SUSE in der neuen Welt des Rechenzentrums

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Der Beginn der Industrialisierung

Eine neue Produktionsmethode

Auswirkungen der Fließbandarbeit:

- **Standardisierung**
- **Qualitätssicherung**
- **Zuverlässig**
- **Effektiv**
- **Günstig**

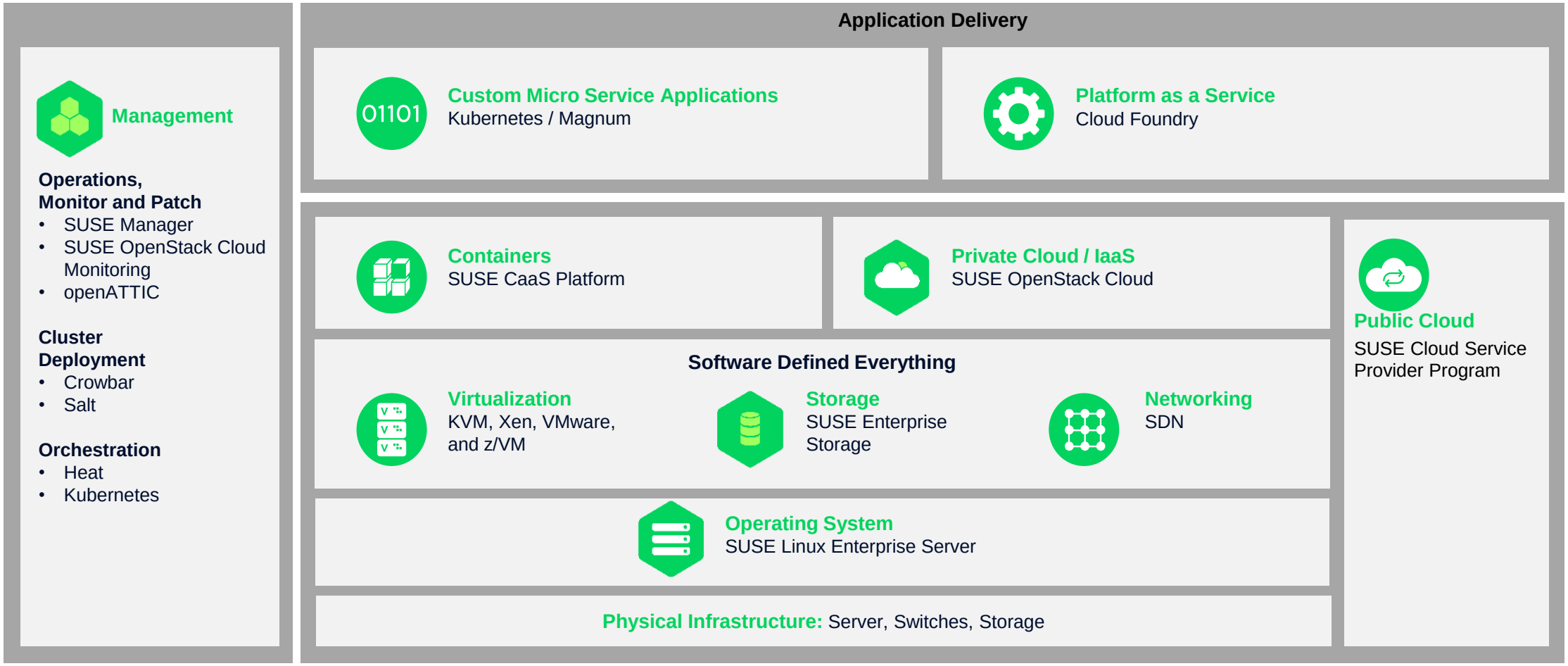
Gilt das für heute noch immer?

Vision /Strategie:

- Standardisierung
- Qualitätssicherung
- Zuverlässig
- Effektiv
- Günstig
- Agil / Dynamisch
- Flexibel

SUSE Software-defined Infrastructure

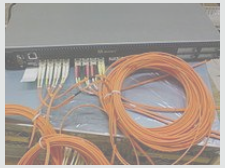
An open, flexible infrastructure approach



Trends im Storage Markt

Die Storage Evolution…

SCSI

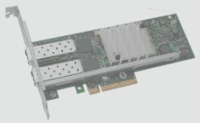


Fibre Channel

NFS
NETWORK FILE SYSTEM

NFS V3

CIFS



iSCSI

……

ceph

CEPH (stable)

