CLOUD COMPUTING TRANSFROMATION IN FINANCIAL SERVICES

A LOOK AT CLOUD MIGRATION STRATEGY AND CLOUD SECURITY COMPLIANCE

19th January 2022

REPLY

EBF European Banking Federation

CLOUD ADOPTION IN FINANCIAL SERVICES

SURVEY PRESENTATION AND RESULTS

Nelson Phillips | Professor of Technology Management University of California

19th January 2022

REPLY

EBF European Banking Federation

CLOUD COMPUTING: AN ENABLING TECHNOLOGY

Cloud computing is an enabling technology in Financial Services, just as it is in other sectors!

Cloud in Financial Services Survey

29%

60%

29% of the financial institutions identified **on-demand scalability** as the most important benefit of the cloud.

60% of the respondents view it as among the top three benefits of the cloud.

19%

44%

19% of the financial institutions identified **enabling innovation** as the most important benefit of the cloud.

44% believe it to be among the top three benefits of the cloud.

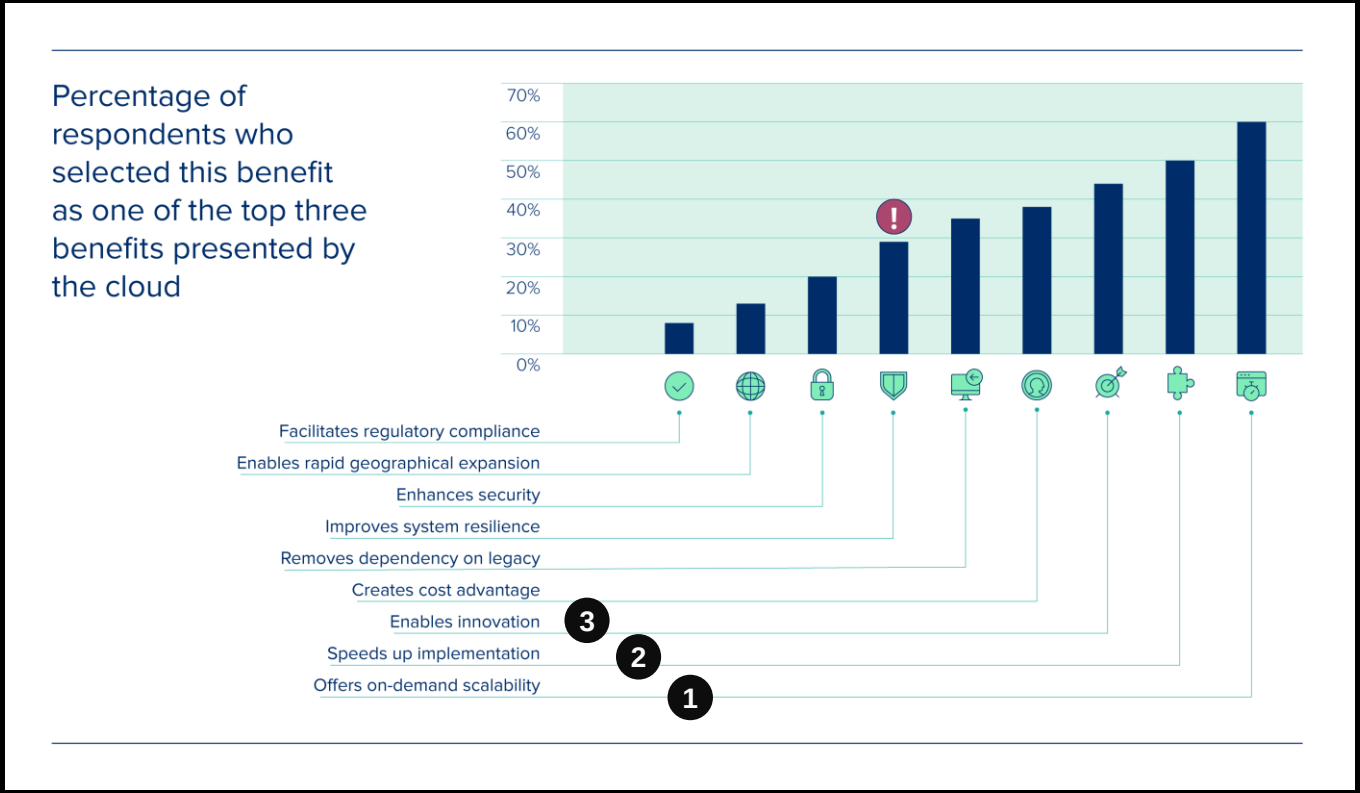
Powered by REPLY

Cloud-enabled health protection for 450 million Europeans…

…since 2018.

THE FUTURE IS CLOUD...

