Red Hat Summit

Connect

More Operational Resilience, please!
Can your business absorb a cloudburst?

Business Track FSI – Financial Services and Insurances

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Technology usage is being reshaped by emerging regulatory requirements and industry standards

2018
Data Privacy (GDPR)

2023 – 2025
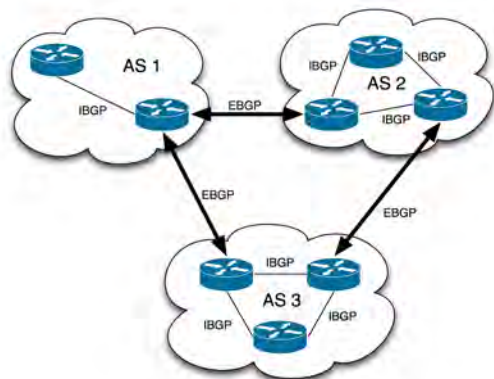**Digital Resiliency (DORA), NIS2, CRA, AI–Act**

Consultations
Directive on Critical Infrastructure Resilience (CIR)

Consultations
Cloud Sovereignty

https://www.whitecase.com/insight-our-thinking/financial-regulatory-observer-2022-operational-resilience-uk-eu-and-us
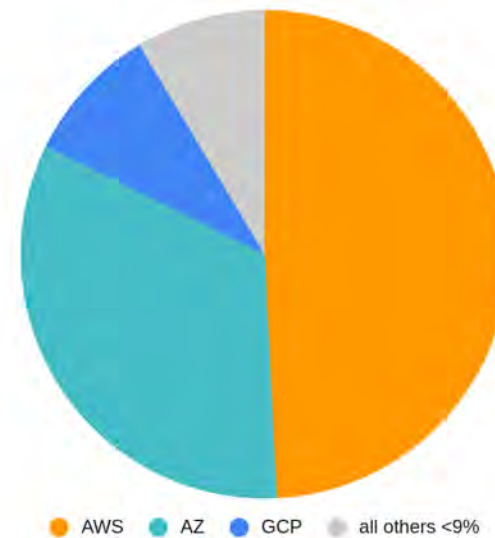
Control plane incidents (e.g. BGP, DNS, NAT,...)
have caused public cloud outages of multiple hours or with global impact

⇒ vulnerabilities to disruptions & cyber attacks

The industry is mainly using less than a handful of hyperscaler cloud providers

⇒ concentration risk

Disruptions can lead to loss of confidence, bank runs, contagion and financial market instabilities

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https://www.statista.com/statistics/1202770/hyperscaler-iaas-paas-market-share/

Not just regulators are concerned: top 5 concerns of customers

Concern	Percentage	Related
Security or resilience concerns related to the cloud vendor	73%	DORA
Potential exposure to extra-territorial laws and/or possibility of data access by foreign governments owing to vendor's location of origin	69%	Sovereignty / GDPR
No transparency or control over data in the cloud	68%	GDPR
Non-interoperability of data/applications	68%	DORA
Operational dependency on vendors/providers based outside of country/region's jurisdiction	67%	Sovereignty

Source: Capgemini Research Institute, Cloud Sovereignty Survey, May–June 2021, N = 1,000 organizations.

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Capgemini · Red Hat

https://www.capgemini.com/insights/research-library/cloud-sovereignty/

A simple framework when thinking about designing for options

HIGH

Switching cost

Caution against Lock-in to CSP-specific services

Lock-in may be acceptable

(depending on the unique value obtained)

Disposable

(not worth spending too much decision making time on)

