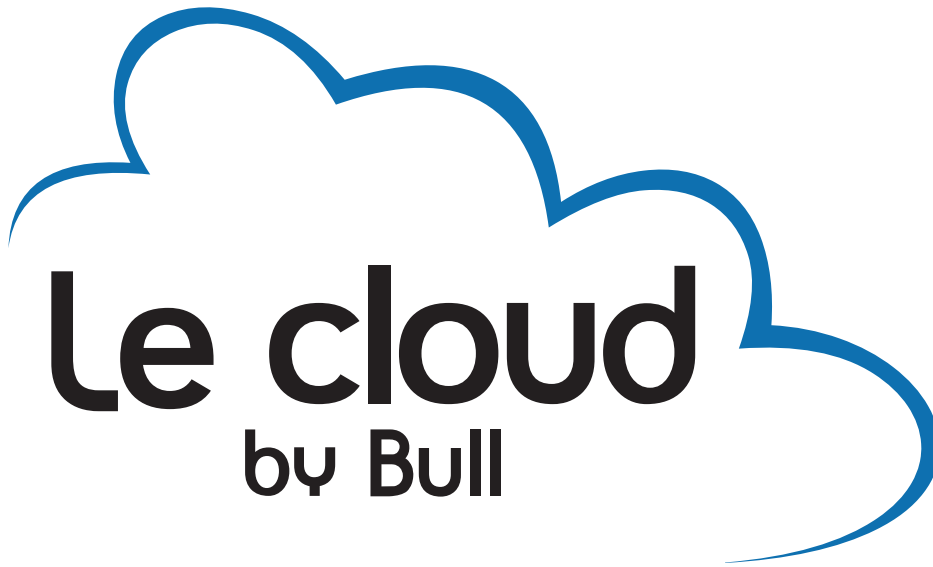




Le cloud

by Bull



A PRACTICAL APPROACH TO THE **CLOUD** FOR A **SMOOTH TRANSITION**

IT departments are under pressure from all directions to adopt cloud computing: from the economic climate, which demands flexibility and rigorous cost control, from a technology perspective, driven by the consumerization of tools and, of course, from users and decision-makers, who aspire to greater autonomy. Cloud computing seems to be an unstoppable revolution, and the type of computing best suited to this environment. So the question is no longer why, or even when, but how to transition to the cloud.

Switching to cloud computing is a major transformation project for an IT department and for the company as a whole structured around its information system. And like all profound changes, it demands resolve and pace, combined with a gradual and attentive change management approach.

To help in this area, Bull has designed **Le cloud by Bull**, a progressive, integrated approach that combines all Bull's areas of expertise to support you as you move – at your own pace – towards the most appropriate enterprise cloud for your business, which meets your current and future needs and protects your investments.

Le cloud by Bull is a practical approach designed to ensure a smooth transition to the enterprise cloud. By tackling issues

of security, service levels and continuity, control of data and systems, and IS governance very early in the process, **Le cloud by Bull** addresses all these concerns in a pragmatic, coherent way in order to define the configuration and operational profile of a secure, scalable, made-to-measure cloud that aligns with your business needs.

Bull has unique experience in the design, implementation, security and operation of sensitive information systems. **Le cloud by Bull** represents a natural continuum of technologies and services dedicated to the cloud and its specific characteristics. The Group is one of the few players with experience across all forms of enterprise cloud – private, managed, public, scientific – placing Bull in an optimal position to evaluate the respective benefits of each of these forms for your business.

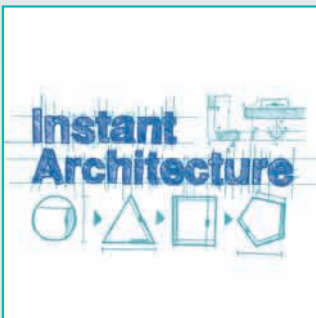
Combining consultancy, specific technology building blocks, security solutions and hosting options, **Le cloud by Bull** brings you one step closer to your enterprise cloud so that you can enjoy the benefits quickly, without ever losing control over your organization or your information systems.

KEY CHALLENGES OF THE ENTERPRISE CLOUD



To make sure that the Cloud is a positive driver for value creation – rather than adding complexity, tensions or insecurity – IT Departments have to get ready to welcome it.

That involves instigating, structuring, planning and securing an enterprise Cloud transformation project, to gradually raise service levels and cut costs, step by step.



