Cloud Architecture at MAERSK

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Cloud Architecture at MAERSK

Agenda
- Cloud Strategy
- Self Service
- The Guardrails
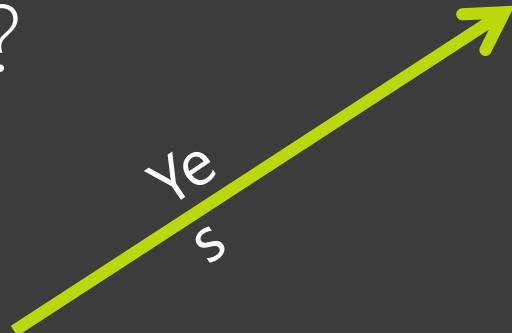- Finance
- Scaling

Cloud Architecture at MAERSK

Cloud Strategy

Cloud Strategy

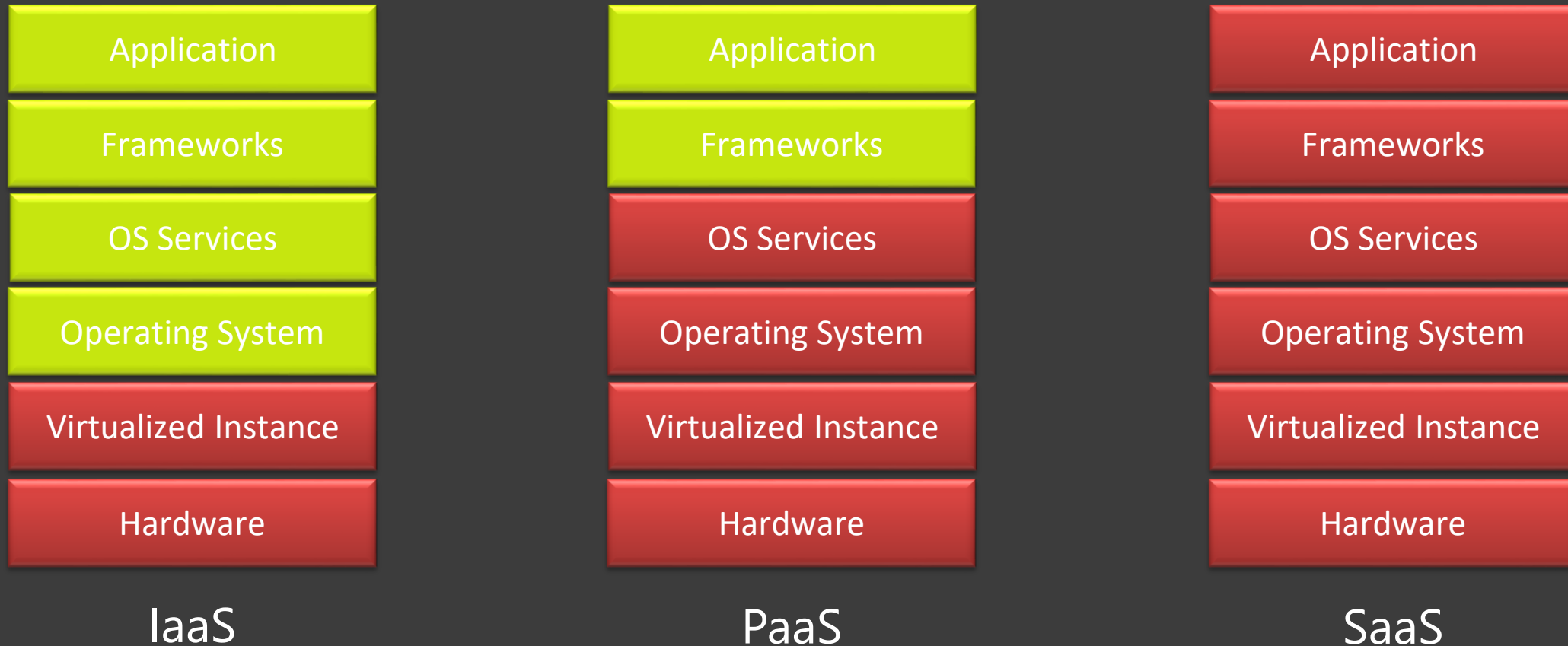First question,
Do you have a Cloud Strategy?

