Open Source with NetApp

전국섭상무, 한국넷앱 마케팅 총괄

1684 PB Flash Shipped

26,000+ All-Flash Controllers

243K+ Hybrid Controllers

Fastest
Growing Top 5 Flash Player
#2 in Flash Market Share

80% YoY Growth (PB)

$1.5B Annual Rev Run-rate

Converged Infrastructure Capacity Shipped

#1

#1
WW *Fastest*
Growing Top 5 SAN Vendor

#1
OCI - #1 Market Share
In Storage & Device Management Software

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Leader
Gartner Magic Quadrants

#1
ONTAP – World's #1 Open Networked Branded Storage OS
- *Ranked #1 in Revenue*
- *Ranked #1 in Capacity Shipped*
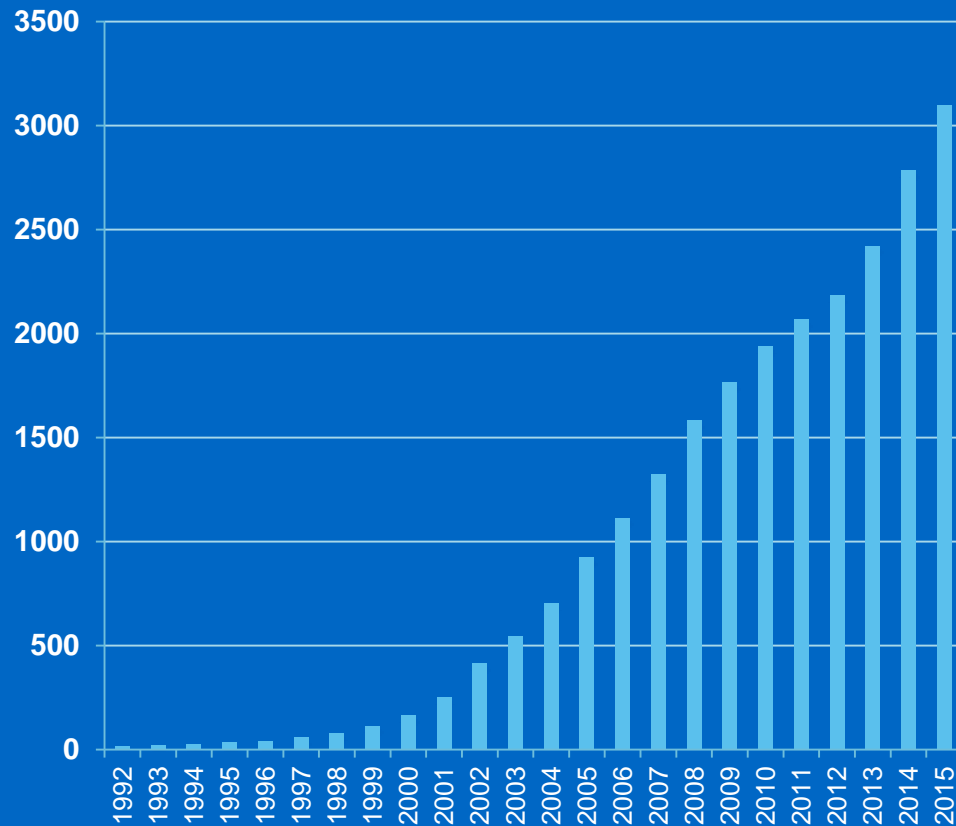
#1
Commercial Storage For OpenStack

Solid-State Arrays
General-Purpose Disk Arrays
Integrated Systems

2

25 years of increased innovation to solve customer problems

Patent Asset Portfolio Growth

Innovation areas

- Enabling control and choice in hybrid cloud
- Protecting data across the lifecycle
- Accelerating enterprise applications
- Driving next generation Data Centers

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3 Key Focus Areas Of Open Source

