SNIA

Education

Sunshine User Base Accountability with your Cloud Storage

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Abstract

- Sunshine User Base Accountability with your cloud storage
  - In today's data center storage is the fastest growing component, this as storage managers are faced with the daunting task of reducing cost while keeping up with service levels. Now more than ever with the onset of Cloud Storage it is even more difficult to make the business more accountable for the storage they use. How does a storage manager manage his user base? By making the financial costs of storage transparent to the user population. This presentation is designed to show you how to calculate and communicate the storage costs to your user base.

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Which Picture Describes Your Storage Users?

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Definitions

Source: SNIA Dictionary
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- **Cloud storage**
  - Also knows as Data storage as a Service
  - [Services] Delivery over a network of appropriately configured virtual storage and related data services, based on a request for a given service level.
  - Typically, DaaS hides limits to scalability, is either self-provisioned or provisionless and is **billed based on consumption.**
- **Public cloud**
  - [Services] Delivery of SaaS, PaaS, IaaS and/or DaaS to a relatively unrestricted set of customers.
- **Private cloud**
  - [Services] Delivery of SaaS, PaaS, IaaS and/or DaaS to a restricted set of customers, usually within a single organization.
  - Private Clouds are created due to issues of trust.

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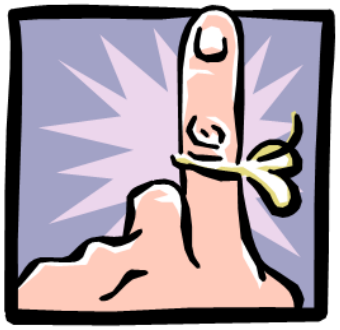

Remember your goal:

You want to give the business information they need to make business decisions.

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What is included in your Cloud Service?

- Storage Tiers
- Hardware
- Software?
- Labor
- Additional services such as backup

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How Do You Define Your Tiers of Storage?

- Know your audience
  - Business Users
  - IT Users
- You need to make it:
  - Understandable
  - Reasonable
- Tips:
  - New “things” and old “things” go together
  - Limit the number of tiers 3-5
  - Remember you are expecting someone to make a business decision based off of this information

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Be Consistent and Fair

Don’t be confused by “accuracy”

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Define Your Cost Hardware and Software

- Questions you need to find out first:
  - What is the depreciation schedule on hardware and software?
  - What is the maintenance on hardware and software?
- What are the hardware components included in each tier of storage?
  - Switch
  - Storage arrays
  - HBA/NIC?
- Tips:
  - Don't be afraid to allocate shared resources proportionally
  - Don't forget about other services such as backups getting allocated to each tier!

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Example #1

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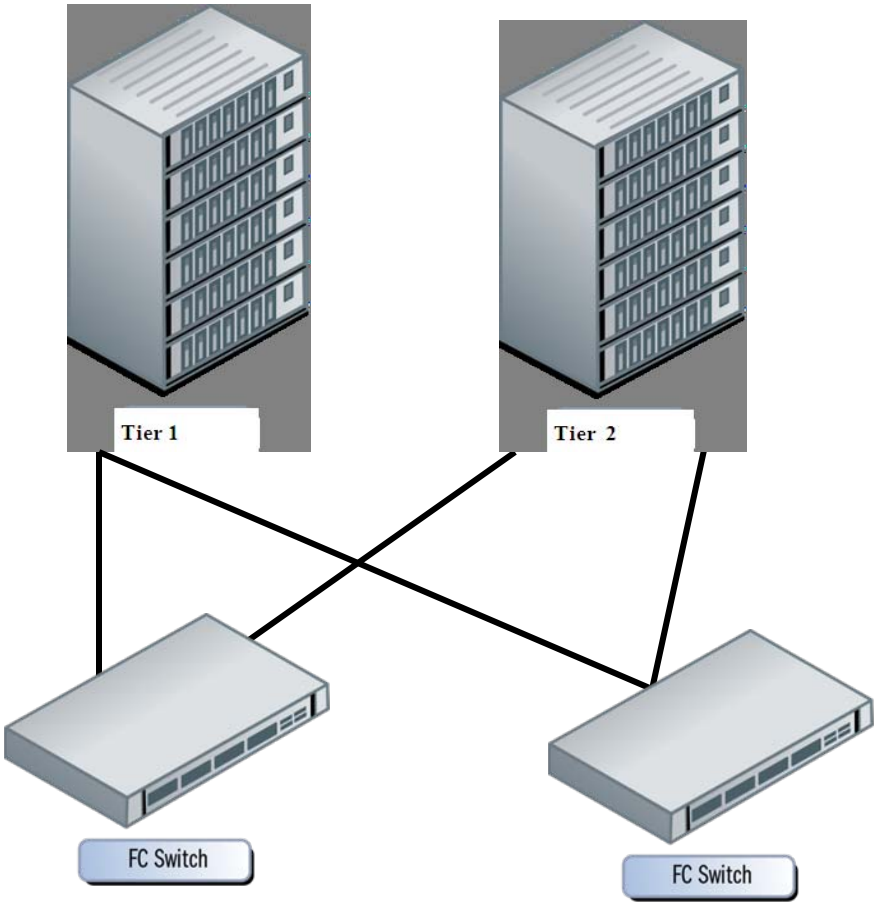
Example – Switch Ports

