What is a private cloud?

The cloud definition

➜ On-demand self-service

➜ Broad network access

➜ Resource pooling

➜ Rapid elasticity

➜ Measured service

As defined by the US National Institute of Standards and Technology

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Why build a private cloud?

Primary drive factors

- Automation = Fewer administrative tasks
- Faster delivery time = More productivity
- A self service portal for X as a service
- On premise = More control
- A service catalog
- Better governance
- Better use of the infrastructure

Reducing administrative overhead

Total VM Cost

Administration

70%

Licenses 5%

Hardware
25%

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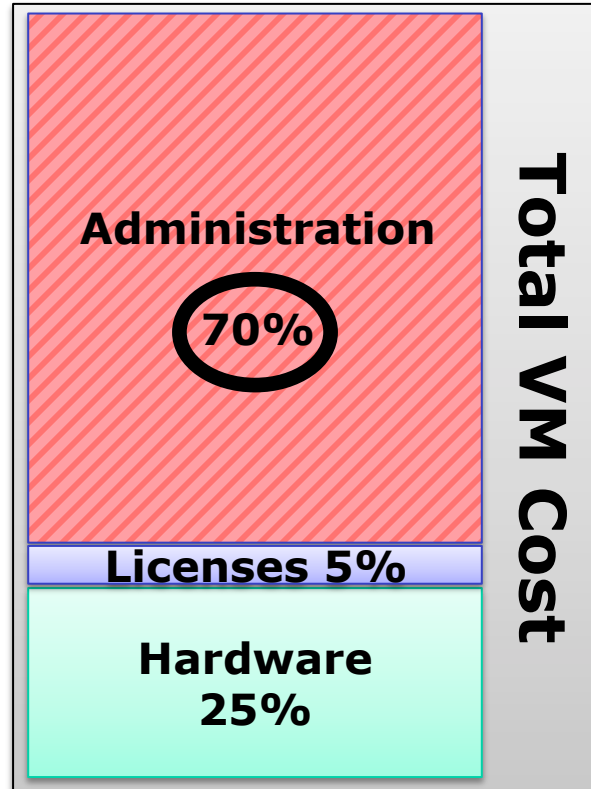
Designing the private cloud

Requirements for a private cloud

- A self-service portal

- Monitoring tools

- Automation tools

- Cost efficient, scalable, reliable virtualization infrastructure

A self-service portal

- ~~vCloud Director~~
  - Don't use, use vCloud Automation Center says VMware since 2013.
- vCloud Automation Center
  - Can connect to public clouds
  - Included with our vCloud licenses
- OpenStack requires more work to implement

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Monitoring tools

- VMware Operations Manager
  - Included in the vCloud licenses.
  - Oversized and undersized VM:s reports
  - Capacity planning
  - Monitors health status
  - Can automate deployment based on load

- Ms System Center Operations Manager
  - Using Veeam Management pack

Automation tools

- VMware vCenter Orchestrator
  - For advanced deployments

- Microsoft Orchestrator
  - To manage roles, group memberships in Active Directory etc.

- Bash/Perl/Python scripts
  - for Linux deployment and auto-configuration

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Cost efficient, scalable, reliable hypervisor

- VMware vSphere hypervisor

  - Perpetual license model

  - Scale up host model to keep licence costs down

  - High availability and DRS

  - Stretched cluster spanning over two sites

vmware®

Cost efficient, scalable, reliable network

- Cisco Nexus 1000V
  - Software defined networking
  - Fits into our existing Cisco network infrastructure

Cost efficient, scalable, reliable storage

- DataCore SANsymphony-V
  - Software defined storage
  - X86 hardware
  - Multi-tier storage with auto tiering
  - Synchronous replication of data between sites
  - Converged network infrastructure
  - Perpetual license model and/or subscription