Desirable
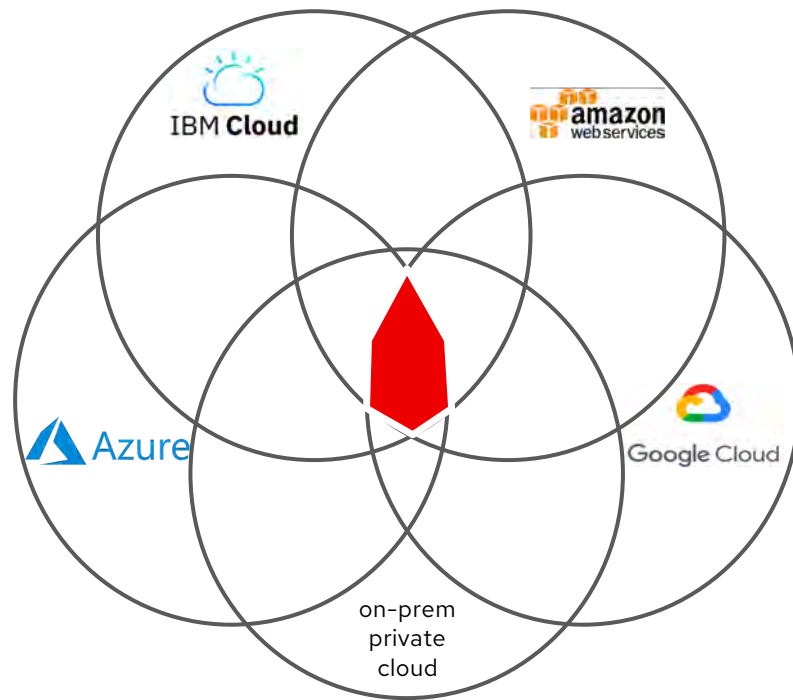
(but rare)

LOW

HIGH

Cloud's unique value
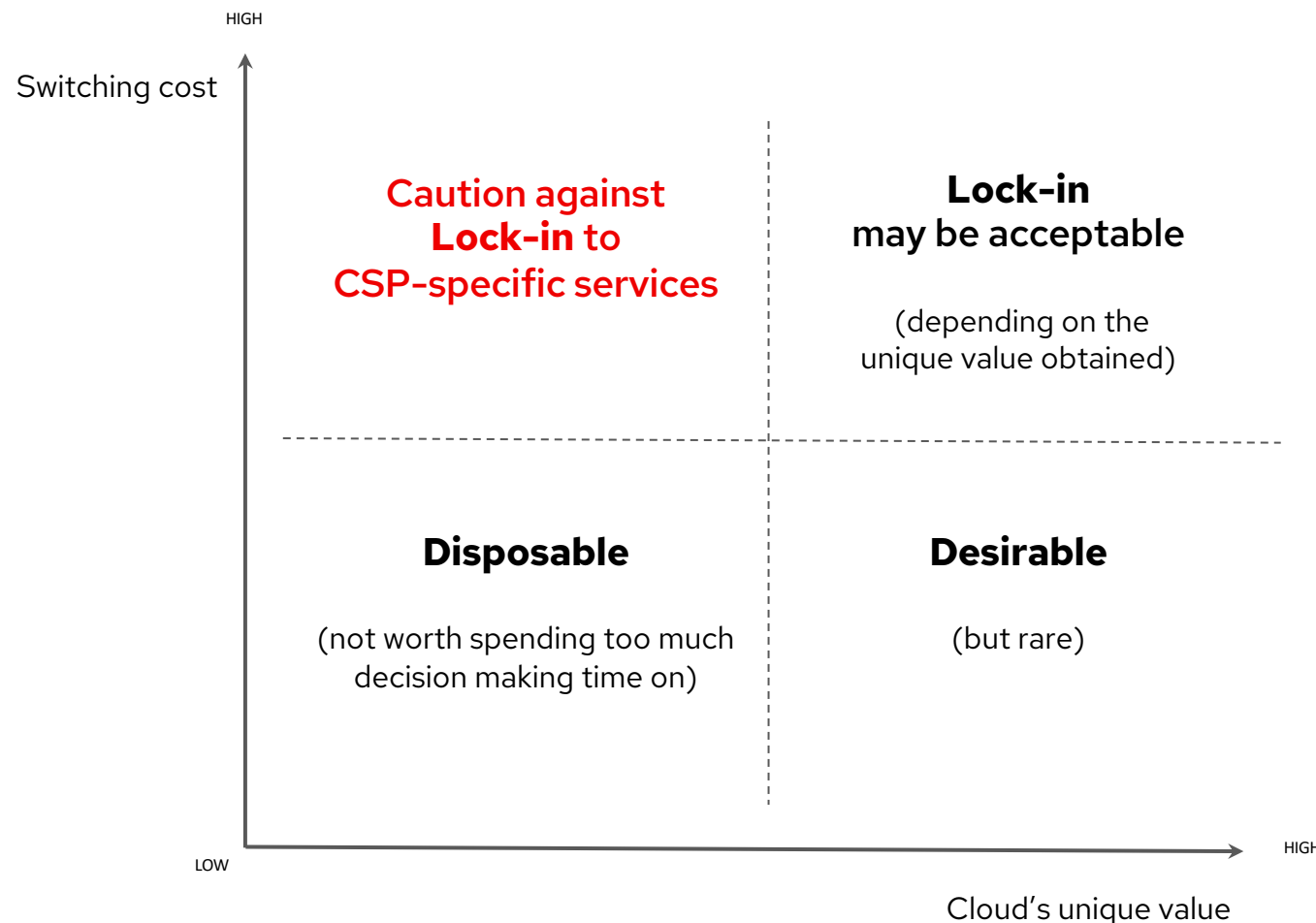
Do not only focus on the **Workloads** (e.g. in Containers, VMs), but also consider:

- **Workflows**
- **Data Persistence**
- **Data Traffic**
- **Security Policies**
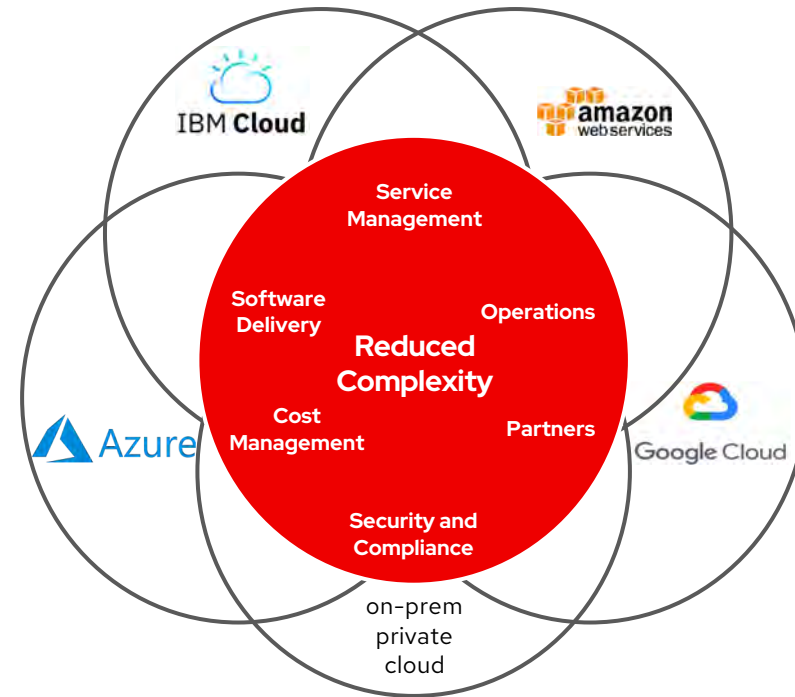- **Management**
- **...**