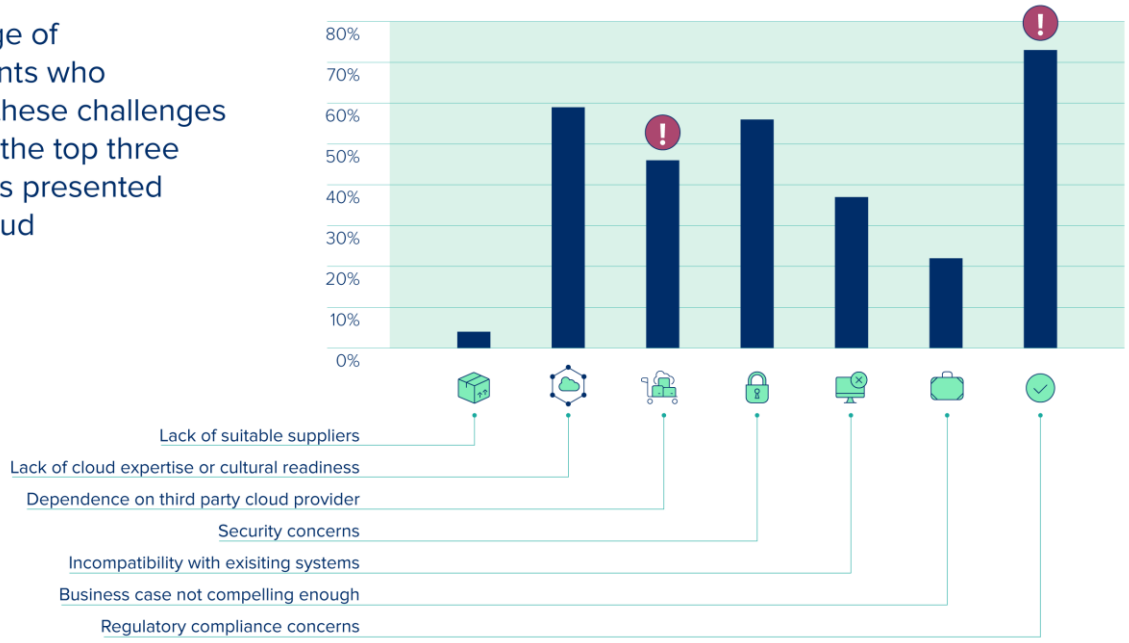
There is a general consensus that the move to the cloud is overwhelmingly positive.



CHALLENGES REMAIN...

At the same time, financial institutions face a number of challenges when moving to the cloud.

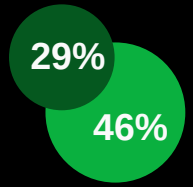
Percentage of respondents who selected these challenges as one of the top three challenges presented by the cloud



OPERATIONAL AND CYBER RESILIENCE…

The cloud is perceived as a positive contributor in terms of operational and cyber resilience but…

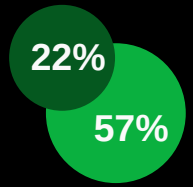
Cloud & Operational Resilience



For 29% of the financial institutions, across all levels of experience, one of the cloud's many benefits is to improve **operational resilience**.

This needs to be balanced with the risk of (excessive) **reliance on third-party suppliers** (i.e., CSPs), a point of concern for 46% of the financial institutions.

Security: The Striking Paradox…



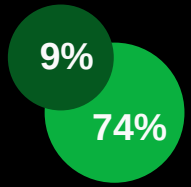
For 22% of the financial institutions, **enhancing security** is one of the top three benefits of the cloud.

However, for 57% of the financial institutions, **security** is one of the top three challenges of the cloud.

REGULATORY FRAGMENTATION...

Regulatory and compliance concerns is a predominant challenge of migrating systems to the cloud.

Regulatory and Compliance Concerns



Whilst 9% of the financial institutions consider that **facilitating regulatory compliance** is one of the top three benefits of the cloud, 74% regard **regulatory compliance** as one of the top three challenges of the cloud.

Progress is being made, not least in Europe, but much remains to be done.

CLOUD ADOPTION IN FINANCIAL SERVICES

Insights from the Imperial College Business School / Reply Survey

To download the paper:
https://www.reply.com/en/industries/financial-services/cloud-adoption-in-financial-services