1979	1994	1995	1996	2002	…	2012

Die Storage Evolution…

Dienste im Datacenter früher…

NFS
NETWORK FILE SYSTEM

CIFS

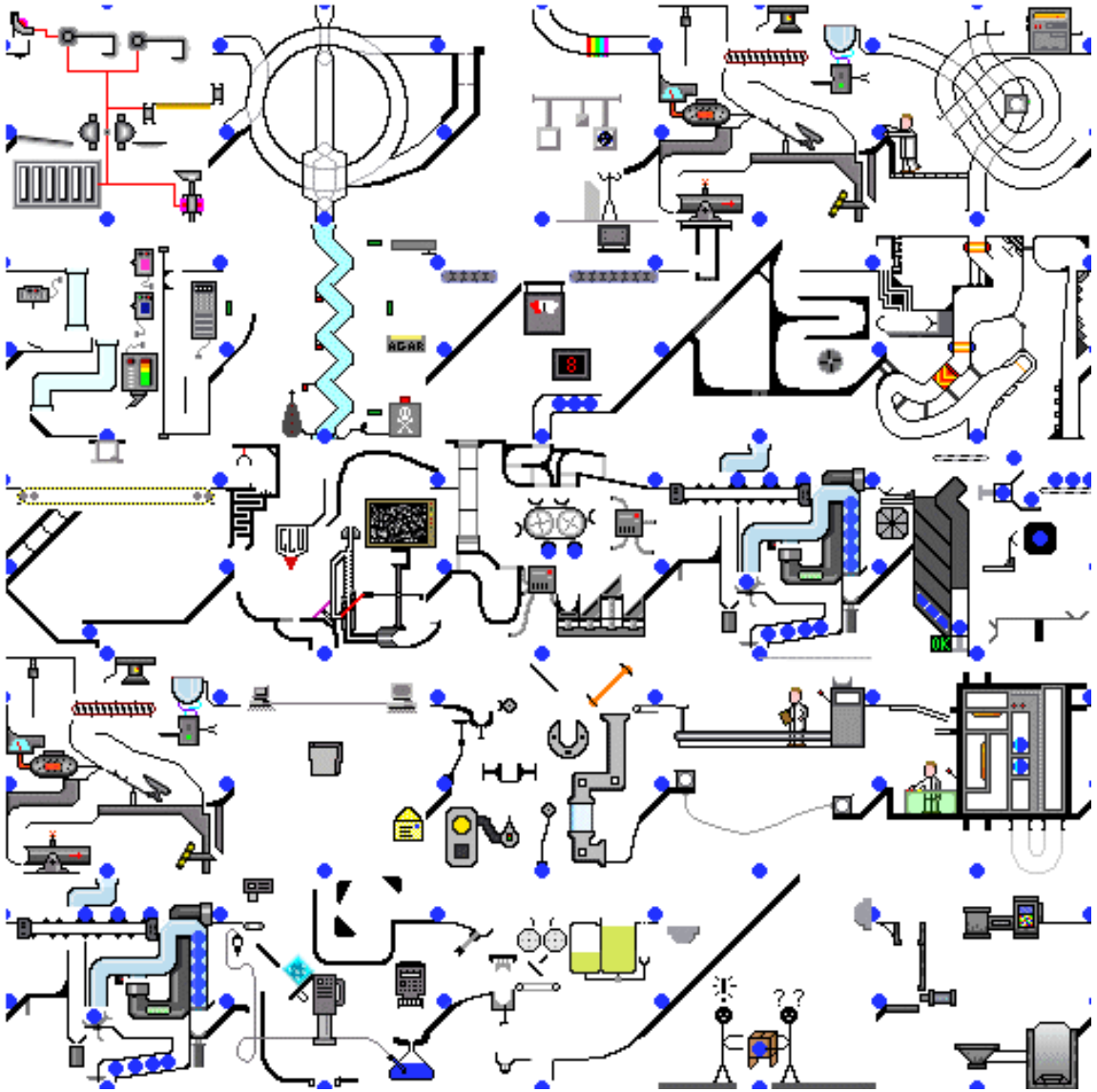
Microsoft Exchange

SAP®

SUSE

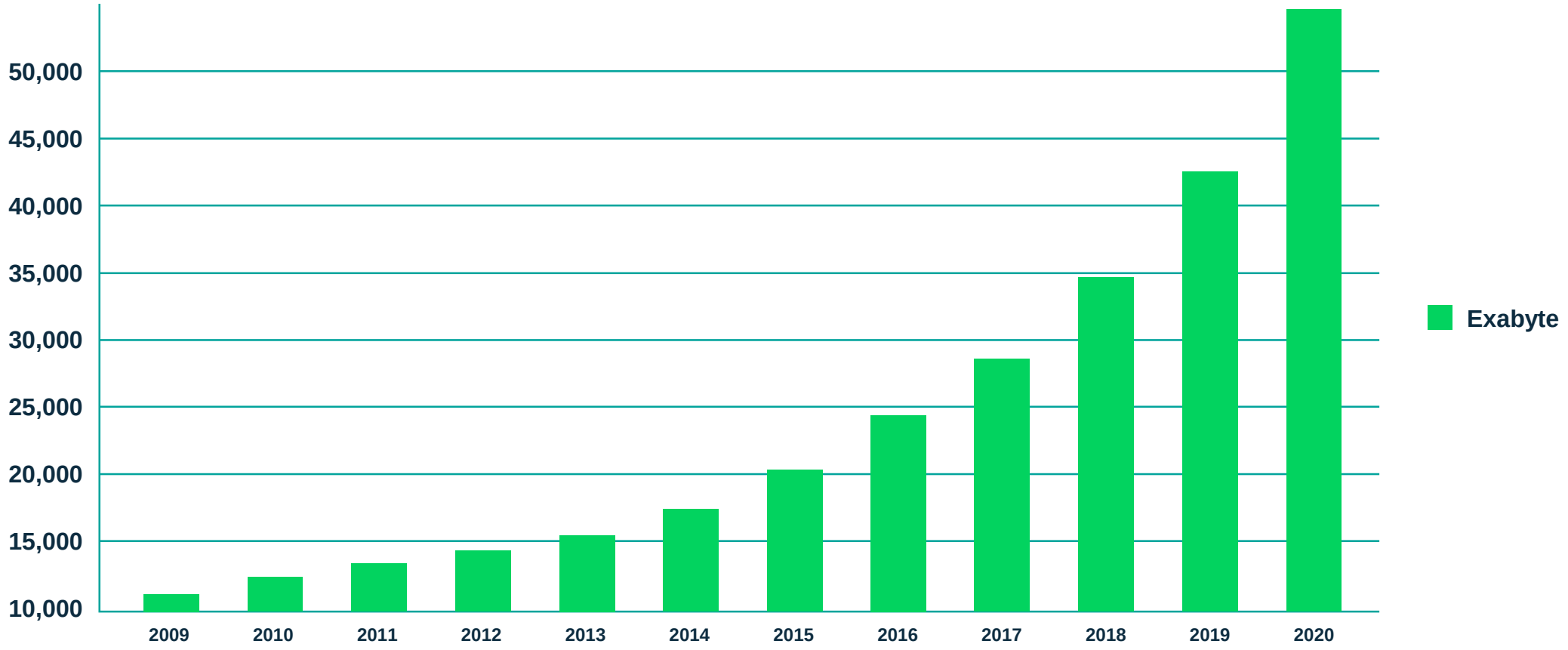
Die Storage Evolution…

Dienste im Datacenter heute…



SUSE

Und dazu das Datenwachstum…

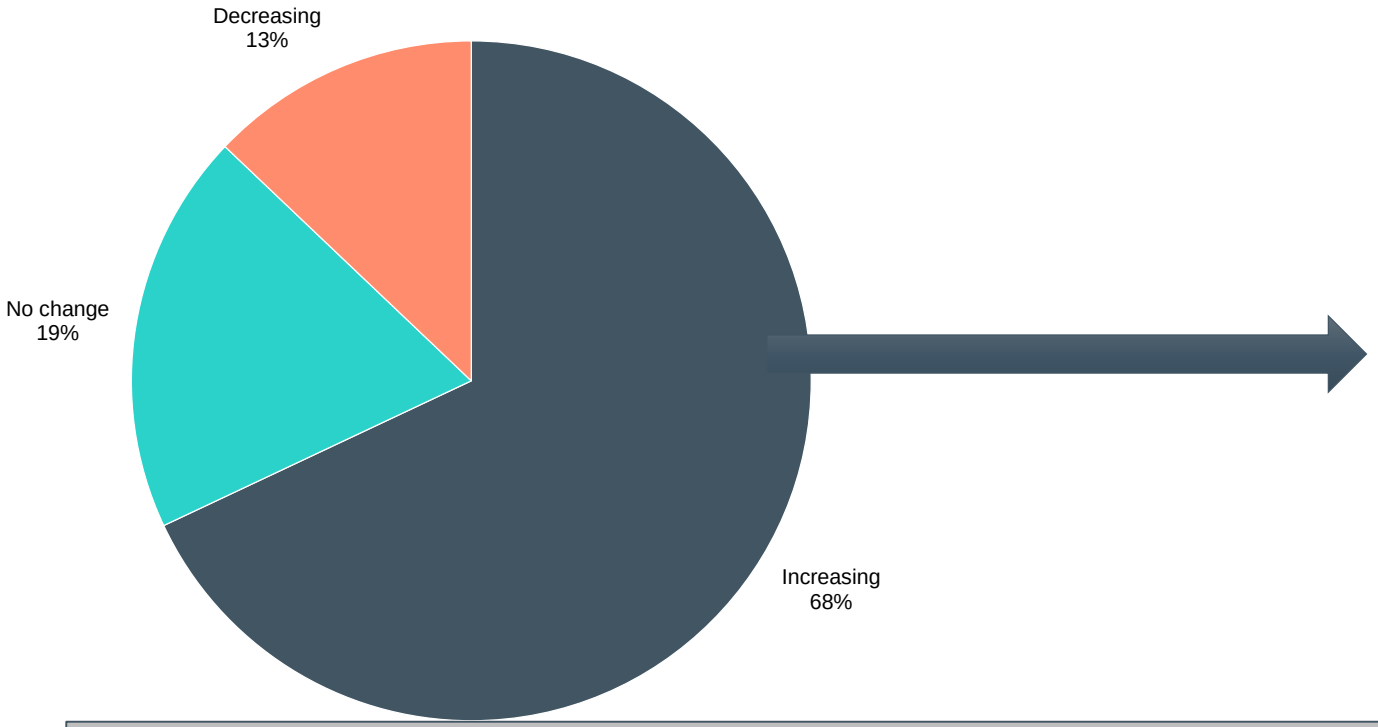


IDC Analyze the Future

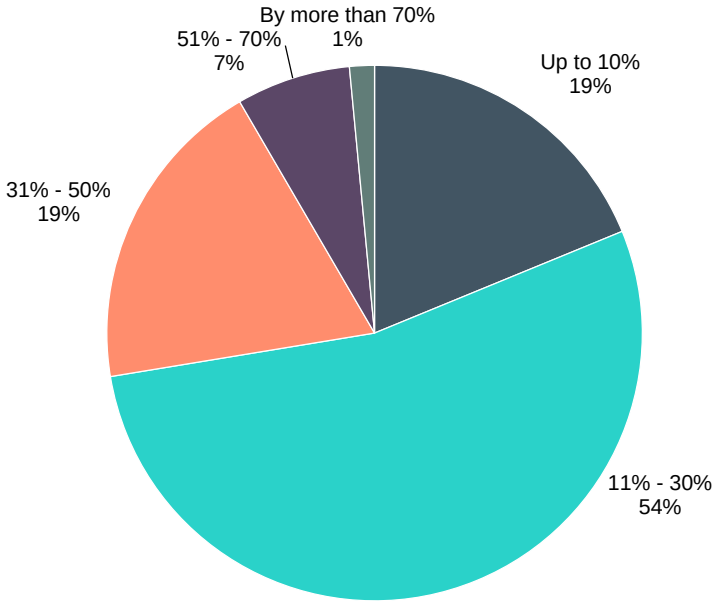
Quelle: IDC / http://www.tecchannel.de/a/software-defined-storage-wird-zum-muss,2067830

