Moving Avanza Bank's Virtualized Workloads into OpenShift

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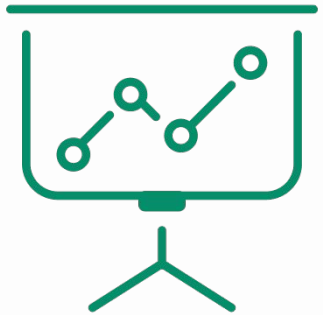
Head of Platform Operations



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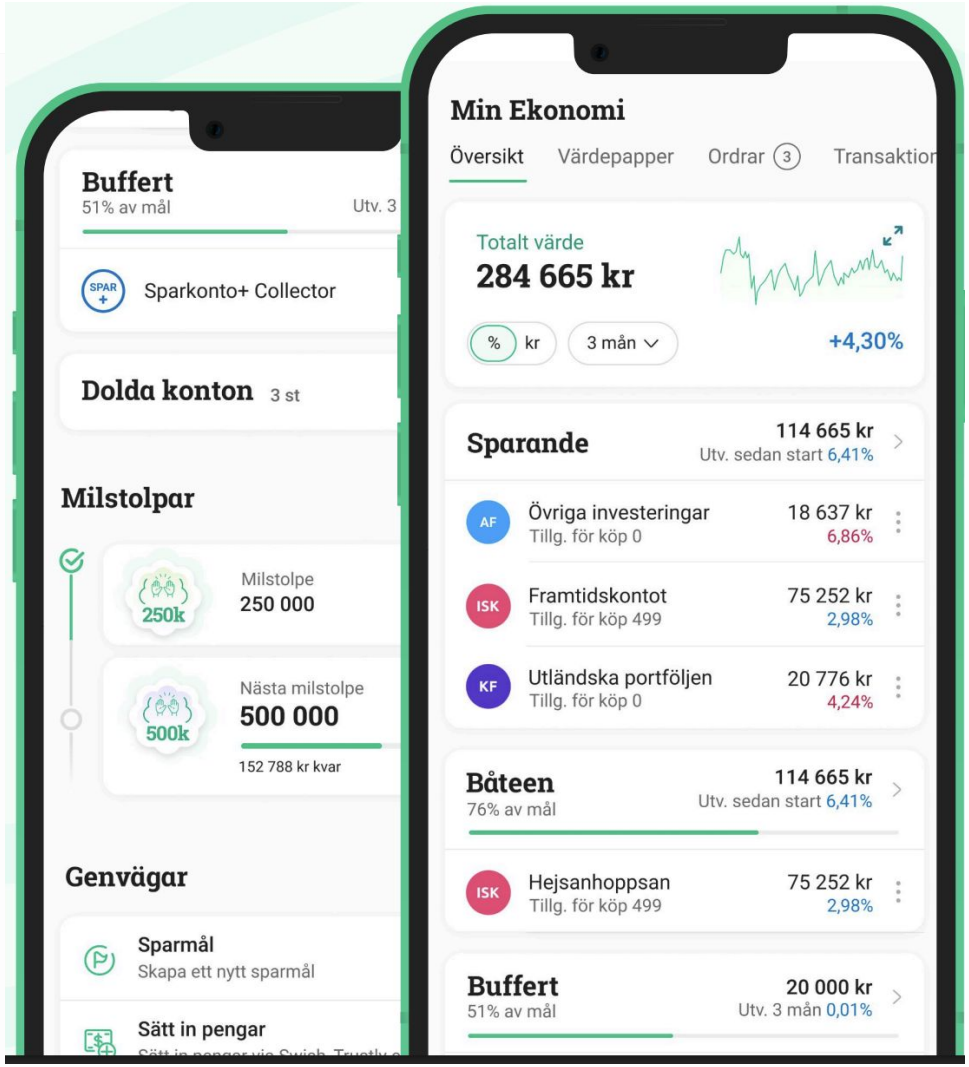
