

# Designing an ADSM Server



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# Agenda



- ❑ **Configuring Solutions**
  - ❑ **Server Platform**
  - ❑ **Libraries**
  - ❑ **Operating Systems**
  - ❑ **Disk**
  - ❑ **Peripherals**
- ❑ **The Art of Hardware Design**
- ❑ **ADSM Solution Configuration Worksheet**
- ❑ **ADSM Configuration Tips**

# Server Choices



## ❑ In General:

### ❑ Use a Single Centralized Server for:

- ❑ Sites with single campus environments
- ❑ Sites with high speed networks
- ❑ Sites with small numbers of clients

### ❑ Use Multiple Servers for:

- ❑ Sites with wide area networks and slower network links
- ❑ Sites with lower speed networks
- ❑ Sites with large numbers of clients

# Server Platform



- Existing Platform
- New Platform
  - UNIX
  - NT
  - Other

# Library Configurations



- ❑ ADSM designed with Robotics in mind
- ❑ > 300 devices supported
- ❑ Size
  - ❑ Large enough to hold all on-line data
  - ❑ Minimum Library Size = Total Data + (# of versions \* Daily Change Rate)
  - ❑ Example: 100 GB environment, 5% Daily Change, 30 versions  
Library Size =  $100 \text{ GB} + 5 \text{ GB} * 30 = 250 \text{ GB}$   
Library
- ❑ Too Big is better than too small!

# The Art of Hardware Design



- ❑ Truly an Art Form
- ❑ Few Tools
- ❑ Anecdotal information often the only source for information
- ❑ Many factors:
  - ❑ CPU
  - ❑ Memory
  - ❑ Disk
  - ❑ Architecture

# Operating System



- ❑ The best two choices:
  - ❑ UNIX
  - ❑ NT
- ❑ Often dependent on customer's wishes or expertise
- ❑ Often decided by available hardware

# Processor



- ❑ UNIX Platform – RS/6000, HP, or Sun
- ❑ NT Platform – Intel
- ❑ Single CPU
- ❑ Multiple CPUs
  - ❑ On UNIX Servers, Good ideas
  - ❑ On NT, the debate rages...



# Memory



- ❑ The more the better
- ❑ 128 MB minimum
  - ❑ Maximize ADSM Database Bufferpoolsize - 131072

# Disk



## ❑ How Much?

- ❑ Ideally enough to hold one day's incremental backup
- ❑ 5% of total space in environment
- ❑ plus 10% for database and recovery log

## ❑ To RAID or not to RAID

- ❑ Generally, RAID is not necessary
- ❑ Use ADISM Availability features instead

## ❑ Layout

- ❑ Keep DB and Log volumes on separate disks

# Tape



- ❑ Stand-alone drives
- ❑ Robotic Tape Librarians
- ❑ Format
- ❑ Cartridge capacity
- ❑ Robot capacity

# WorkSheet



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## ADSM Solution Configuration Worksheet

Client Name	Platform Type	OS	OS Version	Total Storage Capacity (GB)	% Used	Total Storage Used (GB)	Daily Data Change Rate (%)	Total Data Changed Daily (GB)	Total Number of Files	Days Data Retained (30 Days Default)	Total ADSM Data (GB)	Total ADSM Files
LOLA	Intel Pentium	Win95		100	80%	80	5%	4	100000	30	200	150000
BEEBEE	VAX	OpenVMS	V5.5-2	200	75%	150	5%	7.5	120000	30	375	180000
SATURN	Alpha	OpenVMS	V7.0	120	50%	60	20%	12	10000	30	420	60000
KNOWITALL	SPARC	SunOS	V5.4.4	300	90%	270	50%	135	20000	30	4320	300000
JENSEN	Alpha	OpenVMS	V7.0	100	80%	80	10%	8	500000	30	320	1500000
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
						0	5%	0		30	0	0
<b>Totals:</b>						640		166.5	750000		5635	2190000

**Storage Pool Size\*:** 166.5 GB  
**Library Capacity\*\*:** 5635 GB  
**Database Size\*\*\*:** 1414 MB

\* Storage Pool Size is the sum of Total Data Changed for all clients

\*\* Library Capacity = Total Storage Used + Total Data Changed Daily \* Days Data Retained

\*\*\* Database Size (MBytes)= Total ADSM Files \* 0.0006 MB/file +100 MB

# ADSM Configuration



- ❑ KISS - Keep It Simple Silly
- ❑ Minimum number of Storage Pool Hierarchies
- ❑ Minimum number of Policy Domains, Sets, Management Classes

# Policy Domain Design



- ❑ Conduct Customer Workshop to determine requirements
- ❑ Determine Regulatory and Business requirements driving retention policies for all data types
- ❑ Backup vs. Archive
- ❑ Reduce to as few different policies as possible
- ❑ Get legal eagles involved if possible

# Storage Pool Design



- ❑ Single hierarchy is best
- ❑ Collocated vs. Non-Collocated
  - ❑ Use only if necessary
  - ❑ Know that you need collocation before implementing
  - ❑ This is true in most cases
- ❑ Always use a Copy Storage Pool!

# Remember



- ❑ Nothing is permanent in ADSM
- ❑ Configuration can change to reflect changes in business or thinking
- ❑ Standardize to the extent possible across servers to ease management strain
- ❑ Use best practices as developed by other ADSM users