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Limit cloud usage

- to a small set of portable services
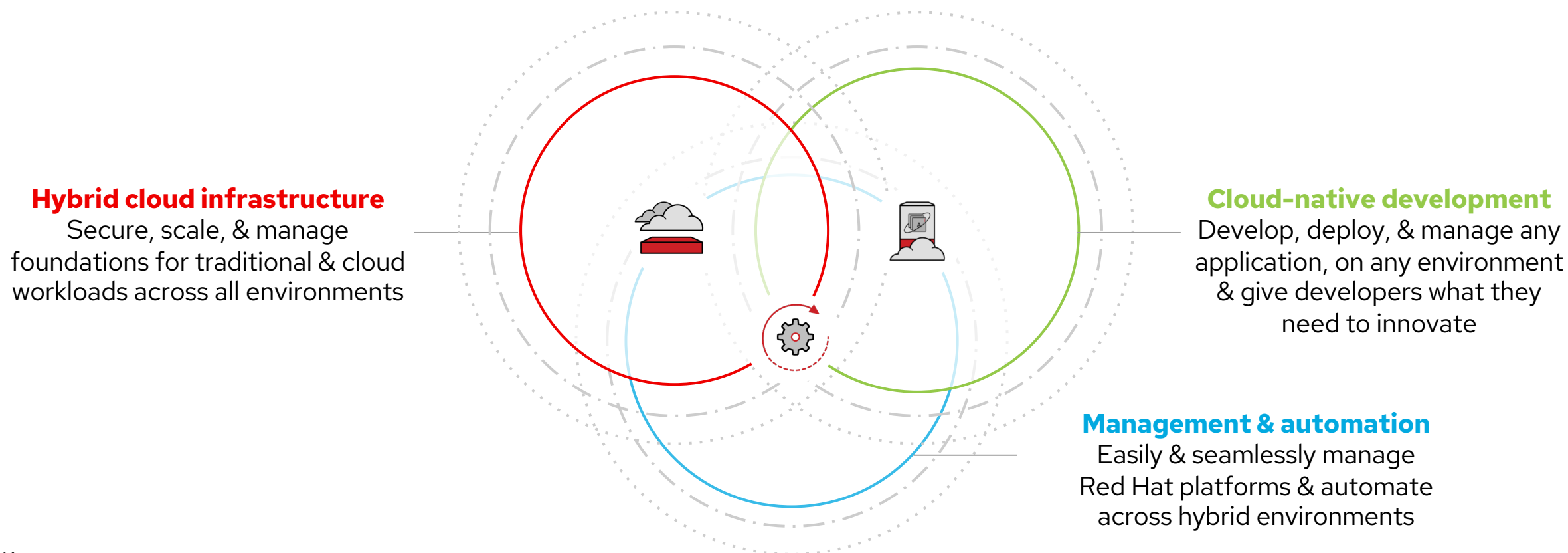- that are common on all platforms

Use a technology layer

- that has a large set of services
- and is available for all platforms

Open Hybrid Cloud

Red Hat's strategy and vision for its portfolio of software, tools, and services built in the open source development model and designed for future architectures that are open, secure, innovative and agile across hybrid clouds.
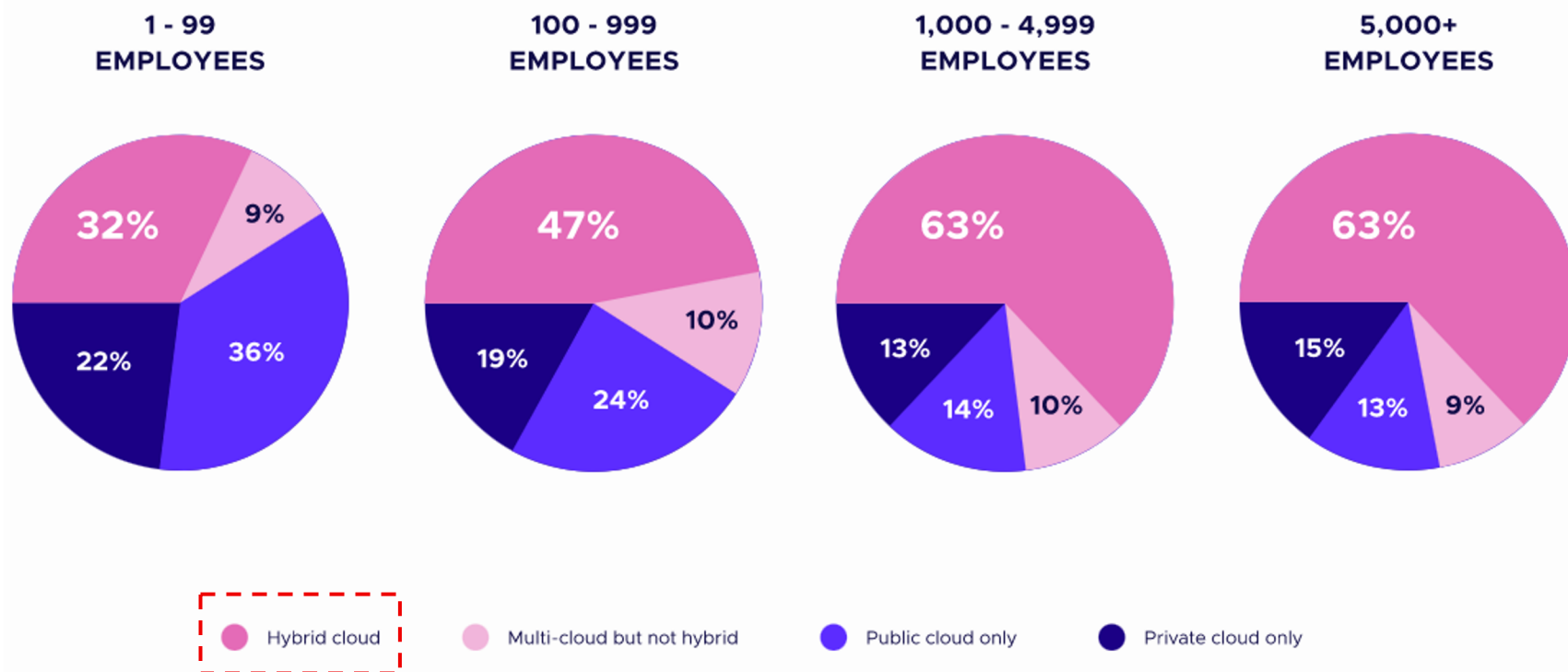

