Cloud Computing: Getting the benefits while navigating the security challenges

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IBM Global Technology Services

Todays Challenges

85% idle

In distributed computing environments, up to 85% of computing capacity sits idle.

70¢ per $1

70% on average is spent on maintaining current IT infrastructures versus adding new capabilities.

1.5x

Explosion of information driving 54% growth in storage shipments every year.

$40 billion

Consumer product and retail industries lose about $40 billion annually, or 3.5 percent of their sales, due to supply chain inefficiencies.

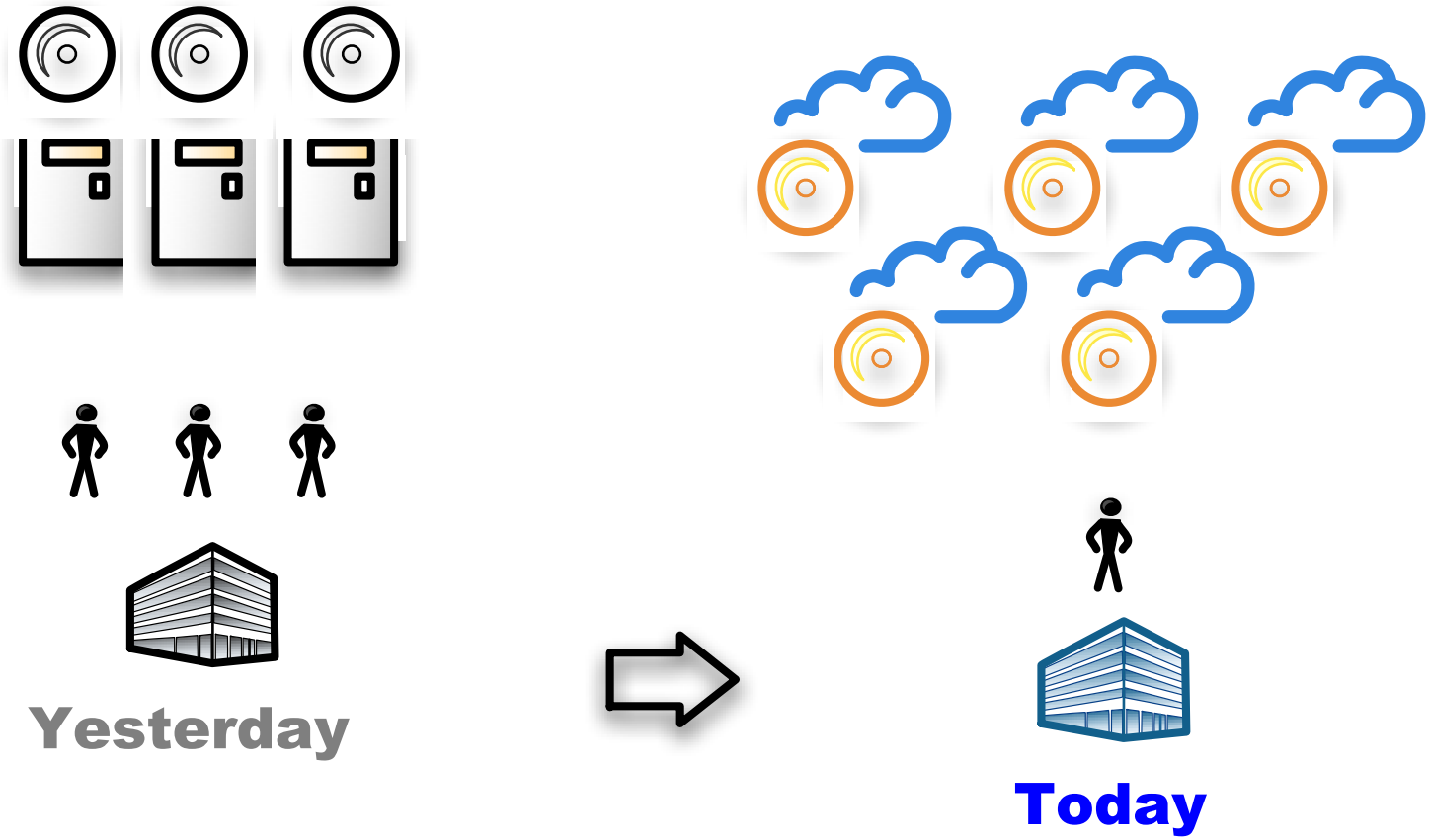
33%

33% of consumers notified of a security breach will terminate their relationship with the company they perceive as responsible.

