



OSL Storage Cluster – Product Overview

Storage Networking & Virtualization • Volume Management
Clustering • High Availability • Disaster Protection

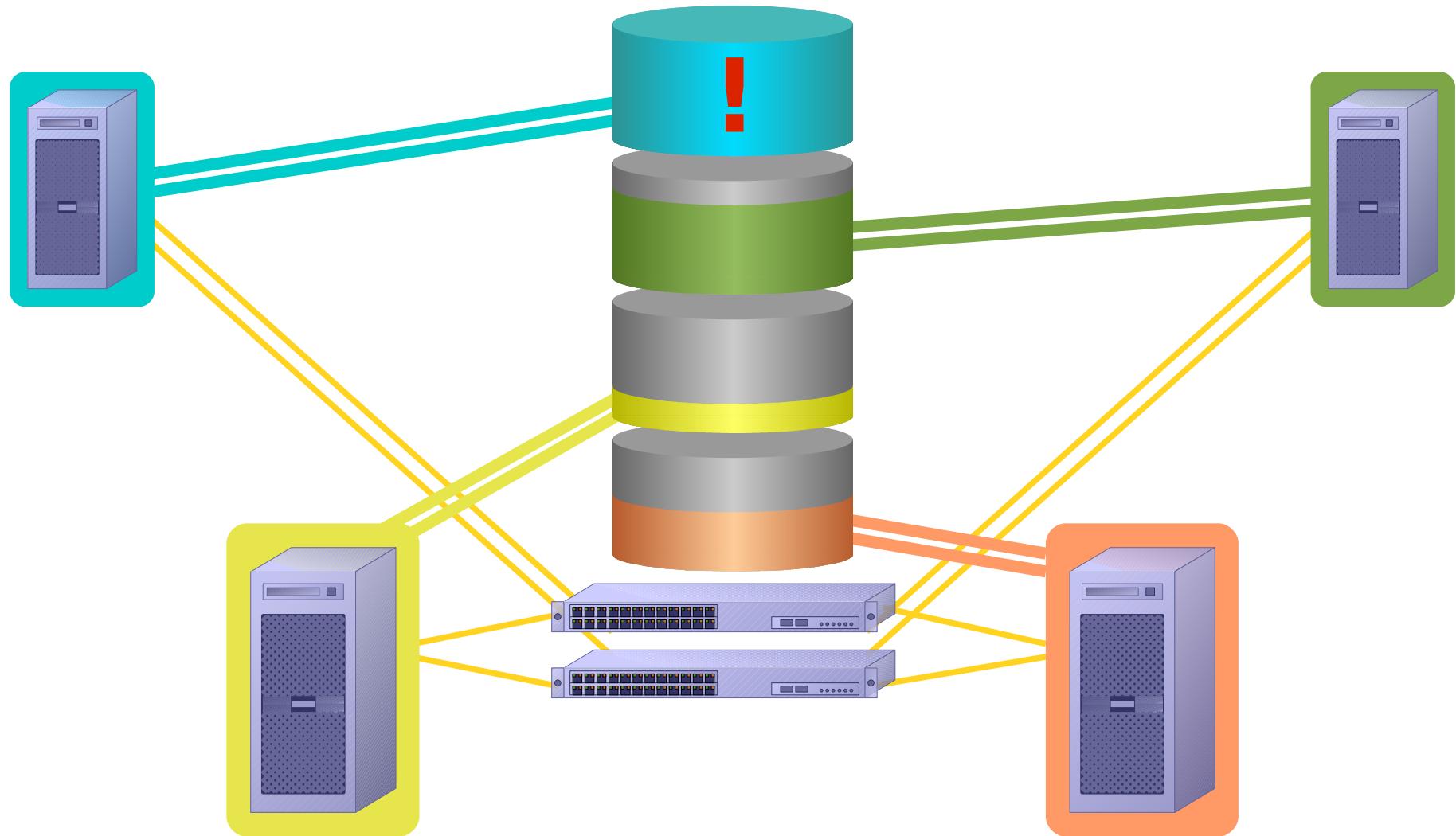
OSL Data Centre Technology
Spring Tour 2011 • Luxembourg, 08/06/2011