Hybrid cloud infrastructure
Secure, scale, & manage foundations for traditional & cloud workloads across all environments

Cloud-native development
Develop, deploy, & manage any application, on any environment & give developers what they need to innovate

Management & automation
Easily & seamlessly manage Red Hat platforms & automate across hybrid environments

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Hybrid cloud is a reality, especially in large enterprises

Public cloud only is mostly found in small (startup) enterprises

Hybrid cloud is the dominant cloud strategy in larger enterprises

CLOUD NATIVE COMPUTING FOUNDATION

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Which of the following combinations of data center and cloud architectures does your organization use? (By organization size)

| 1 - 99 EMPLOYEES | 100 - 999 EMPLOYEES | 1,000 - 4,999 EMPLOYEES | 5,000+ EMPLOYEES |

- 1 - 99 EMPLOYEES: 32%, 9%, 36%, 22%
- 100 - 999 EMPLOYEES: 47%, 10%, 24%, 19%
- 1,000 - 4,999 EMPLOYEES: 63%, 10%, 14%, 13%
- 5,000+ EMPLOYEES: 63%, 9%, 13%, 15%

Hybrid cloud   Multi-cloud but not hybrid   Public cloud only   Private cloud only

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Public cloud only is mostly found in small (startup) enterprises

Hybrid cloud is the dominant cloud strategy in larger enterprises

> *You're crazy if you don't start in the cloud...*

> *... you're crazy if you stay on it.*

andreessen. horowitz

[exclusively]

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"The Cost of cloud, a Trillion Dollar Paradox" https://a16z.com/the-cost-of-cloud-a-trillion-dollar-paradox

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The future of enterprise IT in Europe continues to remain hybrid with the vast majority of organizations using a combination of public cloud and on-premises infrastructure and services.

