers worked in close co-operation with their Intel counterparts.

At the end of 2004, the first Montecito samples, in "stepping A" version, were delivered to our laboratories in Les Clayes-sous-Bois, and tested on NovaScale servers. Do we need to point out that all the features described in this article were not yet fully operational? However, we were able to carry out preliminary trials and to test new BIOS and NovaScale server administration tool features, in particular those dedicated to Multi-Core and Multi-Thread processes.

We continued our tests in 2005... through to the delivery by Bull, at the end of the year, of the TERA-10 supercomputer to the CEA (French Atomic Energy Authority), with several thousand Montecito chips installed and in operation, the very proof that NovaScale hardware and software are truly Montecito-ready.

EXPERT VOICE (CONTINUED)

Lionel Mourer, Director of the IT security consulting and audit unit, Bull Services and Solutions

The challenges of patch management: managing corrections, alternatives and best practice, day to day



Lionel Mourer has more than 10 years experience in strategic and operational consulting on security for large organizations. He joined Bull in 2004 to set up and develop the IT security consulting and audit unit. Over and above his mission to develop the offer and manage the team, Lionel is involved in a large number of pre-sales activities and also contributes to consulting assignments and complex projects.

The proliferation of security breaches over the whole range of operating systems and application software in both the proprietary and Open Source worlds is leading organizations to put in place corrective management (or patch management) systems to bolster their defenses. This is by no means an insignificant task, as it involves not only the technical but also the organizational aspects of the information system.

So what are the risks and constraints? What are the alternatives and solutions? This article gives a broad view of trends and best practices in this area.

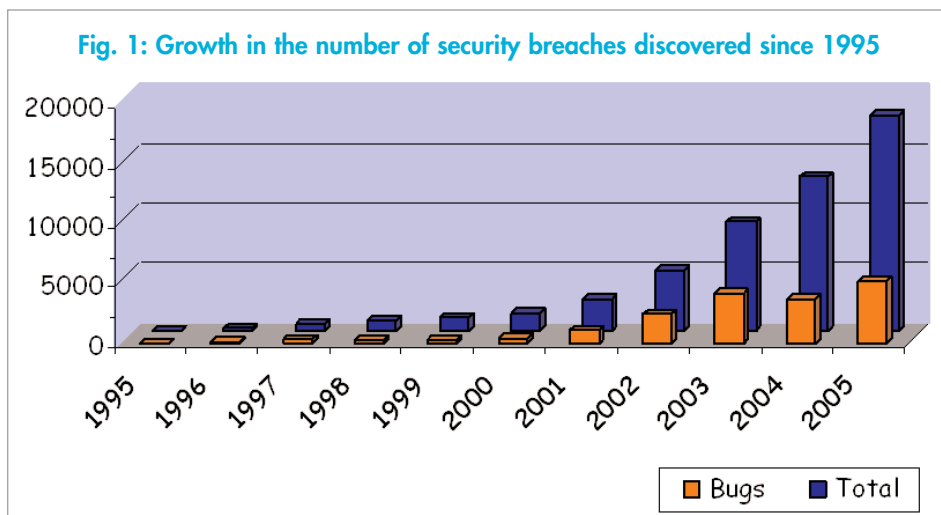
“Bug, did you say bug?!...”

Before going any further, let's make it very clear what we're talking about. This is not about software or system upgrades... nor versioning, or releases featuring new functionality, even though there is some similarity with patch management in the way these updates are treated. Before looking at other issues, I would like to examine security weaknesses themselves and their associated corrective actions. There are effectively four key types of security risk, as described in Table 1 below. In the context of patch management, we are mainly interested in bugs. Our aim is to counter an area of weakness using a suitable “patch” as supplied by software publishers and IT makers.