To become part of the age of industrial-scale, instantly adaptable and business-oriented IT, the cloud needs a flexible and scalable technological platform:

one that contributes to simplification and can support different types of architectures on heterogeneous technologies. Only under these conditions can infrastructures offer the highest levels of security and service for critical applications.



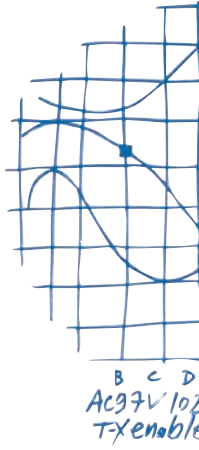
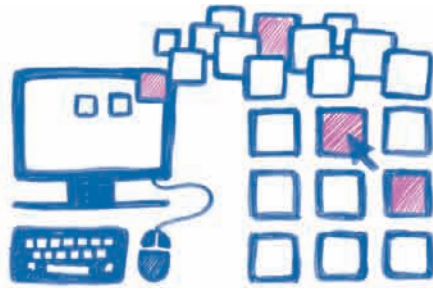
Whatever the cloud environment – public, private or hybrid – information is still organizations' most important asset, and protecting it is a vital issue.

So security is a central concern, whether it is approached globally – data protection, access control, vulnerability management, service availability – or in response to specific organizational, business, operational, geographic or regulatory questions.



In a services-oriented organization, new rules are being written to cover the offering, billing, instantiation and supervision of services, resource provisioning and process automation.

Defined by SLAs, measured and audited, service levels are at the heart of a new form of governance, aimed at guaranteeing totally transparent management of the cloud.



SERVICES CATALOGUE

THE FIRST STAGE IN *LE CLOUD BY BULL*: EVALUATING AND DESIGNING. BULL ADVISORY SERVICES HELPS YOU DEFINE A SERVICE-ORIENTED, ORGANIZATIONAL TARGET MODEL.

THE SERVICE CATALOGUE, A KEY STEP

The service catalogue lists the various resources that the IT department makes available to users (processing or storage capacity, applications, services, etc.) and sets out their costs in relation to the levels of service required. This structures the dialog between the business and the IT department, making catalogue creation a key step in rationalizing and transforming the IT infrastructure in readiness for the cloud. Bull Advisory Services helps all stakeholders to identify, define and enhance the services, depending on needs and application criticality.

THE STRUCTURED CLOUD

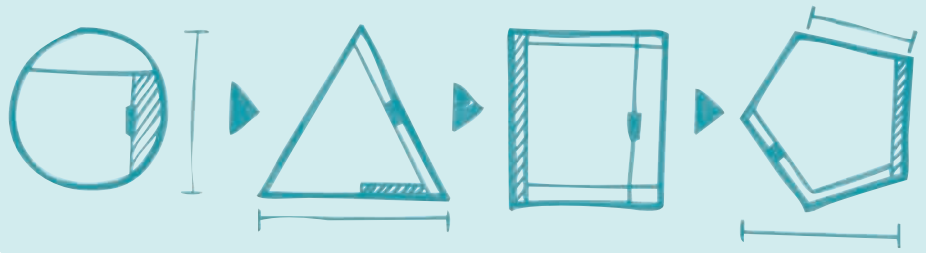
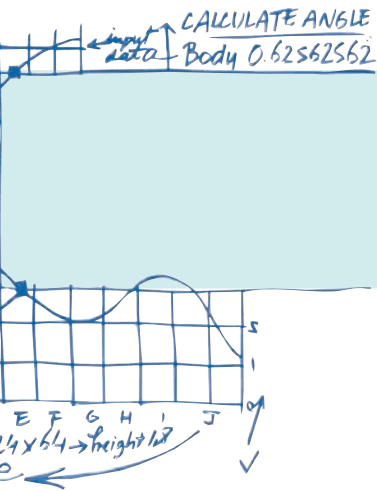
To ensure that the cloud actively contributes to value creation, rather than just introducing more complexity, IT departments have to carefully think through its many and varied consequences: technologies and IS topology, the nature, management and distribution of services, relations with the business, organization and skills, etc.

Bull Advisory Services, the consulting service specialized in infrastructure transformation, conducts a rapid, rigorous and independent analysis based on ITIL, COBIT or eSCM guidelines to help IT departments prepare for the transition to the cloud and its new service orientation.