Q4. Which statement best represents your organization's attitude to using public cloud services?
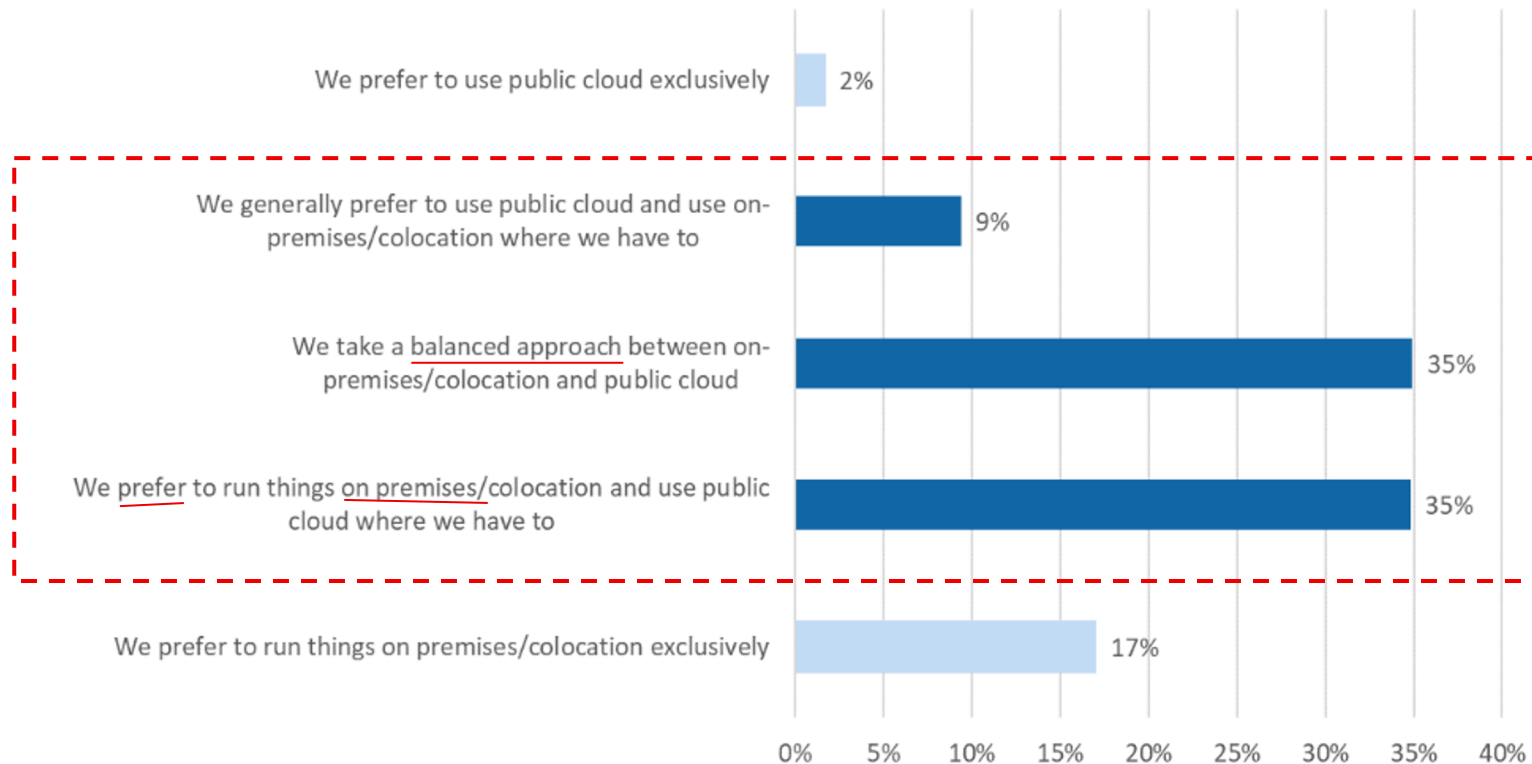
- A combined 79% of organizations use a mix of on-premises/colocation and public cloud for their IT infrastructure and resources.

- This is an increase from the combined figure of 76% seen in 2021 and highlights the continued trend for hybrid IT usage across enterprises.

- Those that prefer to only use either public cloud or on-prem/colocation have seen a decline in numbers compared with 2021. The latter group are unlikely to disappear altogether — while many enterprise apps will benefit from being migrated to cloud, not all workloads need to shift (e.g., for compliance reasons).

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AI is the killer-app for **Hybrid Cloud**.

Why?