The number of bugs is currently growing exponentially. To grasp this fully, you only have to look at Figure 1 below, which shows the increase in security breaches reported during the course of the last 11 years, covering the whole spectrum of OS and application software. And the trend is not showing any signs of diminishing; 1,600 security breaches have already been recorded during the first quarter of 2006! It's interesting to note that many discovered breaches involved not only the pro-

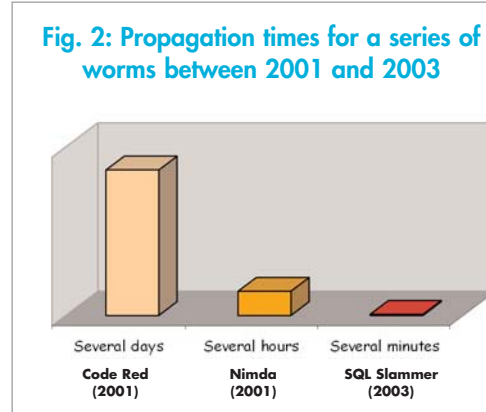
Types of security risk

Type de faille	Type	Exemple	Fréquence de vérification
De configuration	Mauvaise configuration d'un élément	ACLs non positionnées	Souvent
D'administration et erreurs humaines	Nul n'est parfait...	Mot de passe écrit sur un papier	Souvent
Faillies intrinsèques	Liées à l'application, au système d'exploitation, au protocole réseau utilisés	Par exemple, pour IP : l'adresse IP non authentifiée, la fragmentation possible des paquets, etc.	Selon l'évolution des protocoles réseaux, etc.
Bugs (ou bogues)	Faillies identifiées dans un composant et issues d'une erreur de développement	Cf. sites Internet et listes de diffusion spécialisées	Selon l'évolution des systèmes d'exploitation, des applications



proprietary world, but also the “Open Source” world. However, most of the attacks on record today are still aimed at the Microsoft range of operating systems. Another important indicator in the appearance of bugs is speed. There are two angles from which to approach this factor:

- The speed with which “exploits” (the name given to pieces of malicious code created by hackers designed to take advantage of a security breach in order to run) become available has decreased dramatically in the last few years (cf. Figure 2 below);

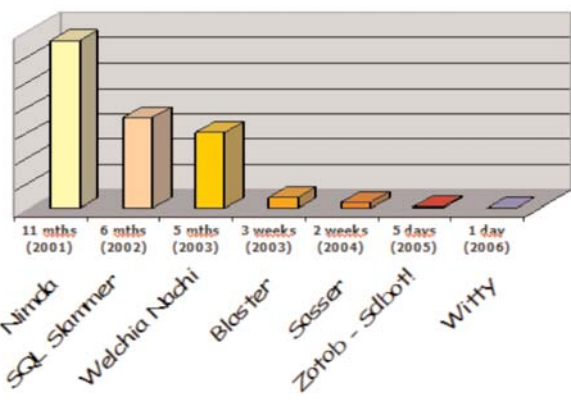


(continued on page 12)

EXPERT VOICE (CONTINUED)

- The speed of propagation, in other words the time it takes for an "exploit" to do the rounds, (i.e. visit the "full circle of the world's servers") has also increased radically (see [Figure 3](#) below).

Fig. 3: Timescale for an "exploit" to be "made available"



Finally, the nature of attacks that exploit security breaches that are uncovered has also changed:

- Historically, the "exploit" often aimed at disrupting a (simple or distributed) service
- Today, increasing "professionalism" and financial incentives go hand in hand with a trend for more sophisticated "Trojan horse" type code, destined for key-logging, backdoor or other types of stealth operations.

So, having explored these different aspects of the theory, we now need to position patch management more precisely. To do this, let's look at the three phases involved in the process:

- The lead-time before patches are put in place,
- During deployment,
- Following installation of corrective patches.

Finally, we will look at some additional considerations that are important in their own way, and finish this review with a conclusion.

Pre-corrective management

Sometimes the fall-out from putting a patch in place can work both ways: patches themselves are not always problem-free and, in seeking to put them into production too quickly, the cure can turn out to be worse than the original problem! In the first place, it is important that the installed IT base is as homogeneous as

possible. Indeed, the more homogeneous the park is, the simpler it will be to distribute patches. In addition, some kind of pre-production or test environment will also be in place, for non-regression testing before applying patches in a live production environment.

Next, procedures have to be written, implemented and maintained to enable:

- Security watch, to discover what breaches have recently come to light, whether they are applicable to your organization, etc. This enables decisions to be taken on the basis of appropriate and verified information
- The need to qualify the information for the specific IS involved: this enables the actual level of risk to be assessed, and gets round the need to depend on the publisher's own evaluations

- Identification of suitable patches depending on specific needs of the business
- Estimation and analysis of risks and impacts in the case where patches are not applied.

