



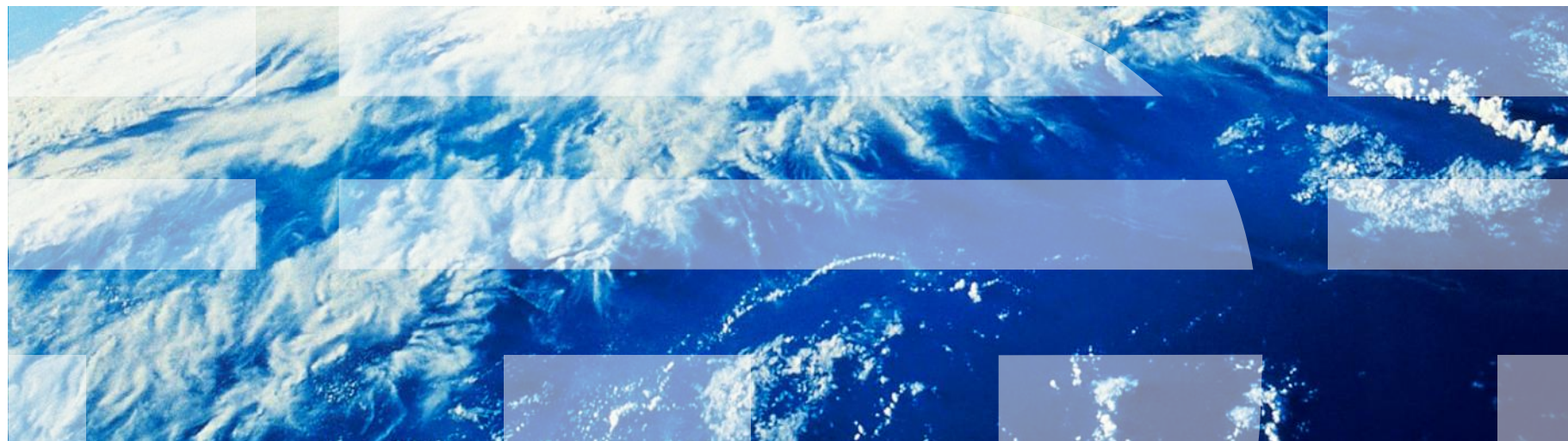
Cloud Security - Risiken und Chancen

Dr. Matthias Schunter, MBA

IBM Research – Zürich,

mts@zurich.ibm.com,

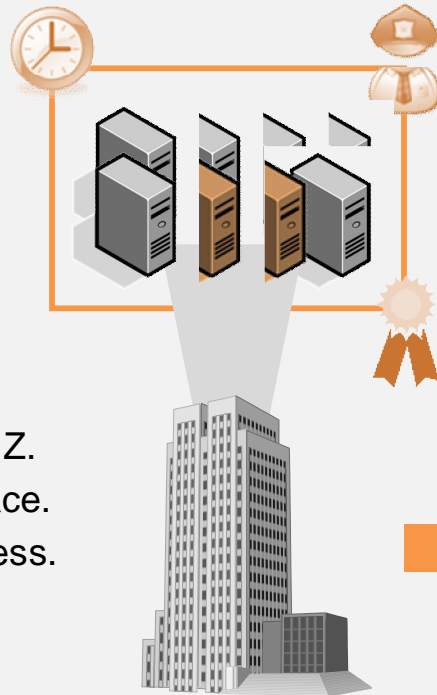
<http://www.schunter.org>



Simple Questions...

Today's Data Center

Tomorrow's Public Cloud



We Have Control

- It's located at X.
- It's stored in server's Y, Z.
- We have backups in place.
- Our admins control access.
- Our uptime is sufficient.
- The auditors are happy.
- Our security team is engaged.

Who Has Control?

- Where is it located?
- Where is it stored?
- Who backs it up?
- Who has access?
- How resilient is it?
- How do auditors observe?
- How does our security team engage?

