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Archivi audio

Degrado dei supporti

Supporti meccanici audio

Cilindri	fragilità, muffe/batteri: estremamente vulnerabile
shellac-78 rpm	abbastanza stabili, fragilità
instantaneous discs	estremamente vulnerabile
vinyl (LP) discs	altamente stabile

Degrado dei supporti

Nastri magnetici

Maggiormente a rischio:

- acetate tape
- R-Dat

Degrado dei supporti

Compact Discs - Digital Versatile Discs

replicated CDs + DVDs

abbastanza stabile?

recordable CDs + DVDs

estremamente vulnerabile

DVDs: higher data density - lower data security

Obsolescenza e disponibilità dell'equipaggiamento audio

formato	obsoleto		equipaggiamento
	ora	presto	
cilindri	x		specialist only
dischi magnetici	x		specialist only
micro groove discs (vinili)		?	fading out
nastri 1/4 pollice		x	fading out
micro cassettes		x	fading out
compact cassette		?	?
R-Dat		x	fading out
MiniDisc	?		?

Supporti ottici: la *babele* degli standard

Disc	Type	Storage capacity	Laser wavelength write mode	Laser wavelength read mode	Typical use
CD-ROM, CD-A, CD-V	read only	650 MB	780 nm	780 nm	Commercially available
CD-R (SS)	write once	650 MB	780 nm	780 nm	Music recording, computer data, files, applications
CD-R (SS)	write once	700 MB	780 nm	780 nm	
CD-RW (SS)	Rewritable	650 MB	780 nm	780 nm	Computer data recording, files, applications
CD-RW (SS)	Rewritable	700 MB	780 nm	780 nm	
DVD-ROM, DVD-A, DVD-V: SS/SL, SS/DL	read only	4.7 GB 8.54 GB 9.4 GB	650 nm	650 nm	Movies, interactive games, programmes, applications
DS/SL		17.08GB			
DS/DL	write once	4.7 GB	650 nm	650 nm	General use: One time video recording and data archiving
DVD-R(G)	write once	3.95 or 4.7 GB	635 nm	650 nm	Authoring/professional use
DVD-R(A)	write once	4.7 GB	650 nm	650 nm	Video recording and editing
DVD+R	write once	4.7 GB	650 nm	650 nm	General use: One time video recording and data archiving
DVD-RW	Rewritable	4.7 GB	650 nm	650 nm	General use: Video recording and PC backup
DVD+RW	Rewritable	4.7 GB	650 nm	650 nm	General use: Video recording and editing, data storage, PC backup
DVD-RAM	Rewritable	2.6 or 4.7GB	650 nm	650 nm	Computer data: Storage repository for updateable computer data, back-ups
SS		5.2 or 9.4GB			
DS					

La compatibilità totale all'indietro →

Disc type	CD-ROM drive		CD-RW or CD-R/RW drive		CD-R Drive	
	Read	Write	Read	Write	Read	Write
CD-ROM	Yes	No	Yes	No	Yes	No
CD-R	Yes	No	Yes	Yes	Yes	Yes
CD-RW	Yes	No	Yes	Yes	Yes	No

Table 2, Section 5.6: Compatibility; CD

Disc type	Home DVD player	DVD-ROM drive	DVD-R (G) drive	DVD-R (A) drive	DVD-RW drive	DVD+RW drive	DVD-RAM drive
	Play only	Play only (Computer)	Records General -R	Records Authoring -R	Records -RW General -R	Records +R RW +R	Records RAM
DVD-ROM	No	No	No	No	No	No	No
DVD-R(A)	No	No	No	Yes	No	No	No
DVD-R(G)	No	No	Yes	No	Yes	No	No
DVD-RW	No	No	No	No	Yes	No	No
DVD+RW	No	No	No	No	No	Yes	No
DVD+R	No	No	No	No	No	Yes	No
DVD-RAM	No	No	No	No	No	No	Yes
CD-ROM	No	No	No	No	No	No	No
CD-R	No	No	Yes	No	Yes	Yes	No
CD-RW	No	No	No	No	Yes	Yes	No

Table 3, Section 5.6: Compatibility; DVD (Write Mode).