Then, of course, comes the moment when the patches you want to deploy have to be tested. Effectively, to work out whether or not it is actually necessary to install a particular patch, several factors should be borne in mind:

- The impact on the operating system or application software concerned (loss of functionality, need to reboot, etc);
 - The wider impact on business processes.
- Only tests that are carried out on a platform closely matching the actual production environment will identify any likely side effects of installing the patch. Once these "non-regressive" tests have been completed, the decision whether or not to deploy a patch can be taken.

Finally, for complete peace of mind, the decision-making procedures must be cross-checked, while respecting each member of staff's areas of responsibility.

Putting patches in place

Actual deployment of patches is often achieved using a patch management tool. There are many such tools on the market, and we are not going to try and compare them here. The choice of tool must be made depending on the platforms used (OS, application software...), but also depending on how they are used

(fixed workstations, mobile computing...) and the way the business is organized (whether or not it is highly centralized). Nevertheless, deployment is actually controlled by the host organization to a greater or lesser extent, depending on the method of distribution being used:

- Deployment controlled via remote distribution tools that send out upstream pre-configured software bundles
- Deployment partly controlled by the company, with target platforms coming to look for the appropriate software bundles independently and at different times
- Deployment that is not controlled to any great extent by the company, since it is the user who independently seeks patches, on software publishers' websites for example.

Finally, during deployment, it is essential to ensure the good progress of the deployment, any rejects or failures, side effects and so on.

Post-corrective management

The procedures that needed to be implemented after patches have been applied include:

- Monitoring of patch updates, to keep track of any developments to the patch itself.
- Updating the inventory of the installed IT base, for the application of subsequent patches.

Finally, it is important that the results obtained are communicated, so it's clear when a job has been well done! This can be communicated via management control panels to a wide range of groups including:

- IT management, for monitoring and assessing the scale of the installed computer base
- Information systems security management, to enable on-going assessment of security levels and risk analysis updates
- General management, to enable them to gauge alignment with rules and/or regulations.

A few additional thoughts

When implementing patch management plans, organizations need to ask themselves a number of other questions, to ensure that their information systems, and the staff working in and around them, are fully protected.

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EXPERT VOICE (CONTINUED)

With the increasing importance of mobility in companies, new challenges are appearing in relation to updating (this applies equally to anti-virus software, for example). How, for example, should you go about updating a portable PC used by someone who is working away from his usual site for several weeks, and who is connected to the company network via the Internet? And how are PDAs and other smartphones handled? These points will have to be catered for within the company's information system.

Some systems cannot be taken into account: for example, "turnkey" type: platforms dedicated to controlling manufacturing processes, platforms dedicated to specific business applications, applications or modules re-used by other applications in OEM products, "black boxes" appliances, etc. In these cases, the publisher, manufacturer or even the systems integrator is directly responsible. But how much confidence do you have in them? ISVs generally publish regular security patches (for example, once a month). However, sometimes they are happy to wait before issuing them. So what's going to happen in the following situations?

A patch fails to fix a security breach, but instead only intercepts calls seeking to exploit a weakness (in this instance the weakness remains completely unaffected)?

An "unauthorised" or "unofficial" patch corrects the problem a risk that has been discovered independently, before the publisher can send out the official patch? A zero-day attack: an "exploit" appears

on the scene at exactly the same time as weakness is announced?

A patch is only published several months after the discovery of a security risk?

And ultimately, the rather tricky problem remains, of how to manage responsibilities:

Over and above the technical aspects, who is responsible for applying patches? And who is held responsible for an attack if patches are not applied?