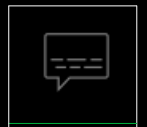
CLOUD MIGRATION

5YR OUTLOOK

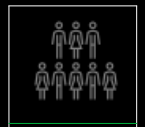
Matt Mould | Partner Storm Reply

19th January 2022

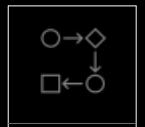
THE UBIQUITOUS WORLD OF CLOUD



Comms

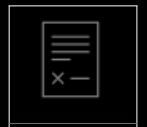


People

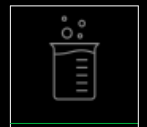


Process

Legal



Contracts

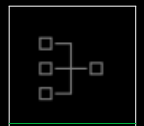


R&D

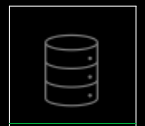
Power

Cooling

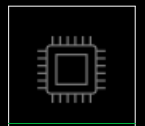
Security



Network

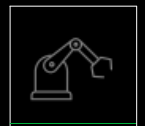


Storage



Compute

Tools



Automate

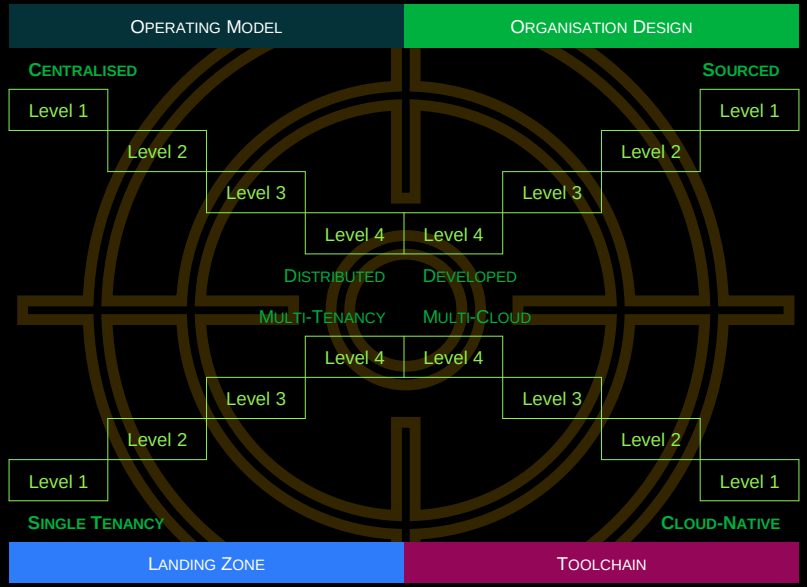
EVOLUTION OF CLOUD

1946 – 1970’s	1980’s	1990’s	2000-2002	2006	2006 - 2010	2011 onwards
Mainframe era	The comms cupboard era	Rise of co-location DC’s	.com boom!	Virtualisation is mainstream	AWS / Azure / GCP etc. launch	Cloud adoption
Data centres for defence & rich!	Networked computers	Hosting services mature	.com crash!	Private Cloud is mainstream	Public Cloud is mainstream	

Maturity & Evolution

CLOUD MATURITY LEVELS

4 dimensions across organisation change and technology



2022	2023	2024	2025	2026
Level 1	Level 1 -2	Level 2 - 3	Level 3 - 4	Level 4

Reply CAFFE'
(Cloud Adoption Framework for Enterprise)

OPERATING MODEL MODES

Centralised

- Single / centralised team
- Central deployments and changes
- Single governing body for approval

Federated

- Non-core is de-centralised
- Centralised + self-sufficient teams
- Teams move at their own pace

Distributed

- Permission by accreditation
- ‘Community’ based contribution
- Autonomous design authority

ORGANISATION DESIGN | HOW

Leadership Alignment

- Stakeholder assessment
- Leadership action plans
- Facilitate change network
- Leader ‘talking points’
- Perform readiness check

Communication

- Develop key messaging
- Maintain program intranet
- Video messaging
- Support All Hands
- Provide ‘Communications

Learning

- Training strategy
- Foundational training
- Tool-specific training
- Measure training success

Landscape

- Current state assessment
- Perform gap analysis
- Define changes to roles

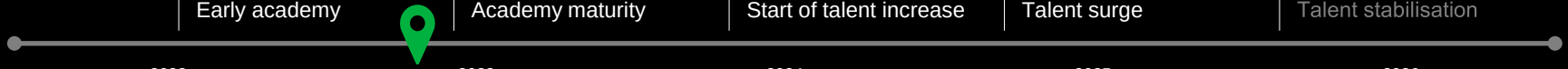
TRANSITION & FUTURE

The unavoidability of change and progress…

Do you see yourself at the company in 2025?

Is the organisation aware of future trends?