OpenStack Ecosystem
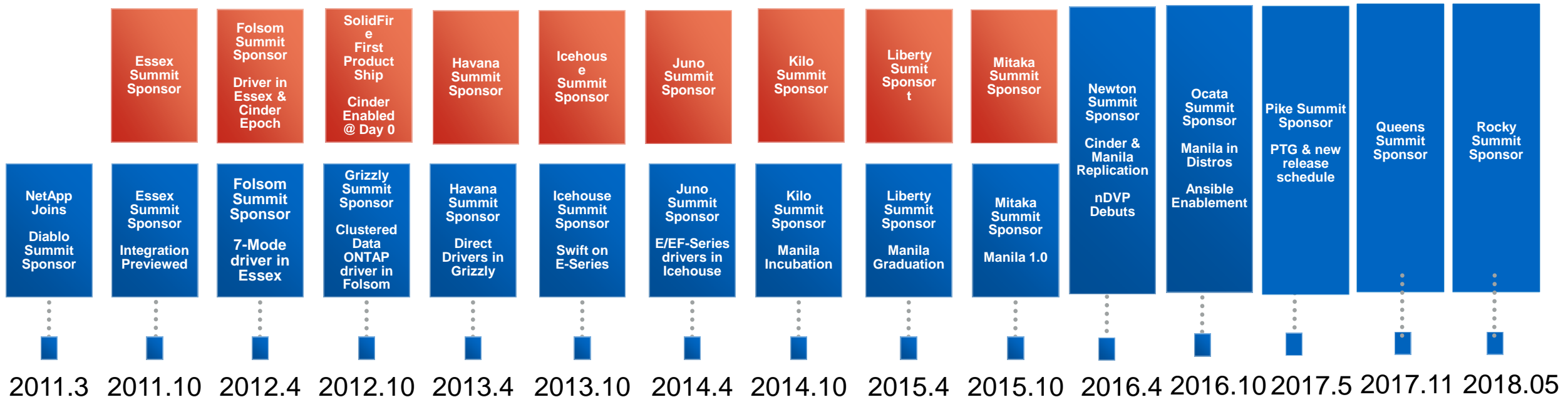
Container Ecosystem

DevOps Ecosystem

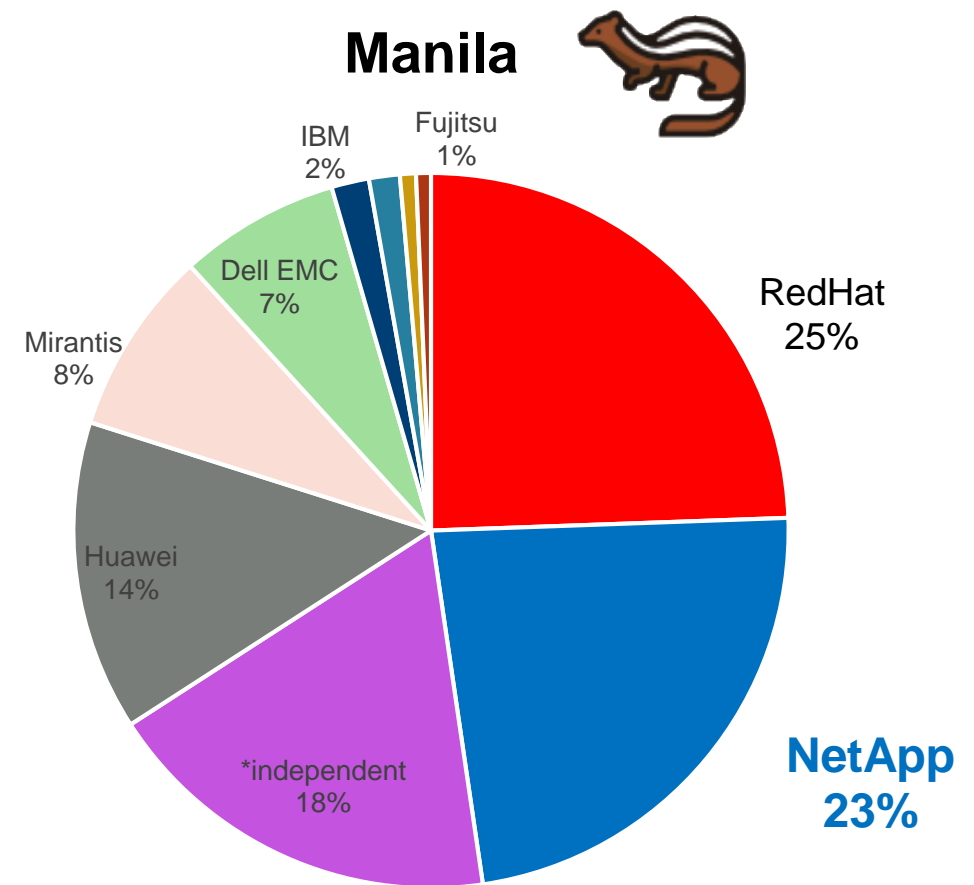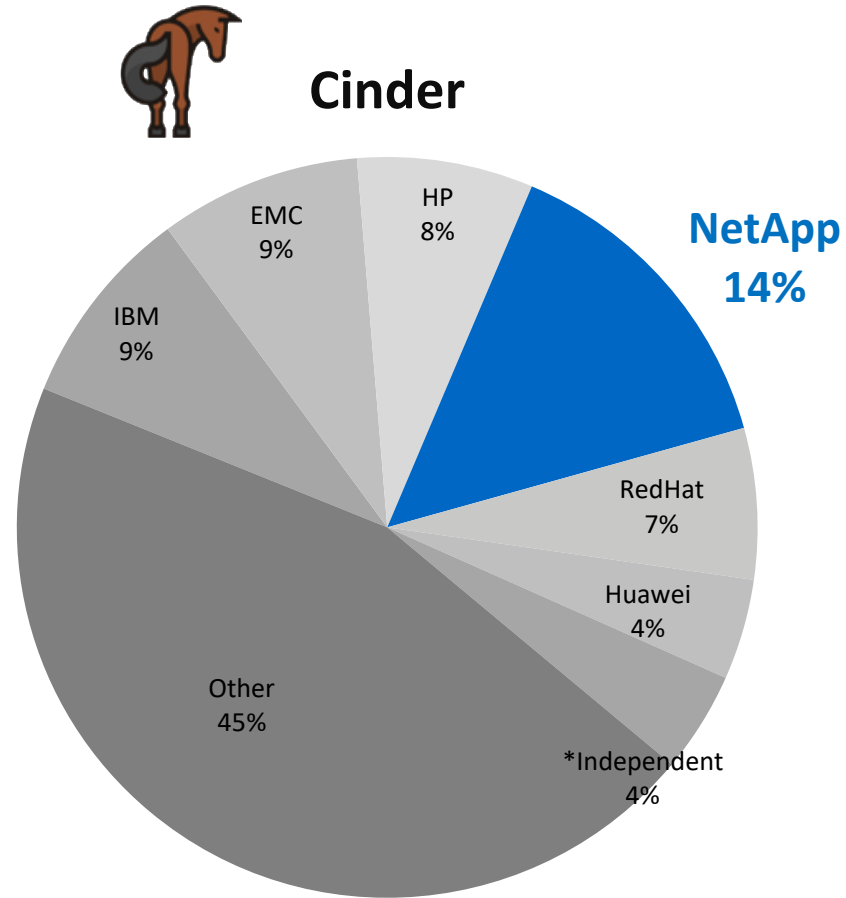**NetApp**