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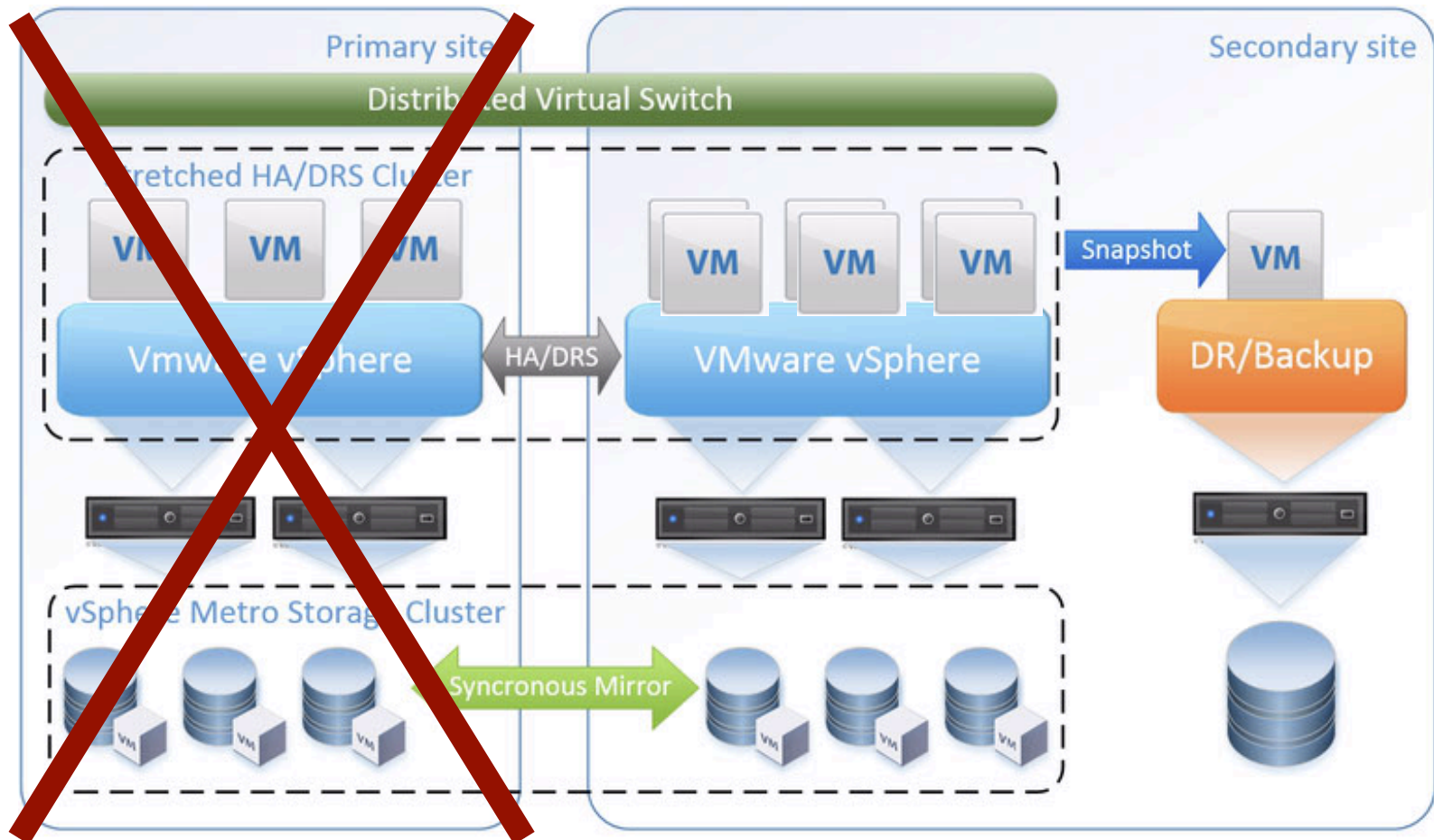
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Cost efficient, scalable, reliable disaster recovery/backup

- Veeam Backup & Replication
  - Provide Basic backup for all VM:s
  - Used as disaster recover in case of SAN failure.

A software defined datacenter

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Automating the deployment

- Identify VM types define services

- Document the tasks needed to create a VM

- Write scripts to automate sub-tasks

- Run the scripts manually for a while

- Automate the process and make it available for order in the self-service portal

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Where do we go from here?

- Our self-service portal is in final testing stages.

- Hybrid cloud
- Community cloud
- Platform as a service, PaaS
- Desktop as a service, DaaS
- X as a service

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