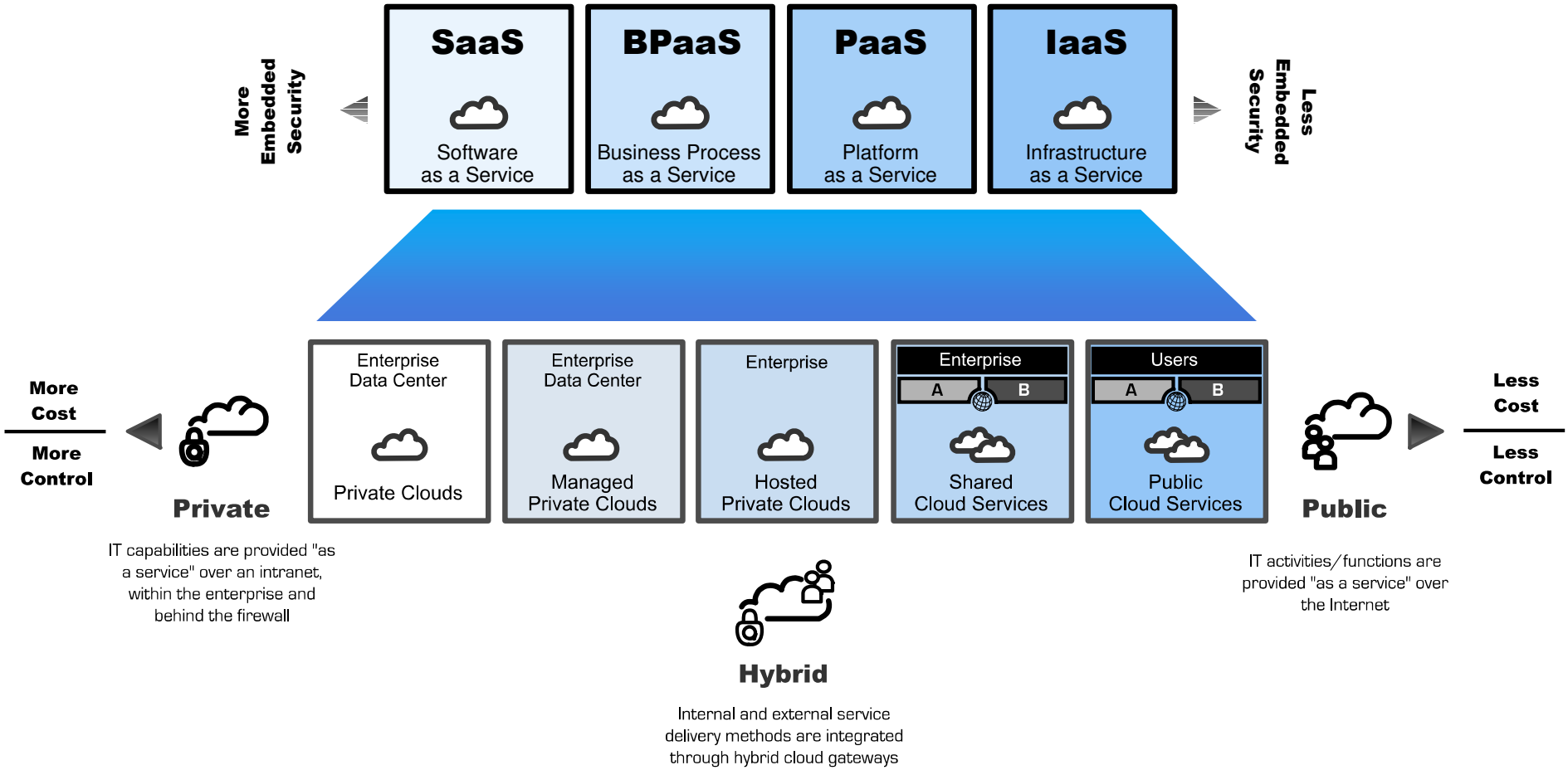
It's time to start thinking differently about infrastructure