NetApp Contributing Code Upstream

NetApp storage models are built into the OpenStack community

- ## OpenStack Foundation
  - Charter Gold Member
  - Elected board representation

- ## 1st and leading storage provider
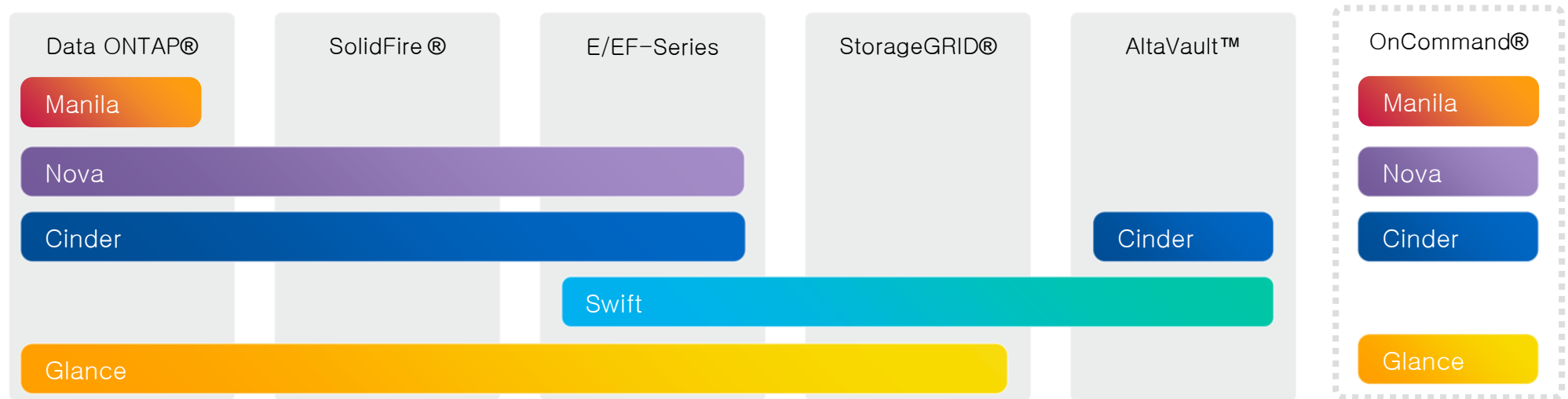- ## Production deployments and deployer
- ## Community project leadership

