Computing and Network Infrastructures

Fulvio Risso

Politecnico di Torino

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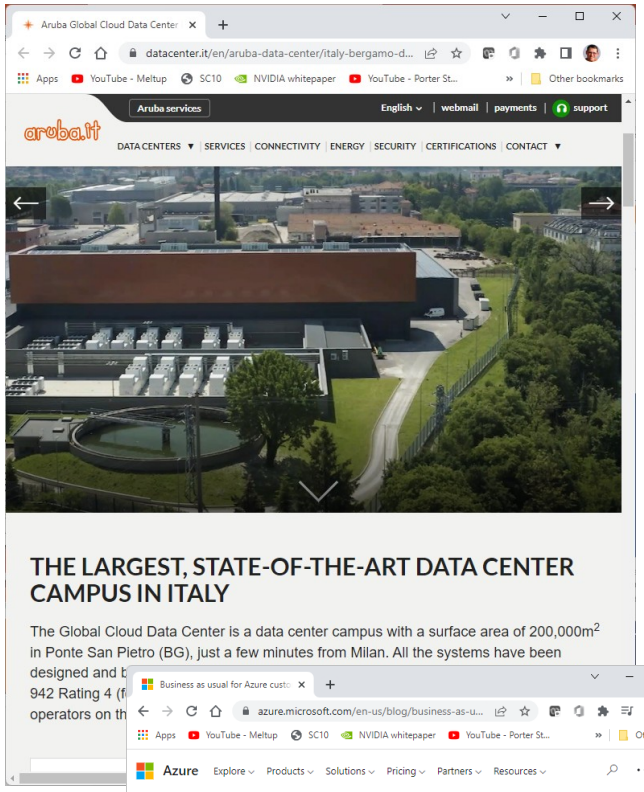
Aruba Global Cloud Data Center
datacenter.it/en/aruba-data-center/italy-bergamo-d...
aruba.it
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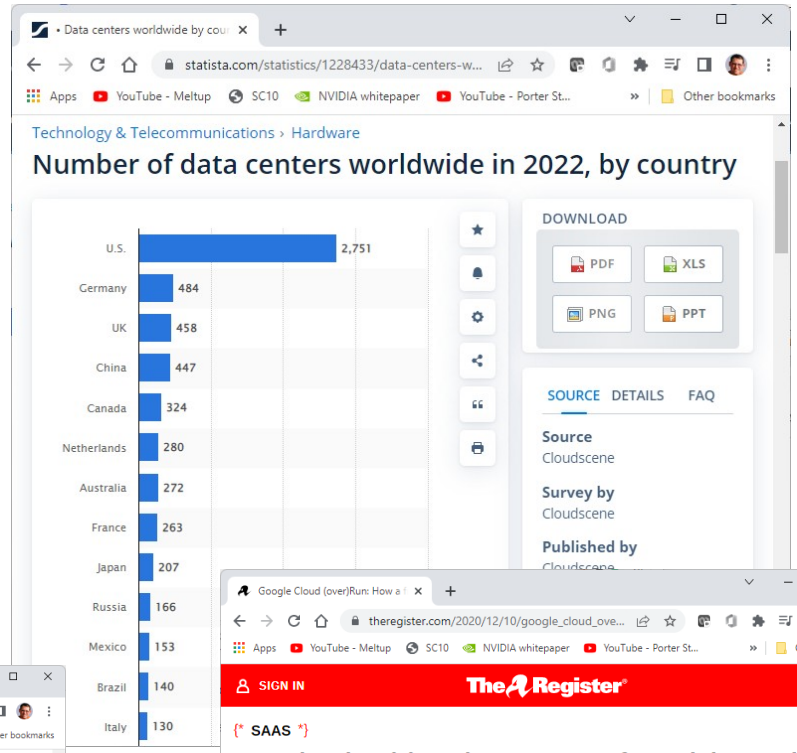
DATA CENTERS | SERVICES | CONNECTIVITY | ENERGY | SECURITY | CERTIFICATIONS | CONTACT
THE LARGEST, STATE-OF-THE-ART DATA CENTER CAMPUS IN ITALY
The Global Cloud Data Center is a data center campus with a surface area of 200,000m² in Ponte San Pietro (BG), just a few minutes from Milan. All the systems have been designed and b
942 Rating 4 (f
operators on th


