

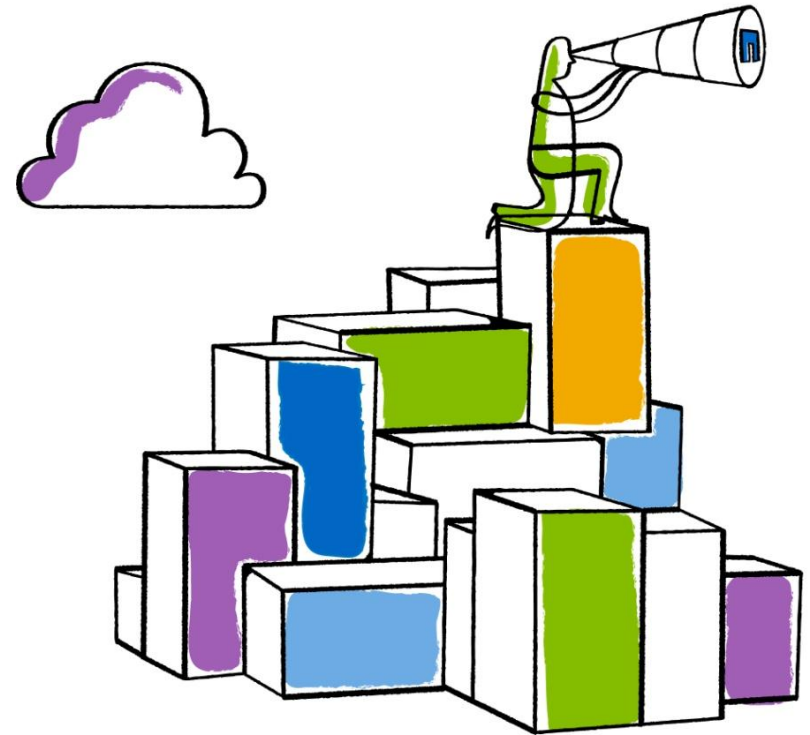


Go further, faster®



# Efficiently Delivering Shared Services

Steve Saunders  
NetApp





# Shared Services Opportunities

## ■ Servers

- Make better use of IT assets
- Standardise deployment models
- Simplify service catalogues and achieve predictable project pricing
- Streamline infrastructure provisioning

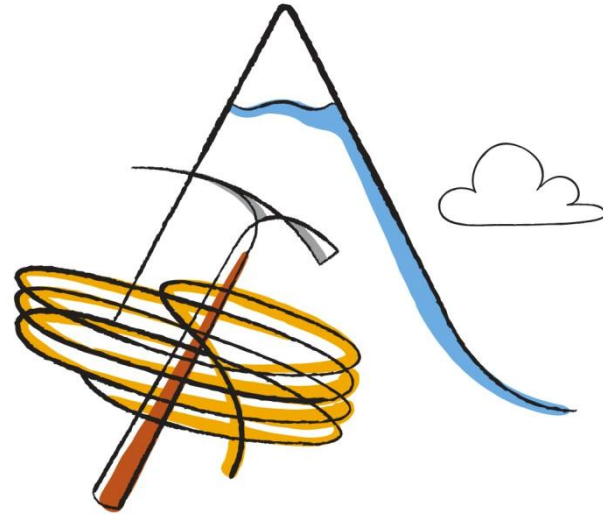
## ■ Desktop

- Deliver new capabilities faster
- Increase user choice and flexibility
- Centralise service delivery to improve management and lower cost
- Improve information security

# Shared Services Challenges

Both Server and Desktop Shared Services

- Multi-tenancy
- Budget
- Data recovery
- Scale
- Agility



Infrastructure is the key...