2011.3	2011.10	2012.4	2012.10	2013.4	2013.10	2014.4	2014.10	2015.4	2015.10	2016.4	2016.10	2017.5	2017.11	2018.05
	Essex Summit Sponsor	Folsom Summit Sponsor / Driver in Essex & Cinder Epoch	SolidFire First Product Ship / Cinder Enabled @ Day 0	Havana Summit Sponsor	Icehouse Summit Sponsor	Juno Summit Sponsor	Kilo Summit Sponsor	Liberty Sumit Sponsort	Mitaka Summit Sponsor	Newton Summit Sponsor / Cinder & Manila Replication / nDVP Debuts	Ocata Summit Sponsor / Manila in Distros / Ansible Enablement	Pike Summit Sponsor / PTG & new release schedule	Queens Summit Sponsor	Rocky Summit Sponsor
NetApp Joins / Diablo Summit Sponsor	Essex Summit Sponsor / Integration Previewed	Folsom Summit Sponsor / 7-Mode driver in Essex	Grizzly Summit Sponsor / Clustered Data ONTAP driver in Folsom	Havana Summit Sponsor / Direct Drivers in Grizzly	Icehouse Summit Sponsor / Swift on E-Series	Juno Summit Sponsor / E/EF-Series drivers in Icehouse	Kilo Summit Sponsor / Manila Incubation	Liberty Summit Sponsor / Manila Graduation	Mitaka Summit Sponsor / Manila 1.0					

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Giving Back to Open Stack Community

Cinder & Manila Lines of Code since OpenStack Inception

Cinder

- HP 8%
- EMC 9%
- IBM 9%
- **NetApp 14%**
- RedHat 7%
- Huawei 4%
- *Independent 4%
- Other 45%

Manila

- IBM 2%
- Fujitsu 1%
- Dell EMC 7%
- Mirantis 8%
- Huawei 14%
- *independent 18%
- RedHat 25%
- **NetApp 23%**

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NetApp OpenStack Portfolio Enablement

OpenStack users consume NetApp through a common API framework

Nova (Compute)		Cinder (Block Storage)
Glance (Image)	Manila (File Share)	Swift (Object Storage)

Data ONTAP®	SolidFire®	E/EF-Series	StorageGRID®	AltaVault™	OnCommand®
Manila					Manila
Nova					Nova
Cinder				Cinder	Cinder
		Swift			
Glance					Glance

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OpenStack support model

- **NetApp Customer Support Operations supports (for SupportEdge Premium entitled systems):**
  - NetApp Cinder unified driver
  - NetApp Manila unified driver

- **OpenStack services are supported by distribution providers; NetApp partners with major vendors using TSANet where applicable**

- **Open OpenStack support cases through:**
  - 1-888-NETAPP
  - mysupport.netapp.com