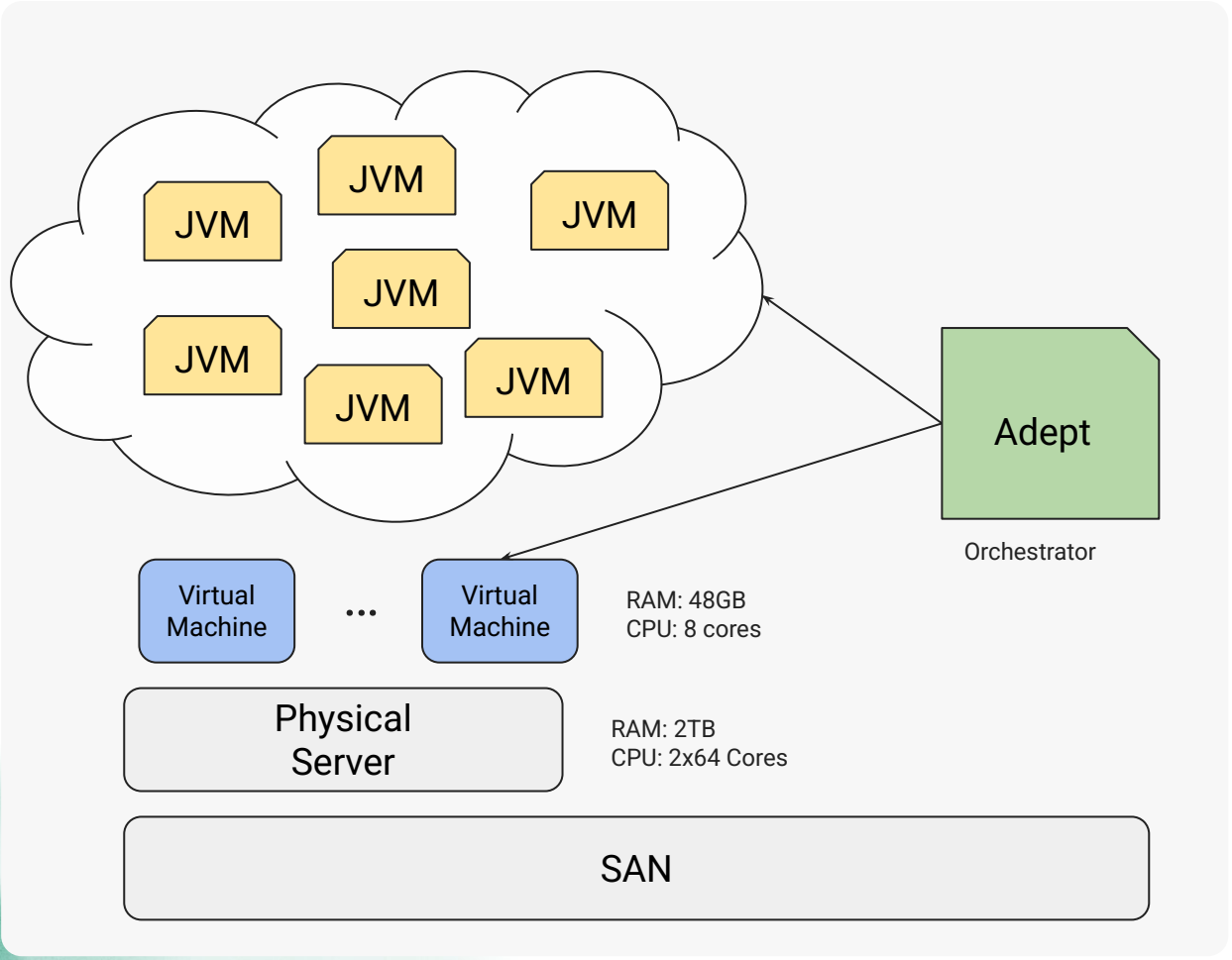
Avanza Bank

- Online Bank for Savings, Investments and Pensions
- 2.2+ Million Swedish Customers
- Over 1 000 000 MSEK in Savings Capital
- Promise - More to you, less to the bank
- Vision - A better future for millions of people