SUSE Storage Umfrage 2016 - Datenwachstum

Datenwachstum - Ja/Nein



Wachstum in %



Das durchschnittliche Datenwachstum in DACH beträgt **27%** in 2017

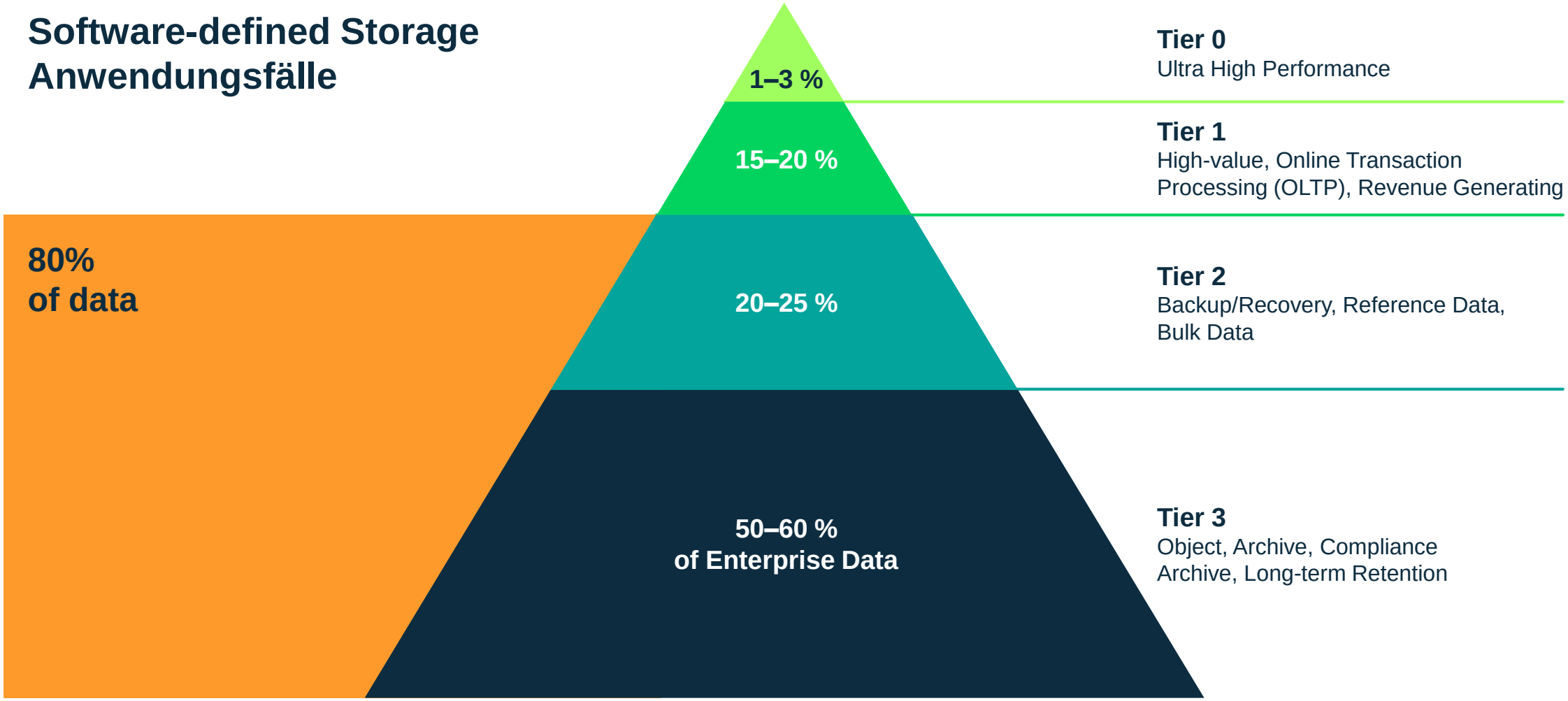
*1202 senior IT decision makers across 11 countries completed an online survey in July / August 2016

SUSE Storage Umfrage 2016 - Herausforderungen

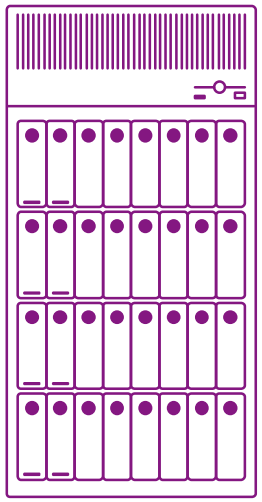
*1202 senior IT decision makers across 11 countries completed an online survey in July / August 2016

Aufteilung der Enterprise Daten

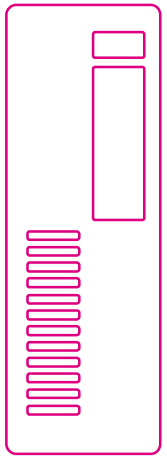
Software-defined Storage Anwendungsfälle



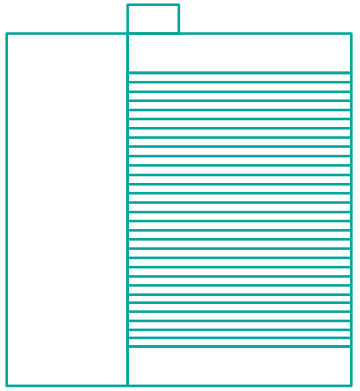
Können traditionelle Systeme die Antwort sein?



Keine nahtlose Skalierung – daher nicht zukunftssicher



Zu teuer



Nicht Cloud fähig

SUSE Enterprise Storage

Was ist SUSE Enterprise Storage?

Eine **hochskalierbare**, **softwarebasierende** Storagelösung, die Unternehmen den Aufbau einer **kosteneffektiven** Speicherplattform, basierend auf **Standard Serverhardware** ermöglicht und zugleich **alle Enterprise Funktionen** unterstützt, die Kunden von einer derartigen Lösung erwarten.

SUSE Enterprise Storage - Vorteile

– Multiprotokoll:

Objekt: S3/SWIFT **Block: Linux/MSFT/Vmware** **File: CephFS**

– Kosteneffizient:

Je grösser desto günstiger

– Hochskalierbar und flexibel:

Unendlich skalierbar bei linearen Kosten

– Selbstverwaltend:

Mehr Speicher bei gleicher Anzahl der Administratoren

– Hochverfügbar:

Synchrone Spiegel, ansychrone Spiegel, Georedundanz

– Heterogene Betriebssysteme:

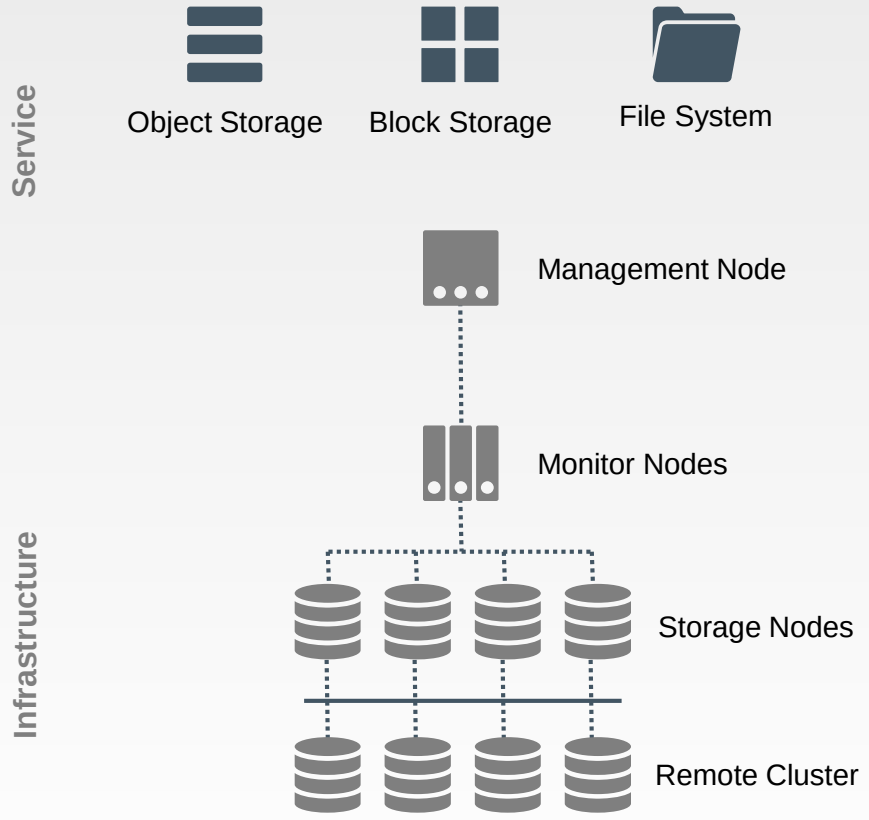
Heterogener OS-Support

– Sicher:

Datensicherheit gewährleistet

SUSE Enterprise Storage 4

SUSE Enterprise Storage 4



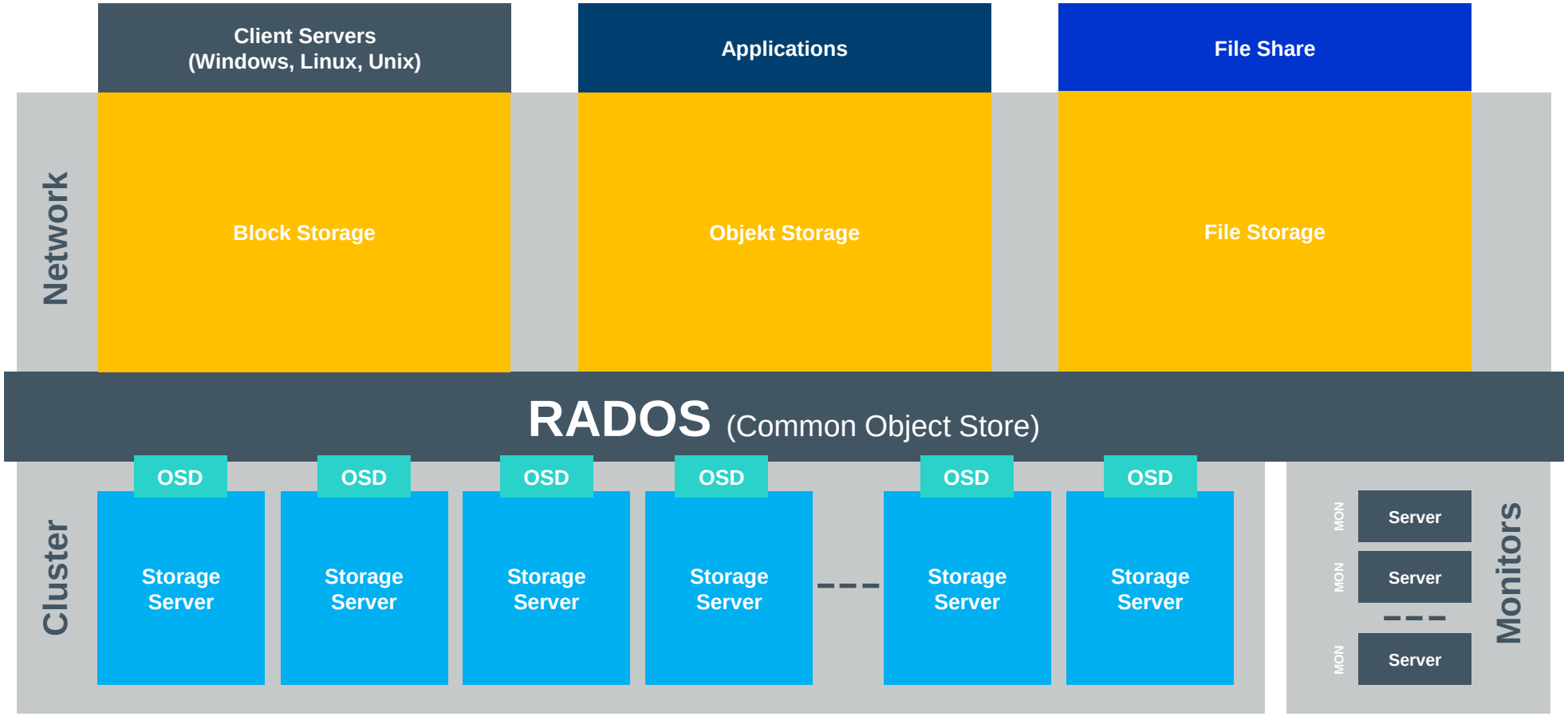
Features Legend:

- Included
- Partial
- Coming

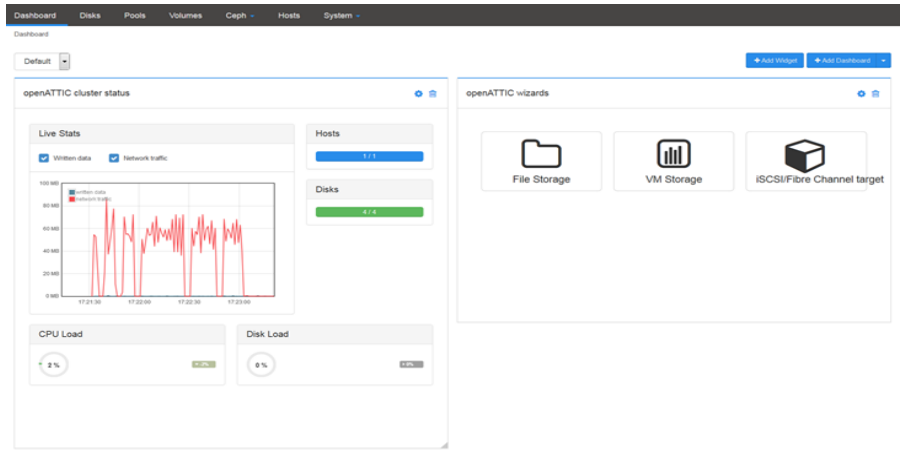
- Industry Leading Storage Functionality
- Simple Install, Management and Monitoring
- Heterogeneous OS Access

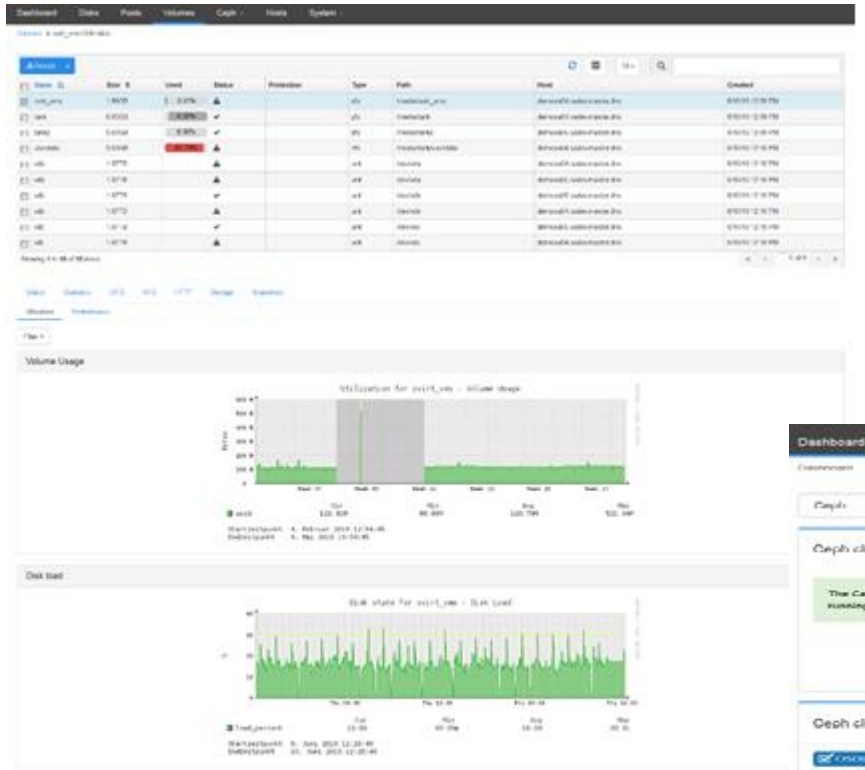
- Highly Redundant Data Cluster
- Unlimited Scalability
- Policy-based Data Placement
- Stretch Cluster Replication
- Security
- Data Encrypted in Flight
- Data Encrypted at Rest
- Data Compression
- Data Deduplication
- Async Remote Data Replication

SUSE Enterprise Storage - Architektur

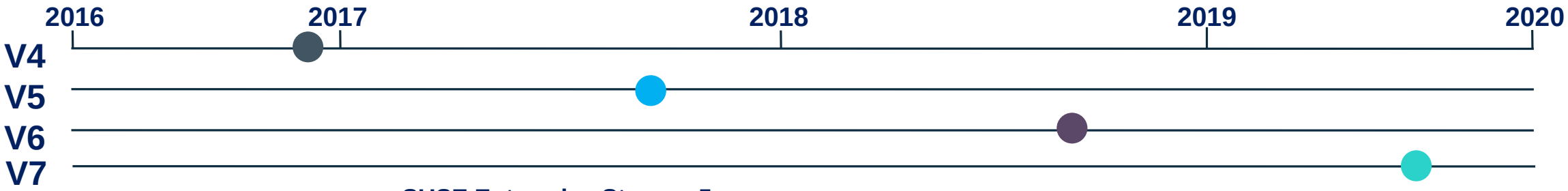


SUSE Enterprise Storage – Neues Management





SUSE Enterprise Storage



SUSE Enterprise Storage 4

Built On
- Ceph Jewel release
- SLES 12 SP2 (Server)