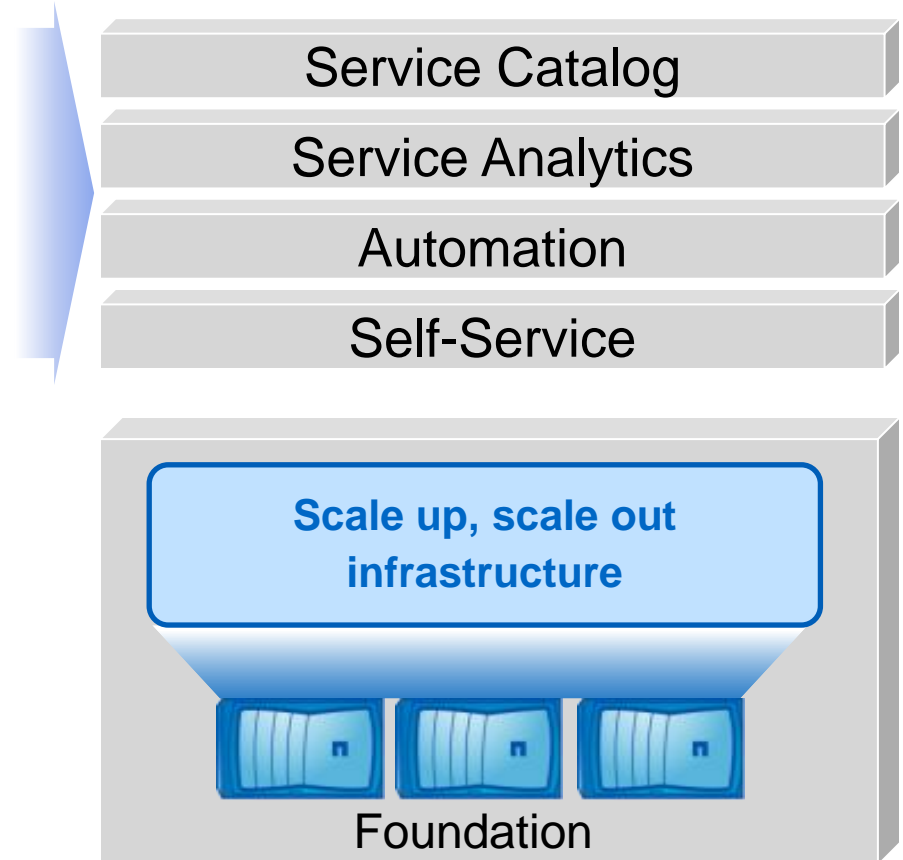
# The Path to Effective Shared Services

## Service Requirements

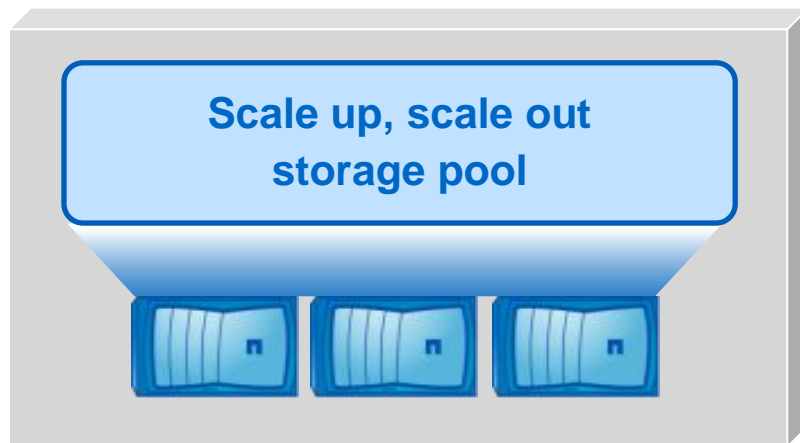
- Define your services
- Optimise your service delivery
- Rapidly deploy your services
- Empower IT and your end-users



## Fundamental Elements



# Data is Central to Shared Services



Flexible, efficient, unified storage architecture supporting shared services

Critical cloud capabilities:

- Storage efficiency
- Scale up and scale out
- Non-stop operations
- Secure multi-tenancy
- Integrated data protection

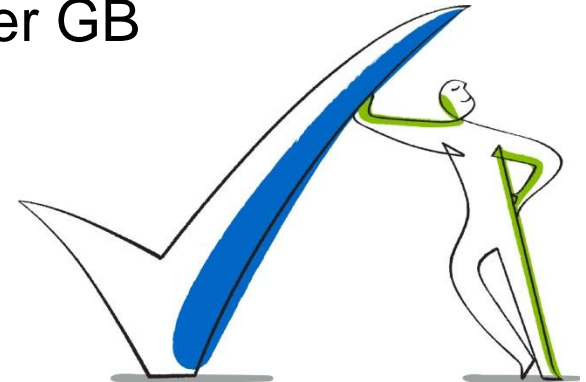
An Effective Storage Foundation is a Fundamental Element of Shared Services



# If We Get It Right...

## Government Shared Service Provider Results

- All storage tiers 85% cheaper overall
- Virtual Desktop storage 167% overall efficiency
- Recovery time reduced from 2 days to 15min
- Backup time reduced from 4+ hours now under 15min
- Backup cost shrunk from \$25 to \$2 per GB  
—10.3M in cost avoidance