Requires Smarter IT Services

Cloud computing is a
new consumption and delivery model

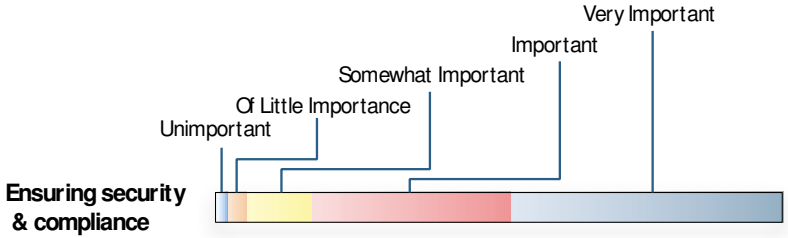


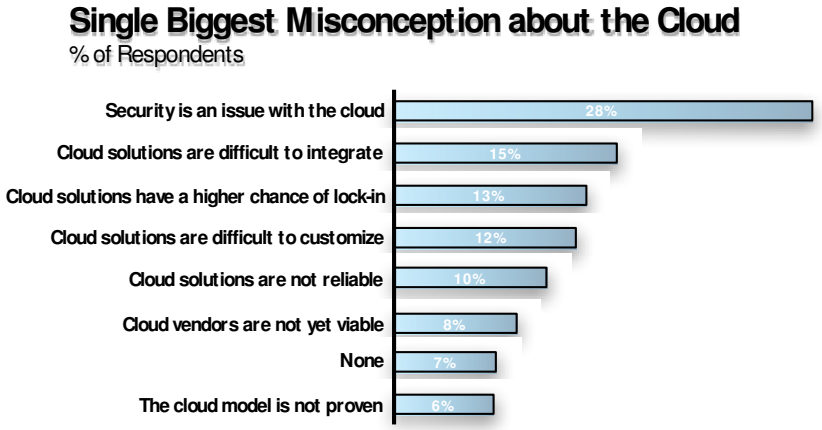
Depending on an organization's readiness to adopt cloud, there are a wide array of deployment and delivery options



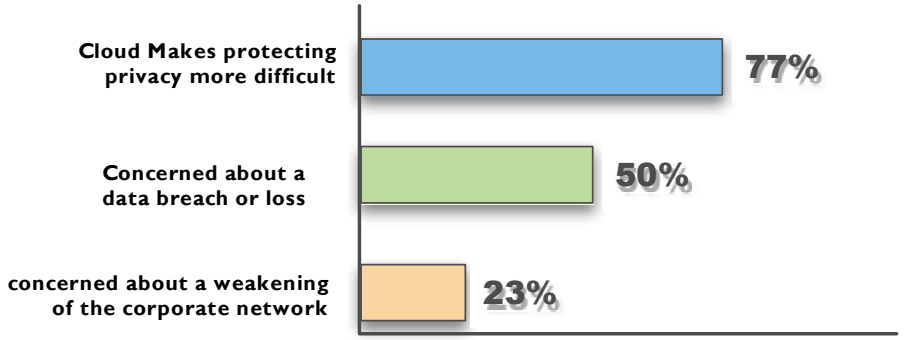
Security in the Cloud

A recent Appirio survey of 150+ mid to large-sized firms that have already adopted cloud applications:





According to IBM's Institute for Business Value 2010 Global IT Risk Study, cloud computing raised serious concerns among respondents about the use, access and control of data



High-level cloud security concerns

Less Control

Many companies and governments are **uncomfortable** with the idea of their information located on **systems they do not control**. Providers must offer a high degree of security transparency to help put customers at ease.