Manageability
- Initial openATTIC management
- Initial DeepSea Salt integration

Interoperability
- Arch64
- CephFS (production use cases)
- NFS Ganesha (Technology Preview)
- NFS access to S3 buckets (Technology Preview)

Availability
- Multisite object replication

SUSE Enterprise Storage 5

Built On
- Ceph Luminous release
- SLES 12 SP3 (Server)

Manageability
- openATTIC management phase 2
  - Grafana monitoring dashboard
  - Prometheus event alert - email
- DeepSea Salt integration phase 2
  - Online Filestore to BlueStore

Interoperability
- NFS Ganesha
- NFS access to S3 buckets
- CIFS Samba (Technology Preview)
- CephFS Multi MDS support

Availability
- Erasure coded block and file

Efficiency
- BlueStore back-end
- Data compression

SUSE Enterprise Storage 6

Built On
- Ceph “N” release
- CaaS Platform (Server)

Manageability
- openATTIC management phase 3
  - Event alert - SNMP traps
- DeepSea Salt integration phase 3
- Integration with SUSE Manager
- Automatic Metric Reporting phase 1
- IPv6

Interoperability
- Containerized SES
- CIFS/Samba
- Quality of Service (QoS)
- RDMA back-end (Technology Preview)

Availability
- Asynchronous iSCSI replication

SUSE Enterprise Storage 7

Built On
- Ceph “P” release
- CaaS Platform (Server)

Manageability
- openATTIC management phase 4
- DeepSea Salt integration phase 4
- Integration with Kubernetes
- Automatic Metric Reporting phase 2
- Last good configuration rollback

Interoperability
- RDMA back-end

Availability
- CephFS snapshots
- Asynchronous file replication

Information is forward looking and subject to change at any time.

SUSE

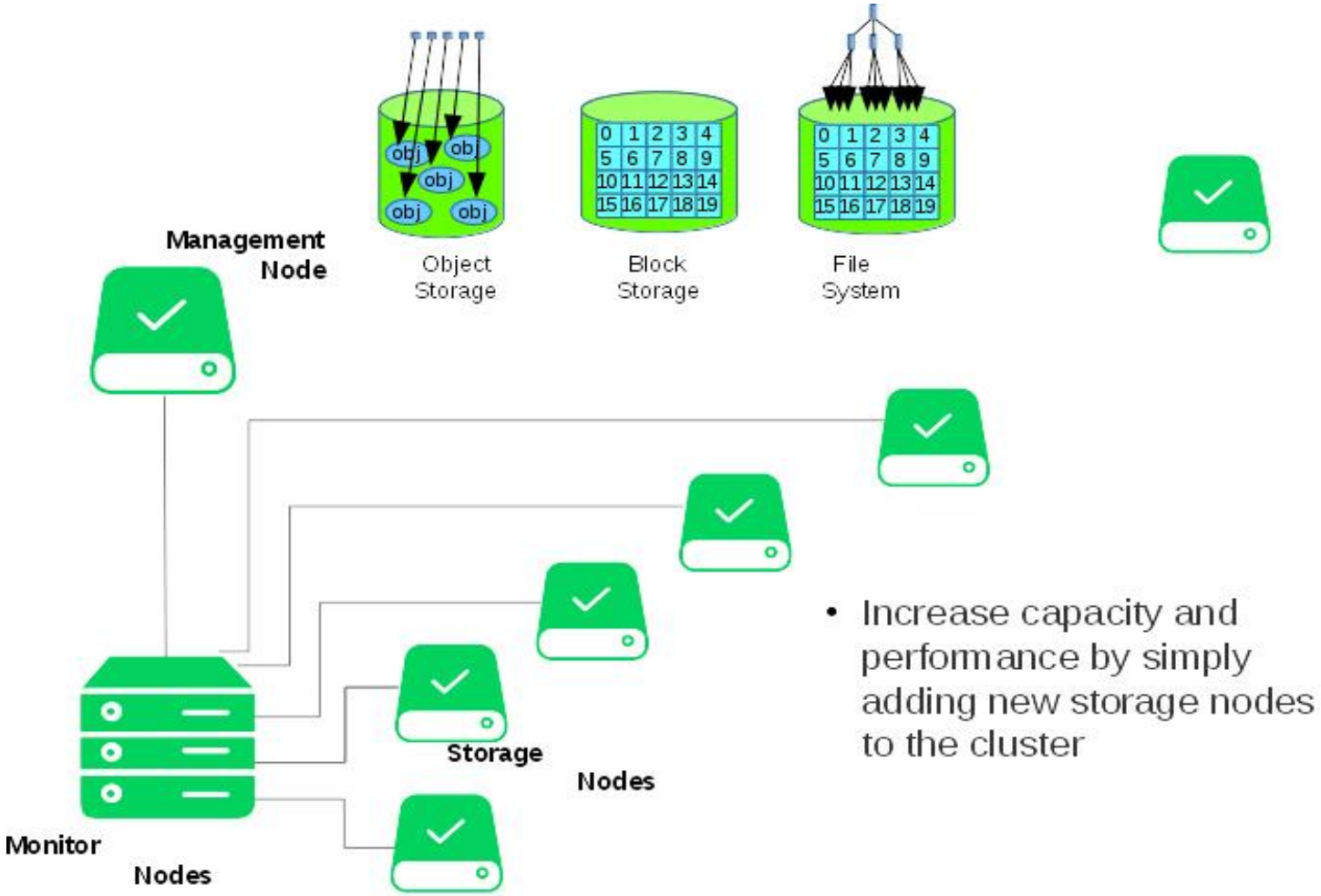
Warum Kunden Objekt Storage wollen

- Wachstum unstrukturierter Daten
- Skalierbarkeit
- Nie wieder Migrationen
- Big Data
- Filesystem-Support
- Effizienter als Tape Auslagerung bei günstigen Preisen
- Wird von Version zu Version immer schneller

Quelle: http://searchstorage.techtarget.com/tip/Nine-reasons-object-level-storage-adoption-has-increased