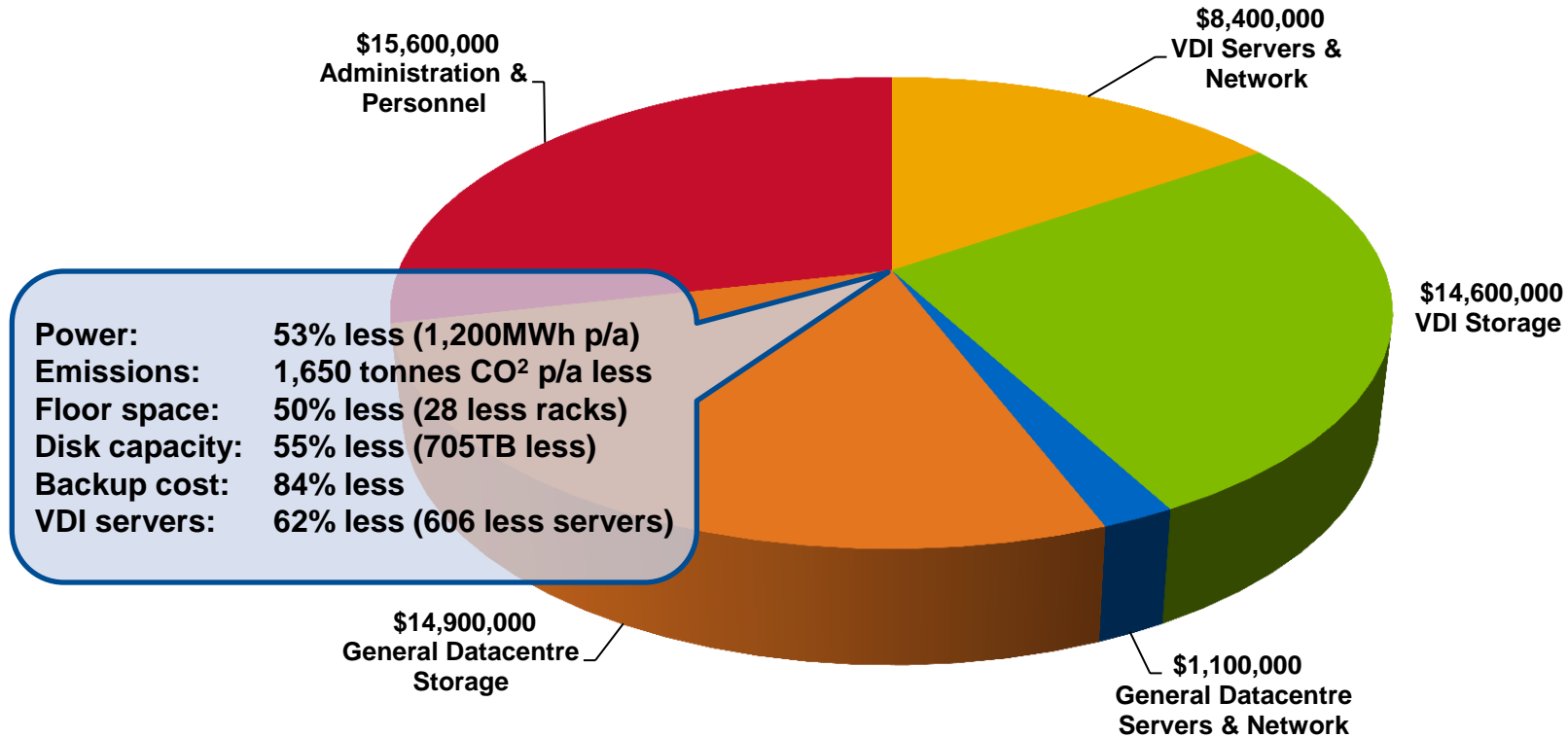