Data centers worldwide by cou
statista.com/statistics/1228433/data-centers-w...
Technology & Telecommunications › Hardware
Number of data centers worldwide in 2022, by country
U.S. 2,751
Germany 484
UK 458
China 447
Canada 324
Netherlands 280
Australia 272
France 263
Japan 207
Russia 166
Mexico 153
Brazil 140
Italy 130
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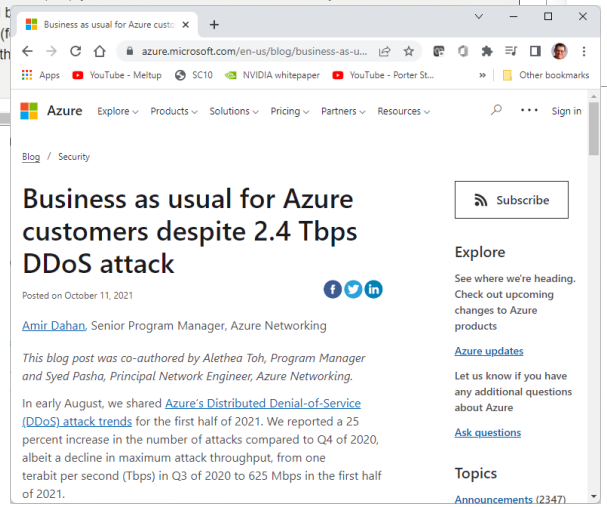
Business as usual for Azure cust
azure.microsoft.com/en-us/blog/business-as-u...
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Business as usual for Azure customers despite 2.4 Tbps DDoS attack
Posted on October 11, 2021
Amir Dahan, Senior Program Manager, Azure Networking
This blog post was co-authored by Alethea Toh, Program Manager and Syed Pasha, Principal Network Engineer, Azure Networking.
In early August, we shared Azure's Distributed Denial-of-Service (DDoS) attack trends for the first half of 2021. We reported a 25 percent increase in the number of attacks compared to Q4 of 2020, albeit a decline in maximum attack throughput, from one terabit per second (Tbps) in Q3 of 2020 to 625 Mbps in the first half of 2021.
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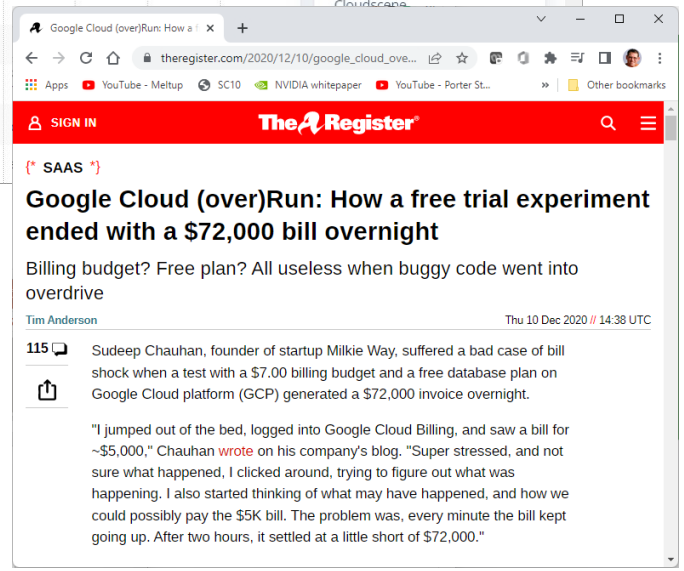
Google Cloud (over)Run: How a
theregister.com/2020/12/10/google_cloud_ove...
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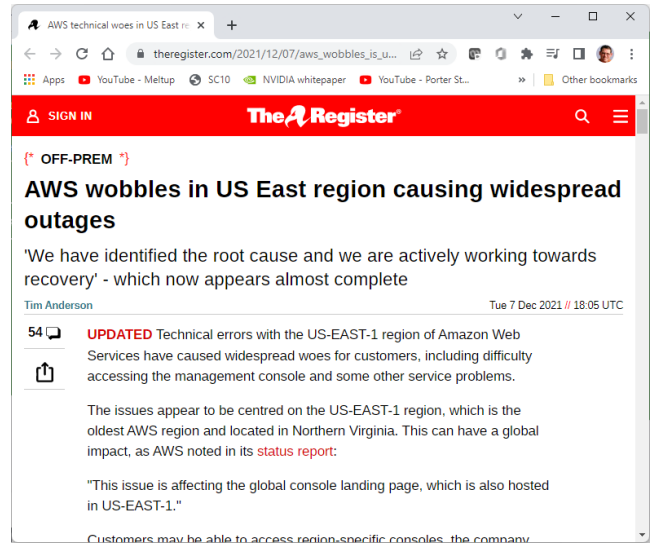
{* SAAS *}
Google Cloud (over)Run: How a free trial experiment ended with a $72,000 bill overnight
Billing budget? Free plan? All useless when buggy code went into overdrive
Tim Anderson
Thu 10 Dec 2020 // 14:38 UTC
115
Sudeep Chauhan, founder of startup Milkie Way, suffered a bad case of bill shock when a test with a $7.00 billing budget and a free database plan on Google Cloud platform (GCP) generated a $72,000 invoice overnight.
"I jumped out of the bed, logged into Google Cloud Billing, and saw a bill for ~$5,000," Chauhan wrote on his company's blog. "Super stressed, and not sure what happened, I clicked around, trying to figure out what was happening. I also started thinking of what may have happened, and how we could possibly pay the $5K bill. The problem was, every minute the bill kept going up. After two hours, it settled at a little short of $72,000."