Disc type	Home DVD player	DVD-ROM drive	DVD-R (G) drive	DVD-R (A) drive	DVD-RW drive	DVD+RW drive	DVD-RAM drive
	Play only	Play only (Computer)	General -R	Authoring -R	Records -RW General -R	Records +R RW +R	Records RAM
DVD-ROM	?	Yes	Yes	Yes	Yes	Yes	Yes
DVD-R(A)	Mostly	Usually	Yes	Yes	Yes	Yes	Yes
DVD-R(G)	Mostly	Usually	Yes	Yes	Yes	Yes	Yes
DVD-RW	Partly	Usually	No	Yes	Yes	Usually	Usually
DVD+RW	Partly	Usually	Usually	Usually	Usually	Yes	Usually
DVD+R	Partly	Usually	Usually	Usually	Usually	Yes	Usually
DVD-RAM	Rarely	Rarely	No	No	No	No	Yes
CD-ROM	Depends	Yes	Yes	No	Yes	Yes	Usually
CD-R	Usually	Yes	Yes	No	Yes	Yes	Usually
CD-RW	Usually	Yes	Yes	No	Yes	Yes	Usually

DVD-Audio: All DVD drives should play DVD-Audio or DVD-Video if the computer has DVD-Audio or DVD-Video software installed.
DVD-Video: DVD-RAM drives are questionable.

Supporti magnetici digitali

Format	Tracks	Manufacturer	Native Capacity	Native Transfer Rate	Media Type	Coercivity	Substrate material	Tape speed	Tape width	Tape length	Track width	Drive US\$	Availability
DLT4000	128	Quantum	20 GB	1.5MB/s	Metal				12.7 mm			\$2,500	1995
DLT7000	256	Quantum	35 GB	5MB/s	Particle			160 ips	(¹ / ₂ " linear)			\$3,000	1997
DLT1	168	Benchmark	40 GB	3MB/s								\$3,500	1998
DLT8000	208	Quantum	40 GB	6MB/s							45 µm	\$4,000	1999
Super DLT	448	Quantum	110GB	10-16 MB/sec	Adv. MP						25 µm	\$6,000	2001
LTO Accellis		TBA LTO	25 GB	10MB/sec								TBD	
LTO Ultrium	384	IBM, hp.	100 GB	15 MB/s	Metal				12.7 mm	690 m		\$5,000	2001
LTO 2 Ultrium	768	Seagate	200 GB	30MB/sec	Particle				(¹ / ₂ " linear)			\$10,000	2003
9840	288	Storage-Tek	20 GB	10MB/sec	Adv. MP	1625 Oe	8µm PEN	2 ms ⁻¹				\$10,000	1999
9940			60 GB	15MB/sec	MP				12.7 mm		20 µm	\$15,000	1999
9940B	576		200GB	30MB/sec					(¹ / ₂ " linear)			\$20,000	2002
Magstar™	128	IBM®	10 MB	9 MB/sec	Type3MP	2400Oe							
3590™	256	Fujitsu M8100	20 GB	13.5 MB/sec	Metal Particle				12.7 mm				
DTF	Helical	Sony	42 GB	12MB/sec	MP		PET		12.7 mm			\$15,000	1995
DTF-2		Sony	200 GB	24MB/sec	MP				(¹ / ₂ " Bcam)			\$25,000	1997
Exabyte	Helical	Exabyte	5 GB					1 ips	8mm	112 m		\$1,000	1995
Mammoth		Exabyte	20 GB	3 MB/sec								\$2,000	1997
Mammoth-2		Exabyte	60 GB	12MB/sec	AME							\$4,000	1999
AIT	Helical	Sony	35 GB	3 MB/sec	AME			1 ips				\$3,000	1999
AIT-2		Sony	50 GB	6MB/sec	AME					250 m	11 µm	\$4,000	2001
AIT-3		Sony	100 GB	12MB/sec	AME						5.5 µm	\$5000	2003
DDS-4	Helical	Sony, HP	20 GB	1-3 MB/s	DAT				6.3mm (¹ / ₈ "	125 m		\$1500	1998
SLR100		Tandberg	50 GB	5 MB/sec	SLR				12.7mm (¹ / ₂ "			\$2500	1999
VXA		Ecrix	33 GB	3 MB/sec	AME							\$1000	1999

Roadmap: upgrade ogni 18 mesi; compatibilità in lettura garantita per due generazioni

Digital Mass Storage Systems (DMSSs)

robotic storage systems

- self-checking
- self-regenerating
- self-migrating

DMSS costituiscono il prerequisito per l'accesso remoto a collezioni audio

Archivi Radiofonici introdussero DMSSs dal 1992

Soluzione intermedia: imitazione manuale degli DMSS

Controllare ogni supporto e tenere un error status record

Controllare gli errori a intervalli regolari

Copiare il contenuto prima che il segnale diventi illeggibile
(refreshment)

Copiare in nuovi sistemi prima dell'obsolescenza HW/SW
(migration)

Evitare materiale di mercato a largo consumo (CD-R, DVD-R,
ecc.) e formati proprietari (DV, DigiBeta, ecc.)