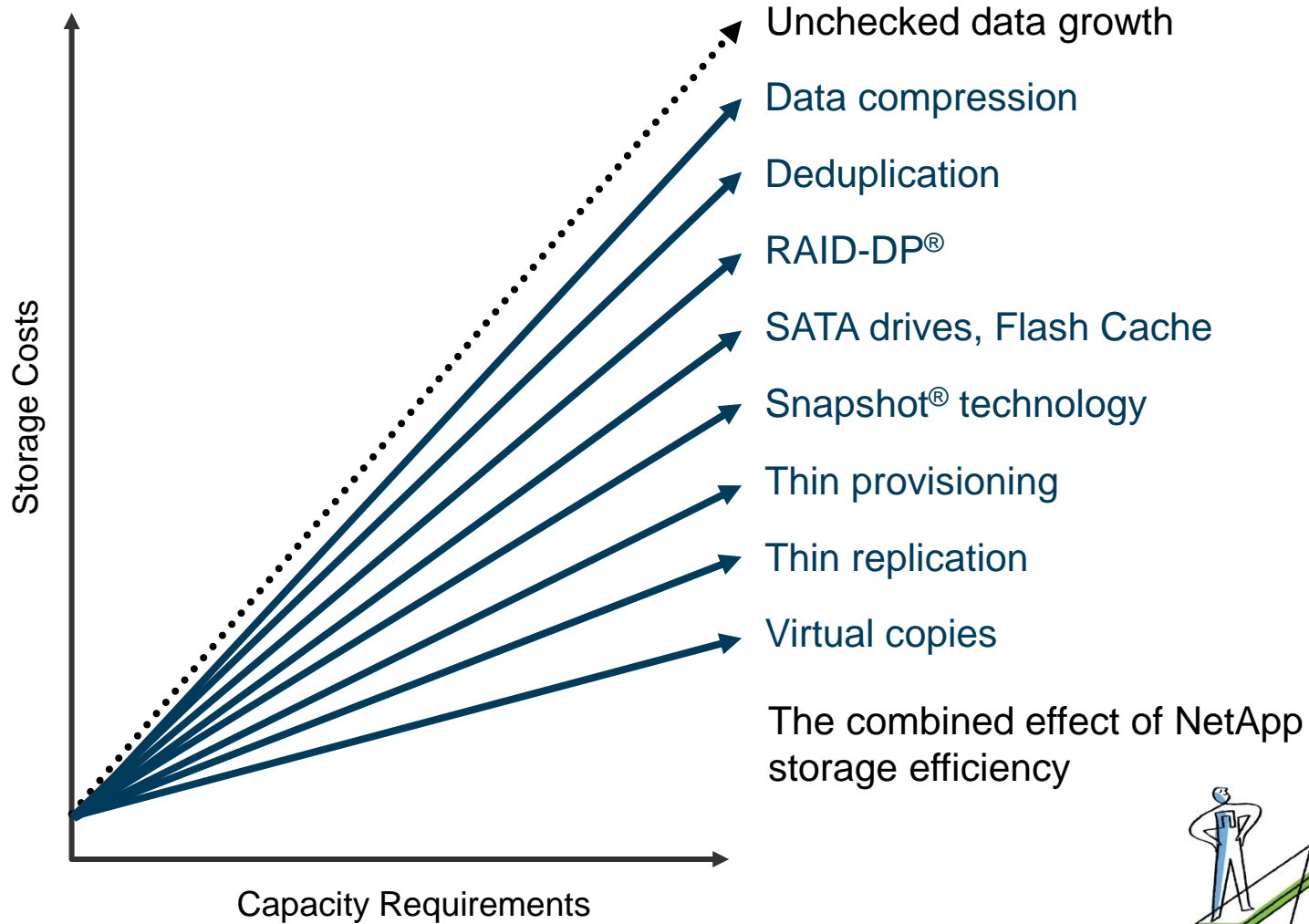
# If We Get It Right...