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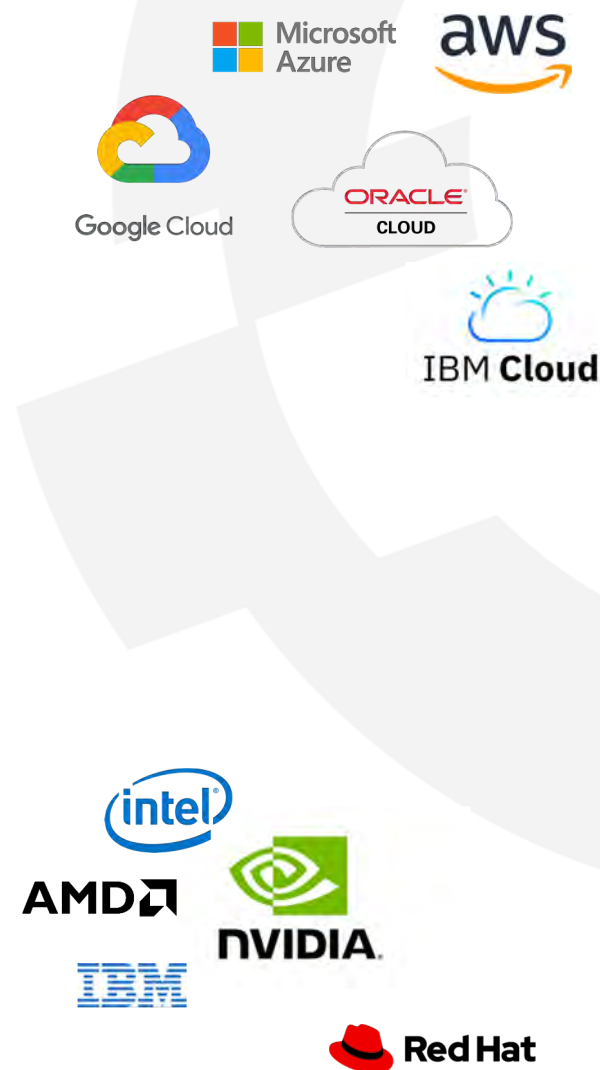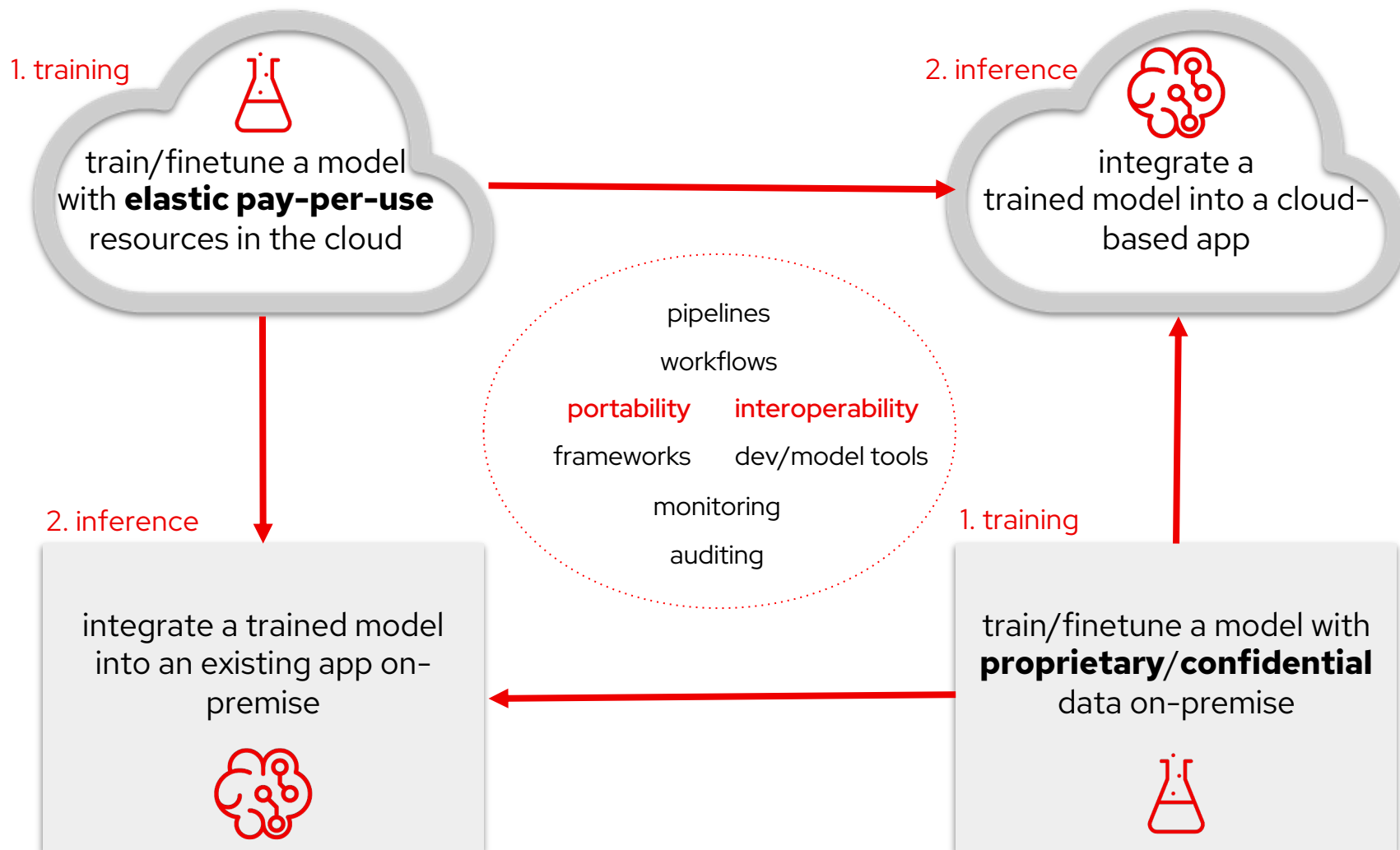
1. training