Virtualization Architecture

VMware-based virtualization across datacenters

We were only using basic features of vSphere

IT Operations provide servers to the Development side for deploying

A lot of ClickOps for the virtualization layer

Everything is on-prem

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Starting Point

Flirting with other solutions

- Cost vs Implementation Project

Limited automation & elasticity

Manual compliance and patching processes

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The Kick We Needed

Early 2024 - Planning for adding more capacity

3x Price Increase for same functionality

My Parental Leave was planned for May

Writing a brief & Getting buy in

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Our Goals

Reduce cost without reducing quality

As close as 1-1 migration of our current platform as possible

Automate operations and compliance

Stay fully on-prem while enabling a hybrid cloud future

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Evaluating Options

Platform	Pros	Cons
VMware	Stable, mature	Costly, vendor lock-in, Vendor unreliability
OpenShift Virtualization	K8s-native, Red Hat	New-ish, Learning curve
Others	Price, Simplicity	Unproven Vendors, Unclear futures for support

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Workshop with Red Hat

Understanding of Avanza architecture and requirements

Decided on a Pilot and not on a PoC

Scope of the pilot for running a full test environment

Build together and learn, Avanza to implement and migrate

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Let’s GO

Started with sending everyone on training

Everyone involved with our Virtualization

Part of involving the organisation in the change

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Implementation Journey

Right into Pilot (Alpha env)

Pilot was lead by Red Hat with Project Managers from Avanza supporting

Re-architect and fine tune

After Avanza leads, and Red Hat supports

Continue roll out

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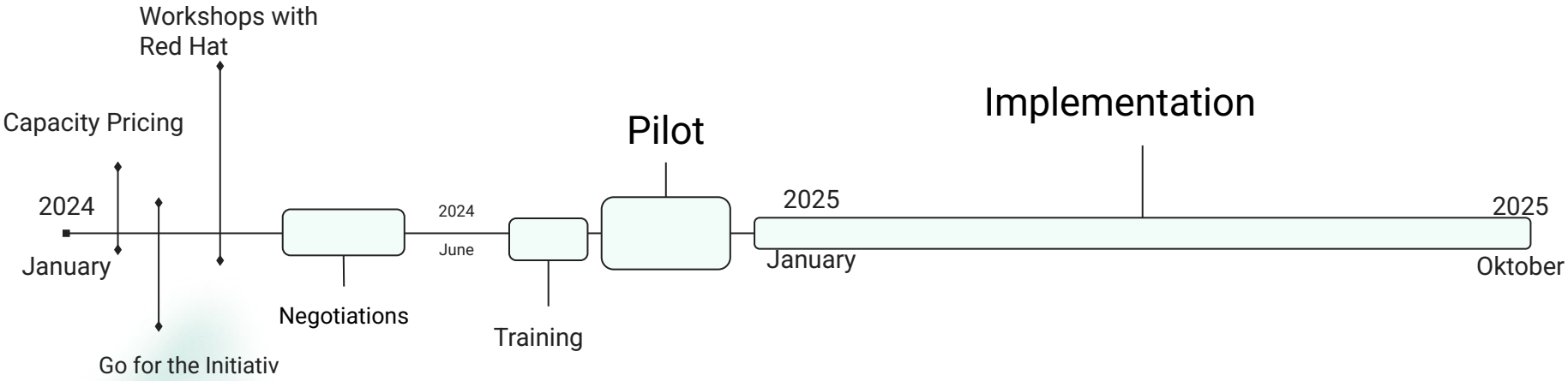
Timeline