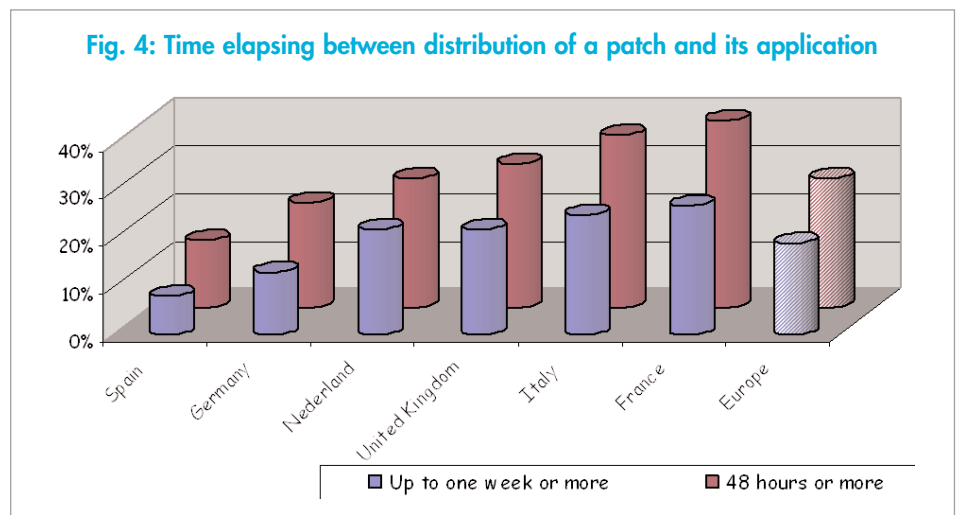
In the case of outsourcing, which party is responsible for implementing patches: the customer or the outsourcing provider?

Good practice procedures (for example ITIL, COBIT or ISO 27000) can help in the allocation of these responsibilities. But on the whole, it is just important that it is done, whether internally through business procedures or via contracts (in the case of outsourcing).

Conclusions

Figure 4 below shows that patch management is an area where numerous organizations still have to make a lot of progress.

What's more, instead of patching after the event, isn't it so much better to install a system properly from the start and banish default installations (OS and software applications optimization)? Finally, rather than preserving old operating systems or software applications isn't it better, surely, to move on to newer versions? Nevertheless, while it is easy to say, "we must patch," the implementation of a comprehensive and coherent update for security patches remains a real project in itself, and one that must be managed as such.



SOLUTIONS

Interview with **Pierre Duval**, Head of the Intel-based servers Business Unit

NovaScale family extended to cover all enterprise requirements, from supercomputers to the simplest file servers

Bull has just launched the new NovaScale 3005 series. What are the advantages of these latest models?

They are twice as powerful as their predecessors and deliver three times the performance for the price. What's more, they feature the new-generation "Montecito" dual-core technology in response to the specific power and scalability requirements of major data centers and scientific computing facilities. The servers are also very compact, because a single housing can hold anything from 4 to 160 powerful processing cores. They also supply highly compacted power: with only a slight increase in power consumption and better heat output. The new models replace the NovaScale 4000 series, and complement the NovaScale 5005 large-scale SMP servers.

So does this mean that the new Intel "Montecito" processor is now available?

Indeed, TERA-10 for the French Atomic Energy Authority, Europe's most powerful supercomputer and No.5 in the world, already features over 4,000 Montecito processors. So Bull has unique experience of these new processors in the marketplace. They will be available on general release at the beginning of August this year.

The new Montecito processor responds to the market's intense demands for high-end processors that deliver lots more power with low electricity consumption and heat output, for the most demanding environments: supercomputers, large database servers and application servers in mission-critical environments.

The NovaScale 3005 series is the first to integrate the Montecito processor from its inception, thus offering an extremely competitive price and price/performance ratio. The NovaScale 5005 series, launched in March 2006, initially featured the Madison processor, and will be offered with the Montecito processor from the beginning of August, ensuring that our range of high-end SMP processors takes full advantage of the power of the latest Intel processors.

What are the first models in the new NovaScale 3005 series?

Initially, there are three models in the NovaScale 3005 series, each featuring up to four Dual-Core Intel® Itanium® 2 Montecito processors. The differences between them are the number of dual-core processors they feature and how compact they are:

- **The NovaScale 3025 and NovaScale 3045 models** are especially well suited to production environments where intensive use of I/Os is required. The NovaScale 3025 is equipped with one or two dual-core processors, and with eight integral disk bays.
- **The NovaScale 3045 Compact** enables to build clusters delivering very high levels of computing power to be built. With its extremely compact format (only "2U"), it features between one and four dual core processors and two integral disk bays.

The first servers will be available from August 2006. The price for the entry-level server configuration with one Intel® Itanium® 2 9020 processor, 4GB memory and 73GB of disk space, starts at 11,300 euros.

Why Bull is also extending its NovaScale family with new "rack" and "tower" format servers?