## Government Shared Service Provider Projections

- \$55M Saving Over Five Years



# Storage Efficiency





# Storage Efficiency Example

## Government Shared Service Provider

People store the same document many times. Identical and similar documents (e.g. identical 4kB blocks) are de-duplicated and stored only once.

Usable (TB)	Allocated (TB)	% Allocated	Dedupe Savings (TB)	Total Usable Storage Consumed (TB)	Total Usable Storage Available (TB)	Usable Storage Consumed	Usable Storage Efficiency	Thin Provisioning Benefit
48.07	121.24	252%	14.94	34.02	14.05	71%	140%	356%

48 TB of physical space available (after overhead of parity, spare disks etc)

DBAs, project managers, server admins ALWAYS ask for more space than they need. Here there were requests totalling 121 TB of storage.  
  
In this environment only 34Tb of the 121TB is actually being used.

Even after requests for 121TB are satisfied, 14TB of the original 48TB is still free. This growth area is shared between all users, not dedicated to one server as is traditionally the case.

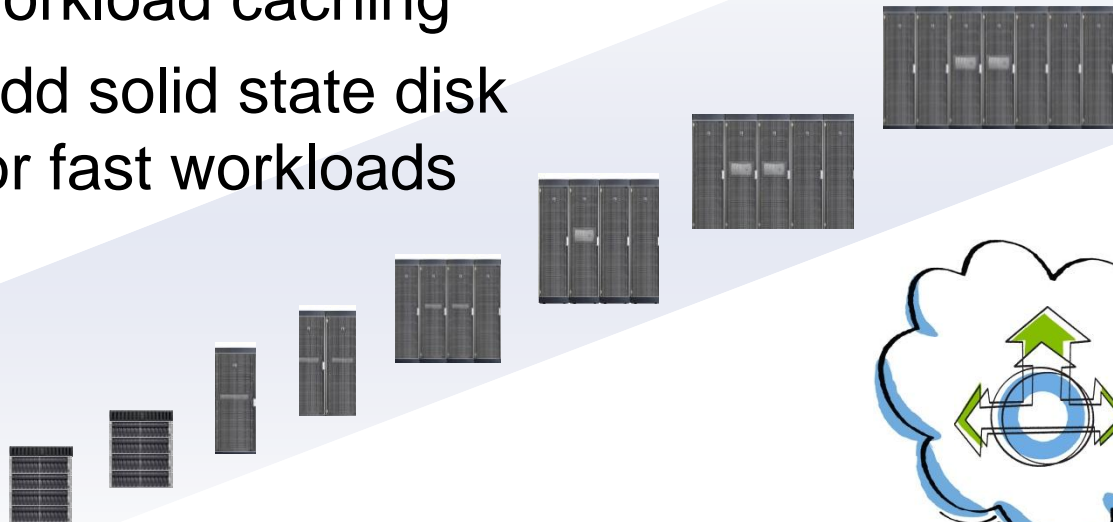
# Scale Up and Scale Out

## ■ Scale up

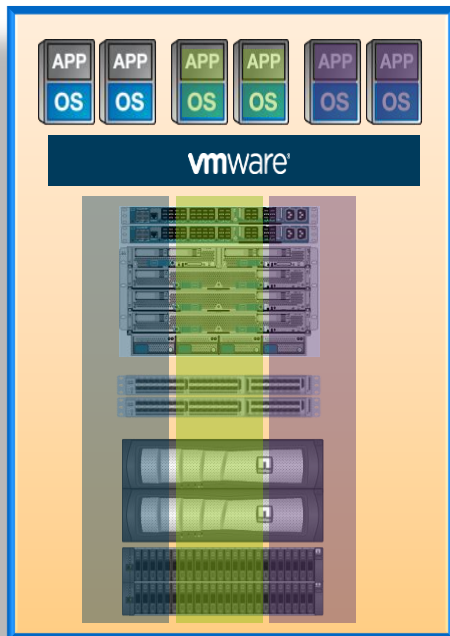
- Wide striping over storage pools
- Add flash for workload caching
- Add solid state disk for fast workloads

## ■ Scale out

- Add storage controllers
- Add capacity



# Secure Multi-Tenancy



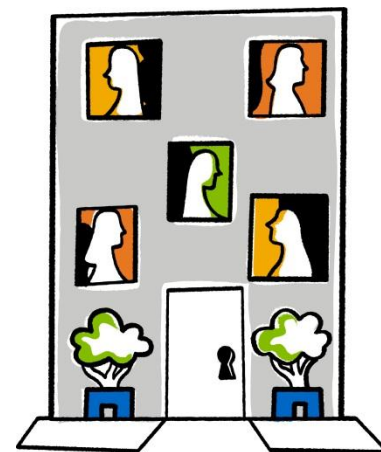
Enhanced Secure  
Multi-Tenancy (SMT)  
Cisco Validated Design

## Enable Software and Features

- NetApp MultiStore and FlexShare
- VMware vShield Zones and applications
- VMware vSphere Enterprise Plus
- Cisco Nexus® 1000V Series
- Cisco SAFE architecture

## Enable capabilities

- Multi-tenancy and secure separation
- Service availability and DR
- Service management
- Service assurance
- Workload isolation and mobility





# Non-Stop Operations

- Dynamic data movement
  - Data Motion
  - Virtual Storage System Migrate
- Geographically clustered storage
  - MetroCluster combines continuous availability and disaster tolerance *with* simple management

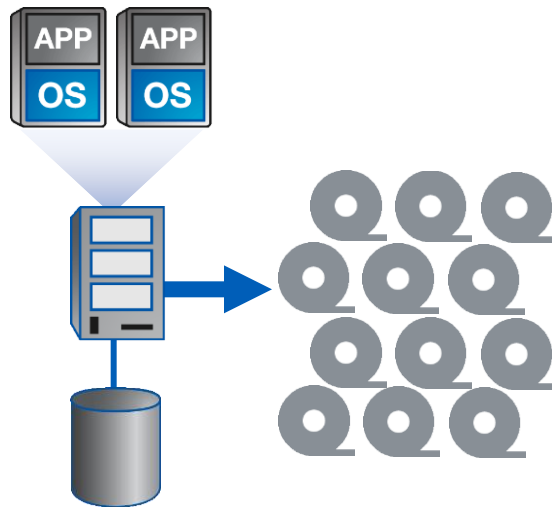




# Integrated Data Protection

## The Problem

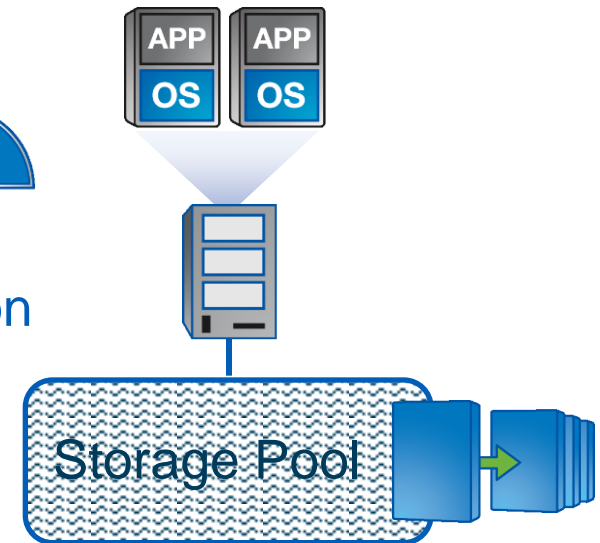
- Tape is slow, complex
- Streaming backups take too long
- Recoveries are slow
- Recovery points are limited