AWS technical woes in US East re
theregister.com/2021/12/07/aws_wobbles_is_u...
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AWS wobbles in US East region causing widespread outages
'We have identified the root cause and we are actively working towards recovery' - which now appears almost complete
Tim Anderson
Tue 7 Dec 2021 // 18:05 UTC
54
UPDATED Technical errors with the US-EAST-1 region of Amazon Web Services have caused widespread woes for customers, including difficulty accessing the management console and some other service problems.
The issues appear to be centred on the US-EAST-1 region, which is the oldest AWS region and located in Northern Virginia. This can have a global impact, as AWS noted in its status report:
"This issue is affecting the global console landing page, which is also hosted in US-EAST-1."
Customers may be able to access region-specific consoles, the company

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Dan Meyer | Executive Editor
May 26, 2022 4:21 PM
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formiche
Pacifico, un cavo? L'investimento anti Cina di Usa, Australia e Giappone
Di Gabriele Carrer | 13/12/2021 - James Bond
Migliorare la connettività negli Stati federati di Micronesia, nelle isole Kiribati e a Nauru ma anche contrastare l'ascesa cinese nei fondali e nel traffico dei dati. Ecco la mossa di Washington, Canberra e Tokyo (e non è la prima)

formiche
Attacco alla rete 5G e 4G, come mettere in ginocchio un Paese europeo
Di Otto Lanzavecchia | 09/02/2022 - James Bond
L'azione ha demolito l'infrastruttura delle telecomunicazioni e colpito servizi di emergenza e pagamenti del Portogallo. Vodafone parla di atto "terroristico" e avverte che ricostruire sarà difficile. Mentre si parla di attacco ransomware, torna alla