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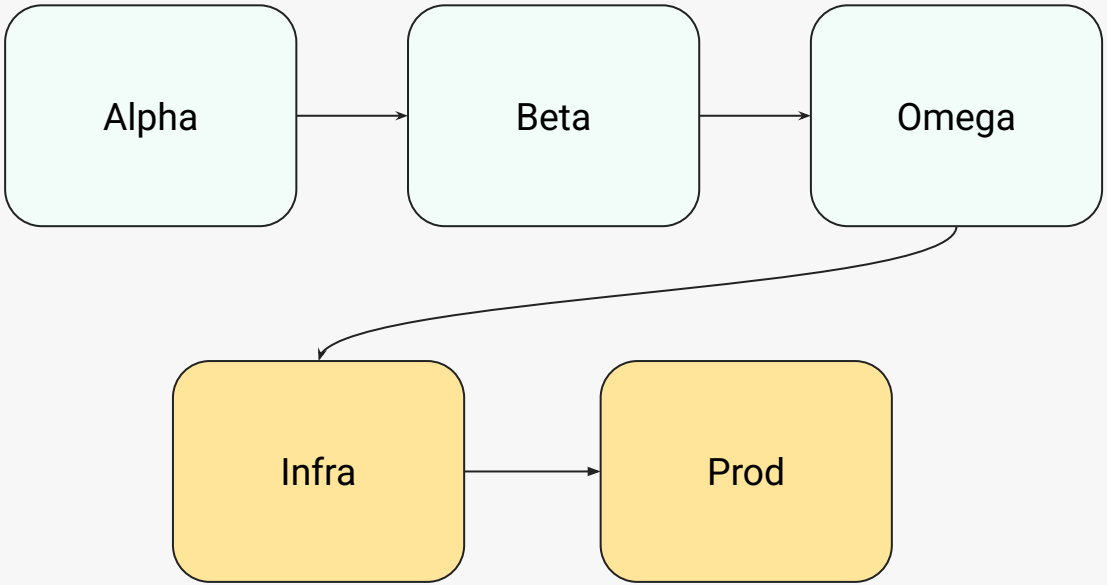

Rollout & High Level

Reusing existing components

- Servers
- Storage
- Network
- Foreman + Katello
- Ansible / AWX

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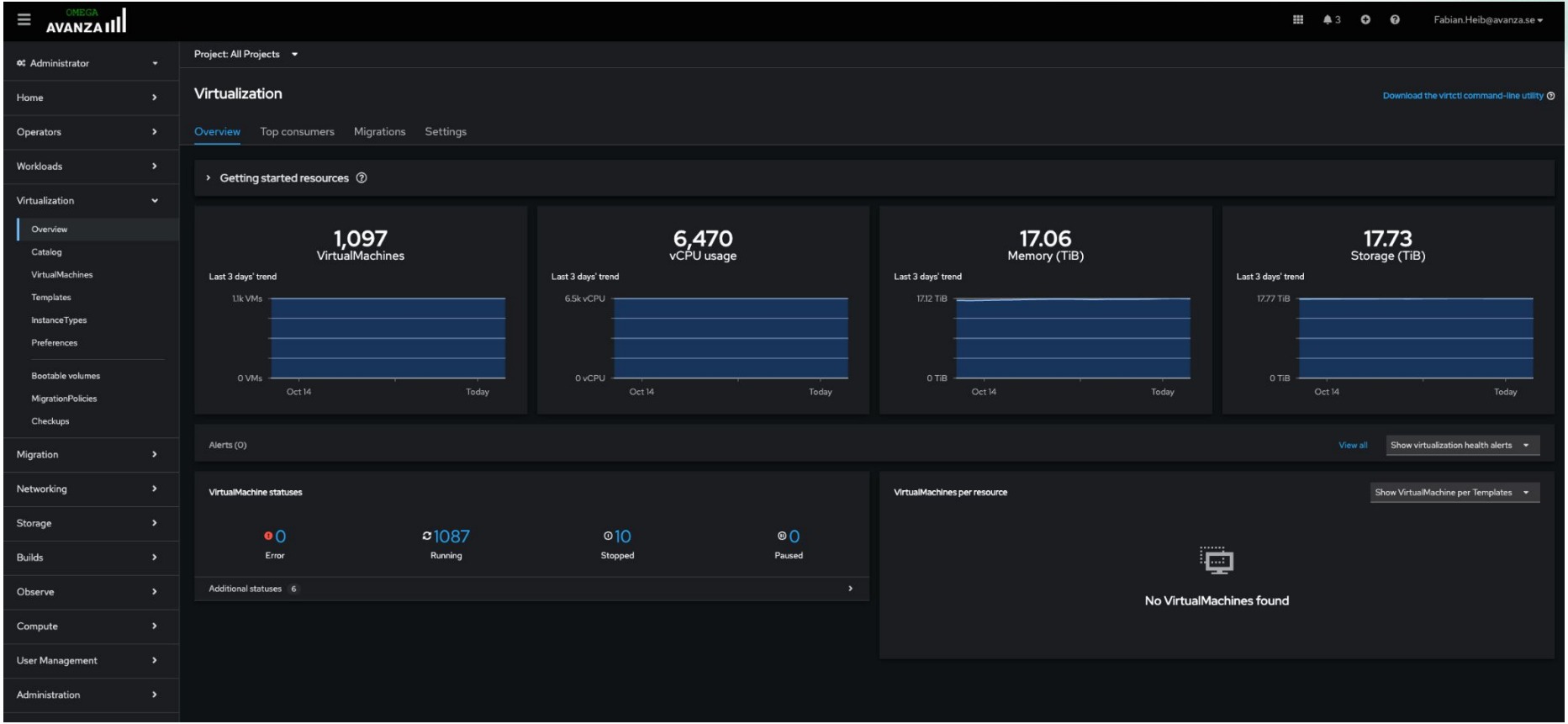
OMEGA
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3
Fabian.Heib@avanza.se
Administrator
Home
Operators
Workloads
Virtualization
Overview
Catalog
VirtualMachines
Templates
InstanceTypes
Preferences
Bootable volumes
MigrationPolicies
Checkups
Migration
Networking
Storage
Builds
Observe
Compute
User Management
Administration
Project: All Projects
Virtualization
Download the virtctl command-line utility
Overview
Top consumers
Migrations
Settings
Getting started resources
1,097
VirtualMachines
Last 3 days' trend
1.1k VMs
0 VMs
Oct 14
Today
6,470
vCPU usage
Last 3 days' trend
6.5k vCPU
0 vCPU
Oct 14
Today
17.06
Memory (TiB)
Last 3 days' trend
17.12 TiB
0 TiB
Oct 14
Today
17.73
Storage (TiB)
Last 3 days' trend
17.77 TiB
0 TiB
Oct 14
Today
Alerts (0)
View all
Show virtualization health alerts
VirtualMachine statuses
0
Error
1087
Running
10
Stopped
0
Paused
Additional statuses 6
VirtualMachines per resource
Show VirtualMachine per Templates
No VirtualMachines found