Approccio scalabile verso i DMSS

Iniziare con:



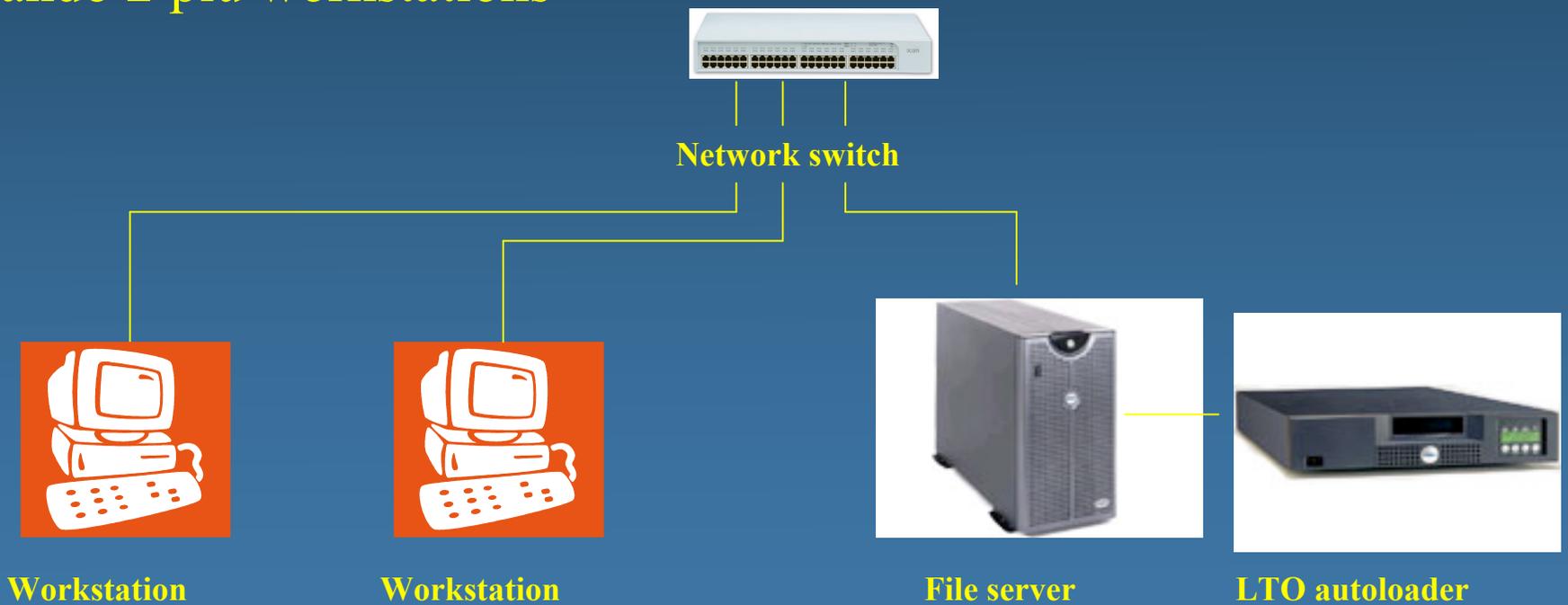
Un solo LTO drive o un piccolo autoloader per backups



**Workstation con firewire/usb2
collegato a desktop RAID**

Approccio scalabile verso i DMSS

Usando 2 più workstations



Approccio scalabile verso i DMSS

Espansioni future:



Several workstations



1Gigabit server backbone



File server con SCSI-attached drive



Library con 1 o 2 LTO drives

Approccio scalabile verso i DMSS

Un piccolo DMSS



Several workstations



1Gigabit Server Backbone



2 o più file servers



Indipendente, altamente scalabile storage unit in un SAN environment



Library con 2 LTO drives potrebbe essere connesso alla SAN oppure direttamente collegato a 1 o più file server

Financial challenge 1

Costo dell'equipaggiamento

- digital mass storage systems € 100,000++
- “intermediary solutions” € 20,000+
- “personal” DMSS € 30,000

Financial challenge 2

Tenere *vivi* i documenti digitali richiede continui aggiornamenti di competenze e input finanziari

Conservazione automatica: 8-12 €/GB/anno

Le soluzioni manuali sono meno costose, ma meno sicure e attuabili solo nel caso di archivi di pochi TB

Predominant strategic aims: le risorse legate alla linguistica NON sono controllate e custodite da archivi/istituzioni del campo linguistico

Oltre l'80% dei documenti sonori legati alla linguistica sono prive di custodia consapevole (prive di conoscenze e finanziamenti):

- Broadcast archives
- Archivi nazionali/regionali/municipali
- Archivi parlamentari
- Collezioni storiche private

- Soluzione: COOPERAZIONE
- Problema maggiore: Mistrust