Traditional Backup Does NOT Enhance Availability

## NetApp Solution

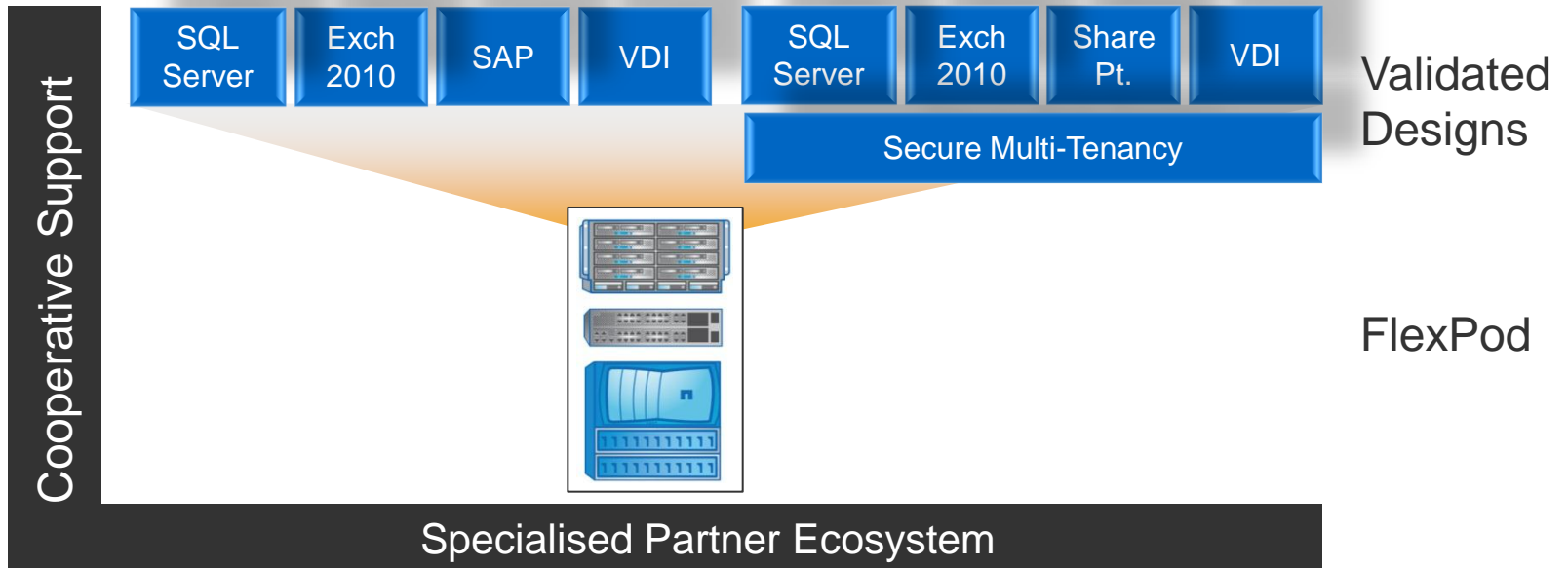
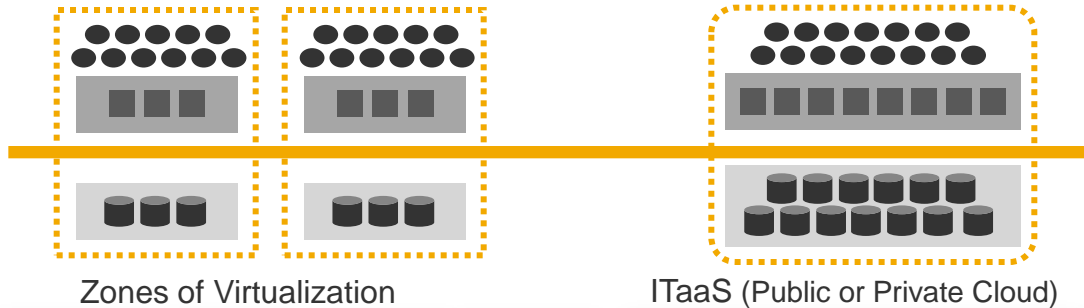
- Backups built-in to the storage
- Rapid backup and recovery
- Low storage overhead
- Frequent, application consistent