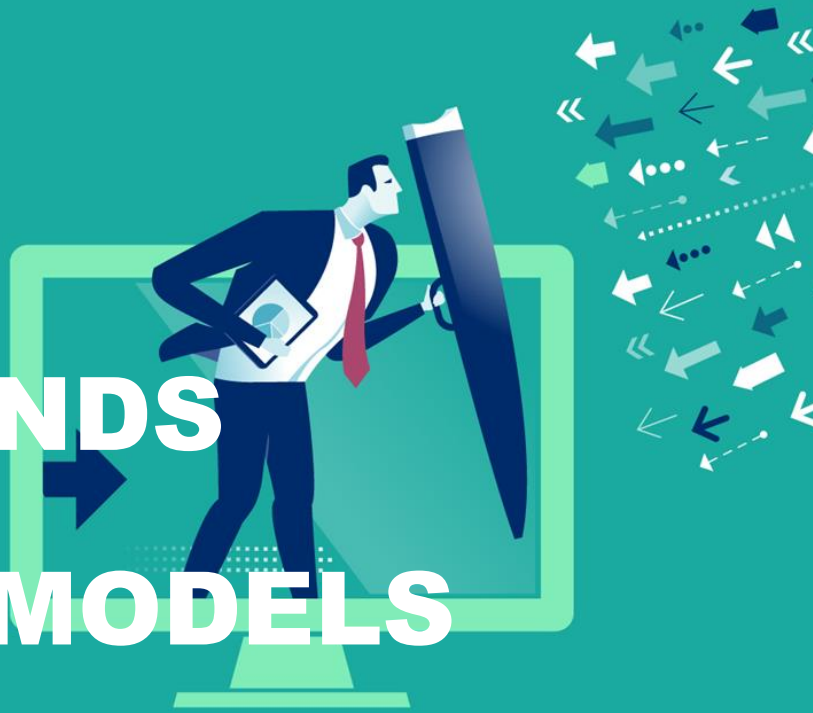
Service	Managed 3-5yr contracts DC + Cloud	Managed 3yr contract DC + Cloud	Managed Rolling contract DC + Cloud	Hybrid Zero contract Cloud	Hybrid Zero contract Cloud
Technology	i386/x64 Closed / Open source CI/CD	i386/x64 Closed / Open source CI/CD / Containerised	i386/x64 Closed / Open Source CI/CD / Containerised	x64/Quantum Open Source CI/CD / Containerised	X64/Quantum Open Source CI/CD / Containerised
People	Outsourced Service management Early academy	Outsourced Insourced Academy maturity	Outsourced Insourced Start of talent increase	Specialist outsourced Insource Talent surge	Specialist outsourced Insourced + AI Talent stabilisation



FSI WORKLOADS IN CLOUD

Key Technology	Cloud Affinity	Key considerations
i386/x64 (Windows / Linux)	Yes	• Base OS support • ISV support of Cloud compute • Latency to non-Cloud systems
File storage Datawarehouse Relational Database	Partial	• Minor – major refactoring required • Data validation (source vs. target) • ISV support of new target platform
Mainframe (z/OS | COBOL | JSL | AS/400 | DB2)	Yes	• Based on emulation software • Minor – major refactoring required • ISV support of new data platform