CORCOM
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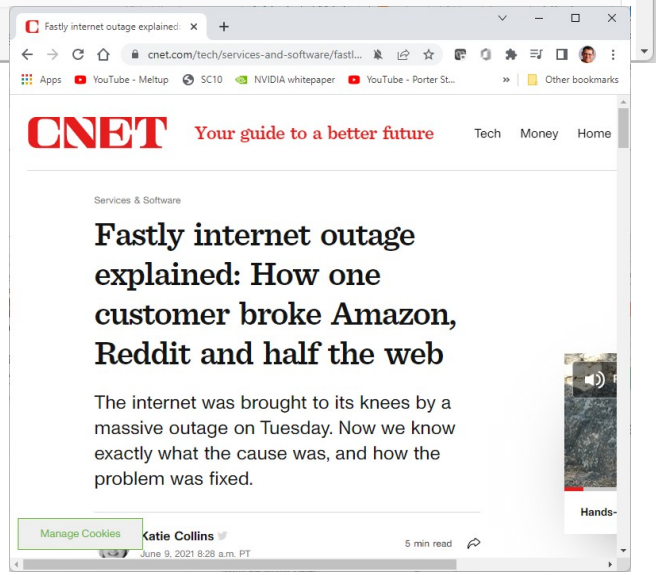
Big tech sotto accusa, consumano più energia di Grecia e Portogallo
Home > Green Economy
Condividi questo articolo
Osservatorio Esg Karma Metrix: nel 2020 Facebook, Amazon, Apple, Netflix e Google hanno "bruciato" 49,7 milioni di megawattora contro i 16,6 del 2018. Maglia nera all'azienda di Jeff Bezos che registra la più forte crescita di emissioni Co2
26 Mag 2022


CNET
Your guide to a better future
Tech
Money
Home
Services & Software
Fastly internet outage explained: How one customer broke Amazon, Reddit and half the web
The internet was brought to its knees by a massive outage on Tuesday. Now we know exactly what the cause was, and how the problem was fixed.
Manage Cookies
5 min read

CLOUDFLARE
Internet is back in Tonga after 38 days of outage
02/22/2022
João Tomé
Tonga, the South Pacific archipelago nation (with 169 islands), was reconnected to the Internet this early morning (UTC) and is back online after successful repairs to the undersea cable that was damaged on Saturday, January 15, 2022, by the January 14, volcanic eruption.

Amazon vuole espandere i suoi servizi cloud in Italia con un investimento da 1 miliardo di dollari

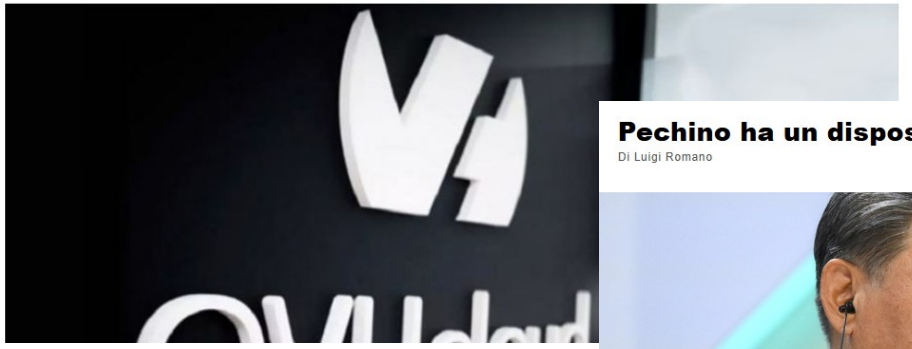
Notizie | Di Craig Hale | Contributi da Marco Silvestri Pubblicato 28 maggio 2024

AWS continua a investire nel cloud

NEWS 30/05/2024 *di redazione*

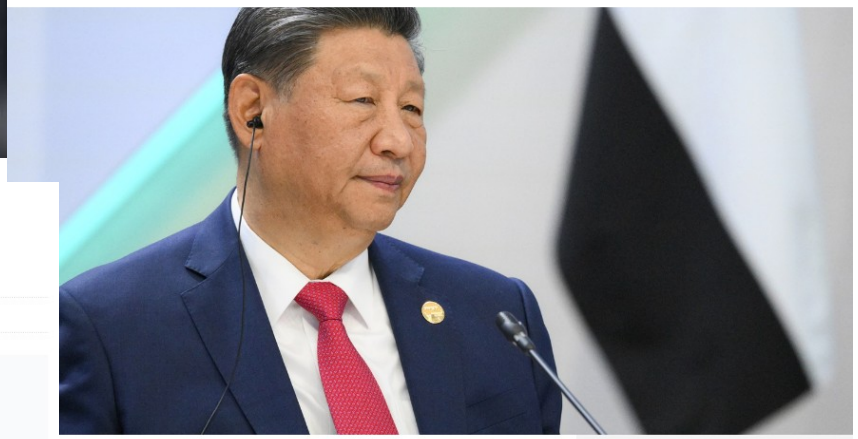
Ovhcloud, una "zona locale" a Milano per tenere i dati in Italia

Il provider francese inaugura la sua prima zona di disponibilità italiana, per garantire ai clienti una bassa latenza e la residenza dei dati entro i confini nazionali.

