

Cloud Computing – Sicherheit und Technik

Berner Tagung für Informationssicherheit

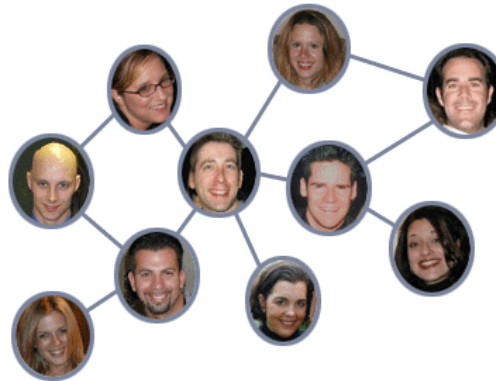
24. November 2011, Hotel Bellevue Palace, Bern

Cyrill Osterwalder
Privacy Engineering Lead
Google

Computing Trends



Mobile



Social



Cloud

Signifikante Synergien



Eigenschaften Richtiger Clouds

- OpEx statt CapEx
 - entkoppelt von Infrastruktur-Kosten
- Praktisch unlimitierte Rechenpower
 - verfügbar in Bruchteilen einer Sekunde
- Skalierung als DNA der Architektur
 - keine 1-1 Beziehung
- Sicherheit von Grund auf integriert
- Echtzeit-Kollaboration
 - unabhängig vom Client



Vision von Large Scale Cloud Computing

Ist das die Zukunft?

Nein! Die Gegenwart.

The image shows a screenshot of a Google search interface. At the top, the Google logo is on the left, and the search query 'albert einstein' is in the search bar. Below the search bar, it says 'Search' and 'About 50,200,000 results (0.16 seconds)'. On the left side, there are filters for 'Everything', 'Images', 'Maps', 'Videos', 'News', 'Books', and 'More'. Below these are 'Zurich' (Change location), 'The web' (Pages from Switzerland), 'Any time' (Past hour, Past 24 hours, Past 2 days, Past week, Past month, Past year, Custom range...), and 'All results' (Sites with images, Timeline). The main search results include: 1. 'Albert Einstein - Wikipedia, the free encyclopedia' with a link to the English Wikipedia page and a snippet: 'Albert Einstein was a German-born theoretical physicist who developed the theory of general relativity, effecting a revolution in physics. For this achievement ...'. 2. 'Albert Einstein - Wikipedia' with a link to the German Wikipedia page and a snippet: 'Albert Einstein (* 14. März 1879 in Ulm; † 18. April 1955 in Princeton, New ...'. Below the results is a section 'Images for albert einstein - Report images' with a row of seven small image thumbnails. Further down are links to 'Albert Einstein - Biography' (from nobelprize.org) and 'Albert Einstein Quotes - BrainyQuote' (with a list of quotes).

OpEx statt CapEx



Coming to London?

Search

The Royal Wedding Prince William & Catherine Middleton

Friday 29 April 2011 at Westminster Abbey

HOME

THE SERVICE

THE PROCESSION

THE RECEPTION

BACKGROUND



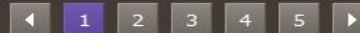
The Royal Wedding Dress: A Story of Great British Design

26th July 2011

Visitors to Buckingham Palace can view the Royal Wedding Dress from 23rd July - 3rd October 2011.

[Read more](#)

Tags: royal wedding collection duchess cambridge



Latest Video



[View all videos](#)

[Charitable Gift Fund website](#)

Latest News



[The Duchess of Cambridge's wedding dress to](#)

Twitter



Royal Wedding
[Clarence House](#)

