

# Simplifying Storage Provisioning

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# Agenda

**Simplifying storage provisioning – Why should we?**

**Meet the Customers**

**Solutions for simplifying storage provisioning**

**The storage provisioning process**

**Conclusions**

**Solution elements**

## Simplifying storage provisioning – Why should we?

- 1. Server virtualization environments**
- 2. Cloud environments**

## Meet the Customers (according to ESG)

- **Many customers are aggressively consolidating data centers**
  - Server virtualization (>50%)
  - Physical locations (33%)
- **Consolidation is being driven by cost reduction initiatives**
  - Real estate
  - Power
- **Energy efficiency**
- **Cloud**

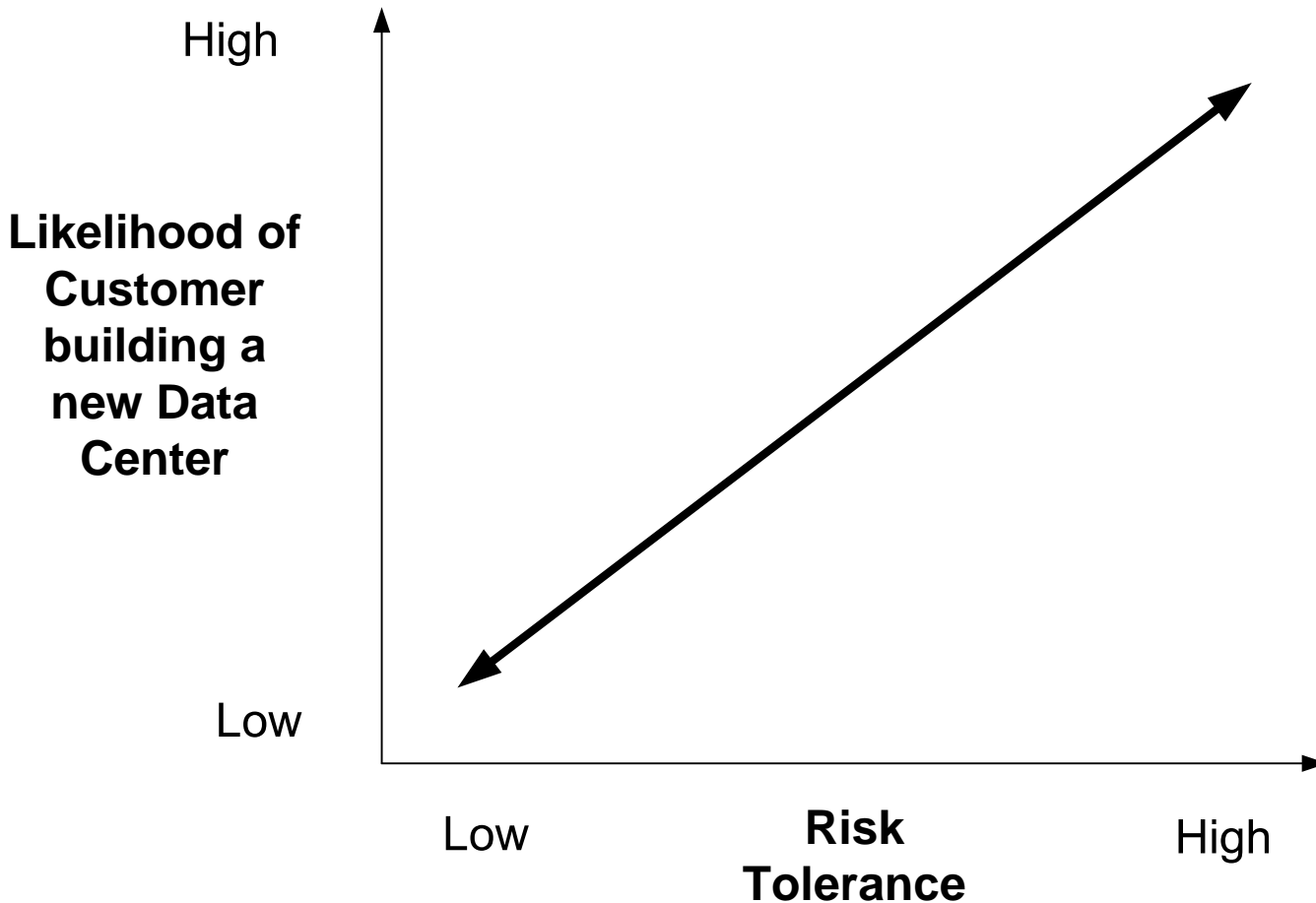
Reference: Enterprise Storage Group – “Data Center Consolidation and Construction Trends” June 2010

## Meet the Customers (Customer priorities according to ESG)

- **Server Virtualization**
- **Security Initiatives**
- **Data Center consolidation**
- **Upgrade Network Infrastructure**

**Reference: Enterprise Storage Group – “Data Center Consolidation and Construction Trends” June 2010**

## Meet the Customers - Risk/Reward (according to ESG)



**Concept: Enterprise Storage Group – “Data Center Consolidation and Construction Trends” June 2010**

## Solutions for simplifying storage provisioning

Protocol	Trend in Server Virtualization	Trend in Private Cloud
FC	Decreasing	??
FCoE	Flat	??
iSCSI	Increasing	??
NAS	Increasing	??

- Why is FC decreasing?
  - FC/FCoE are perceived as harder to use
  - Administrators must perform 2x the number of administrative tasks when compared to iSCSI and NAS
  - Performance of the Alternatives is “good enough”
  - NFS with its VMWare support provides significant administrative efficiencies in large scale storage management.
- Cloud
  - Requires a dynamic network and automation in order to function properly
  - No reason to believe that Customer attitudes will differ from Server virtualization environments

# The Storage provisioning process

## **Fibre Channel / FCoE**

1. Configure Switch ports (FCoE only)
2. Attach hosts and storage to Switch ports
3. Perform Fabric zoning
4. Provision storage

## **iSCSI**

1. Attach hosts and storage to Switch ports
2. Provision storage
3. Point server at storage port

## **NAS**

1. Attach hosts and storage to Switch ports
2. Provision storage
3. Point server at storage port

## Conclusions

- **FC/FCoE will continue to be replaced by iSCSI and NAS in Server Virtualization and Cloud environments unless something is done to address end user concerns about complexity**
- **Storage provisioning is the Least Common Denominator in all 4 protocols.**
  - In other words since storage provisioning has to be done in all three protocols, performing storage provisioning will not be seen as something that is specific to FC/FCoE...
- **Allowing the FC portion of the network to automatically configure itself rather than force the user to essentially input the information twice seems like an easy way to address user concerns.**

## Solution elements

- **It's OK to make significant changes**
  - Customers who are building new data centers are also moving forward with new technologies
- **Don't break existing Customer work flows**
  - FCoE does a good job here
- **Play to strengths**
  - FC/FCoE are network centric
  - iSCSI/NAS are end device centric
  - FC/FCoE are considered to be relatively secure
  - Performance
- **Allow storage ports to publish a list of peer devices that switches will use to restrict access**
  - Zoning is a good thing, Zoning administration is not!