Cloud
Strategy

Yes

No

Cloud Strategy

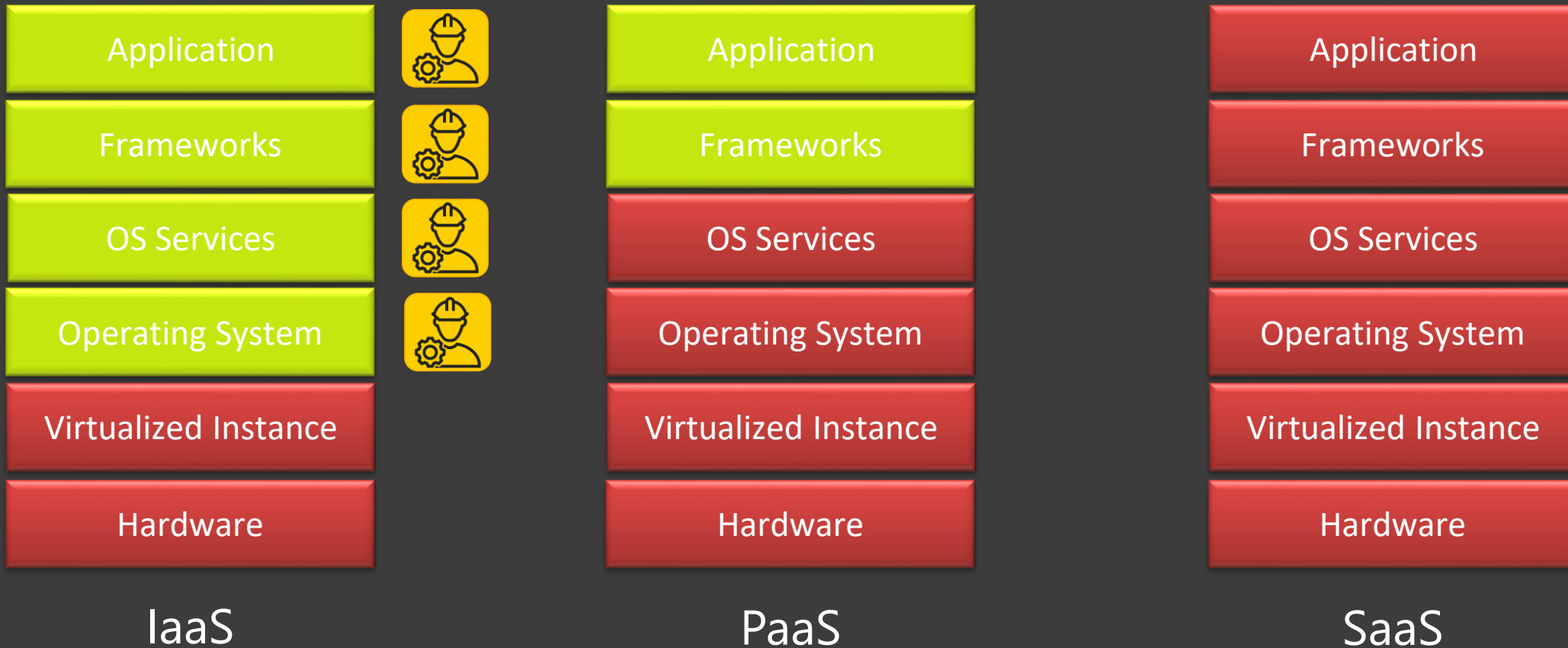Why we are seeing a move to the cloud

1. PaaS gives a higher abstraction

Application
Frameworks
OS Services
Operating System
Virtualized Instance
Hardware

IaaS

Application
Frameworks
OS Services
Operating System
Virtualized Instance
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PaaS