Bert Miemietz

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Storage Virtualisation

Host based storage virtualisation and clustering: The mainstream standard

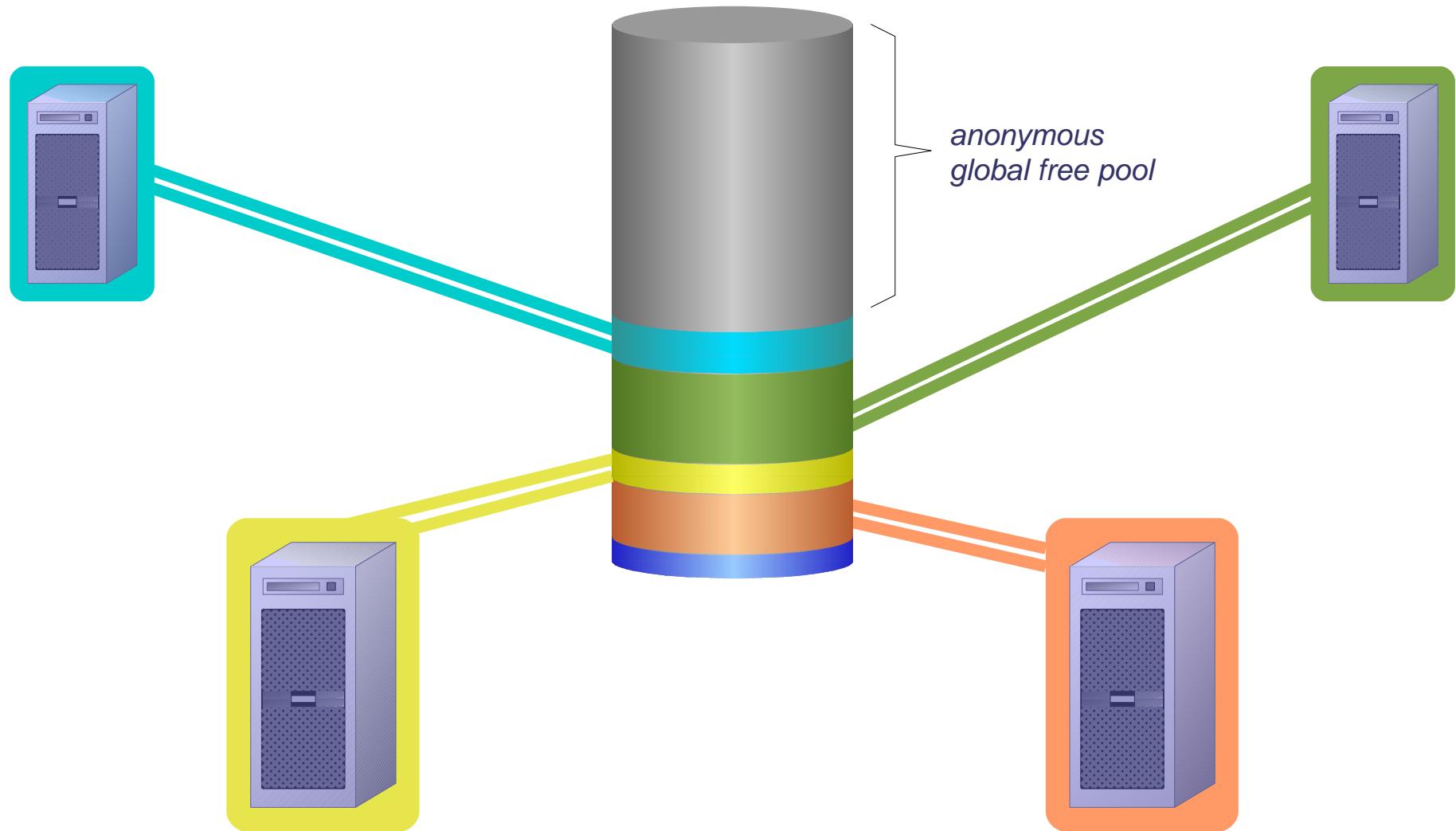


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Storage Virtualisation

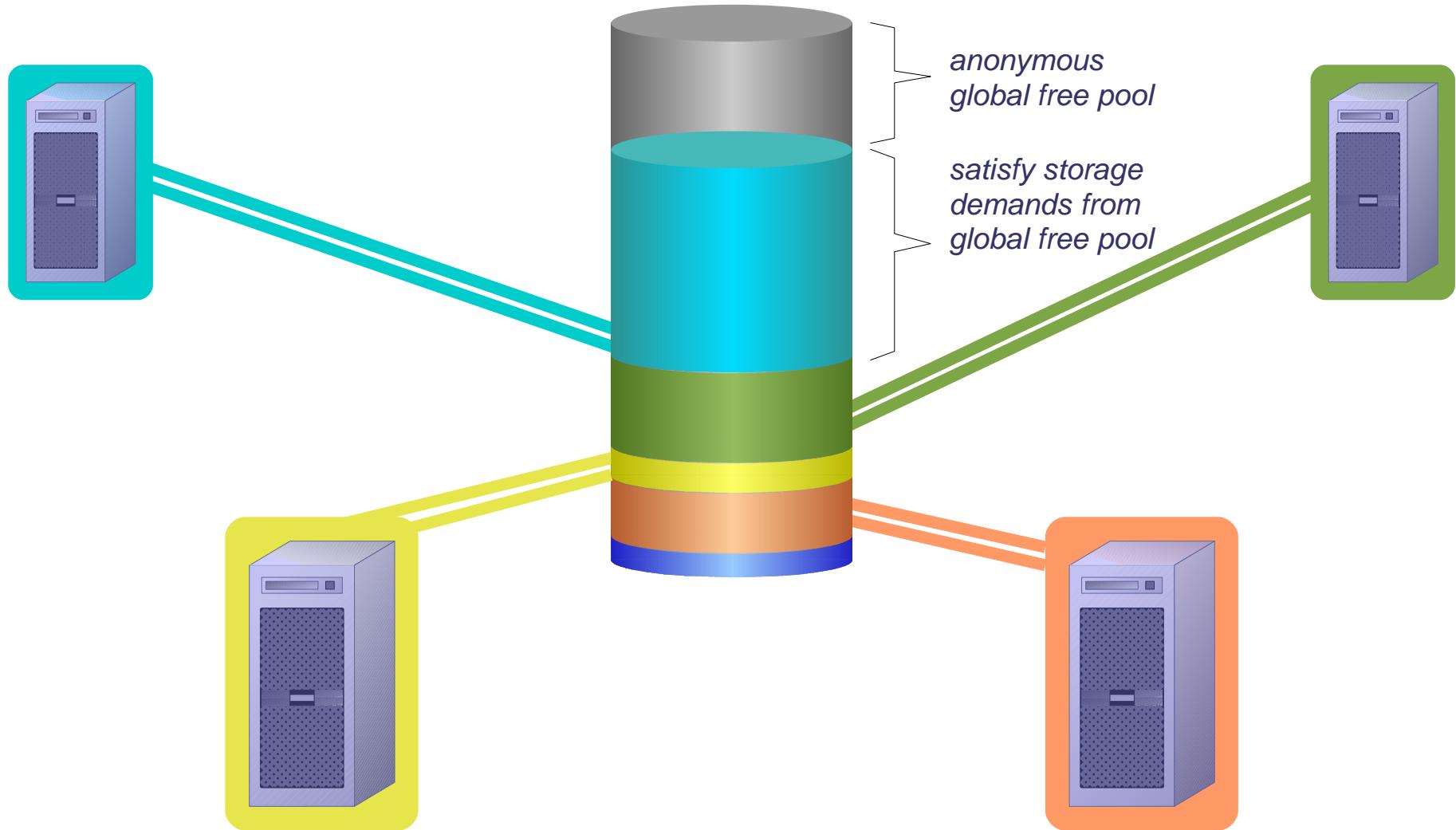
Host based storage virtualisation and clustering with OSL Storage Cluster