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Migrations

Cattle vs Pets

- Reinstall vs MTV

Per Hostgroups

Working closely with the rest of the organisation

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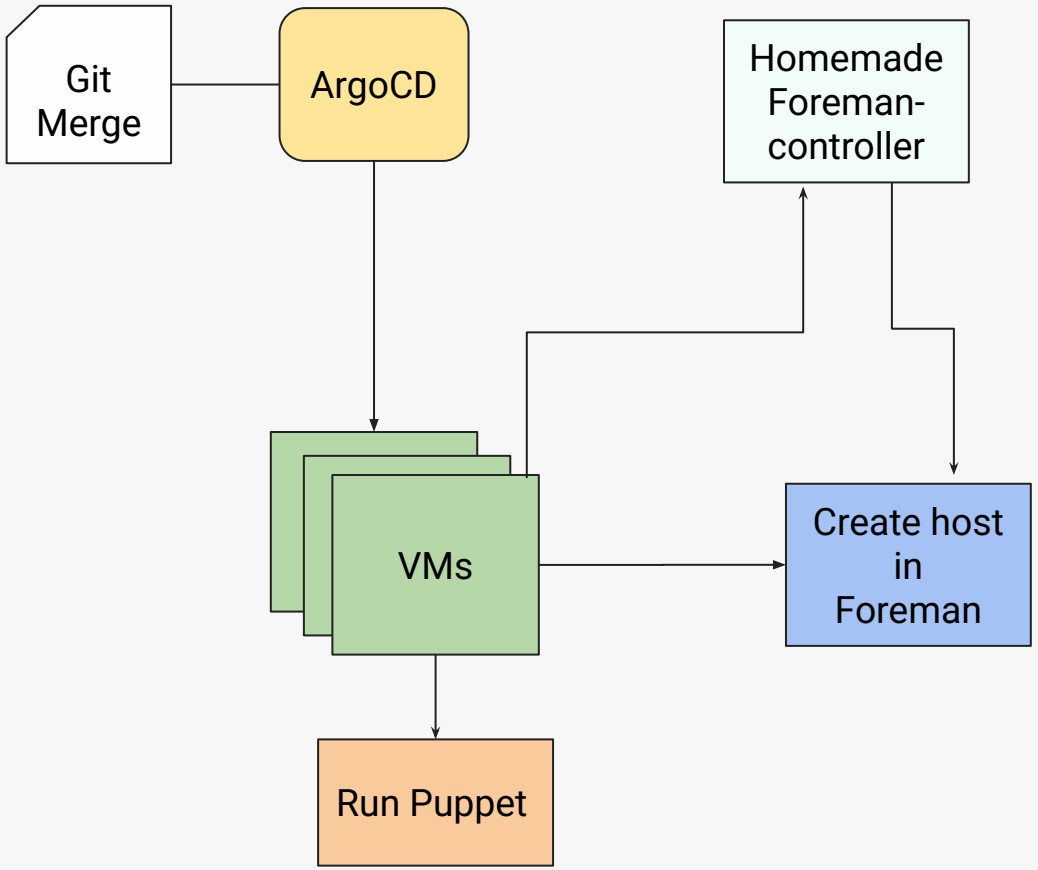