The NovaScale family already includes blade servers, featuring Xeon® processors, to complement high-end servers based on Intel® Itanium® 2 processors designed primarily for large-scale commercial and scientific applications. From now on, servers with other packaging will also be included in the NovaScale family, for all kinds of enterprise use: from front-office servers to application and database servers. Bull wanted to enrich its NovaScale offering and ensure greater consistency across its product catalogue, whilst capitalizing on the NovaScale brand. The new family of servers is designed to meet all kinds of enterprise requirements for open and flexible application infrastructures based on

industry-standard technologies.

That's why Bull is announcing the launch of our new NovaScale R600 and NovaScale T800 series that are equipped, like the NovaScale Blade servers, with Intel® Xeon® processors. They are aimed at the low-cost fault-tolerant server market and the workgroup, printer or file servers market. Just like the Intel® Itanium® 2-based NovaScale servers, the NovaScale servers that use Intel® Xeon® technology can be administered using the NovaScale Master software suite and share the same catalog of Bull StoreWay data storage solutions. So the new NovaScale family represents much greater simplicity for our customers alike. It includes from now:

- **The NovaScale Intensive line**, targeted at mission critical and HPC applications, based on Intel® Itanium® 2 processors, including NovaScale 3005, 5005, 7000 et 9000 series;
- **The NovaScale Universal line**, targeted at volume market, based on Intel® Xeon® processors, including blades, towers, racks and fault-tolerant series of servers.

What R600 and T800 models are currently available?

The NovaScale R620 is the first model in the NovaScale R600 series. It's a fault-tolerant server available in rack format, destined for organizations that want a low-cost and extremely reliable application platform, responding to the highest demands. The price of a configuration including 2 processors, 2GB of memory, 73GB of disks and Windows 2003® Enterprise Edition preloaded is 29,884 euros.

The NovaScale T840 is the first model in the NovaScale T800 series. This is a tower-format server designed for businesses that want simple, easy-to-implement servers for workgroups, file or printer server duties. The configuration price including one 3.0GHz dual-core processor, 1GB of memory and one 80GB hard disk starts at 1,891 euros.

In September, Bull will be unveiling a number of new rack and tower format servers to further enhance the NovaScale server offering.

WHAT'S NEW

Bull is the best company in consultancy services for corporate IT projects, according to IDG

Bull has just been named the company of the year in Brazil in the "project consultancy for corporate services" category by IDG (International Data Group), the leading global communication group in the Information Technology sector. The award is part of IDG's yearbook "100 Biggest in Corporate Services", which analyzed over 200 companies to select the best ones.

According to Alberto Araujo, CEO of Bull Latin America, this success underscores the work Bull has been doing over recent years: "2005 was a year of great changes for Bull and this award shows the market the results of our major restructuring, bringing back the high professional levels of revenue and growth," he states. "We are very pleased

with this outcome and we hope it highlights Bull's return to winning leading awards and to the top of the market". The IDG "100 Biggest in Corporate Services" study uses the following evaluation criteria: history evolution, sales strategy, customer profile and size of the company, revenue per employee, information available in the media and

on the Web site, and information for IT consultants and analysts. The publication will include exclusive analytical reports from IDC Brazil, presenting the current corporate services scenario on ICT, mapping the leading companies in 2005 and ranking of best companies in five categories: Consultancy, Outsourcing, Implementation, Management, and Training.

For further information, please visit:
<http://mkt.idg.com.br/100maiores/06/servicos/hotsite/hotsite.htm>

Bull NovaScale® systems run CD-adapco's STAR-CD simulation software

CD-adapco and Bull have cooperated to offer the world renowned CFD (Computational Fluid Dynamics) solution STAR-CD on Bull's most innovative Intel® Itanium® 2 based NovaScale servers and clusters.

STAR-CD software is designed for engineers and researchers working in the field of computational fluid dynamics (CFD) and provides flow, thermal, and stress solutions in areas like automotive and aerospace aerodynamics, simulations of engine combustion, offshore/marine applications, or any other type of complex but important flow analysis. The STAR-CD solver provides one of the most effective numerical methodologies available in an industrial CFD code with the high level of accuracy needed for complex unstructured meshes. This power is delivered with the speed, efficiency and robustness demanded for practical engineering design and development cycles. Through a tight technical cooperation between Bull and CD-adapco's expert teams, it has now been ported and optimized to fit Bull NovaScale servers and clusters and has successfully passed all certification criteria.