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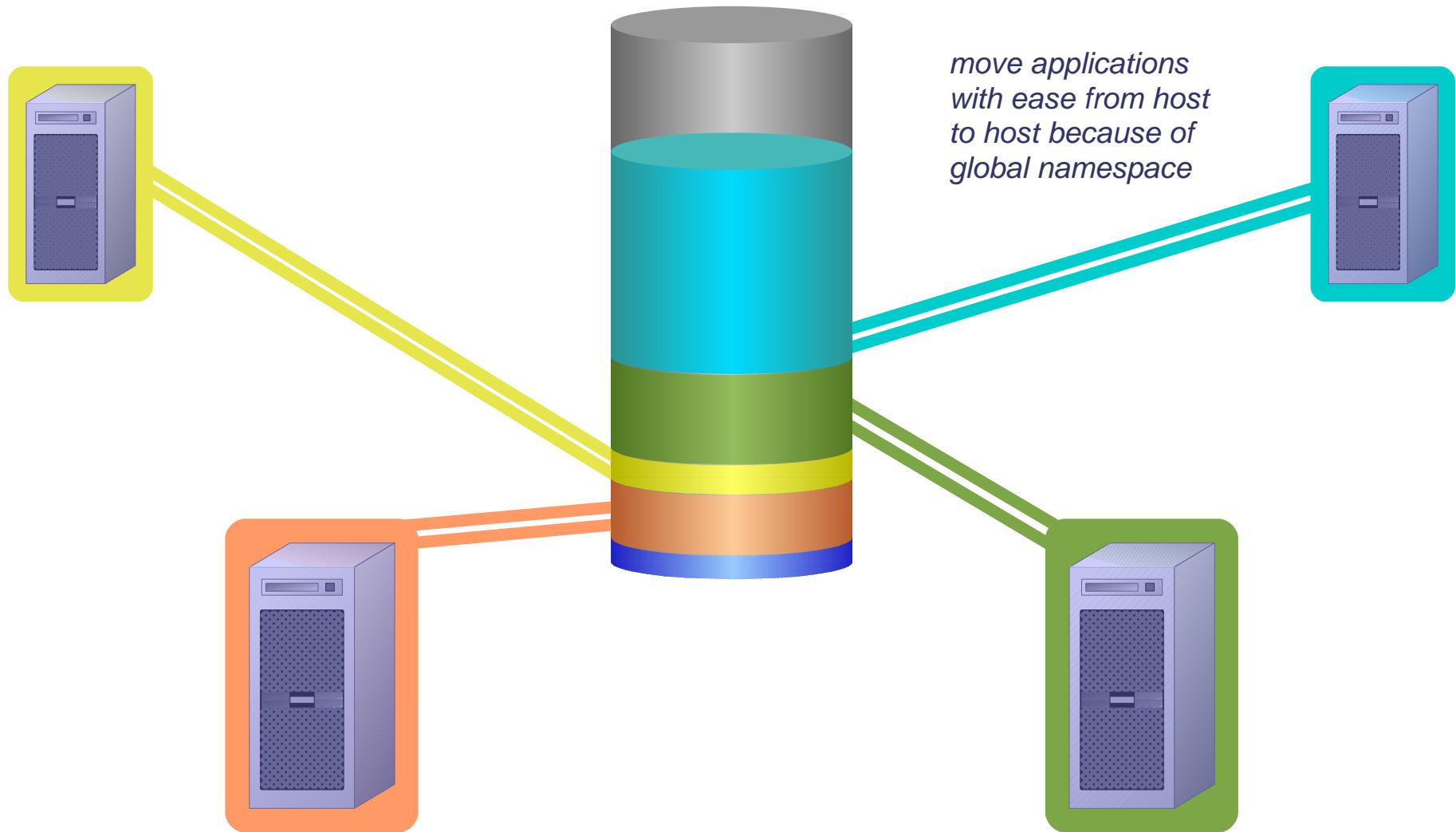