Cloud Computing Modelle



IAAS

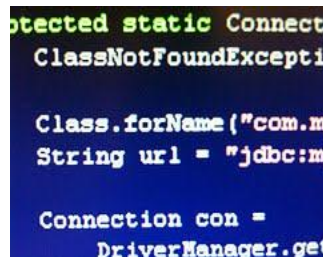
Infrastructure As A Service

PAAS

Platform As A Service

SAAS

Software As A Service



“Private Cloud”: Das Yeti Modell

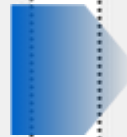
- Klassisches Outsourcing
 - Hosting von Client/Server Software
 - Virtualisierung
- Infrastruktur finanziert durch Kunde
 - Höhere TCO
 - CapEx statt OpEx
- Echte Cloud Vorteile limitiert oder verloren
- Procurement, Lizenzen, Management
 - Kundenspezifisch
 - Kein oder sehr limitierter Skaleneffekt
 - Patching, Versionierung



Banking: Cloud Computing Ansatz



On Premise / Private



Cloud

Cloud Computing Überzeugt



Radikal günstiger



Features
im Consumer
Speed



Höhere Sicherheit



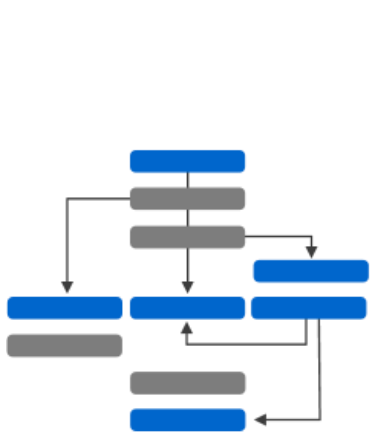
Zugriff von überall



Neue Klasse
von Anwendungen

Wie Sicher sind Daten in der Cloud?

Benutzer wollen leichten Zugriff zu Daten, überall, immer



60%

von Firmendaten sind ungeschützt auf PCs und Laptops



1-von-10

Laptops wird innerhalb 12 Monaten nach Kauf gestohlen



66%

von USB Stick Besitzern geben an, das Medium zu verlieren, über 60% mit sensiblen Firmendaten



Verschiedene Betriebssysteme, Versionen, Applikationen führen zu teurem und unsicherem Patching