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SaaS

Cloud Strategy

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Cloud Strategy

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Cloud Strategy
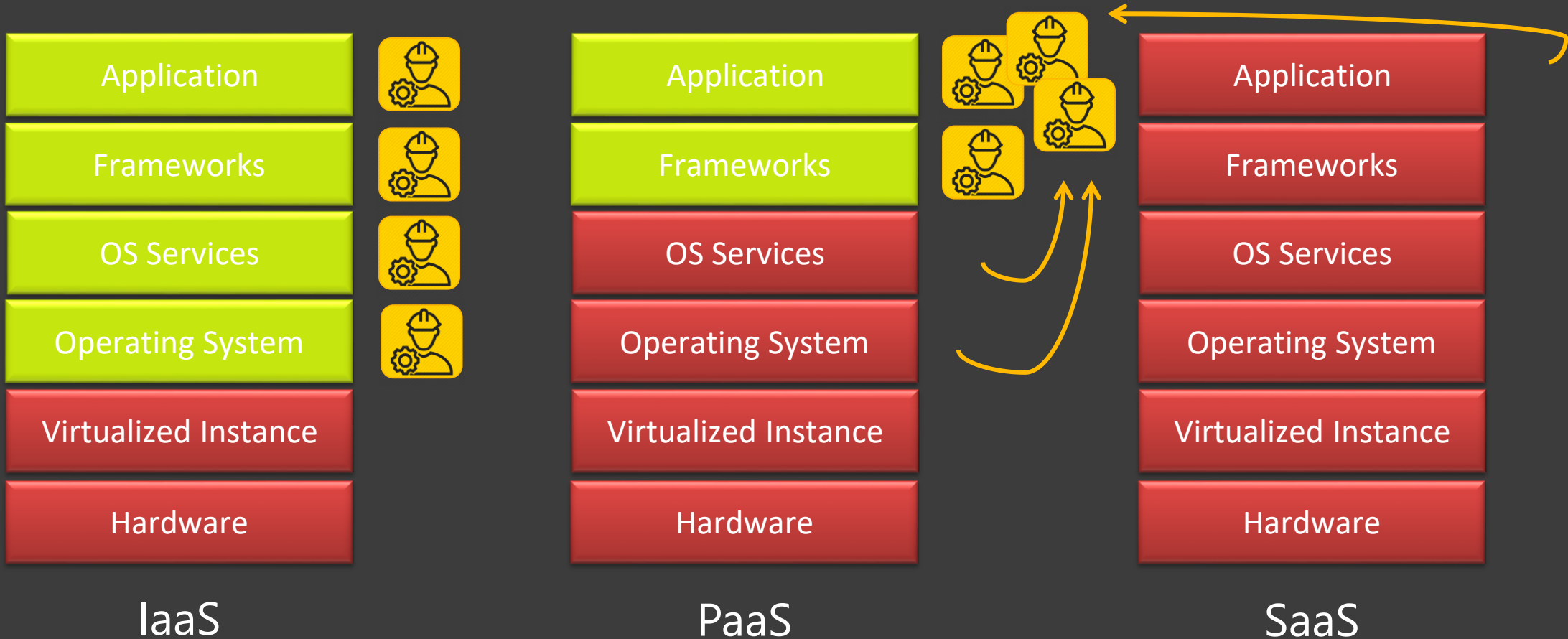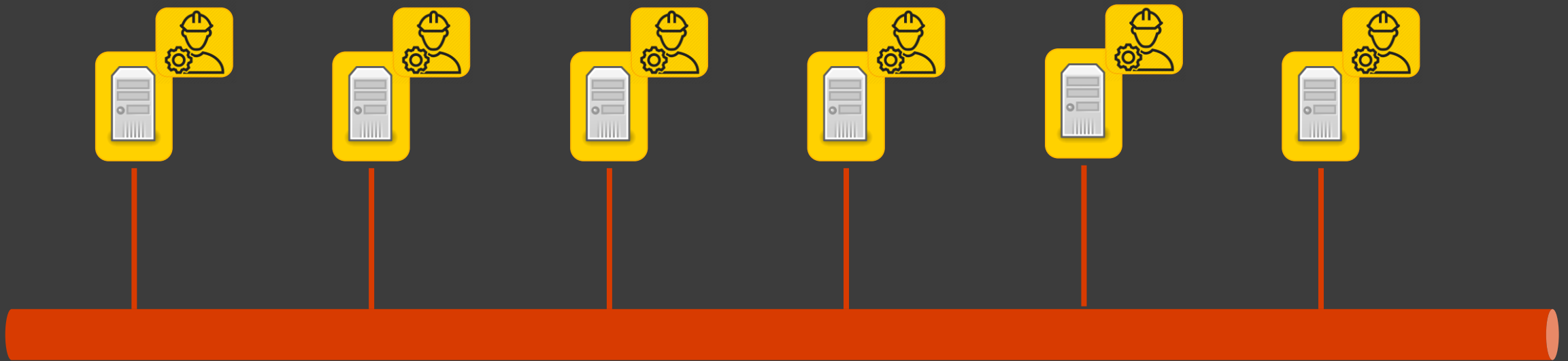
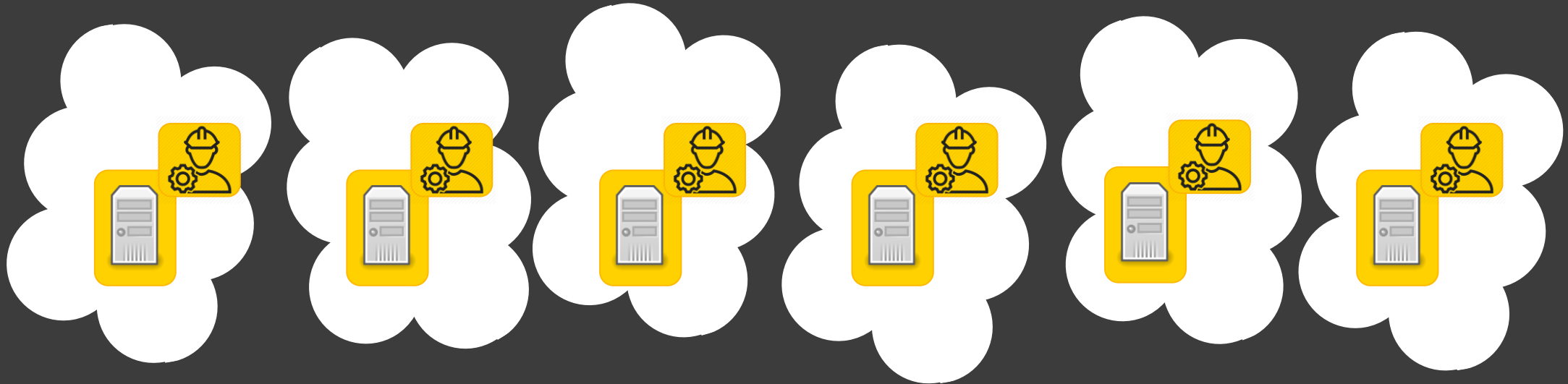Why we are seeing a move to the cloud
1. PaaS gives a higher abstraction
2. De-coupled infrastructure