Data Security

Migrating workloads to a **shared** network and compute **infrastructure** increases the potential for **unauthorized exposure**. Authentication and access technologies become increasingly important.

Reliability

High availability will be a key concern. IT departments will worry about a **loss of service** should outages occur. Mission critical applications may not run in the cloud without strong availability guarantees.

Compliance

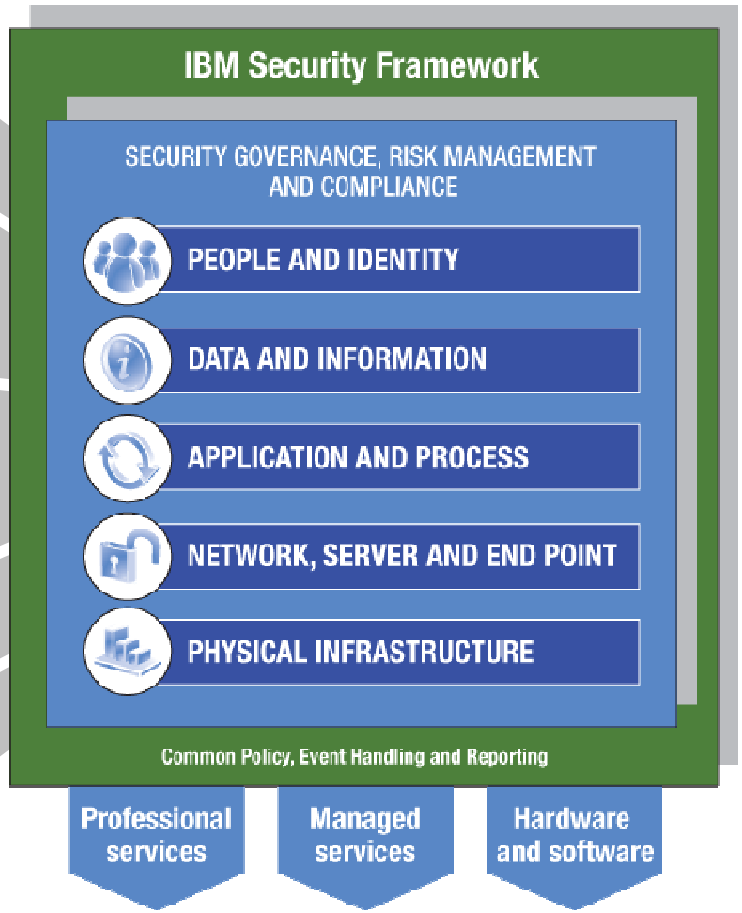
Complying with SOX, HIPPA and other **regulations may prohibit** the use of clouds for some applications. Comprehensive auditing capabilities are essential.

Security Management

Providers must supply easy, visual controls to **manage firewall and security settings** for applications and runtime environments in the cloud.