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OpenStack on NetApp customer deployments
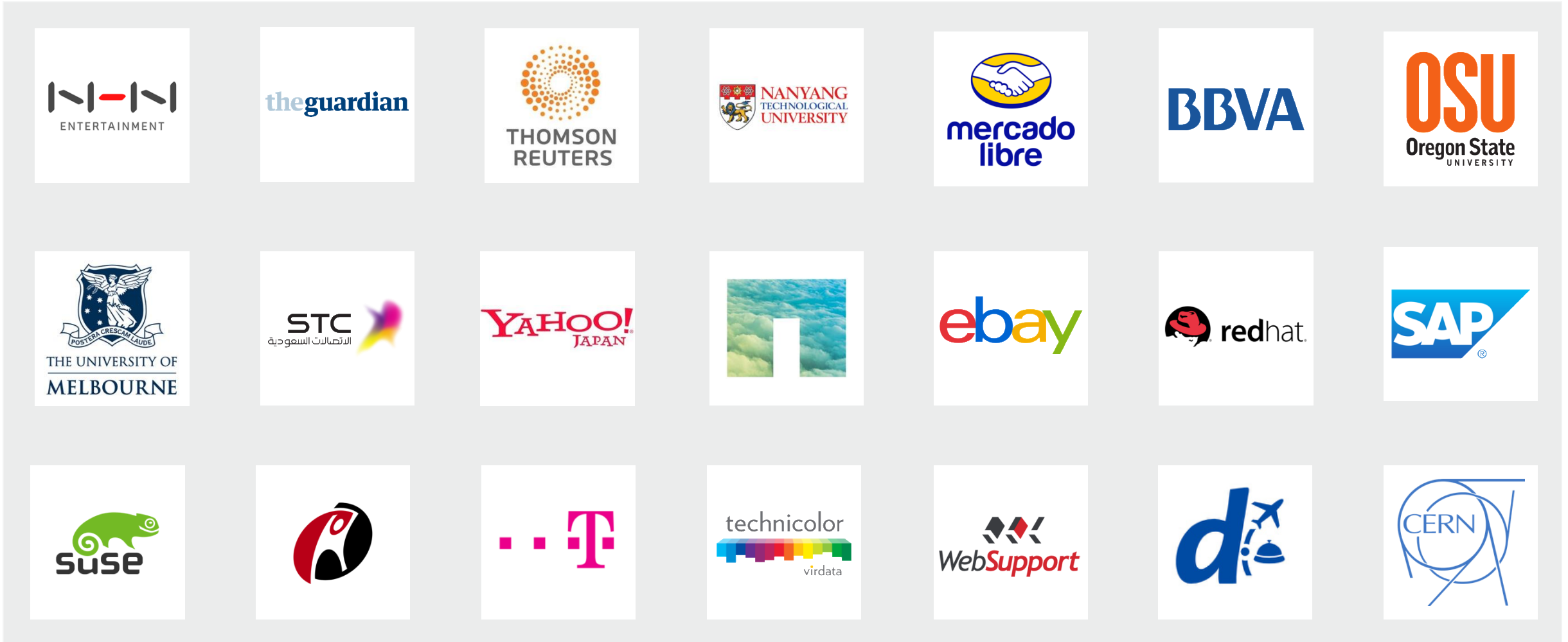
Container ecosystem integrations

Docker

First storage vendors to participate

Join the Docker Certification Program

Kubernetes

A charter member of CNCF

Member of the Storage Special Interest Group

Mesosphere
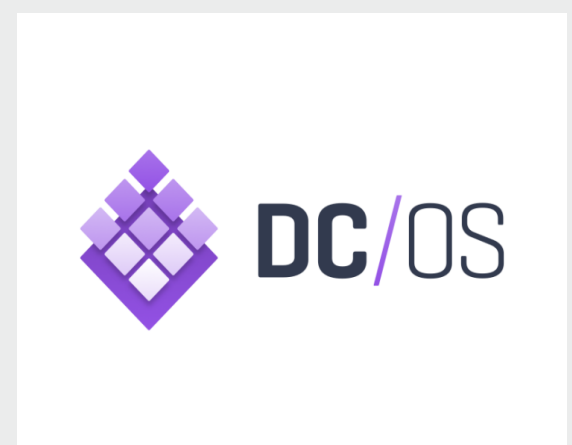
Launch partner for DCOS

Investigating reference architecture

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Trident

Fully supported, open source container integration

Storage Orchestrator for Containers

- Broadest and most extensive production support for persistence through container platforms available today

- Enables self-service storage and data management through the native language of container platforms

- Model classes of service across heterogeneous platforms, aligned with the needs of developers as well as the business, delivered automatically and on-demand
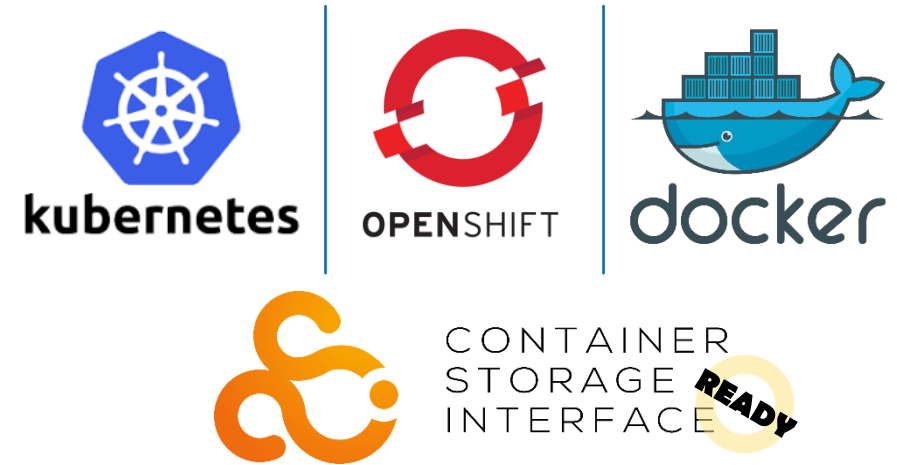
NetApp Firsts