Fast, Affordable, and Simple Operational Recovery



# NetApp FlexPod



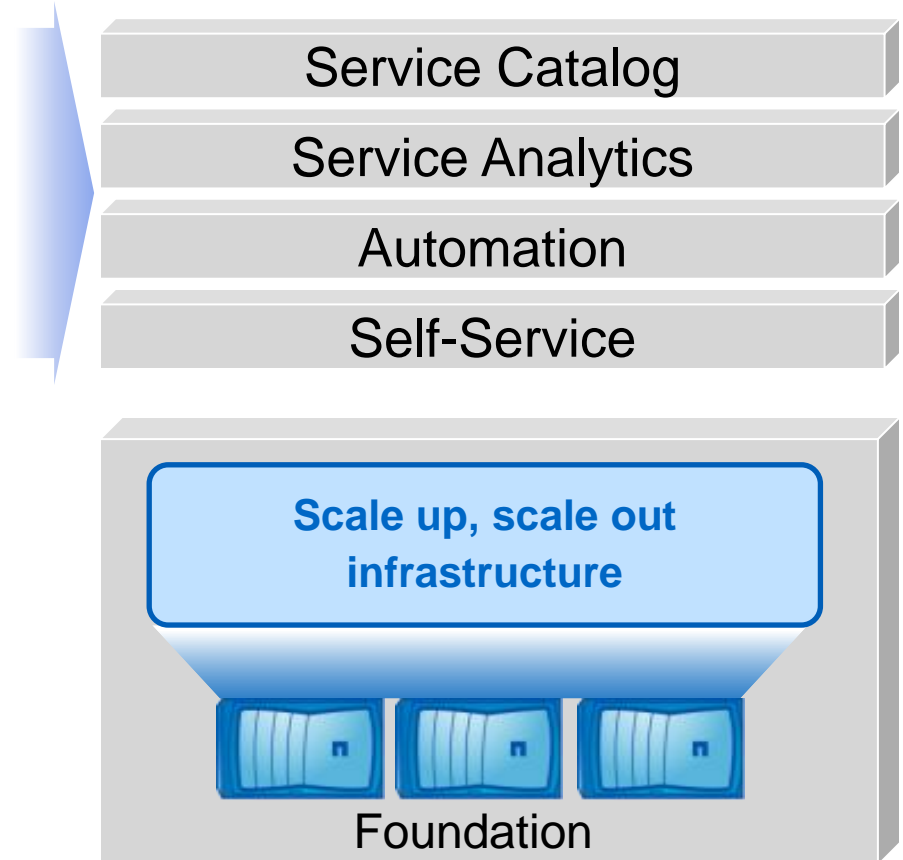
# The Path to Effective Shared Services

## Service Requirements

- Define your services
- Optimise your service delivery
- Rapidly deploy your services
- Empower IT and your end-users



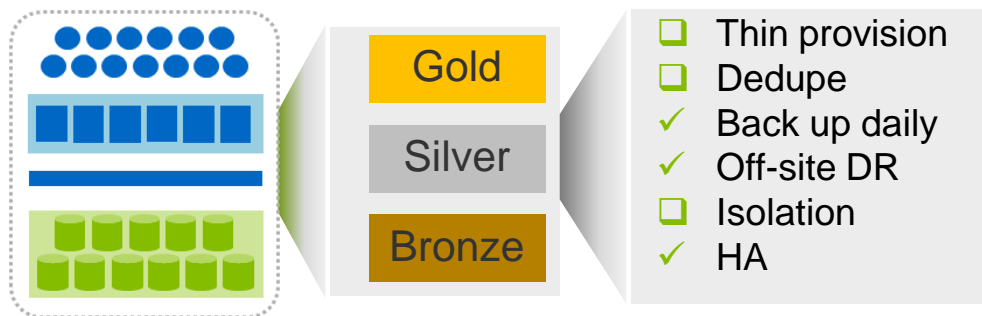
## Fundamental Elements



# Fundamental Element: Service Catalog

The OnCommand™ catalog automatically provisions services from a virtual storage pool for optimal efficiency

NetApp OnCommand



## Define your services

- Define services based on customer needs
- Service levels specify quality of service and not physical hardware
- Service policy attributes
  - Efficiency
  - Performance
  - Availability
  - Protection

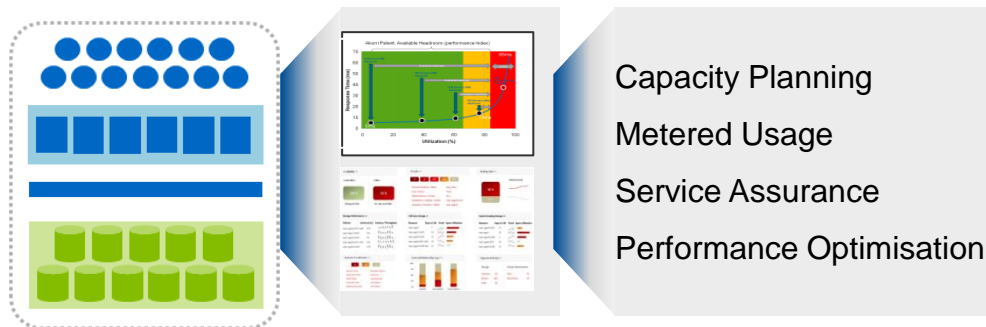
Centralised service catalog enabled decreased provisioning from 6 months to 1 day; improved SLAs to 99.99% uptime.

- Government Service Provider

# Fundamental Element: Service Analytics

OnCommand Insight provides visibility and actionable knowledge for optimising your virtual IT infrastructure

NetApp OnCommand Insight



OnCommand Insight service analytics resulted in a multimillion-dollar annual capex and opex savings and 1,500% operational task efficiency increase.