THE SHIFTING SANDS OF THE CLOUD RESPONSIBILITY MODELS



Phil Longley | Head of Cloud Security Practice Airwalk Reply

Costas Kourmpoglou | Senior Security Consultant Airwalk Reply

19th January 2022

REPLY

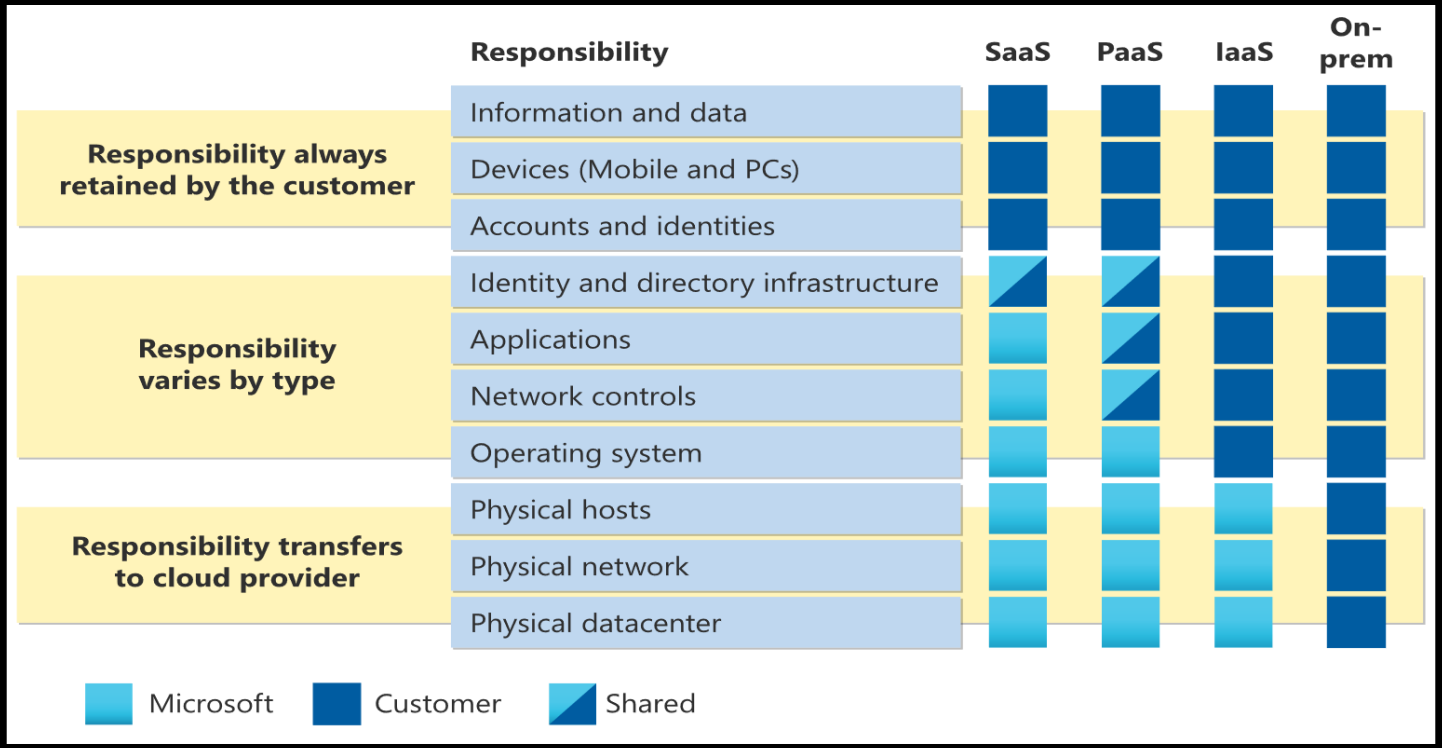
EBF European Banking Federation

RESPONSIBILITY MODELS

The shared responsibility model

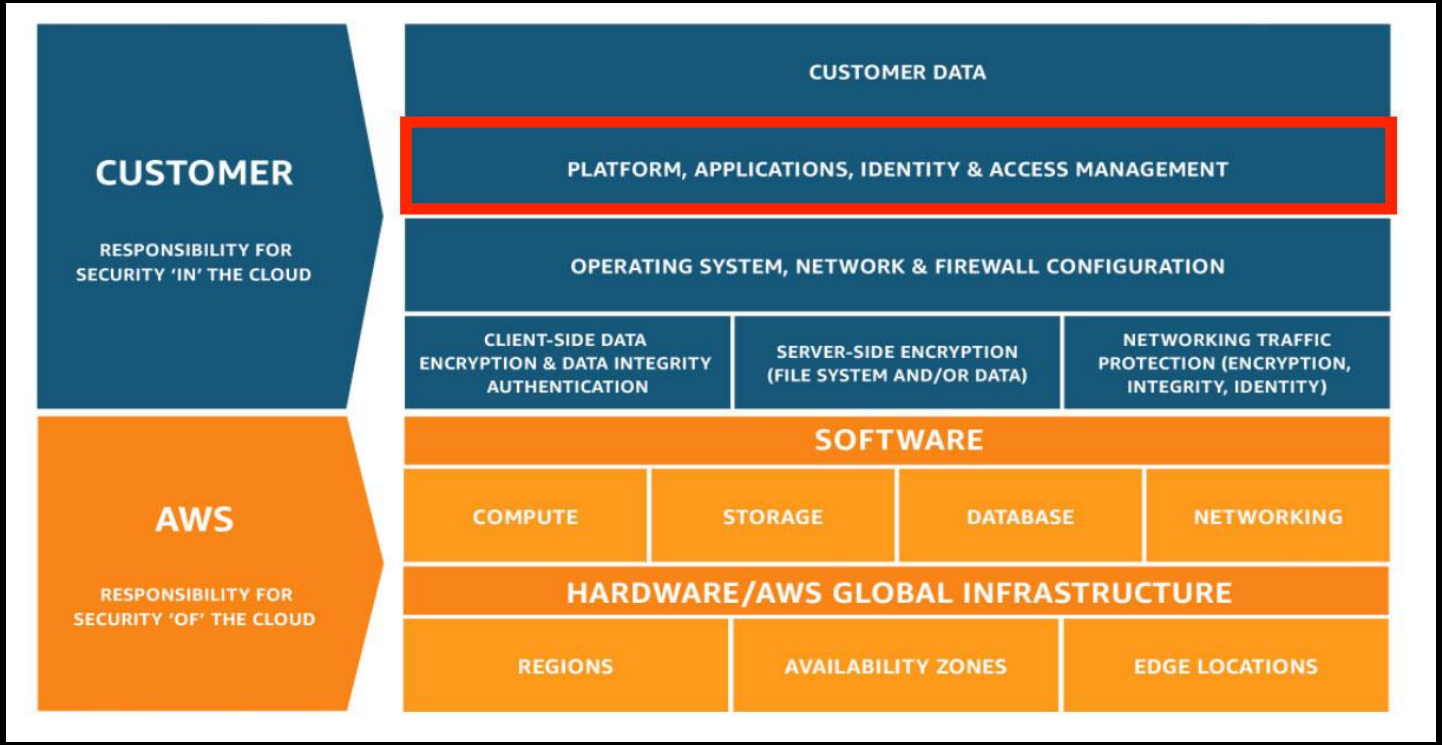
SHARED RESPONSIBILITY MODEL

Source: Microsoft Shared Responsibility Model



SHARED RESPONSIBILITY MODEL

Source: AWS Shared Responsibility Model



CORE PROBLEM AREAS

Complexity

Hundreds of services, not always secure by default.