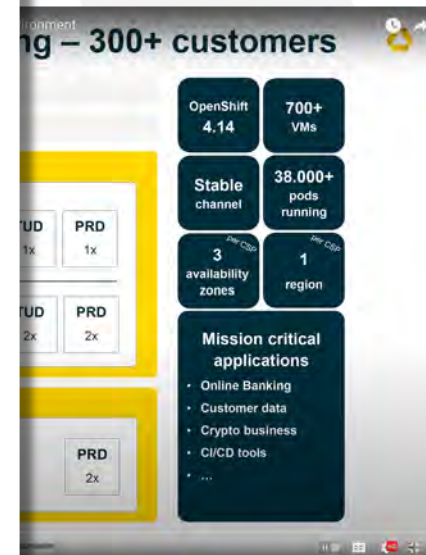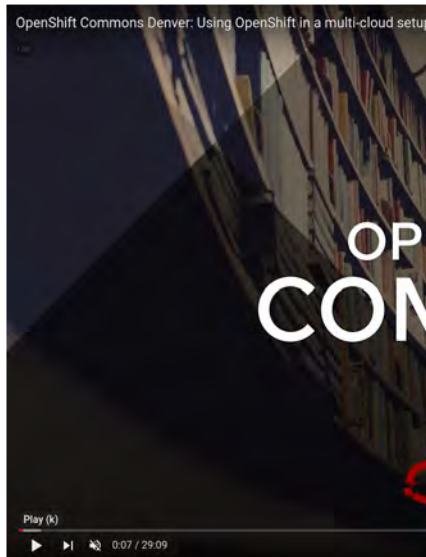train/finetune a model

2. inference

integrate a
trained model into an app

AI models have to be trained, fine-tuned, aligned,..
before they are integrated into an intelligent application.

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AI is the killer-app for Hybrid Cloud

1. training

train/finetune a model with **elastic pay-per-use** resources in the cloud

2. inference

integrate a trained model into a cloud-based app

pipelines

workflows

portability   interoperability

frameworks   dev/model tools

monitoring

auditing

2. inference

integrate a trained model into an existing app on-premise

1. training

train/finetune a model with **proprietary**/**confidential** data on-premise

Microsoft Azure

aws

Google Cloud

ORACLE CLOUD

IBM **Cloud**

intel

AMD

NVIDIA

IBM

Red Hat

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COMMERZBANK

https://www.youtube.com/watch?v=bYxxGqxIr6s

https://www.openshift-anwender.de/2023/12/15/rueckblick-auf-das-23-openshift-anwendertreffen-in-eschborn-frankfurt/

More Operational Resilience, please!

Innovate with Open Source

- Red Hat Enterprise products run **on-prem** and in **any cloud**, with multiple management models,
- Open Source **avoids Lock-Ins** to Hyperscalers, HW vendors, and even to Red Hat.

But there are challenges

- The new **EU** regulations strive to strengthen Operational Resilience, Cyber Resilience, Software Supply Chains, and 3rd Party Risk Mgt,
- Open Source provides better **Interoperability** & **Portability**, **Transparency** & **Auditability**.

Red Hat can help

- We have the capabilities and **partnerships** to help speed-up your Cloud and AI initiatives,
- allowing **faster** delivery of new and modernized applications,
- providing faster time-to-business value and to **control** the risks.

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Thank you

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awarda@redhat.com

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