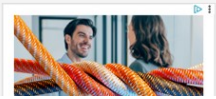


Pechino ha un dispositivo per tranciare i cavi sottomarini

Di Luigi Romano



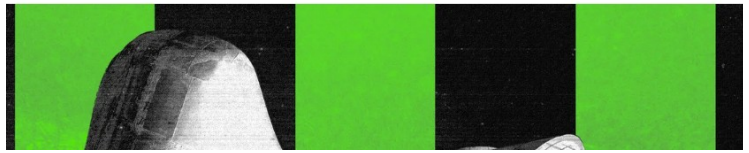
nuovo dispositivo sviluppato dalla Cina, in grado di rare a profondità fino a 4.000 metri, è stato progettato tagliare cavi sottomarini corazzati. Crescono le occupazioni sulla sicurezza globale in scenari di crisi politica



MATT BURGESS TELECOMUNICAZIONI 08.04.2024

Come gli Houthi hanno causato un blackout di internet

Milioni di persone sono finite offline dopo il danneggiamento di tre cavi nel Mar Rosso, probabilmente provocato indirettamente dall'attacco a una nave da parte dei ribelli yemeniti



COREWEAVE'S 250,000-STRONG GPU FLEET UNDERCUTS THE BIG CLOUDS

March 5, 2025 Timothy Prickett Morgan

Why?

- Computing infrastructures represent the foundation of our modern society
  - **Data exchange: networks**
  - **Data processing and storage: datacenters**
- How can you create efficient software without knowing about the infrastructure?
- How can you protect your company without knowing about the infrastructure?
- How can you provide resilient services?
  - **The resiliency we are used to does not come for free**

Key courses

First year

I semester	II semester
• **Cloud computing technologies** (6) • Architetture dei sistemi di elaborazione / Computer architectures (10) • Data Science e Tecnologie per le Basi di Dati / Data Science and Database Technology (8) • **Internet architecture and technologies** (6)	• Ingegneria del software / Software engineering (8) • Applicazioni Web I / Web Applications I (6) [*frontend*] • Programmazione di sistema / System and device programming (10) • **Enterprise network technologies (6)**

Second year

I semester	II semester
• **Software Networking (6)** • Sicurezza dei sistemi informativi / Information systems security (6) • *Distributed systems programming* (6) • (your choice)	• *Web Applications II [backend]* / ***Cloud Programming*** (6) • (thesis)

https://www.polito.it/didattica/corsi-di-laurea-magistrale/ingegneria-informatica-computer-engineering/piano-di-studi#COMPUTER_ENGINEERING_Computing_and_Network_Infrastructures

What?

- Design, installation, maintenance (i.e., operations) of large computing infrastructures
  - Enterprise networks, WAN, Datacenters, High Performance Computing facilities
- DevOps / System admin
  - On-premise/public datacenters
- Distributed software / big software programming
  - Cloud-native software
- Network programming
  - Network devices manufacturer, virtual network services

Where?

- Manufacturers (Cisco, Huawei, DELL, HP, Tiesse, etc.)
- Virtualization & public cloud (Kubernetes/Google, Microsoft Azure, Amazon, Vmware/Broadcom, Aruba, etc.)
- Software (network) services (Palo Alto Networks, HAProxy, Sysdig, Clastix, Isovalent, SigHup, Mia Platform, Kiratech, etc.)
- Consultancy (e.g., Reply, Accenture, CapGemini, Engineering, Atos, etc.)
- "End users" (i.e., large companies such as FCA, Iveco, Brembo, Ferrero, Unicredit, Banca Intesa, Toro Assicurazioni, Dumarey, etc.)

Carattere: Century Gothic