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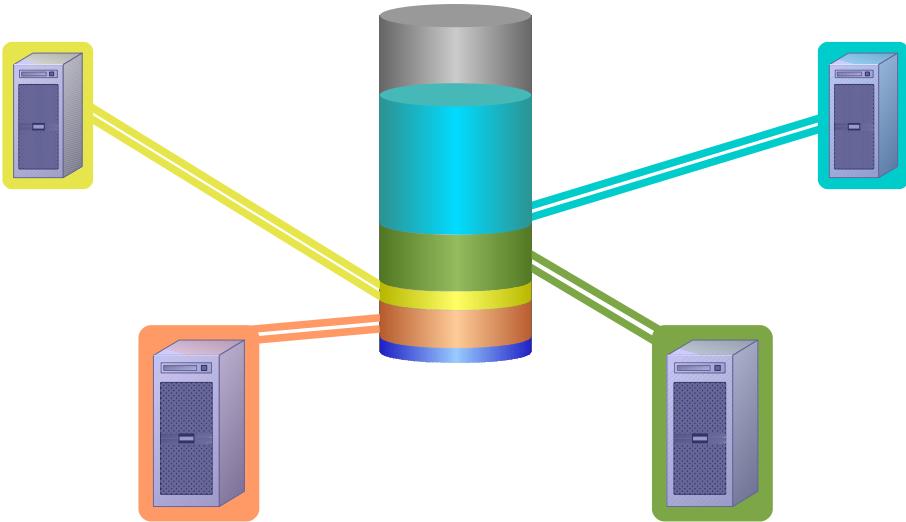
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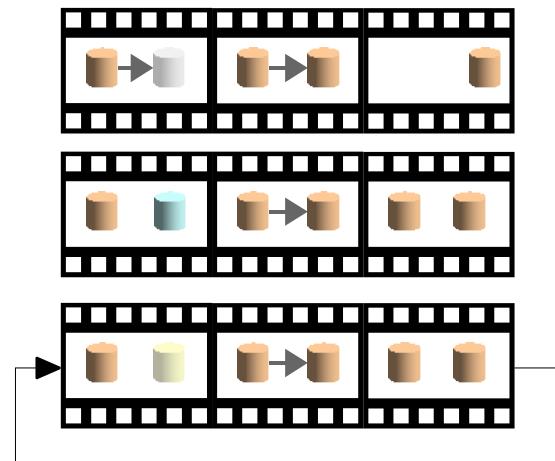
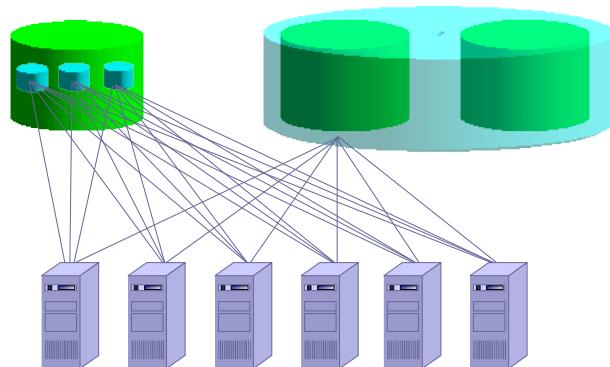
Host based storage virtualisation and clustering with OSL Storage Cluster



- ***global pool / global namespace***
- ***no waste capacities***
- ***cluster capable from the very beginning***
- ***load balancing between servers***
- ***no bottlenecks in the SAN***
- ***avoids IO peaks / disk-overload***
- ***easy administration***
- ***easy orientation in the SAN***

Storage Virtualisation

Overview of Key features



no special hardware required!

*Physical Volumes + Application Volumes
linear or integrated (simple, concat, stripe)
hardware abstraction and IO multipathing
system aided storage allocation
online-Konfig./Dekonfig./Vergrößerung*

*global devices / global namespace
fully automated access management*

*global pools (across hosts)
global inventory
no waste capacities*

*move and reorganise data online
minimum impact on running application I/O*

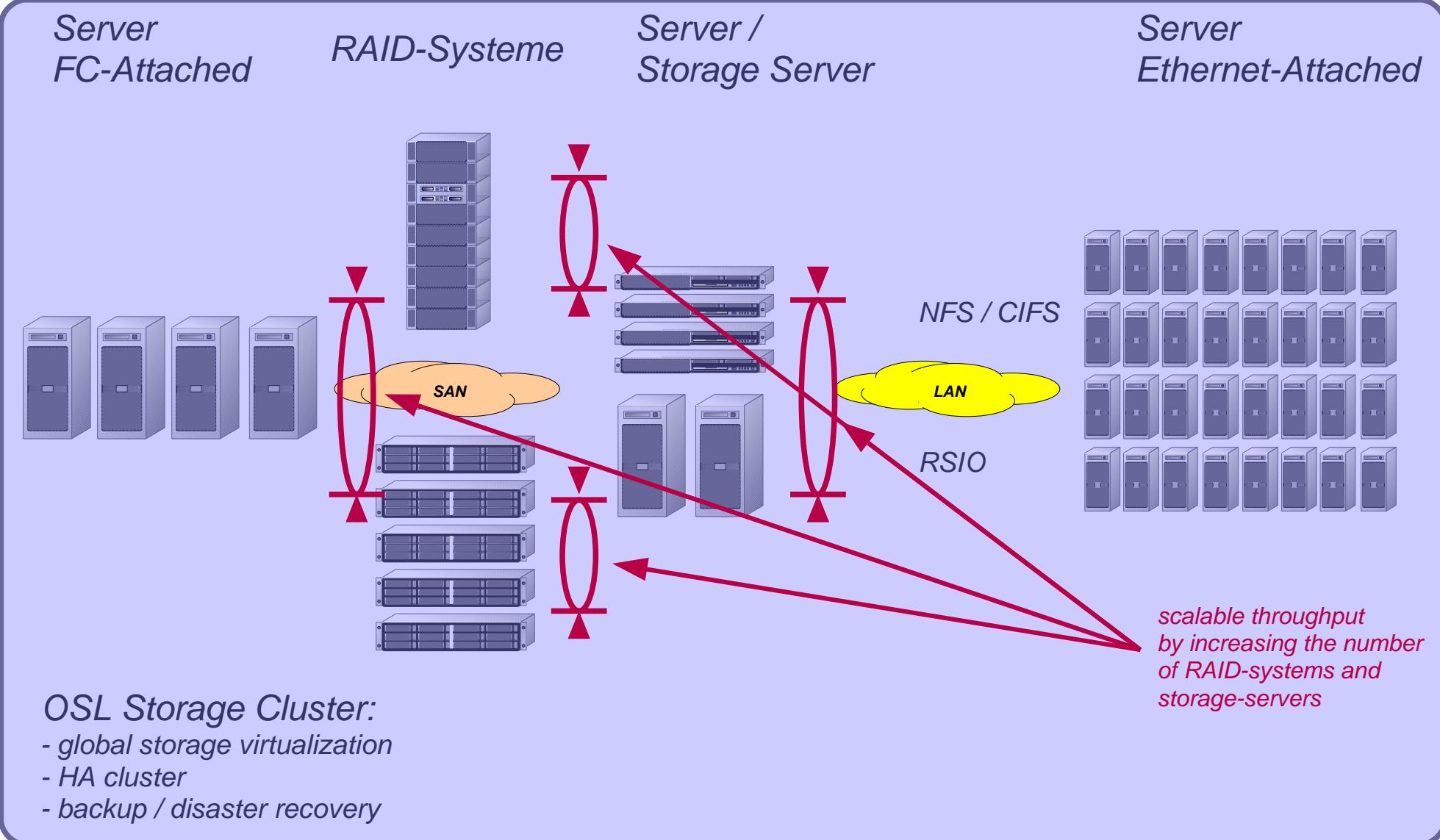
*online data copies to arbitrary targets
atomic operations on multiple volumes*