- First certified Docker volume plugin

- First external dynamic provisioner for Kubernetes; developed the model

- First clone capabilities through Docker and Kubernetes

- … more to come!

NetApp and Containers

Your Data: Persistent, Protected, at Scale

Dynamic Storage Provisioning and Orchestration

Proven tools to deliver and manage persistent storage for any application, in any location.

Accelerate DevOps

Maintain visibility and awareness of developer activity, enabling operations to do more than provision storage

Deliver Agility with Data Insights and Control

Support developer activity AND deliver flexibility to manage and move data

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DevOps Partner Integrations & Solutions

Development Tools

PaaS
(Platform as a Service)

IaaS
(Infrastructure as a Service)

Automation

PERFORCE O

ATLASSIAN O

Jenkins O

JFrog

O, SG

APRENDA O

IBM Cloud O

RED HAT OPENSHIFT Container Platform

O, SF

docker
O, SF, E

kubernetes
O, SF, E

openstack
O, SF, E

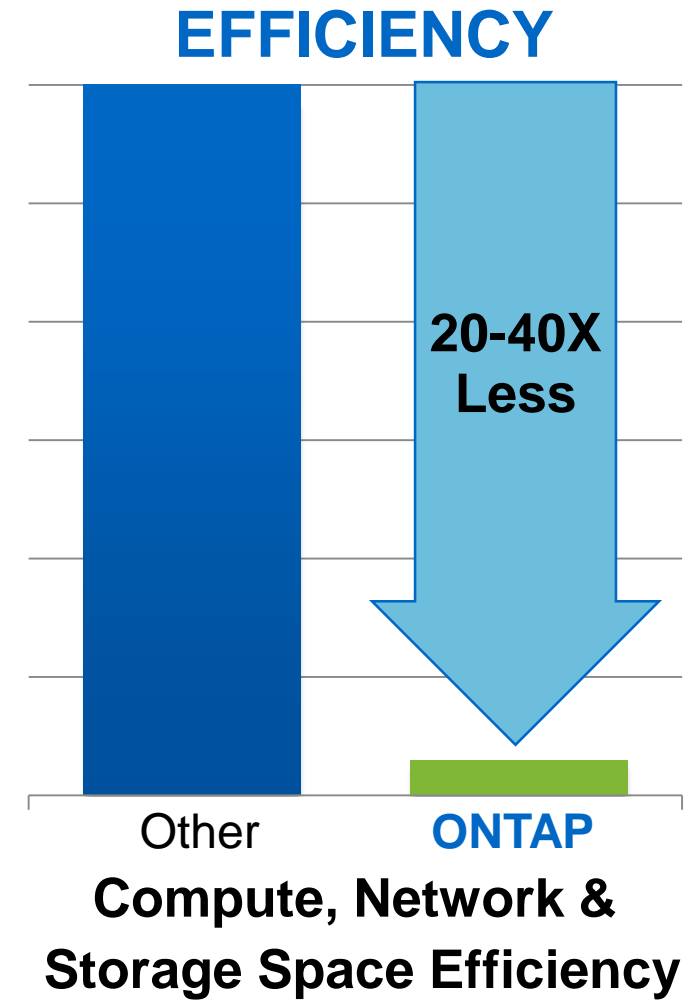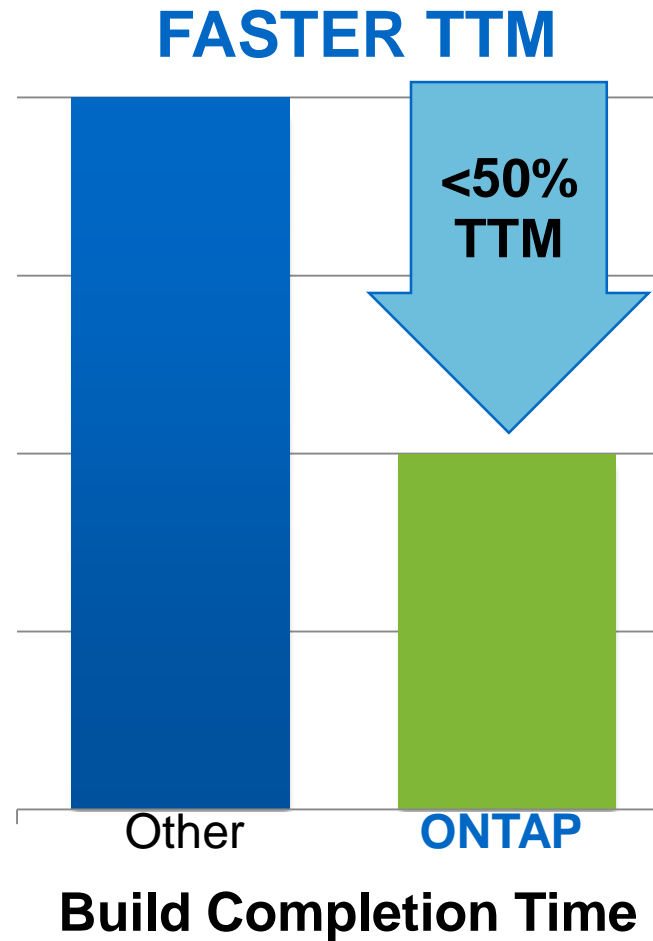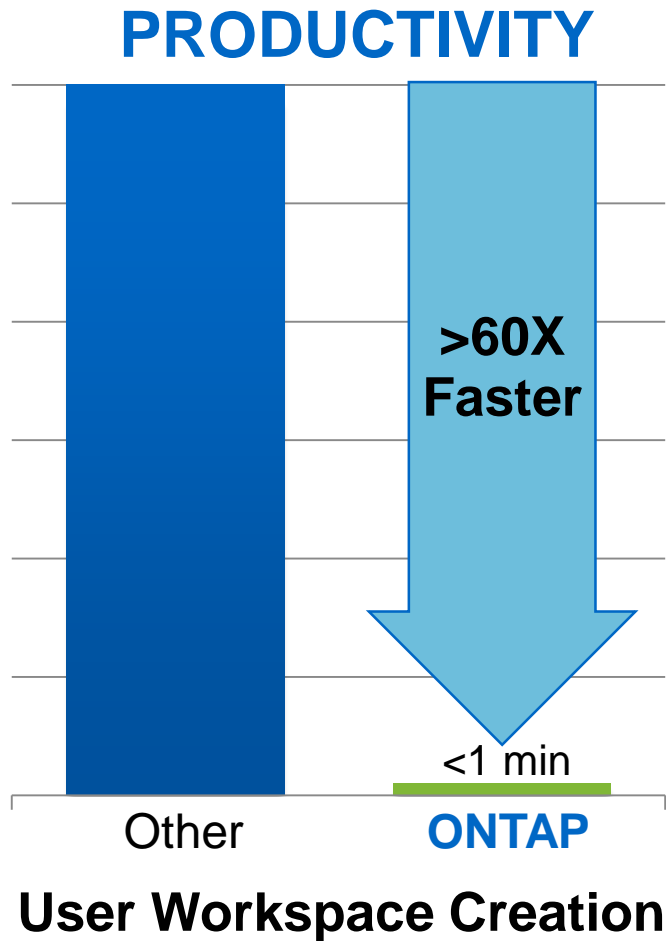ANSIBLE

puppet

HashiCorp Terraform

SF

O = ONTAP   **SF = SolidFire**   **SG = StorageGRID Webscale**   **E = E-Series**

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NetApp DevOps Value

PRODUCTIVITY

>60X Faster

<1 min

Other   **ONTAP**

User Workspace Creation

FASTER TTM

<50% TTM

Other   **ONTAP**

Build Completion Time

EFFICIENCY

20-40X Less

Other   **ONTAP**

Compute, Network & Storage Space Efficiency

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thePub: NetApp's Developer and Open Source Community

Engage with NetApp Engineers, Partners, and Customers

thePub
netapp.io

Slack
netapp.io/slack

Twitter
@NetAppPub

NetApp website
nt-ap.com/2CneVeR

GitHub
github.com/NetApp/trident

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Thank You