Vertrauen in Cloud Anbieter

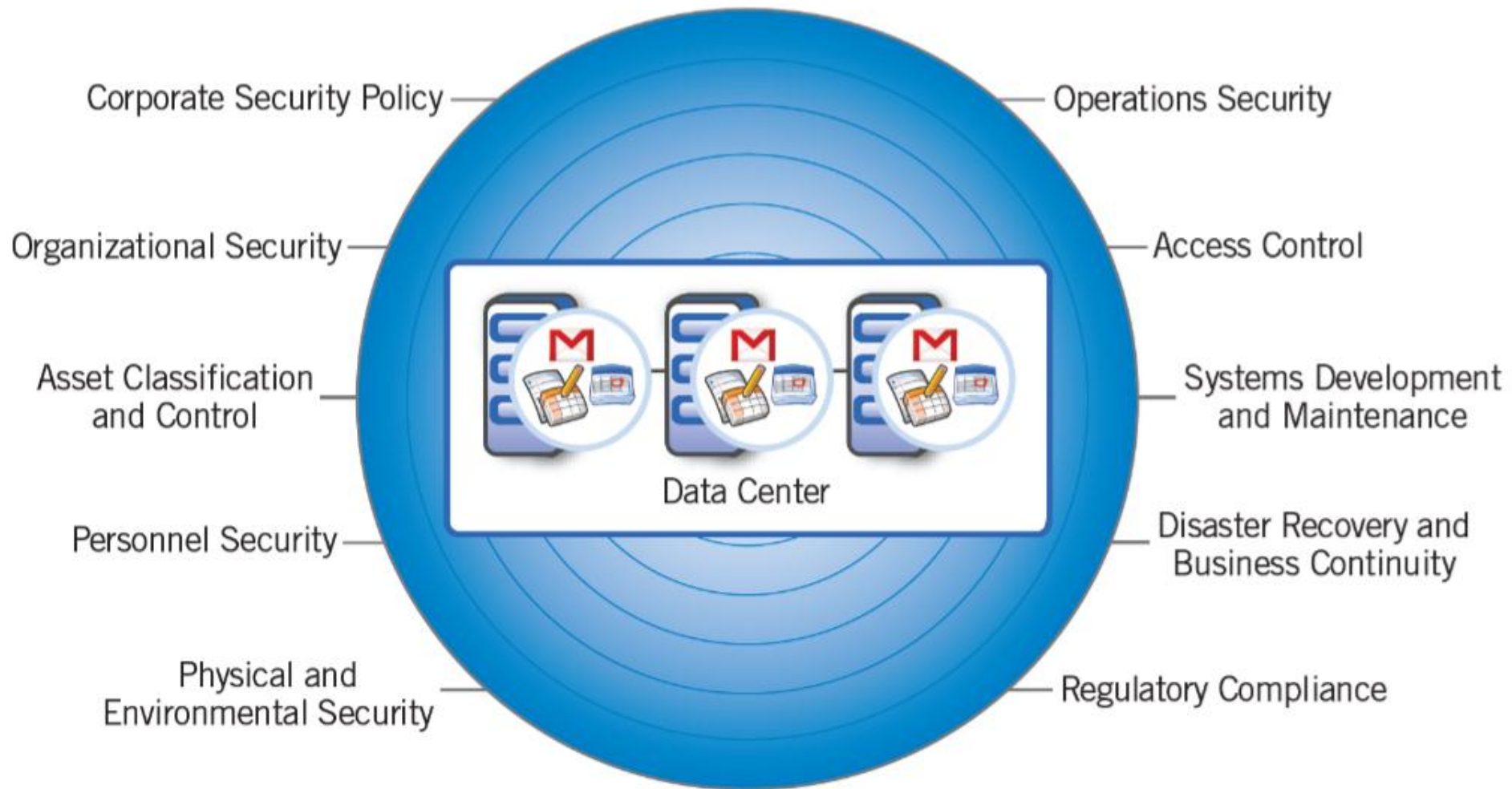


FISMA



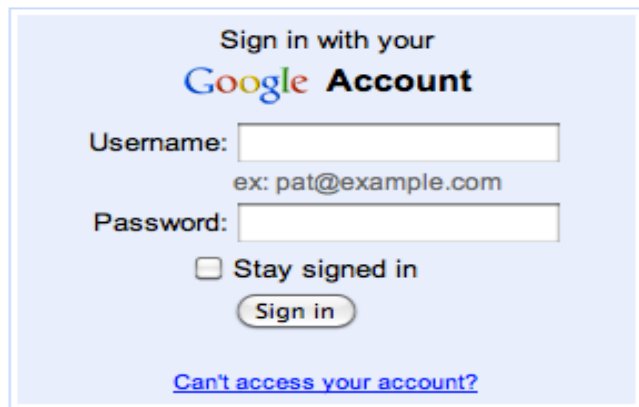
RFP SLA
Contracts

Google Cloud Sicherheit und Datenschutz



2-Faktor Verifikation

1.



Sign in with your
Google Account

Username:
ex: pat@example.com

Password:

Stay signed in

[Can't access your account?](#)

2.

Google accounts

Two-step verification

Enter the verification code generated by your mobile application.

Enter code:

Remember verification for this computer.

[Get a new verification code](#)



Consumer Gmail
<http://goo.gl/YPBkX>

Google Apps
<http://goo.gl/us8eb>



Danke für Ihre Aufmerksamkeit!

- **Google Privacy Center**
 - <http://www.google.com/privacy>
- **Google Apps Trust**
 - <http://www.google.com/apps/trust>
- **Google Apps Security White Paper**
 - <http://goo.gl/AP3Jn>
- **Google Data Centers**
 - <http://www.google.com/corporate/green/datacenters/>
- **Data Liberation Front**
 - <http://www.data liberation.org>