*permanent master-image relationships
multiple images + OSL universes
incremental re-synchronisation
protection against failures of the master*

*XVC (Extended Volume Controls)
e.g. pause, stop, trigger, actions
bandwidth control
detailed statistics*

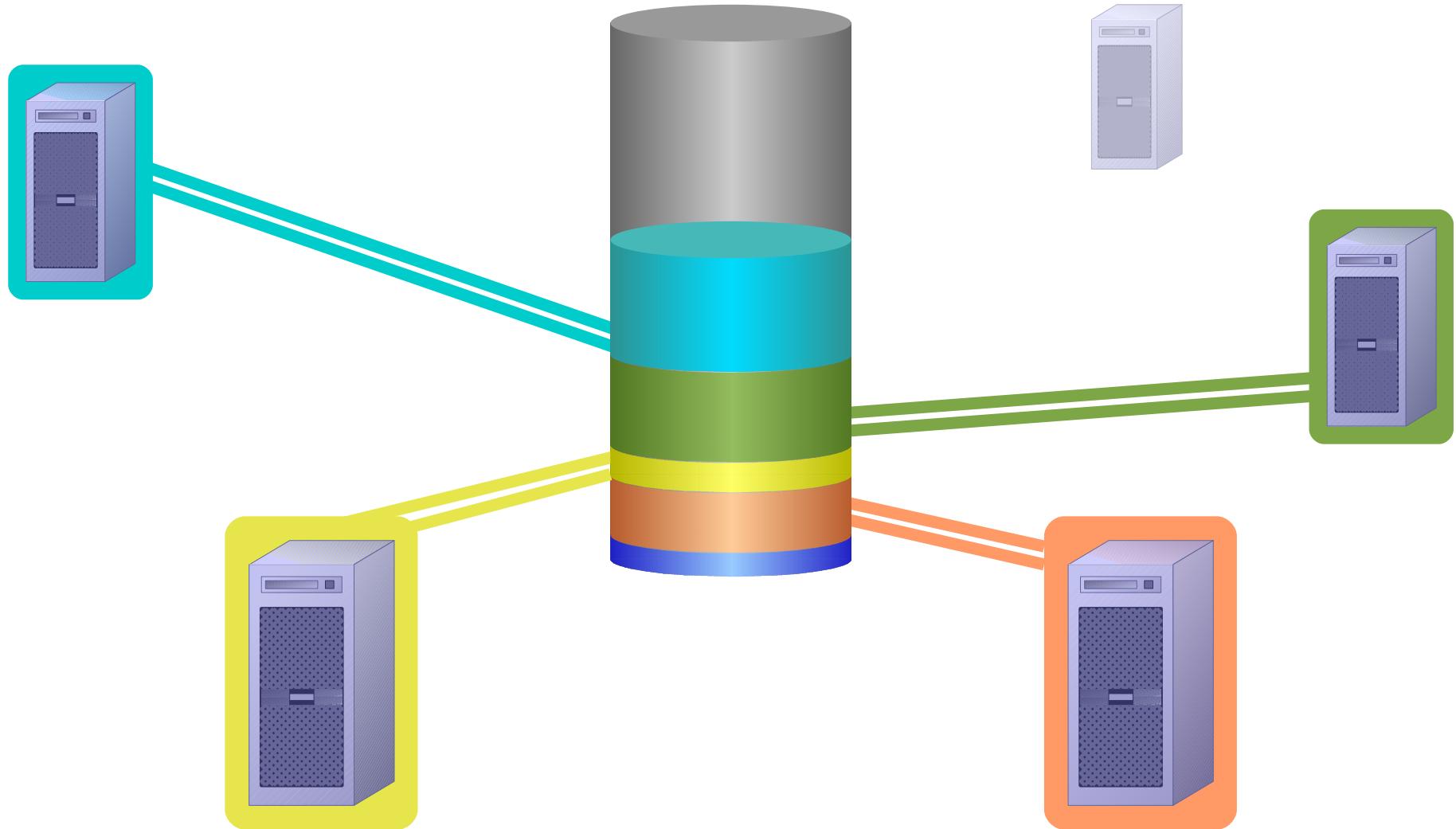
Storage Virtualisation and Clustering as One