GPS for Cloud : this maturity and opportunity analysis starts from the expressed business needs to propose the potential cloud model(s) and an initial cost-benefit assessment

Compass for Cloud : this detailed impact analysis makes recommendations concerning the service catalogue, the cloud model selected and its architecture. It comprises identification of all the factors affecting the transformation project and recommendations for new services.

Service catalogue and technical reference architecture: aimed at defining the optimal service levels, the unit cost of services, service quality indicators, security policies and tools, service continuity and process automation targets. The economic analysis estimates the ROI of the transformation project.



INSTANT ARCHITECTURE

LE CLOUD BY BULL PROVIDES ALL THE BUILDING BLOCKS AND EXPERTISE NEEDED TO BUILD PRIVATE CLOUD INFRASTRUCTURES.

THE AGILE CLOUD

The road to the enterprise cloud, first and foremost, is about aligning hardware and software infrastructure to meet the demands of this service-oriented, modular, shared approach, based on a pay-as-you-use model and Internet technologies.

Bull provides all the technical components and integration services to build a robust, scalable, open and secure infrastructure, compatible with the target architecture and capable of delivering the expected levels of performance.

Servers: Bull's high-performance servers (bullion, Escala, blade series, etc.) are specifically designed for this first step towards the private cloud. Bull equips its Escala and novascale servers (in blade format) with dynamic deployment and configuration, automation and billing capabilities, making them ideal components for a service-oriented infrastructure,

with the ultimate goal of enabling IT departments to improve the competitiveness

of their infrastructures thanks to the integration of cloud-oriented software stacks and the associated expertise.

Storage: as an integrator of advanced storage solutions, Bull StoreWay implements scalable storage resources that can be adapted to meet the needs and service levels required.

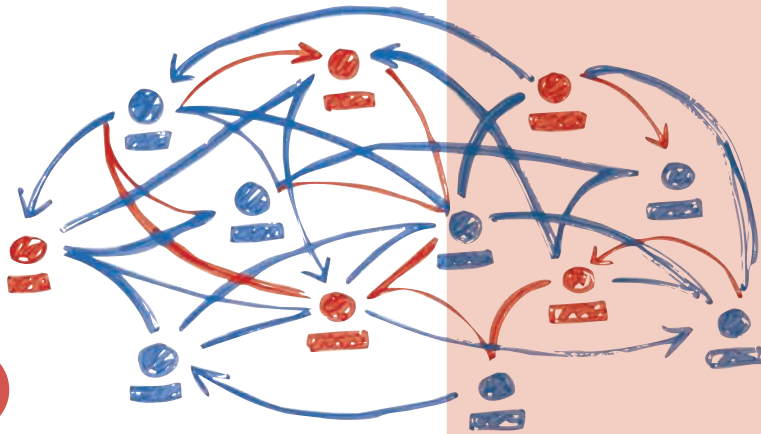
Networks: as an expert in the entire network value chain and integrator of market-leading technologies, Bull implements convergent, dynamic solutions that are scaled to fit cloud and mobile computing needs.

Systems administration: using tools from its partners VMware (x86) and CA Technologies (heterogeneous environments), as well as its own solutions, Bull puts in place all the necessary functionalities to manage cloud environments → (monitoring, load balancing, provisioning, automation, service billing, etc.).

Applications: Bull recommends and takes full account of the technical and functional demands of using applications in cloud mode, in both new developments and when maintaining legacy systems.

BULLION CLOUD PLATFORM, THE CORNERSTONE

bullion cloud platform is a single rack, combining all the power of bullion – the world's fastest x86 enterprise server – VMware's VSphere 5 environment, and fully integrated and tested solutions from its storage and network partners. bullion cloud platform is a highly scalable solution capable of hosting 500 or more applications on a single server or heavier applications on a single virtual machine. This platform is available in three configurations: 'Entry-level' for application development, 'Department' for maximal use of resources and 'Enterprise' to meet even the highest demands for performance and security.



SECURED CYBERSPACE

SECURITY IS ONE OF THE MAIN FEATURES OF *LE CLOUD BY BULL* APPROACH. FROM RISK ANALYSIS TO THE PROVISION OF EXPERT SOLUTIONS, BULL RESPONDS TO ALL ASPECTS OF THE CRITICAL SECURITY ISSUE.

THE SECURE CLOUD

Le cloud by Bull offers access to a thousand or more of the Group's experts to design and develop a security strategy specifically for the enterprise cloud.

Risk analysis: the Cloud Security Assessment Service uses the EBIOS method to identify risks on the basis of digital assets and business-specific constraints.