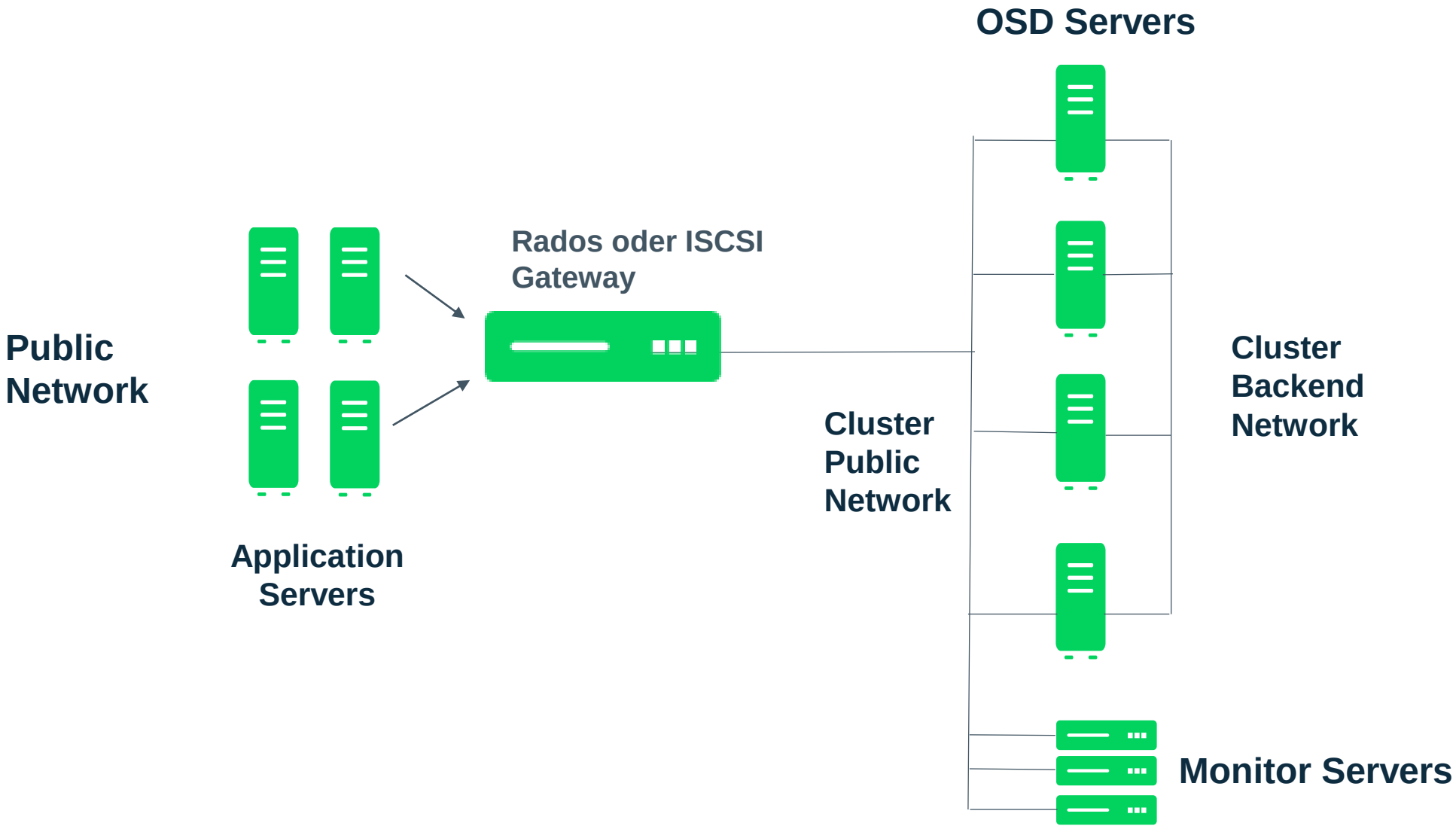
Konfiguration

Cluster Komponenten: MON, OSD, MDS ???

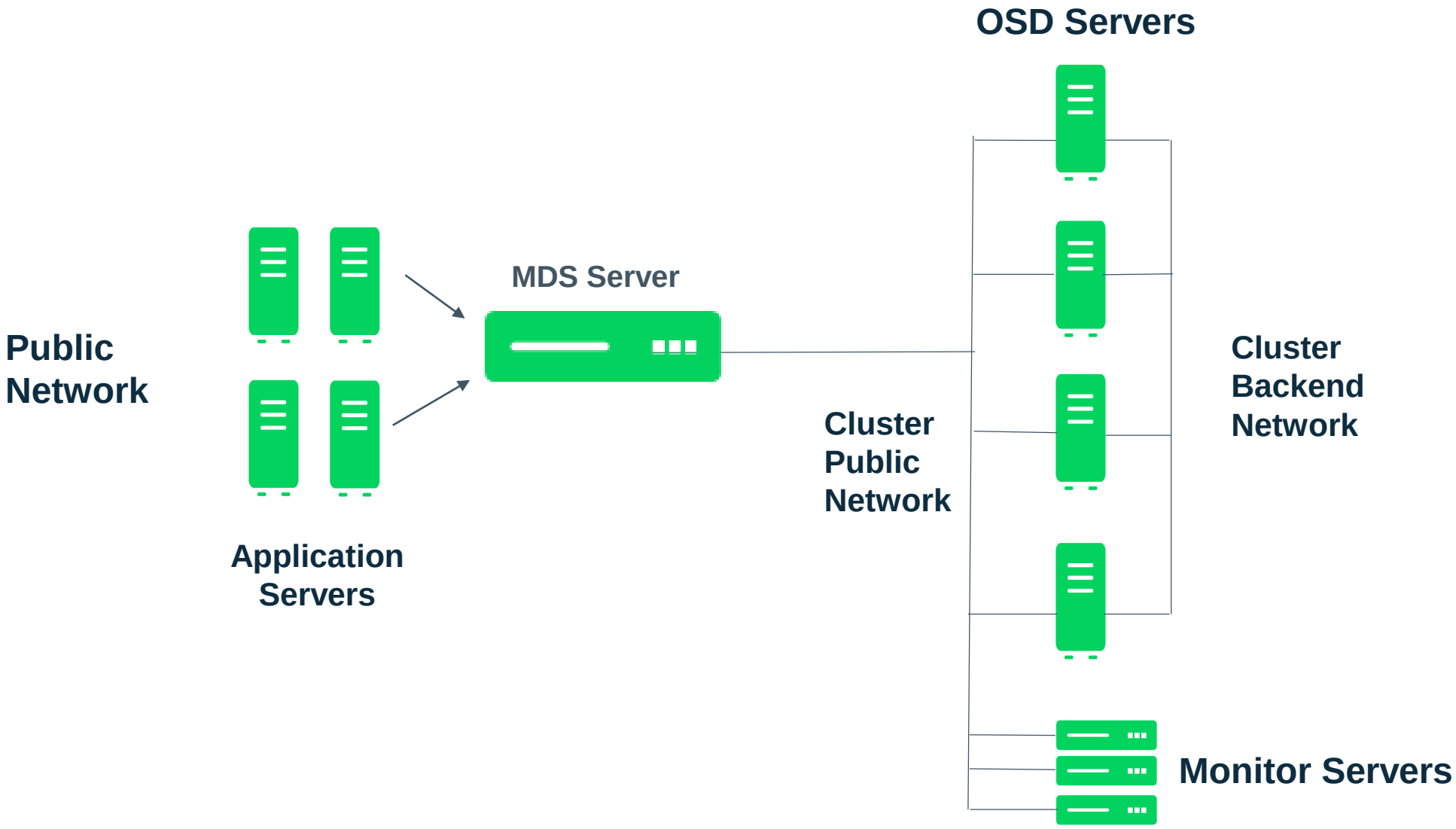


- Increase capacity and performance by simply adding new storage nodes to the cluster