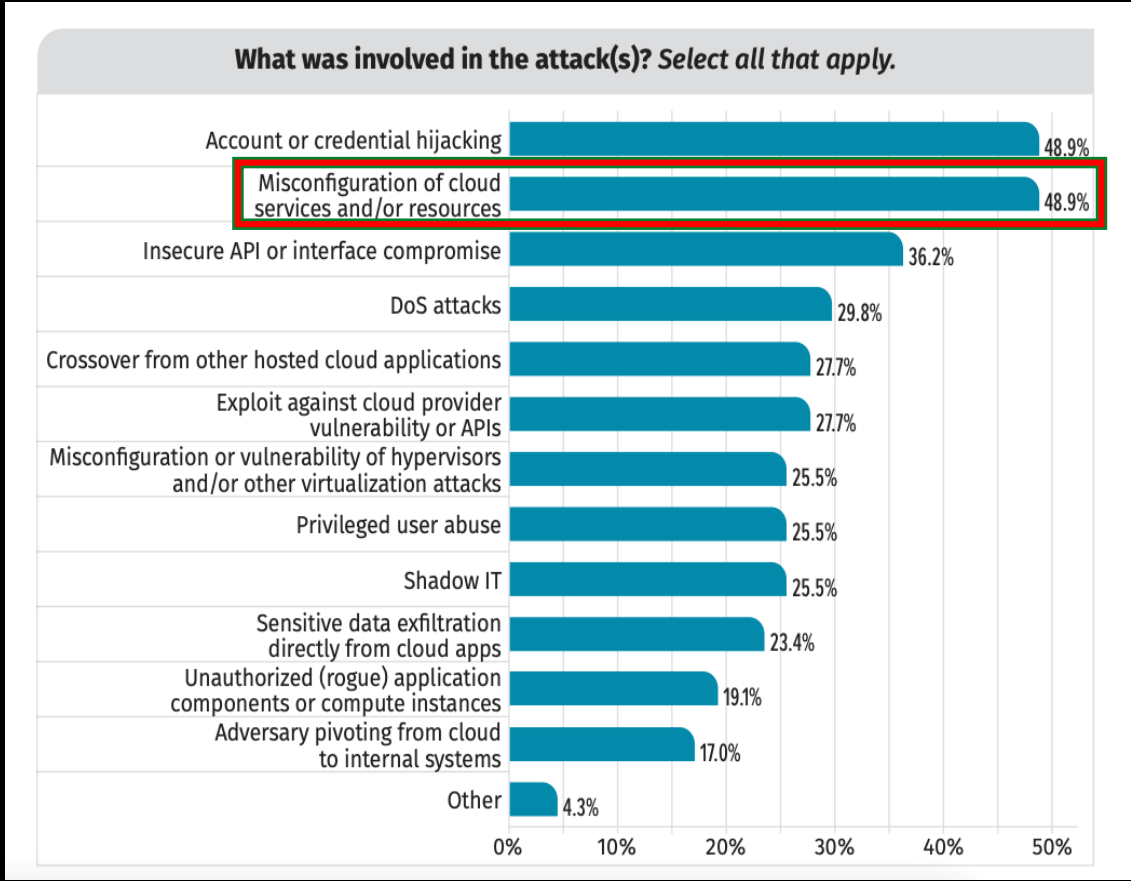
Point In Time

Compliant on Friday doesn’t mean compliant on Saturday

Stagnation

Product Delivery is stifled

COMPLEXITY



Source: SANS 2021
Cloud Security Survey

POINT IN TIME

Table 1. Compromise to Detection to Containment to Remediation

Duration	Time from Compromise to Detection	Time from Detection to Containment	Time from Containment to Remediation
Unknown	19.2%	7.7%	11.5%
Less than 1 hour	3.8%	19.2%	15.4%
1–5 hours	0.0%	30.8%	15.4%
6–24 hours	19.2%	15.4%	7.7%
2–7 days	30.8%	23.1%	23.1%
8–30 days	11.5%	3.8%	15.4%
1–3 months	15.4%	0.0%	3.8%
4–6 months	0.0%	0.0%	3.8%
>1 year	0.0%	0.0%	3.8%