Get More by the Use of Standard Components



HA / Virtualised Runtime Environments

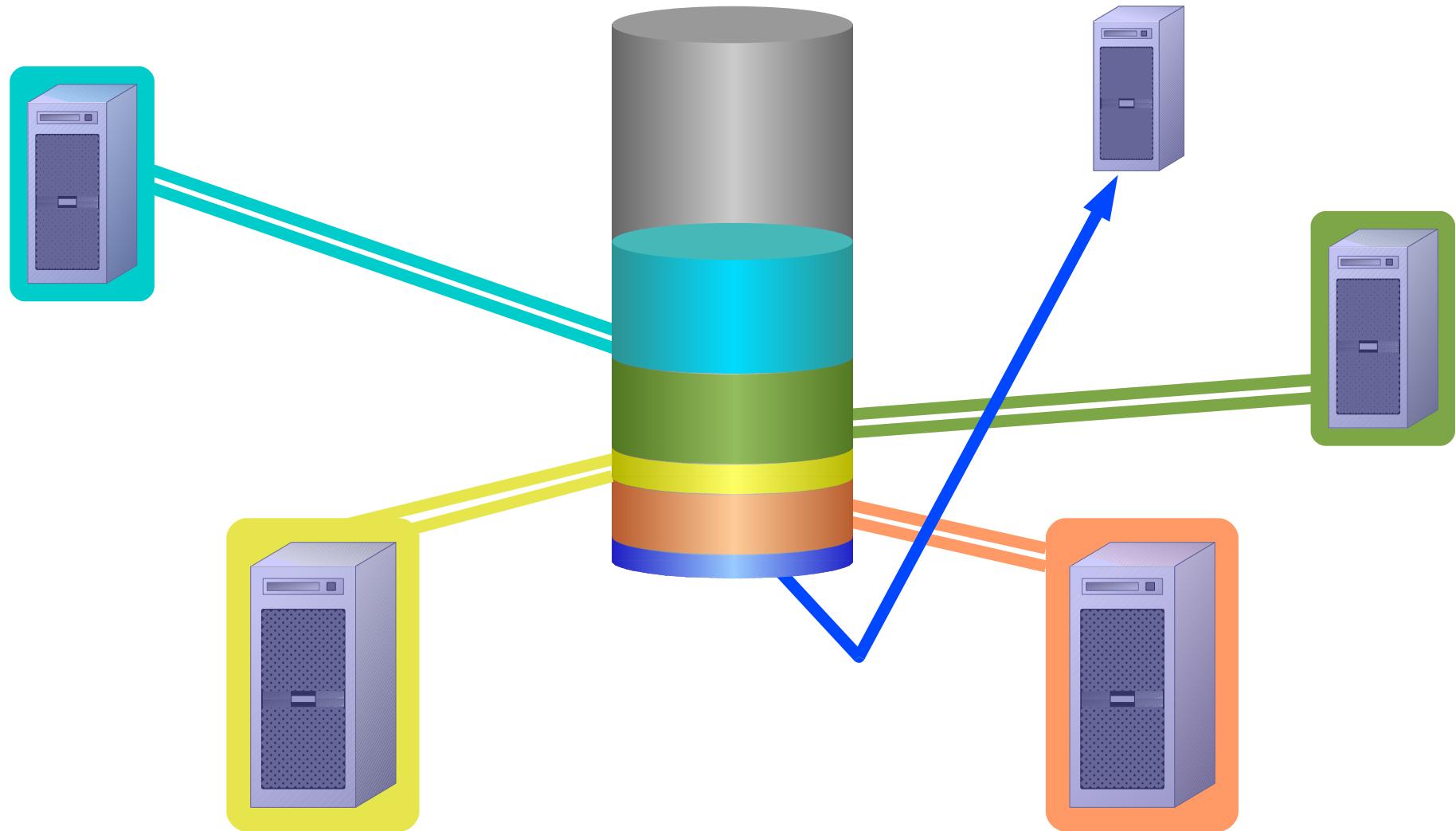
The Basic Idea



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HA / Virtualised Runtime Environments