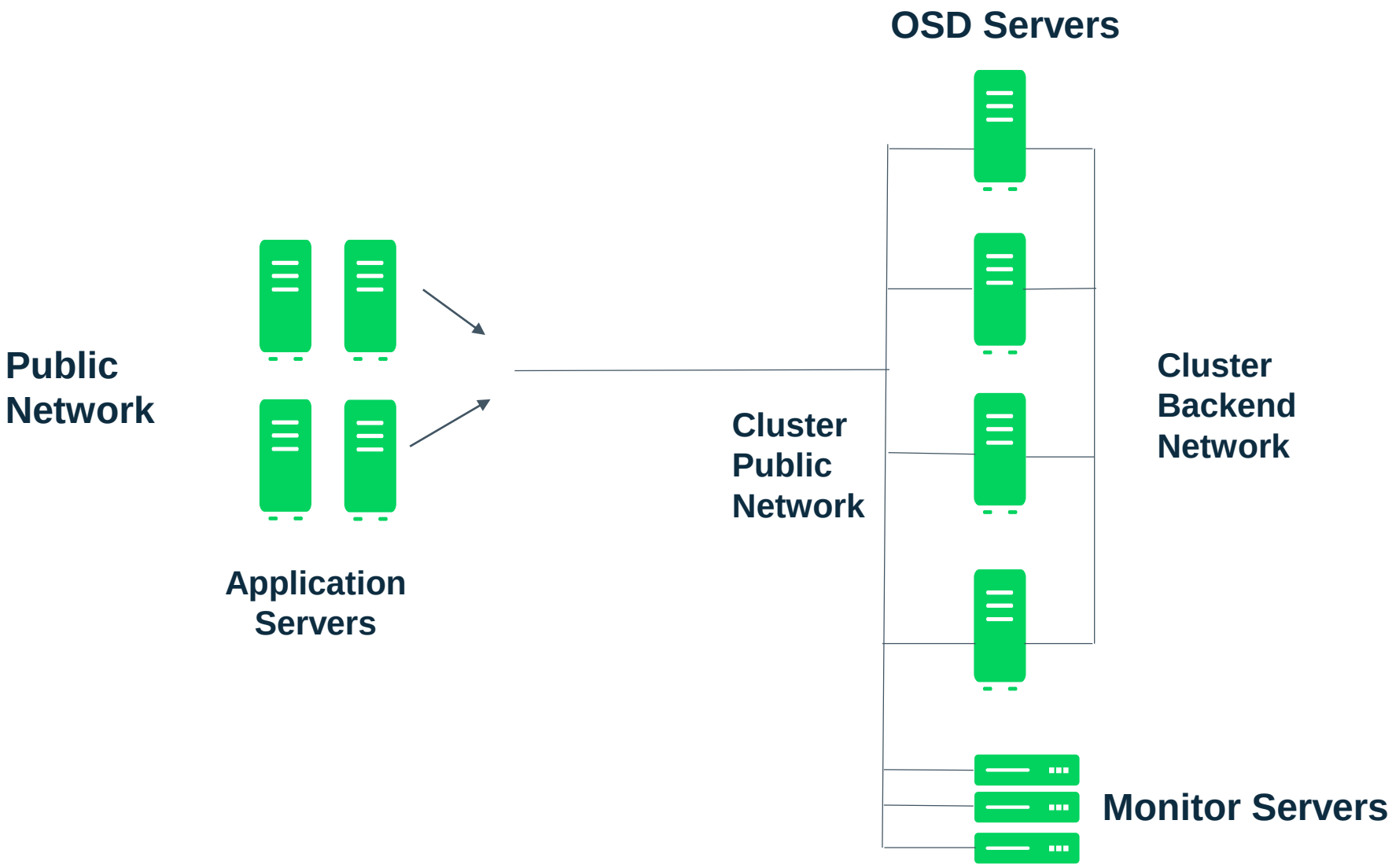
S3 oder iSCSI



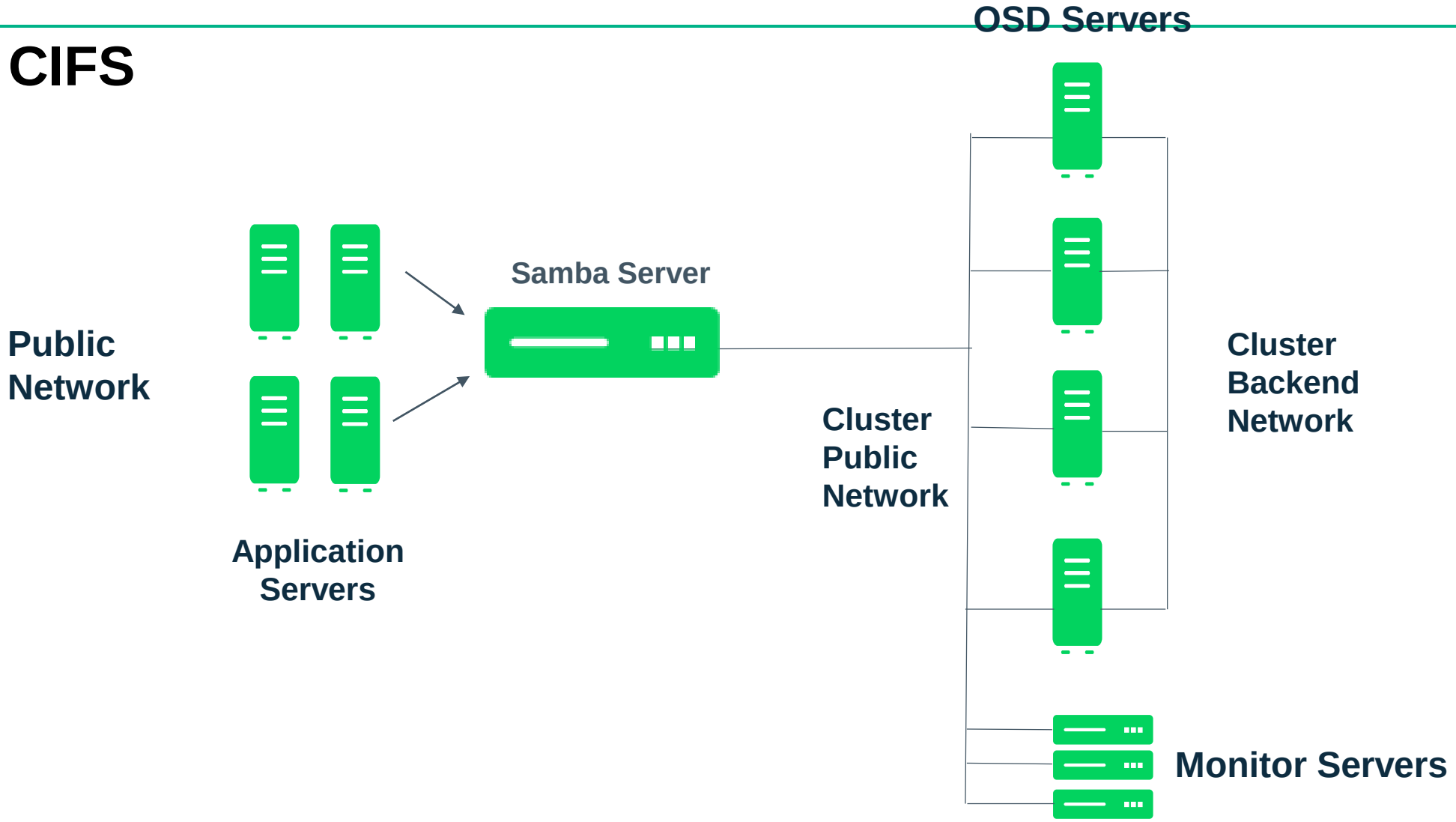
File Transfer via CephFS



RBD


OSD Servers
Public Network
Application Servers
Cluster Public Network
Cluster Backend Network
Monitor Servers

SMB / CIFS



„For the Samba gateway (which will be tech preview in SES5) we'll offer AD domain membership via Winbind.

SUSE Enterprise Storage Preise

– Basis Konfiguration

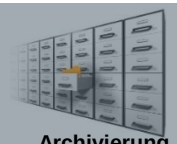
– SUSE Enterprise Storage und “limited use” von SUSE Linux Enterprise Server:
  – 4 Storage OSD Nodes (1-2 sockets) und
  – 6 Infrastruktur Nodes

– Expansion Node

– SUSE Enterprise Storage und “limited use” von SUSE Linux Enterprise:
  – 1 SES Storage OSD Node (1-2 sockets) oder
  – 1 SES Infrastruktur Node