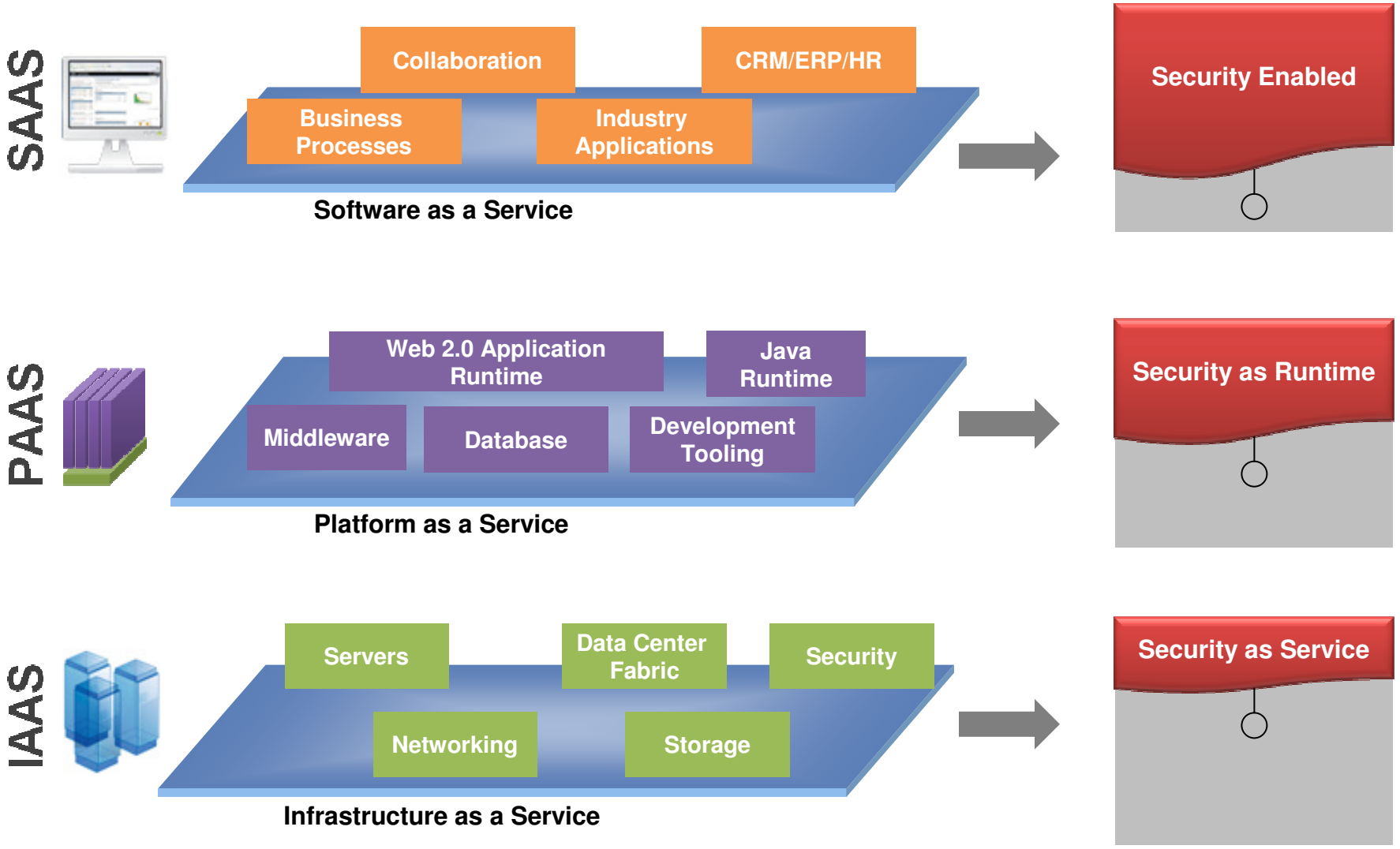
Top security concerns for cloud computing map directly to the IBM Security Framework

- Privileged User Access
- Data Segregation
- Data Recovery
- Investigative Support
- Regulatory Compliance
- Data Location
- Disaster Recovery