Cloud Strategy

Why we are seeing a move to the cloud

1. PaaS gives a higher abstraction
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Cloud Strategy

Why we are seeing a move to the cloud
1. PaaS gives a higher abstraction
2. De-coupled infrastructure
3. Self-Service brings higher agility
4. Elastic infrastructure
5. Cost model

Cloud Strategy

Gartner´s take

1. Where and how to consume cloud
2. How to access, secure, manage, integrate and govern
3. How to factor into our application strategy & architecture
4. Impact on existing data center and infrastructure
5. Will we become a SaaS provider

Cloud Provider Strategy

Selecting a Cloud Provider Strategy

- Single Cloud Provider
- Multiple Cloud Provider – One preferred
- Multiple Cloud Provider – Free for all

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Self Service

Self Service

Tools and API´s

- Cloud Enablement

1. Request (Governance)

2. Self Service Portal or API Access

   Create new Cloud Environments

   Applies Policies (Guardrails)

   Creates Access Policy

3. Free play in the cloud

Self Service

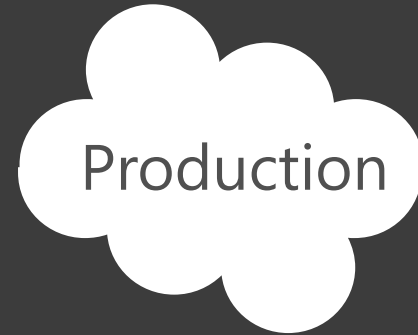Access governance

Build a strong RBAC model

Higher Level Environments
- No direct human changes (view only)
- Only access for pipelines

Lower Level Environments
- Full contributor access
- Add additional users

Higher Level Environments

Pre-Prod

Production

Lower Level Environments

Dev

Test

Self Service

Sandboxes

Short lived environments
Deleted after 30 days
Full access
No restrictions
Great for experiments

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The Guardrails

Guardrails

Build solid guardrails

Self service introduces lots of choice.
There are value in alignment
Can help reduce risk

Guardrails helps us make better choices

Guardrails provide a north start for our engineers
A collection of best practices
A baseline for configuration and security

Provide great tooling

Provide open and guiding practice documentation
Support with tools and audit

LeanKit

Guardrails

Example: Cloud Architecture Principles

Open sourced – Anyone can make a pull request
A continuous development – Used to capture learnings
Owned by a core team
Some principles are enforced
Other principles are reported

Guardrails

Example: Cloud Architecture Principles

- Use Azure PaaS No VM´s allows!
- Enforce encryption on disks
- No direct human access to production
- Enforce use of Pipelines
- Enforce use of Infrastructure as Code
- Promote SaaS over PaaS over IaaS
- Isolated Architecture

Guardrails

Example: Cloud Architecture Principles

- Promote use of App Gateway (WAF)
- Identity & Authentication
- RBAC & Access Governance
- No secrets in code*
- Use secure vault for secrets*

Important: Monitor the baseline!

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Finance

Finance

Local cost ownership

To leverage the scalability of the cloud, it is crucial to have cost accountability associated with the delivery

Build cost transparency

Provide solid tooling for cost transparency, analytics and optimization

Provide great tooling

Build great self-service tooling for engineers and business stakeholders

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Scaling

Re-use and learnings

This is really hard!

Demo sessions
Internal Conferences
Newsletters
Cross-team hackathons

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