



03 MEASUREMENT

TCO[®] Manager — Enterprise Storage Management

Rapid Assessment for Enterprise Storage Management

Chart of Accounts

research consulting measurement community news

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Data Inputs

Company Profile

Company Name

Contacts

Executive Sponsor

Internal Project Manager

Gartner Analyst

Industry

Budget Month

Budget Year

Depreciation Schedule (years)

Capital Costs (Expense, Lease, Depreciation, Maintenance, Installation and Taxes)

Hardware (Annual \$000s)

Hosts (File and Backup Servers)

Online Storage Costs (DAS, SDAS, NAS, SAN and SSP)

Offline Storage Costs (HSM, Backup/Archival Storage, Tape Libraries, Optical Libraries and Removable Media)

Software (Annual \$000's)

Storage Management Console

File System & Volume/LUN Mgmt

Multi-Pathing

HSM/Data Migration

Backup/Recovery

Local Replication

Security

Chargeback

Storage Subsystems Management

Systems Monitoring/Performance

Capacity Planning

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Forecasting

Media/Library Management

Infrastructure (Annual \$000's)

Hubs, Routers, HBAs, Switches and Storage Directors

Cabling

Percentage of Infrastructure Dedicated to Storage Traffic

High Availability (Annual \$000's)

Hardware

Software

Infrastructure

Disaster Recovery (Annual \$000's)

Contract Cost

Shell Facility

Hardware

Software

Communications Costs

Facilities

Hardware Space

Offsite Storage Space

Staffing Space

Outsourcing (Annual \$000's)

Hardware

Software

Operations

Technical Services

High Availability

Infrastructure

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Disaster Recovery

Storage Management

SSP

Media Services (Transportation and Vaulting)

Bundled

Staffing (DAS, SDAS, NAS, SAN, SSP)

Administrative Costs & FTEs

In House Operations & Contract

Backup Media Handling

Console Management

Operations Support

Management

In House Storage Services & Contract

Storage Network Support

Backup/Restore Management

Capacity Planning

Storage Design/Implementation

Vendor Selection/Product Evaluation

Storage Support DBA

Change Management

Storage Performance/Tuning

Management

Finance & Administration

Budget/Chargeback Admin

Asset Procurement

Admin Support

IT Management

measurement

SLA Administration

Outsourcing Contract Administration

Storage Inventory

Number of Frames

Manufacturer Model

Strategic Positioning

Warranty Period

Number of Attached Hosts

Number of Months Installed

Storage Usage Environment

Number of IO Operations/Second

Number of MB/Second

Percent Depreciated

Percent Lease/Storage Contract Completed

Frame Capacity (GB)

Installed Storage per Frame (GB)

Hot Spares per Frame (GB)

RAID Level

RAID O/H %

Avg. Compression Improvement %

Installed Cache (GB)

Total Frame Capacity

Total Installed Storage

Hardware Adjusted Online Storage

Weighted Online Storage

Percentage of Storage Utilized

Utilized Storage (GB)

Weighted Utilized Storage

measurement

Un-referenced Storage (GB)

Weighted Un-referenced Storage

Offline Storage

Number of ATLS

Number of Tape Drives

Number of Tapes in Use

TB Stored

Class of Service Effectiveness (up to 5 Classes of Service)

Security Needs Analyzed: 6

Performance Needs Analyzed: 7

Connectivity Needs Analyzed: 5

Scalability Needs Analyzed: 8

Availability Needs Analyzed: 12

Recoverability Needs Analyzed: 6

Manageability Needs Analyzed: 8

Data Outputs

Cost Analysis

Host per Available GB

Online Storage per Available GB

Offline Storage per Available GB

Software per Available GB

Infrastructure per Available GB

Disaster Recovery per Available GB

High Availability per Available GB

Facilities per Available GB

Operations per Available GB

Storage Services per Available GB

Finance & Administrative per Available GB

Outsourcing per Available GB

Host per Utilized GB

Online Storage per Utilized GB

Offline Storage per Utilized GB

Software per Utilized GB

Infrastructure per Utilized GB

Disaster Recovery per Utilized GB

High Availability per Utilized GB

Facilities per Utilized GB

Operations per Utilized GB

Storage Services per Utilized GB

Finance & Administrative per Utilized GB

Outsourcing per Utilized GB

Host per Storage CDU (Class of Service Delivery Units)

Online Storage per Storage CDU (Class of Service Delivery Units)

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Offline Storage per Storage CDU (Class of Service Delivery Units)
Software per Storage CDU (Class of Service Delivery Units)
Infrastructure per Storage CDU (Class of Service Delivery Units)
Disaster Recovery per Storage CDU (Class of Service Delivery Units)
High Availability per Storage CDU (Class of Service Delivery Units)
Facilities per Storage CDU (Class of Service Delivery Units)
Operations per Storage CDU (Class of Service Delivery Units)
Storage Services per Storage CDU (Class of Service Delivery Units)
Finance & Administrative per Storage CDU (Class of Service Delivery Units)
Outsourcing per Storage CDU (Class of Service Delivery Units)
Facilities Cost per SqFt
DAS Cost per Utilized DAS GB
SDAS Cost per Utilized SDAS GB
SAN Cost per Utilized SAN GB
NAS Cost per Utilized NAS GB
SSP Cost per Utilized SSP GB
DAS Cost per Attached Server
SDAS Cost per Attached Server
SAN Cost per Attached Server
NAS Cost per Attached Server
SSP Cost per Attached Server
Storage Cost Distribution percentage by Storage Type (DAS, SDAS, NAS, SAN, SSP and HSM)
Expense Percentage of Hardware Costs
Lease Percentage of Hardware Costs
Depreciation Percentage of Hardware Costs
Maintenance Percentage of Hardware Costs
Installation Percentage of Hardware Costs
Tax Percentage of Hardware Costs