Gartner: Assessing the Security Risks of Cloud Computing, June 2008

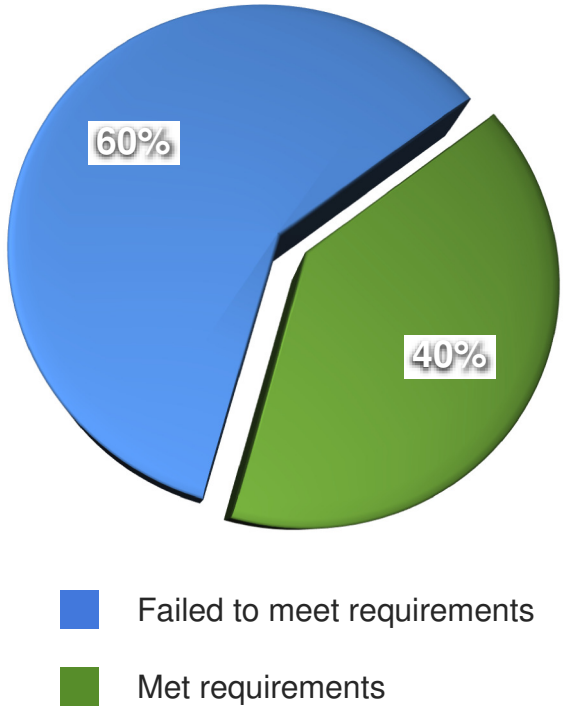
Security approach is determined by the Cloud pattern



Security has to be Built into the Fabric of the Cloud

"Almost 60 percent of all the applications brought to security testing and risk-analysis company Veracode during the past 18 months couldn't meet the minimum standards for acceptable security, even when the criteria were dialed down to accommodate applications that don't pose a great security

Many Apps Flunk Security Check Before Move to Cloud
Kevin Fogarty,



IBM deploys a variety of security controls in its clouds

Access & Identity
IBM leverages a combination of extensive internal policies along with various IBM tools to address Access and Identity in the Cloud

Data & Information
IBM will apply data protections to information when possible.

Release Management
IBM implements strong policies for management of release of virtual images and software within it's environment

SIEM
IBM Leverages its own tools and expertise to provide the functions for Security Information and Event Management

Physical Security
In order to address our customers needs IBM applies industry leading approaches to security of our data centers such as CCTV, 24/7 physical security, biometrics, etc..

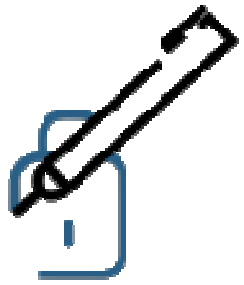
Problem & Incident Management
Leveraging IBM tools and services IBM provides a high quality of problem and incident management including utilization of social networking technologies

Threat and Vulnerability Management
Leveraging IBM's own managed services and tooling IBM applies its best of breed solutions to it's own clouds

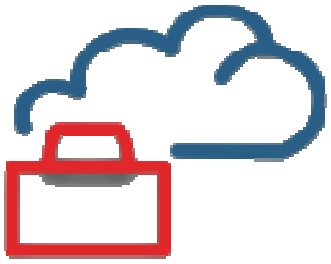
Change & Configuration Mgmt
IBM manages its environment leveraging best case change and configuration management process via its own tooling for example Rational Asset Manager