- Large Multinational Wireless Carrier

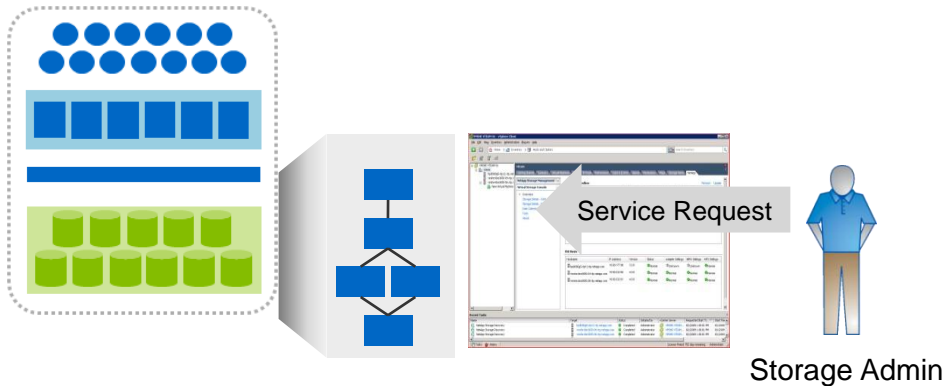
## Optimise your services

- Answer key questions to delivering business value
  - What do we have and where is it?
  - What's causing my performance problem?
  - What's the impact of change?
- Understand what services are being used by who
  - Show utilisation metrics back to your users
  - Enable showback or chargeback

# Fundamental Element: Automation

OnCommand allows you to move virtual machines or data within the cloud and automatically have the policy follow

NetApp OnCommand



Accelerated resource provisioning from weeks to minutes; launched new QA system in a matter of hours.

- Leading Liability Insurer

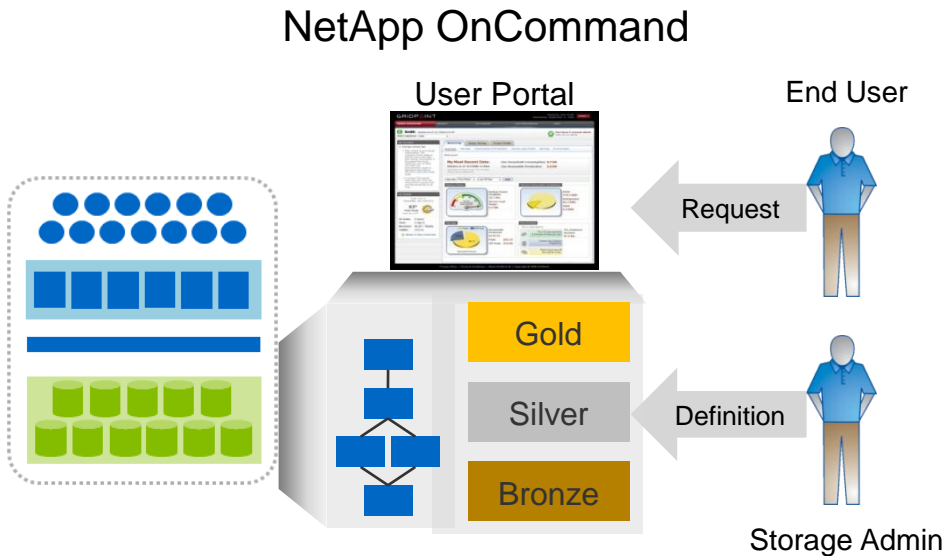
## Rapidly deploy your services

- Policy-based provisioning and data protection
- Integrated with popular management platforms
- Empower admins to manage storage using familiar tools
  - VMware® vCenter™
  - Microsoft® System Center
  - Oracle®
  - SAP®
  - MS Apps (Exchange, SharePoint®, SQL Server®)



# Fundamental Element: Self-Service

OnCommand enables simple and fast creation of self-service portals



Empower IT and your end-users

- Self-service portals allow end-users choice
- Service offerings integrated with end user workflows
- Simplifies service request processing
- IT can focus on innovation instead of end-user requests

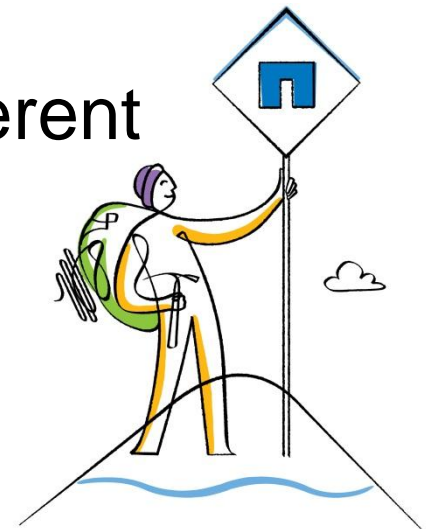
On demand, self-service access to computing resources reduced planned customer support by up to 40%.

- Disaster Recovery Services Provider

# Summary

The right infrastructure is key to successful shared services architectures

- Efficiency to drive down cost and enable scale
- Increasing service levels while delivering new capability
- Hosting multiple tenants with different requirements



# Thank you

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