Table of Contents

1. Cloud Computing und IT Security
 - IT Security and Emerging Threats
 - Cloud Security Risks
 - Security Controls for the Cloud

2. IBM Cloud Security
 - Security for the Cloud
 - Secure Clouds
 - Security from the Cloud,

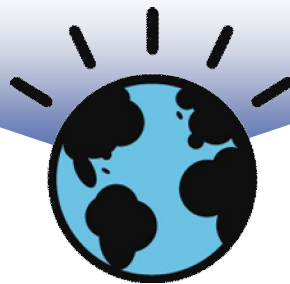
3. Outlook: The TClouds Research Project
 - Objectives
 - Architecture



2. IBM Cloud Security

Security of the Cloud

Security from the Cloud



Security & Privacy Leadership



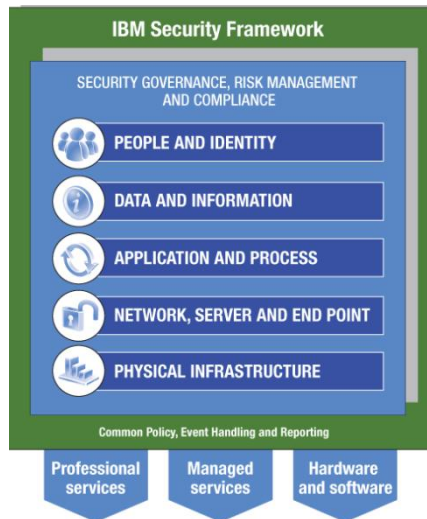
IBM Security for the Cloud: Automation & Simplification!

Governance, Risk Management, Compliance

- 3rd-party audit (SAS 70(2), ISO27001, PCI)
- Client access to tenant-specific log and audit data
- Effective incident reporting for tenants

Physical

- Monitoring and control of physical access



People and Identity

- Privileged user monitoring, including logging activities, physical monitoring and background checking
- Federated identity / onboarding:
- Standards-based SSO

Data and Information

- Data segregation
- Control over geographic location of data
- Government: Cloud-wide data classification

Network, Server, Endpoint

- Isolation between tenant domains
- Trusted virtual domains: policy-based security zones
- Built-in intrusion detection and prevention

Based on interviews with IT users and various analyst reports

IBM Security from the Cloud

Smart Business Security Services delivered from the IBM Cloud




Security Event and Log Management



Vulnerability Management Service



Managed Web and Email Security Service

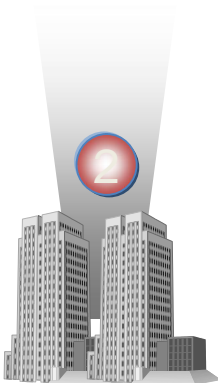


X-Force Threat Analysis Service



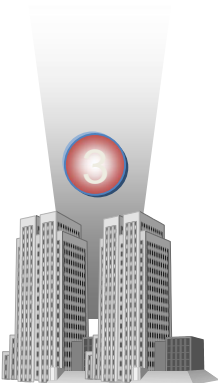
Subscription service

Offsite management of logs and events from IPS's, Firewalls and OSs



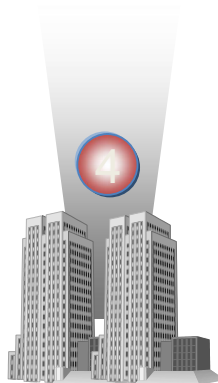
Cloud based

Proactive discovery and remediation of vulnerabilities



Monitoring and management

Protection against spam, worms, viruses, spyware, adware, and offensive content



Monitoring and management

Customized security intelligence based on threat information from X-Force research and development team