How we deliver Cloud Security

We believe the Cloud could be more secure than traditional Enterprises



Security By Design



Security By Workload

New Security Efficiencies

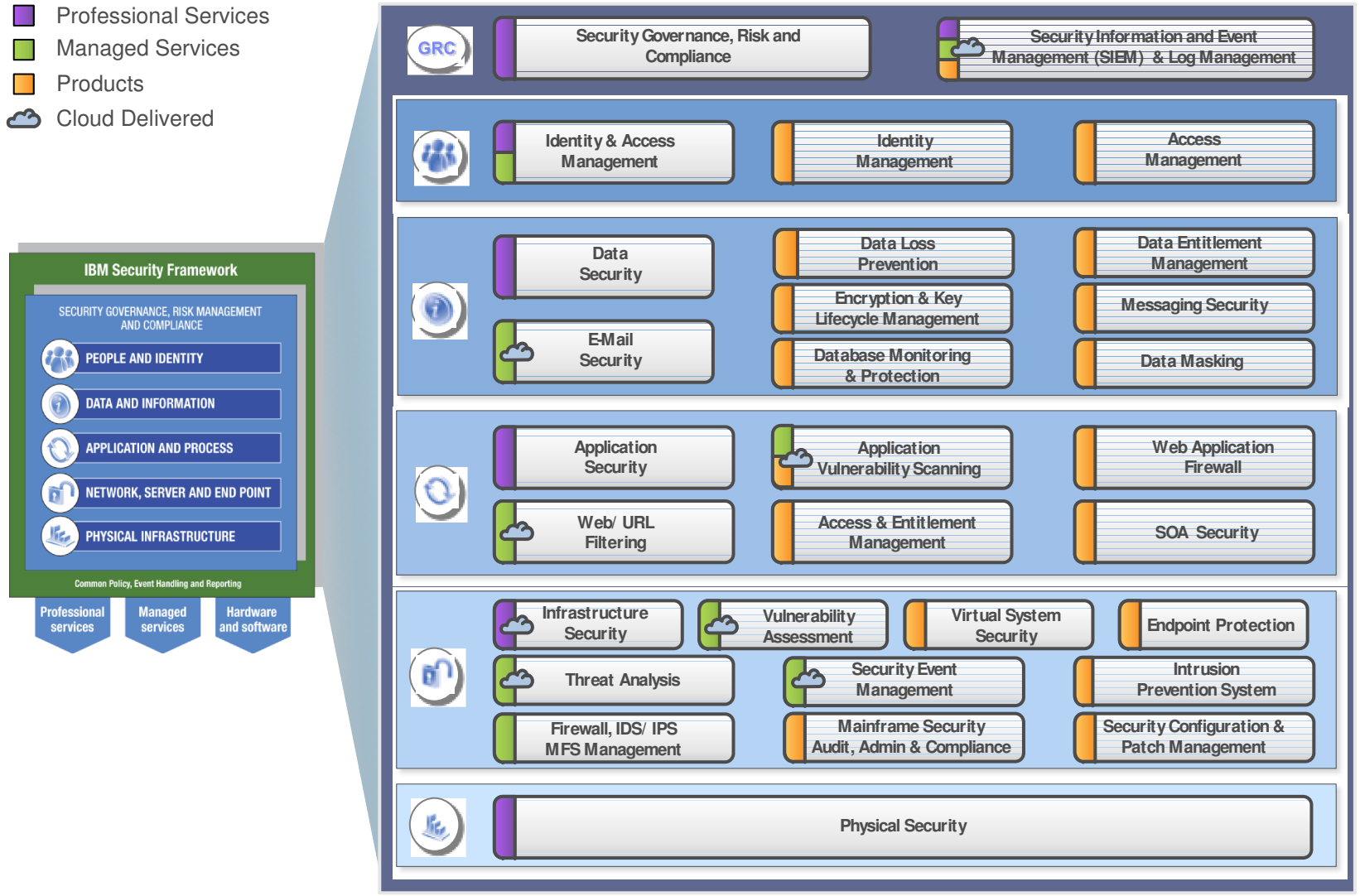
Clients and IBM itself are implementing IBM Security solutions as foundational controls to address their cloud security needs

IBM Smart Cloud Enterprise LotusLive™	**Business Challenge**	Secure IBM Public Cloud and SaaS offerings and help differentiate from its competitors
	IBM Solution	▪ IBM Security Intrusion Prevention System ▪ Tivoli Access Manager and Federation ▪ Tivoli Directory Integrator and Server

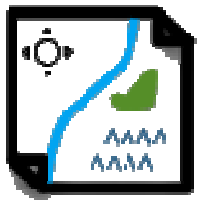
IBM Smart Cloud Enterprise+	**Business Challenge**	Secure Hybrid/Private Cloud solution (in development) to share business services across the ecosystem
	IBM Solution	▪ Tivoli Access and Federation ▪ Tivoli Directory Integrator and Sever ▪ *IBM Security Virtual Server Protection (in plan)*