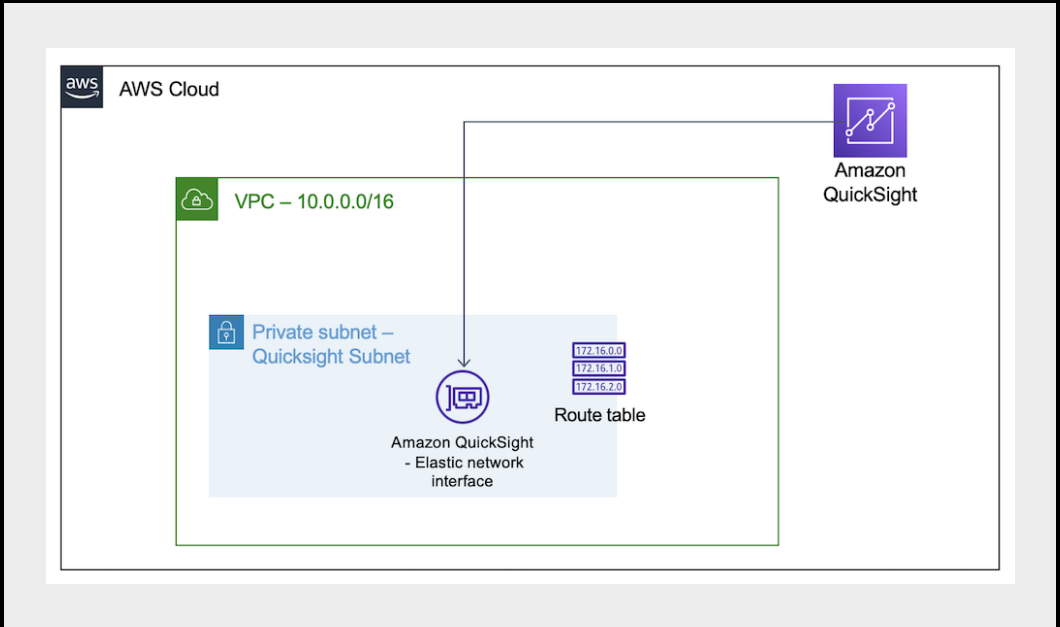
Source: SANS 2020 Enterprise Cloud Incident Response Survey

QUIZ TIME

SCENARIO - REDSHIFT DATALAKE

SOLUTION

- Redshift
- EFS
- Private VPC
- Direct Connect for all queries from on-premise
- Risk assessed – based on no external connectivity



WHOSE RESPONSIBILITY IS IT ?

CLOUD SECURITY POSTURE MANAGEMENT

Monitor, report, and act on the security management of cloud workloads

CLOUD SECURITY POSTURE MANAGEMENT

CSPM - is a continuous process of cloud security improvement and adaptation to reduce the likelihood of a successful attack.

POLICY AS CODE

POLICY AS CODE

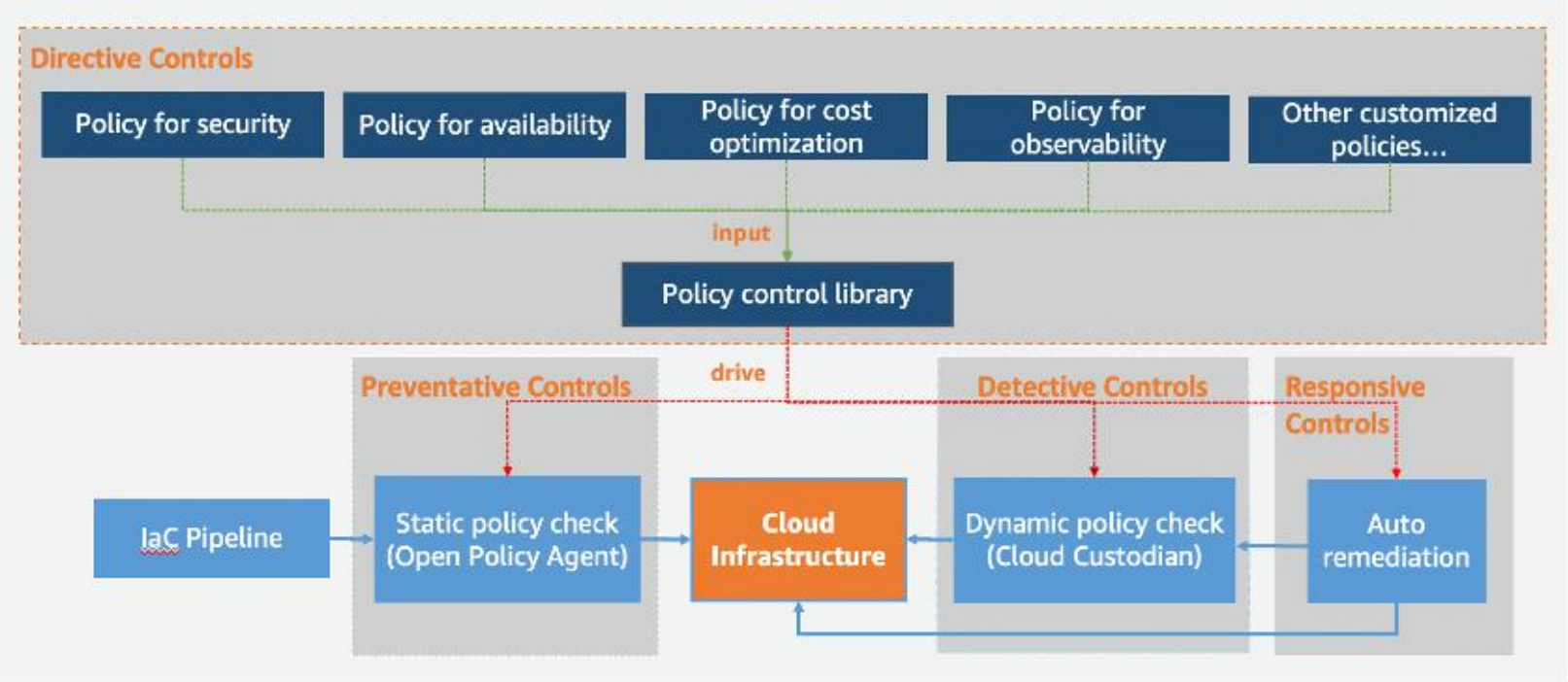


Image source: Cloud governance and compliance on AWS with policy as code by Xuejiao Zhang

CONTINUOUS COMPLIANCE

Case Study: A global bank

GLOBAL BANK

The start of the cloud journey – needs

Wanted to get the most from cloud but concerned about compliance.