To the Customer – Offloading Security Tasks on the Ground



3. Outlook: The TClouds Research Project:

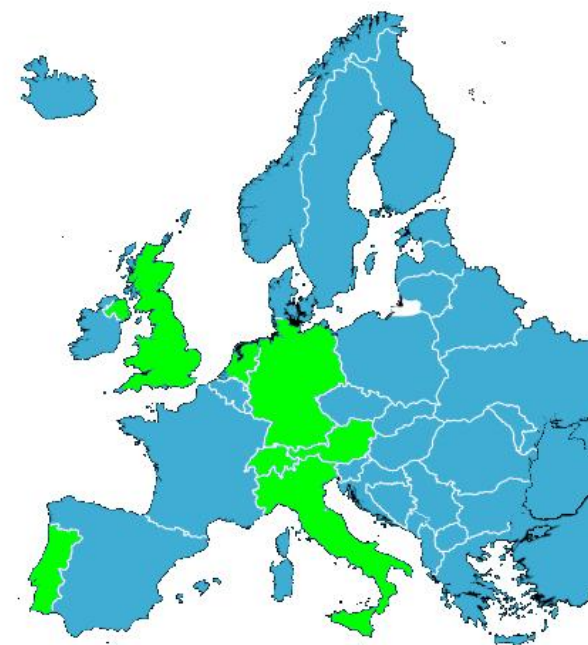
“Trust and Resilience for Internet-scale Critical Infrastructures”



The TClouds Project



- TClouds aims to architect internet-scale ICT infrastructure which provides cost-efficient virtualized computing, network, and storage resources over the Internet that ensure security, privacy, and resilience.
- Proof Points:
 - Smart Energy Grid: Managing power grids from the cloud
 - Home Healthcare: Privacy protection of personal data stored in the cloud
- Sponsored by the EU 7th Framework:
 - 7.5MEUR, 80PY, 15 Partners:
 - Phillips Electronics, IBM,
 - Electricidade de Portugal (PT)
 - October 2010 – September 2013

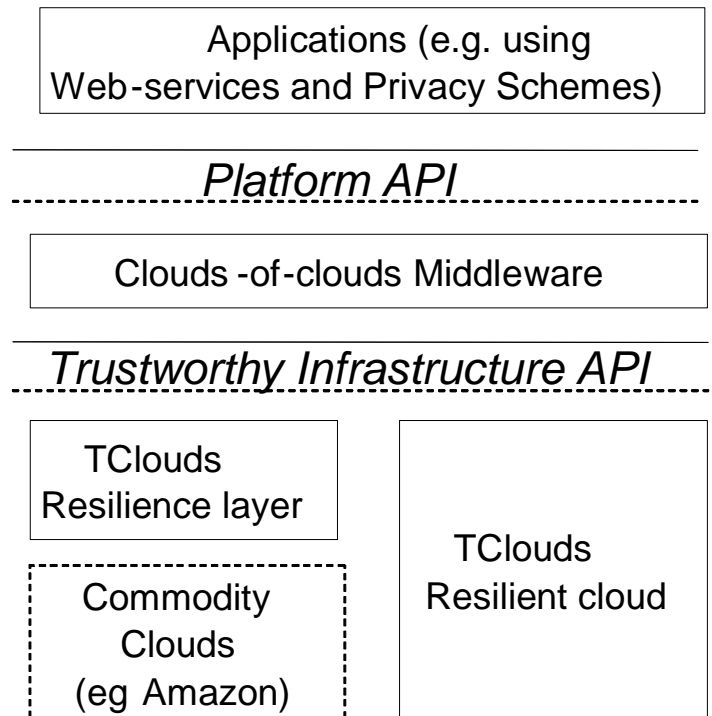


TClouds Architecture



- **TClouds Trustworthy Cloud Infrastructure**
 - Computing resilience against attacks and accidents including trustworthy storage and networks
 - In complement or in addition to commodity clouds

- **TClouds Cloud-of-Clouds Middleware**
 - Transparent resilience despite failures of individual cloud components (to e.g. any Web service)
 - Resilience extended transparently to cloud federations
 - Heterogeneity and openness of resilient clouds





Thank you!

Dr. Matthias Schunter, IBM Research - Zurich
mts@acm.org
Ph +41 44 7248329

Visit me at the IBM booth for Questions and Answers!

For more information, please visit:
ibm.com/cloud
ibm.com/security