Security architecture definition: security requirements are determined according to business needs, how systems will be used and the regulatory environment (processes, forms of access, etc.). The target architecture conforms to the IS security policy (ISO 27000).

Perimeter security: Bull Security Solutions provides all the security elements for a watertight system, as close as possible to the level of the data itself (monitoring tools, firewalls, intrusion detection, data leak prevention with visibull, etc.), backed up by a comprehensive access management policy (Evidian I&AM9, E-SSO, WAM).

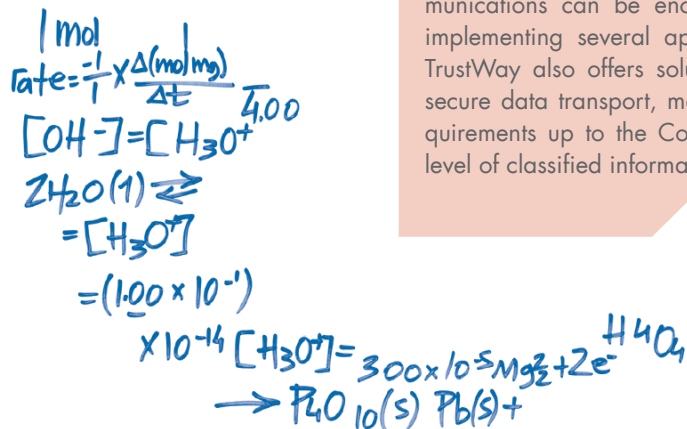
Security for links: Bull's TrustWay high-performance encryption tools guarantee the absolute integrity and confidentiality of your information.

Dynamic security: in terms of security, Bull adapts its solutions in real time (for example, by providing virtualized firewalls) and constantly evaluates its tools under operational conditions. At the same time, an innovative analysis solution, TrustWay Audit Manager, allows the organization to ensure that its supplier is meeting its security commitments.

Incident response: Crisis Management Service enables the necessary measures to be taken as quickly as possible as soon as an incident is detected in order to keep consequences to a minimum.

TRUSTWAY, CRYPTOGRAPHIC ASSURANCE

As an expert in cryptographic solutions, TrustWay offers high-performance IP encryptors that can encode transmissions of up to 1Gb on the fly and even larger communications can be encoded by implementing several appliances. TrustWay also offers solutions for secure data transport, meeting requirements up to the Confidential level of classified information.



KEEP CONTROL

WHETHER THE CHOSEN SOLUTION IS PRIVATE, MANAGED, PUBLIC OR HYBRID, *LE CLOUD BY BULL* BRINGS ALL BULL'S RESOURCES TO BEAR IN DELIVERING A CLOUD THAT IS TOTALLY UNDER CONTROL.

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THE CONTROLLED CLOUD

Le cloud by Bull enables the organization to choose the most appropriate deployment model for its cloud environment (private, managed or public) to match its needs, its culture and its resources. In all these situations, Bull provides the advice, tools and support needed to establish a sustainable and secure cloud platform.

Systems administration: using dedicated administration tools (VMware, CA Technologies), the IT department can manage its cloud based on business-oriented SLAs (Service Level Agreements) and KPIs (Key Performance Indicators).

Control: the IT department keeps control over its data and processes, thanks to the technical interoperability that comes from using standard platforms, as well as the conformity and transparency rules that are put in place.

Reversibility: reversibility, an essential issue, is built in from the start to enable the organization to either to take back its own data or to have it managed by an external supplier.

Bull uses the same approaches and tools, in an industrialized way, when it hosts all or part of a cloud environment.

Managed private cloud: hosting and operation of virtual infrastructures that are private, physically dedicated to business applications or large development and test environments.

Managed private Cloud: Bull's subsidiary, Agarik, provides a Platform as a Service offer for e-businesses.

extreme factory: scientific cloud solution offering on-demand power for high-performance computing.

CloudMaker: a public cloud solution (IaaS) for SMEs wanting fast access to infrastructure resources.

BULL CLOUD CENTERS, A TRUSTED SPACE

In France, Bull has five Cloud Centers forming a virtual hosting space equivalent to a single cloud zone of 12,000 m². Managed exclusively by Bull, with no sub-contracting involved, this entire resource is managed continuously, 24x7, via an owner network open to the leading international operators. Bull's secure network of Cloud Centers – Outsourcing activity is ISO 27001 certified- is extremely energy-efficient, and provides a trusted space for sovereign hosting of even the most sensitive private clouds.



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