Needed a structure that promotes **innovation** but with **guardrails**.

GLOBAL BANK

Solution was found

- Evaluated estate and **controls** required.
- Prioritised **Critical controls** that protect the bank against data loss
  - Insider and external risk
- Implemented **Continuous Compliance**.

CSPM AND CONTINUOUS COMPLIANCE

1

CONSISTENT

Gain confidence in secure configuration

Prevent incidents

2

CONTINUOUS

Remediate and notify in near real-time

Minimise the exposure window

3

DELIVERY

Get the most out of cloud native services

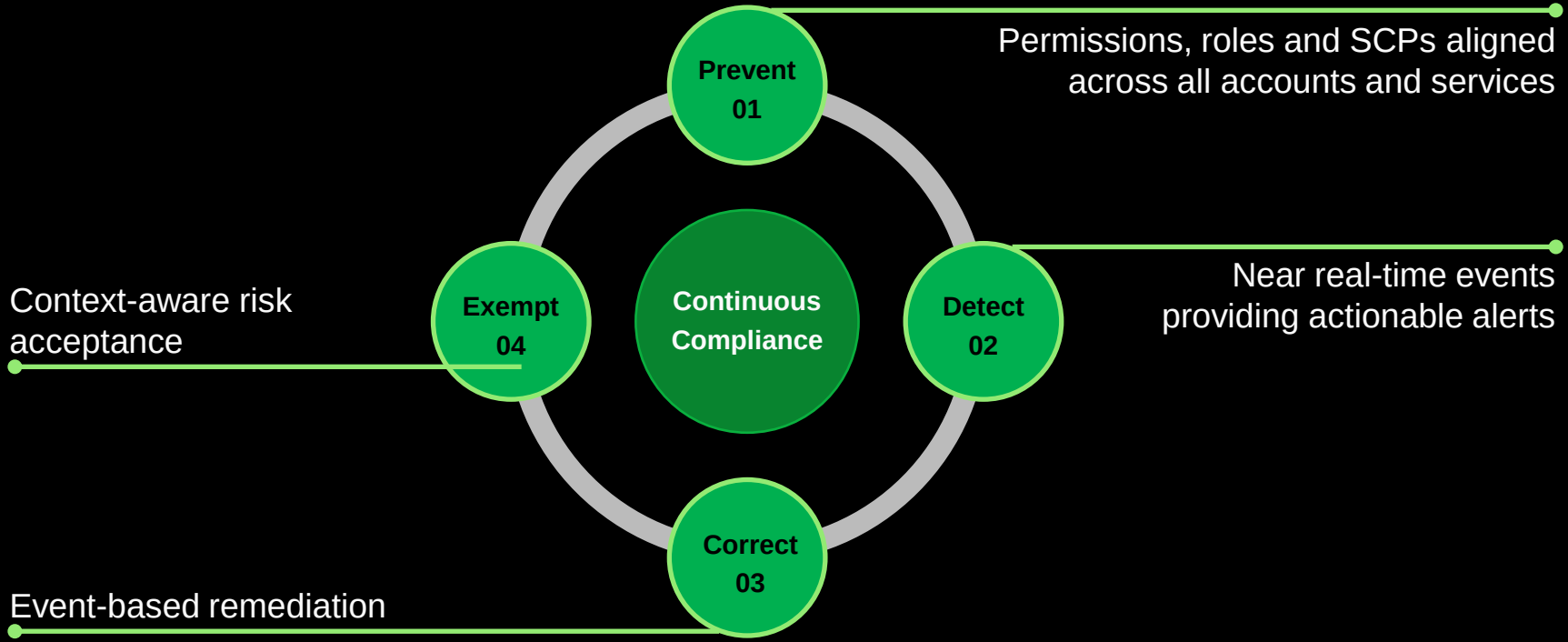
Encourage faster innovation with guardrails

GLOBAL BANK

Current scale of AWS adoption

- Around **2000 Engineers** using **1000 AWS accounts**.
- **200+ critical controls** for over **80 AWS services**.
- Over **50 regulated applications** running on AWS.
- All protected by **Continuous Compliance**.

CSPM IN CONTEXT



Q&A AND CLOSING

19th January 2022

REPLY

EBF European Banking Federation

THANK YOU

www.reply.com

REPLY