- Requirements
  - 2 Tiers of Storage
  - 4 Year depreciation schedule
  - 4 Years Pre-Paid Maintenance
- Costs
  - 2 x 32 port FC Switches, Fully Utilized, $32,000
  - 2 Ports used for ISL's
  - Tier 1 = 75%
  - Tier 2 = 25%



How much of the switch cost should be allocated per year to each tier of storage?

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Answer

- Step 1: Take the total cost of both switches
  - $32,000 x 2 = $64,000
- Step 2: Divide by the depreciation period (4 years)
  - $64,000/4 = $16,000 per year
- Step 3: Allocate by Tiers
  - Tier 1: $16,000 x 75% = $12,000 per year
  - Tier 2: $16,000 x 25% = $4,000 per year

Include the 2 switch ports for interconnection in the overall cost of maintaining the storage!

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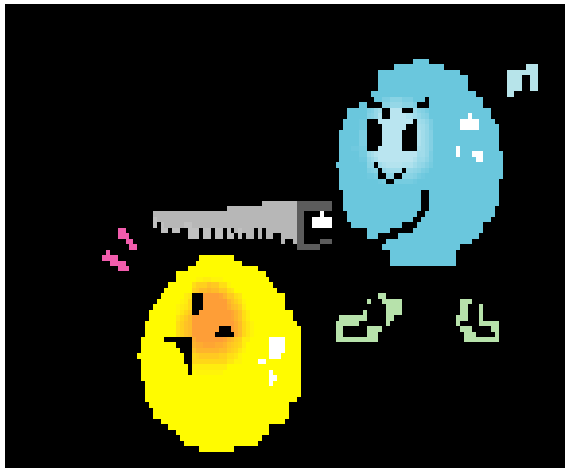
Labor Cost

- Questions you need to find out first:
  - Do you want to include any overhead? (example: employee benefits etc.)
  - What labor is it? Just the storage administrators?
- Include/Exclude
  - Storage Administrators
  - Server Teams
  - Operations
- Tips
  - Don't be afraid to use fractional people
  - Don't over analyze or let others make you!!!



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Ask SME's this question:

What is the best and most accurate answer you can give me in 30 seconds or less?
Tick-Tock!!

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What is Your Usage?

- Really Hard Part!!!!
- You need to define your usage only by what you can **measure**, not by what is actually used.
  - Example:
    - Databases have workspace.
    - If 4 applications are running on a server using the same workspace, the workspace is not actually allocated to an application.
- Know your audience
  - What level of detail does your audience need to make business decisions?
  - How are you allocating now?

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Tips to Define Your Usage

- Don't worry about being 100% correct
  - Remember: Consistency and fairness
  - Don't get bogged down by accuracy
- Show the importance of your initiative to other teams
  - Solicit input
  - See if they can be a source of data

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Example
#2

What is your usage?

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- Tier 1 Databases
  - 200 TB array
  - 4 databases
    - DB1 = 25TB allocated
    - DB2 = 15TB allocated
    - DB3 = 20TB allocated
    - DB4 = 10TB allocated
    - Shared Workspace = 20 TB

- Question 1:
  - Add all databases: 25TB + 15TB + 20TB + 10TB = 70TB
  - What do you do with the other 130TB?

How much storage is actually used in the array?

Answers: Usage means allocated usage. Unused or non-specifically allocated is not factored into rate calcs.

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$$\textit{Unit Costs} = \frac{\text{Total Costs}}{\text{Total Usage}}$$

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Example

	Tier 1	Tier 2
Switch	12,000	4,000
People cost	227,000	118,000
Annual storage (depn and maint)	325,000	65,000
Total Costs	*$564,000*	*$187,000*
Space usage	70	26
Annual cost per TB	$8,057	$7,192

What would happen if utilization were higher?

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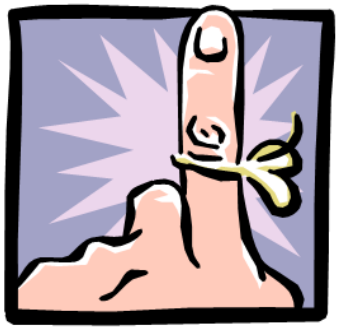

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Refer to Other Tutorials

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Check out SNIA Tutorial:

WAN Optimization and Cloud Computing

An Introduction to Storage Management

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Q&A / Feedback

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