Operations & Automation

GitOps automation (ArgoCD)

Ansible (AWX)

Katello / Foreman

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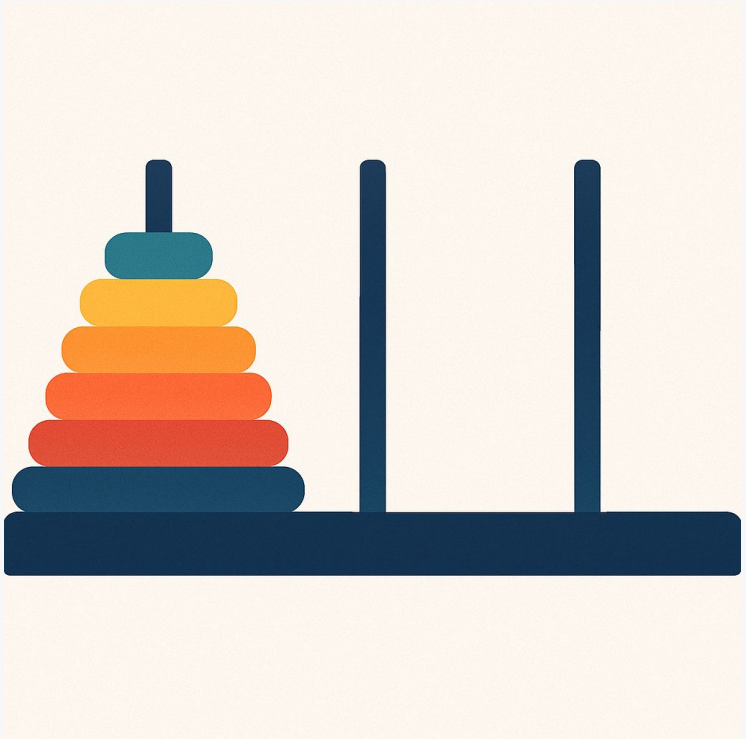
Results

- Aprox 2700 of 5000 virtual machines migrated
  - All test and Infra Cluster are migrated
  - Currently migrating production
  - Doing it in smaller increments
- No major incidents
- Few bugs or issues encountered
- Developers not affected, no big rewrite needed



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Lessons Learned

Always plan for a longer migration

If possible, time it with a hardware refresh

We should have rebuilt the VM provisioning tooling

Involve all partners

- Shout out to Dell that could help us on a short notice

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Takeaways

This is a partnership for the long term - Involve and work closely with vendors

People centered Change Management - Involve your employees and train them

Be specific about your requirements - Remove any misunderstanding of deliveries early

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Takeaways #2

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Thank You

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