Anwendungsfälle

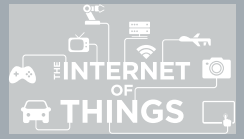
Filesync & Share

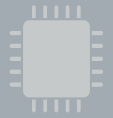


Archivierung

Videoüberwachung

Backup2Disk





Industrie 4.0

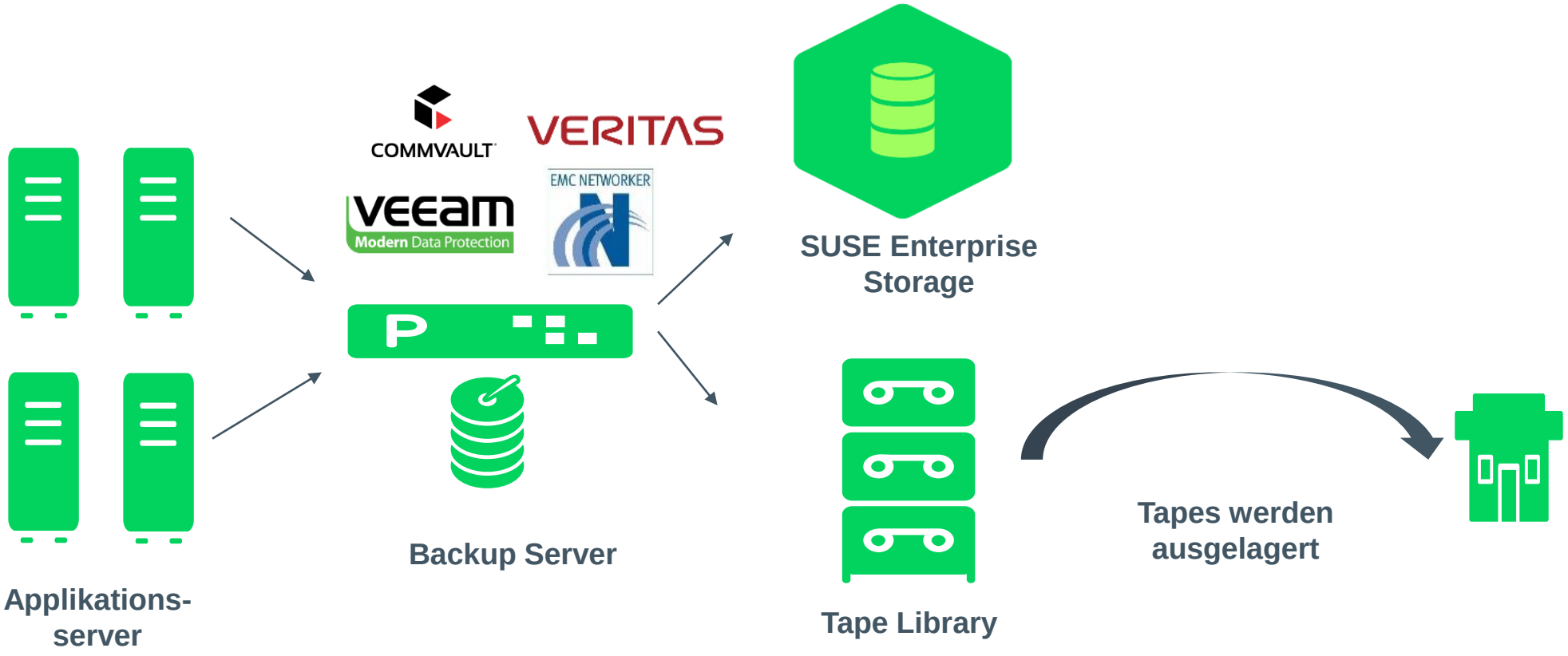
Big Data

Cloud Storage

SAP HANA

SUSE

Anwendungsbeispiel - Backup



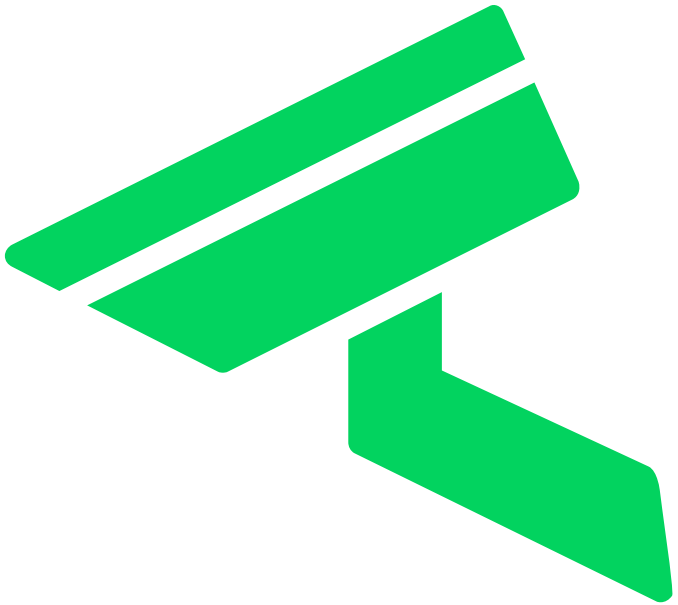
Anwendungsbeispiel - Videoüberwachung

– Industriegebäudeüberwachung

– Verkehrsüberwachung

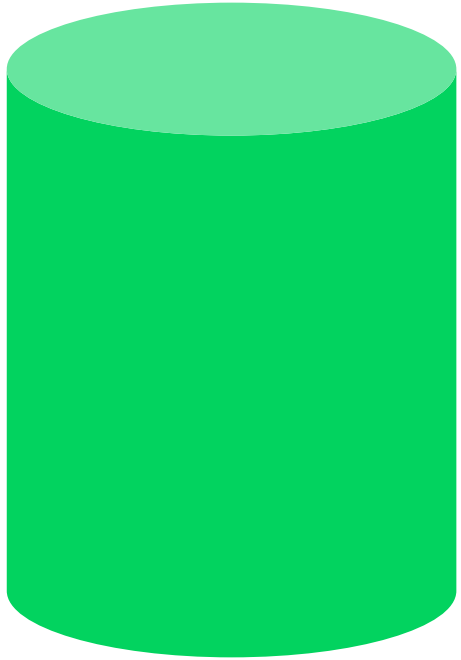
– Bodycams der Polizei

– Öffentliche Bereiche (Flughafen, Bahnhof)



Anwendungsbeispiel - Virtueller Machinen Speicher

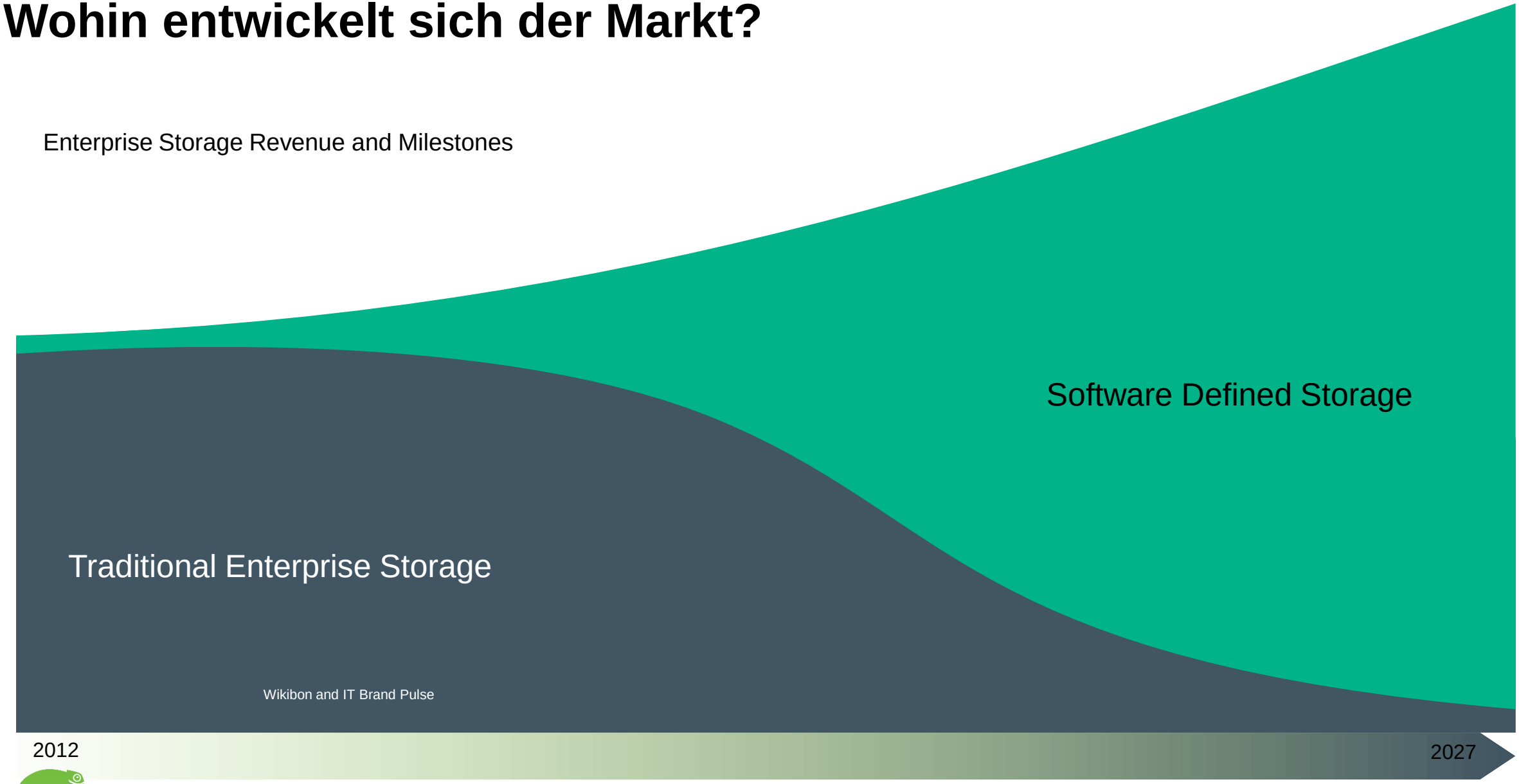
- OpenStack (80% Marktanteil)
- Test-Dev VMs, “normale VMs”
  - Support via:
    - kvm – natives Blockdevice
    - Hyper-V – iSCSI
    - VMware - iSCSI



Zusammenfassung

Wohin entwickelt sich der Markt?

Enterprise Storage Revenue and Milestones



Alles wird Software-Defined…

Bleiben Sie am Ball und setzen Sie auf SUSE

und nicht auf das falsche Pferd...

Quelle: http://www.runnersworld.de/laufevents/haile-gebrselassie-verzichtet-auf-wm-start-in-berlin.115667.htm

Quelle: http://www.holiday-hungary.de/puszta/ungarische-puszta.htm

Vielen Dank