Staffing Analysis

Backup Media Handling FTE per Utilized TB
Console Management FTE per Utilized TB
Storage Operations Management FTE per Utilized TB
Storage Services FTE per Utilized TB
Storage Network Support FTE per Utilized TB
Backup/Restore Management FTE per Utilized TB
Capacity Planning FTE per Utilized TB
Storage Design/Implementation FTE per Utilized TB
Vendor Selection/Product Evaluation FTE per Utilized TB
Storage Support DBA FTE per Utilized TB
Change Management FTE per Utilized TB
Storage Performance/Tuning FTE per Utilized TB
Storage Services Management FTE per Utilized TB
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Storage Performance/Tuning FTE per CDU
Storage Services Management FTE per CDU

Storage Analysis

DAS Storage Analysis by Utilization and Quantity per Attached Server

SDAS Storage Analysis by Utilization and Quantity per Attached Server

SAN Storage Analysis by Utilization and Quantity per Attached Server

NAS Storage Analysis by Utilization and Quantity per Attached Server

SSP Storage Analysis by Utilization and Quantity per Attached Server

Utilized Storage versus Online Storage

Utilized Storage versus Offline Storage

COS (Class of Service) Effectiveness

Overall Effectiveness Gap Analysis

COS 1 Effectiveness Gap Analysis

COS 2 Effectiveness Gap Analysis

COS 3 Effectiveness Gap Analysis

COS 4 Effectiveness Gap Analysis

COS 5 Effectiveness Gap Analysis

Overall Effectiveness Index

COS 1 Effectiveness Index

COS 2 Effectiveness Index

COS 3 Effectiveness Index

COS 4 Effectiveness Index

COS 5 Effectiveness Index

Overall Cost per CDU

COS 1 Cost per CDU

COS 2 Cost per CDU

COS 3 Cost per CDU

COS 4 Cost per CDU

COS 5 Cost per CDU

COS 1 Top 10 Storage Gaps

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COS 2 Top 10 Storage Gaps

COS 3 Top 10 Storage Gaps

COS 4 Top 10 Storage Gaps

COS 5 Top 10 Storage Gaps

Storage Simulation, Forecasting and ROI (3 Year)

Variable Simulation Factors

Annual Growth in Utilized Capacity

Annual Average Storage Hardware Cost Change

Annual Labor Cost Change

Annual Overhead Rate of Change

Client Cost of Capital (IRR)

Extraframe Expansion Cost Premium

Planned Improvement in Storage Utilization

Target TB per Storage Administrator FTE

Storage Decommission Strategy Percentage

- Retiring

- Non-Strategic

- Testing/ Evaluating

- Strategic

Planned Storage Acquisition by Type (DAS, SDAS, NAS, SAN and SSP)

Percentage of Intraframe Capacity Usage Planned (DAS, SDAS, NAS, SAN and SSP)

Estimated Installation/Implementation Costs

Forecasted Elements

Forecasted Storage Requirements (GB)

Forecasted Available Storage Capacity (GB) — (DAS, SDAS, NAS, SAN and SSP)

Required Storage Acquisition (GB)

Intraframe Expansion Capacity (GB) — (DAS, SDAS, NAS, SAN and SSP)

Intraframe Expansion Requirement (GB) — (DAS, SDAS, NAS, SAN and SSP)

Extraframe Expansion Requirement (GB) — (DAS, SDAS, NAS, SAN and SSP)

Storage Investment Cost Analysis

Incremental Costs by Year

Storage Hardware Total

Intraframe

Extraframe

Storage Support Cost at Client TB per Storage Administrator performance level

Storage Overhead Costs

Total Incremental Costs per GB

Cumulative Costs by Year

Storage Hardware Total

Intraframe

Extraframe

Storage Support Cost at Client TB per Storage Administrator performance level

Storage Overhead Costs

Total Cumulative Costs per GB

Net Present Value at Client Cost of Capital

Storage Investment Cost Analysis (Based on Target TB Support Ratio)

Incremental Costs by Year

Storage Hardware Total

 Intraframe

 Extraframe

Storage Support Cost at Target TB per Storage Administrator performance level

Storage Overhead Costs

Total Incremental Costs per GB

Cumulative Costs by Year

Storage Hardware Total

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Intraframe

Extraframe

Storage Support Cost at Target TB per Storage Administrator performance level

Storage Overhead Costs

Total Cumulative Costs per GB

Net Present Value at Client Cost of Capital

Return On Storage Investment (ROSI)

Baseline versus Improving Storage Utilization

Baseline versus Improving Storage Administration per TB ratio

ROSI — Deferring Storage Acquisitions

Lump sum versus 3-year acquisition planning