SCHOLASTIC Vantis Life A better life experience.	**Business Challenge**	Adopt Tivoli IAM as SaaS to address the changing business needs, without having to maintain the infrastructure on premise
	IBM Solution	Lighthouse Gateway SaaS platform using ▪ Tivoli Identity, Access Manager and Federation ▪ Tivoli Directory Integrator and Server ▪ *Tivoli Security Information and Event Manager (in plan)*

IBM Security offerings for Cloud Computing



Security Services offer Clients expertise for moving to secure cloud



IBM Professional Security Services
Security Strategy Roadmap

IBM Professional Security Services
Cloud Security Assessment

IBM Professional Security Services
Application Security Services for Cloud

IBM Information Protection Services
Managed Backup Cloud

Hosted Vulnerability Management

Hosted Security Event & Log Management

Cloud Computing Whitepaper

IBM has a proven reference architecture for building and managing cloud solutions, providing an integrated approach that uses the same standards and processes across the entire portfolio of products and services.

IBM's expertise and experience in designing, building and implementing cloud solutions — beginning with its own — offers clients the confidence of knowing that they are engaging not just a provider, but a trusted partner in their IT endeavours.

The IBM Cloud Computing reference architecture builds on IBM's industry-leading experience and success in implementing SOA solutions.


IBM Global Technology Services
Thought Leadership White Paper

April 2011

Getting cloud computing right

The key to business success in a cloud adoption is a robust, proven architecture.

IBM

http://www.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&appname=GTSE_CI_CI_USEN&htmlfid=CIW03078USEN&attachment=CIW03078USEN.PDF

IBM Cloud Security Guidance

Based on cross-IBM research and customer interaction on cloud security

Highlights a series of best practice controls that should be implemented

Broken into 7 critical infrastructure components:

- Building a Security Program
- Confidential Data Protection
- Implementing Strong Access and Identity
- Application Provisioning and De-provisioning
- Governance Audit Management
- Vulnerability Management
- Testing and Validation


IBM

Redpaper

Axel Buecker
Koos Lodewijkx
Harold Moss
Kevin Skapinetz
Michael Waidner

Cloud Security Guidance

IBM Recommendations for the Implementation of Cloud Security

In this IBM® Redpapers™ publication, we provide a discussion about the IBM recommendations for the implementation of cloud security. To get started, let us begin with an introduction to cloud computing and cloud security in general.

Introduction to cloud computing

Cloud computing is a flexible, cost-effective, and proven delivery platform for providing business or consumer IT services over the Internet. Cloud resources can be rapidly deployed and easily scaled, with all processes, applications, and services provisioned *on demand*, regardless of the user location or device.

As a result, cloud computing gives organizations the opportunity to increase their service delivery efficiencies, streamline IT management, and better align IT services with dynamic business requirements. In many ways, cloud computing offers the *best of both worlds*, providing solid support for core business functions along with the capacity to develop new and innovative services.

Note: As an added benefit, cloud computing enhances the user experience without adding to its complexity. Users do not need to know anything about the underlying technology or implementations.

Both public and private cloud models are now in use. Available to anyone with Internet access, public models include *Software as a Service* (SaaS) clouds, such as IBM LotusLive, *Platform as a Service* (PaaS) clouds, such as Amazon Web Services, and *Security and Data Protection as a Service* (SDPaaS) clouds, such as IBM Security Event and Log Management Services.

Private clouds are owned and used by a single organization. They offer many of the same benefits as public clouds, and they give the owner organization greater flexibility and control.

http://www.redbooks.ibm.com/abstracts/redp4614.html?Open

Cloud Security Whitepaper

Trust needs to be achieved, especially when data is stored in new ways and in new locations, including for example different countries.

This paper is provided to stimulate discussion by looking at three areas:

- What is different about cloud?
- What are the new security challenges cloud introduces?
- What can be done and what should be considered further?

http://www-03.ibm.com/press/us/en/attachment/32799.wss?fileId=ATTACH_FILE1&fileName=10-0861_US%20Cloud%20Computing%20White%20Paper_Final_LR.pdf

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more information, please visit:
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