Dennis Nagy, Vice-President of Marketing

and Business Development at CD-adapco, said: "CD-adapco welcomes Bull as a new partner to support our industry-standard STAR-CD simulation solution. CFD is poised to make an even more significant strategic business impact than heretofore by allowing development engineers to do "up-front" what-if studies and optimization of key components and systems. CFD is very computationally intensive but scales very well on HPC clusters. As clusters such as Bull NovaScale become more powerful and cost-effective, and as CFD methods get significantly faster (e.g., via CD-adapco's introduction of breakthrough polyhedral meshing/solving technology), the execution speed of meaningful simulations is now within the timeframe needed by product developers to gain meaningful insight into innovative 'outside-the-box' new product concepts that previously were too risky to even consider as their chosen new product designs."

Bull NovaScale servers are SMP (Symmetrical Multi-Processor) systems built using modular blocks that can be easily combined in a single cabinet to provide SMP servers from 2 to 32 sockets. They can be further extended with industry

standard interconnects like Quadrics or InfiniBand into powerful clusters. Bull NovaScale systems have already a very strong presence in the Research and Academic sectors with outstanding successes like Europe's most powerful supercomputer and fifth in the world installed at CEA, and is now entering the industry and manufacturing sectors with leading Independent Software Vendors (ISV) partners like CD-adapco.

Jean-Francois Lavignon, Director of the Bull HPC Business Unit, said: "Bull is extremely pleased that CD-adapco has certified STAR-CD on our NovaScale platform making it a key addition to the growing portfolio of MCAE applications that take advantage of our servers and clusters capabilities. We already have installed customers like Pininfarina using STAR-CD on Bull NovaScale servers, and the floating point power of the Intel® Itanium®2 processor, the outstanding I/O capabilities and the scalability of the NovaScale line of servers and clusters will ideally complement STAR-CD software functionalities to offer to our industry partners a winning combination".

WHAT'S NEW (CONTINUED)

Bull joins the blade.org consortium

Blade.org brings together more than 75 partners including: Brocade, Bull, Citrix, Emulex, IBM, Intel, NetApp, Nortel, Novell, Red Hat, VmWare and Qlogic. Its objective is to promote and enrich blade server-based infrastructure solutions by working together on common

specifications in order to standardize the main components of blade servers.

"Bull is committed to providing industry standard-based, open and flexible solutions to its customers." said Michel Lepert, General Manager, Bull Products and Systems. "Our involvement in the

blade.org organization enhances our ability to address customer needs as we leverage an enriched and expanding blade solutions portfolio to provide our customers with more choices for their blade server infrastructures."

EVENTS

2nd Health Conference 2006, organized by IDC, 20 September, at the Westin hotel, Paris

Modernizing Information Systems for tomorrow's health services

// By 2007 there will be more than 3,000 establishments responsible for public healthcare in France: over 1,000 of them in the public sector and around 2,000 in the private sector. This is a highly sensitive sector, being one of those areas that can reap greatest benefit from the latest advances in information technology. And yet, regulations and confidentiality requirements, the constraints of cost control and in addition the emergence of a new patient monitoring system, are

opening new horizons for managers in this sector. IDC analysts, market experts and health sector players will address all these issues that underlie the profound transformations taking place in the French healthcare system."

The program for the day is as follows:

- Users from the hospitals in the French cities of Reims and Lyon, and the regional health authority in Franche Comté will give accounts of their experiences

in the field;

- The Single Electronic Patient Record (DMP): driving computerization from 2006?
- Transforming hospital information systems;
- Computerizing health care procedures;
- Security of hospital information systems: a presentation by Hassan Maad, General Manager of Bull Evidian;
- Activity-based healthcare tariffs, and HIS (hospital information systems).

For more information and to register for the event visit :

www.idc.com/france/events/sante06.jsp

26 September in Nantes (France), Joint Bull and Business Objects seminar

Cost management with new piloting tools

To help you track your business performance and precisely understand its drivers while running your organization, Business Objects and Bull have organized a seminar on September 26, in Nantes intended for decision makers on the theme: **"Cost management with new piloting tools"**.

The agenda includes:

- **Monique Ranou** company, Number 2 in France in self-service delicatessen products, will speak on its return on investment thanks to the implementation of a purchasing and control management solution, based on Business Objects tools, a Bull partner since 1991.