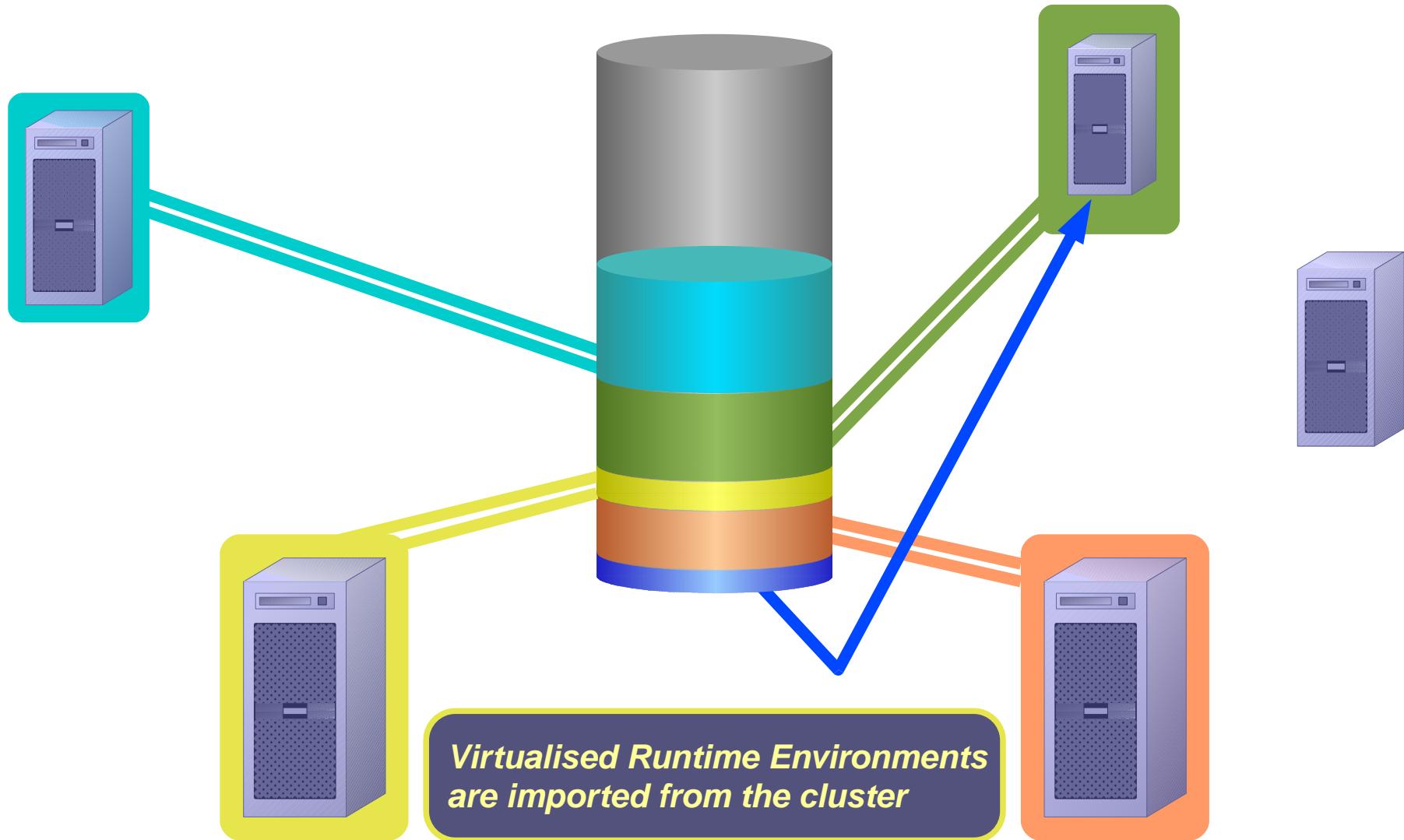
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Virtualised Runtime Environments

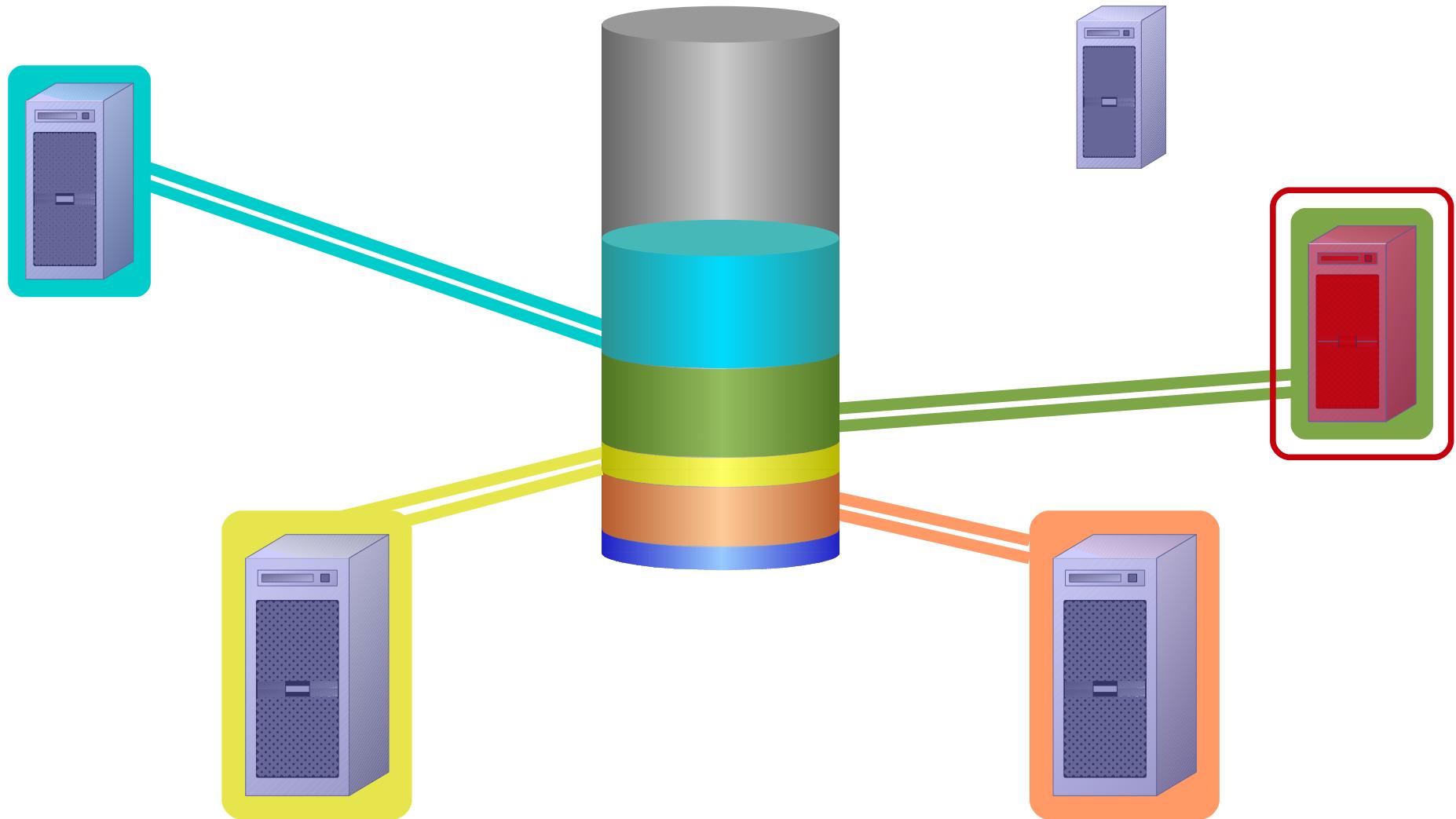
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High Availability and Application Management

can be achieved without an effort by use of the OSL SC software features

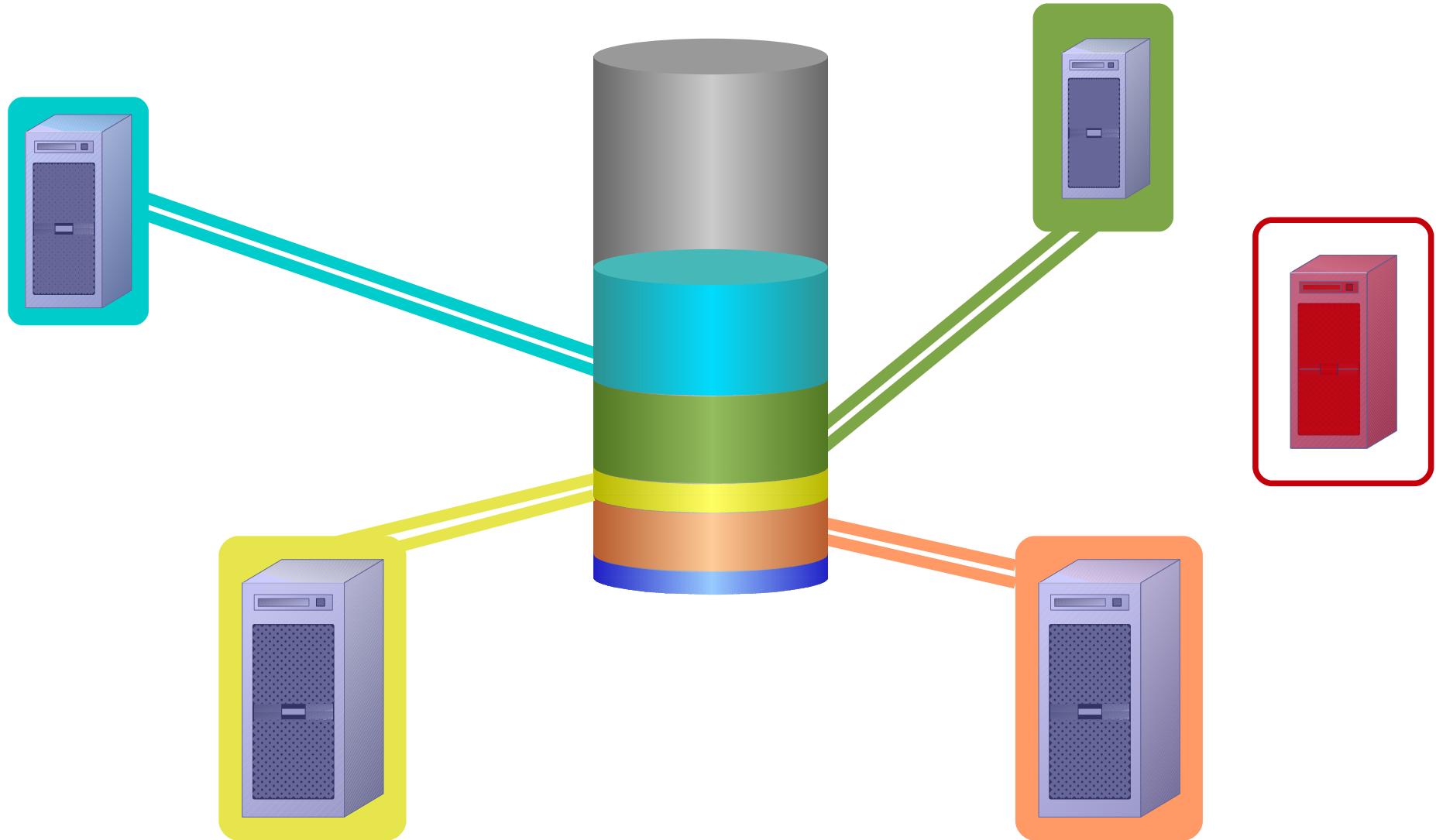


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Summary – OSL SC Product Architecture

Feature-to-Product Overview



application
awareness

bandwidth
control

user
management

Application Control Option

clusterweite control of applications

virtualised (hardware abstract) runtime environments

high availability

resource based self-management

Application Resource Description

application
mirroring

application
cloning

B2D / B2T/ DR
tools

cluster aware storage virtualisation

global storage pools (across hosts)

global disk inventory

global devices / global namespace

cluster volume manager with automated allocation

disk access management

I/O-multipathing

Extended Data Management

integration of RAID-generated data copies / snapshots

host based mirroring

online data migration

data cloning

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