- **Jean-Michel Jurbert**, Business Objects, will present the stakes linked to Business Intelligence's standardization.
- **Yannick Rolland**, Bull, will make recommendations on implementations, based on Bull's savoir-faire in the completion of a number of these kinds of projects.

September 28-29, Paris, France, Bull HPC User Convention 2006

Free up performance in a multi-core environment

The second Bull High Performance Computing User Convention will be held in Paris on September 28-29, 2006, in the unique setting of the Museum of Fairground Arts.

Computing is coming today to a new technological turn. With the processor clock frequency increasing at a slower pace, processors go multi-core to boost performance. Multi core processors offer more computing power, more density, at

a reduced cost. However, making full use of the capacities of multi-core processors requires a fundamental rethinking of how to deliver performance. Speed is still important, of course, but parallelism is a must to efficiently distribute the workload between increasingly numerous cores. Optimizing code, tuning applications, choosing the best tools for the massive parallelism brought by multi core processors are key issues to maximize

performance.

The Bull HPC User Convention will address these issues, through speakers from major HPC centres, Bull partners, and the Bull HPC Competence Centre. The Convention will also offer many opportunities to for informal exchange between experts from all horizons.

For more information email to:
hpc@bull.net

EVENTS (CONTINUED)**October 12, Paris****IT and local area attractiveness**

Local authorities are at the very heart of economic activity and at the center of the State's relationship with its citizens. Information and Communications Technology (ICT) provide a fantastic opportunity to further improve this key role in the society and strengthen their attractiveness in an increasingly globalized world.

Against this backdrop, what new services

can they offer with the help of ICT? How can they prove their dynamism through the use of e-government (for example, in terms of creating employment, improving the quality of their services...)? What technologies are available for them to use? What skills do they need to implement them (change management, security, outsourcing, regulatory compliance, breaking down departmental barriers)?

All these subjects will be covered at a morning event organized by Bull, CIO and French IT magazine Le Monde Informatique on October 12, at the Pavillon Ledoyen in Paris.

André Santini, Deputy Mayor of the town of Issy-les-Moulineaux and Didier Lamouche, Bull Chairman and Chief Executive, will be attending.

October 20, Paris**CUBE (the Bull European User Group) UNIX day**

Following two successful initial sessions, Bull and CUBE are organizing another day where users can share their experiences and learning points on October 20 at the Sofitel in Paris. The event – which will be focused

on Bull Escala® servers and their AIX® environment – is not restricted just to CUBE members: any French-speaking customers or prospects will be welcome to attend. **The main themes of the day will be global virtualization of IT architectures**

and archiving solutions, illustrated by customer case studies.

For more information and to register for the event, contact:
christophe.loye@bull.net

October 18-20, Issy-les-Moulineaux (France)**World eGov Forum**

Bull is sponsor of the World eGov Forum which will be held in October at Issy-les-Moulineaux, France. It will represent a unique opportunity to showcase both the role and the impact of Information and Communication Technologies (ICT) in the public sphere; to present public e-services and citizens' opinions to all types of publics. South Korea will be the guest of honor of the Forum. Approximately 30 countries will participate in various conferences.

Three plenary sessions, four conference themes and around 20 simultaneous round table discussions are organized around the central question: **Which connected society do we want?**

- E-inclusion: the real challenge to build the connected society that we want
 - E-government as a strong issue of the governments transformation
 - Re-invent democracy at the age of information: to a participatory democracy?
- On October 18, **Didier Lamouche**, Bull's

Chairman and CEO will be attending the opening session. **Jean-Pierre Barbéris**, General Manager, Bull Services and Solutions and Michel Lepert, General Manager, Bull Products and Systems will participate in round tables. The program is in progress.

For more information:
www.worldegovforum.com

November 11-17, Tampa (USA)**SC06**

SC06, the premier international conference on high performance computing, networking and storage, will convene in November 2006 in Tampa, Florida. This year the conference will take

its inspiration from Albert Einstein who said, **"Computers are incredibly fast, accurate, and stupid; humans are incredibly slow, inaccurate and brilliant; together they are powerful beyond imagination."**

Visit the Bull booth (#1651)!

More information:
<http://sc06.supercomputing.org/>