

**Flexible  
Scalable  
Cost effective  
Hardware independent**

**Solutions for Long Term Archiving**

 **GRAU DATA**

# More than 20 years of experience in „Archival Storage“



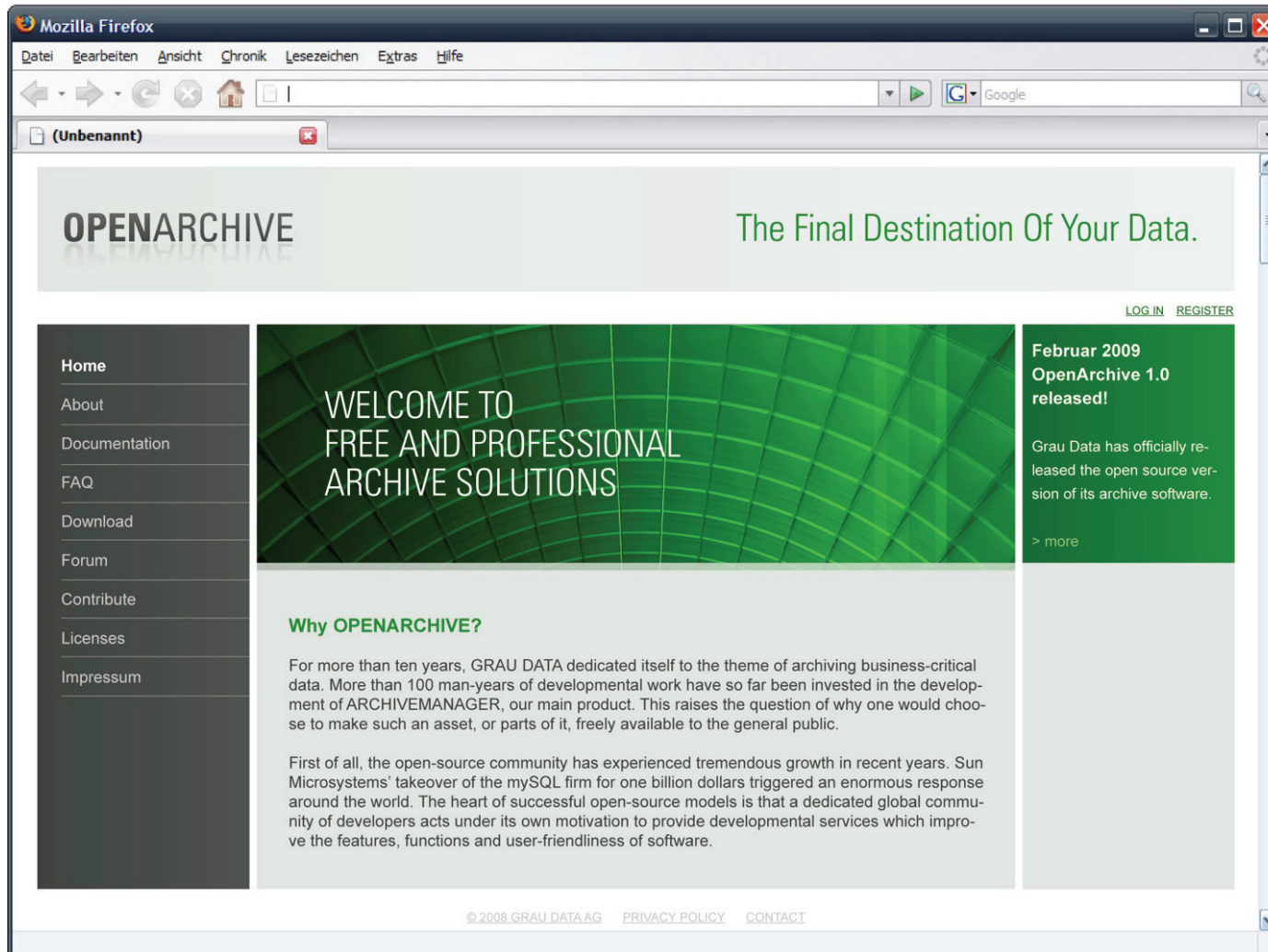
Mainframe Tape Libraries → Open System Tape Libraries  
→ Archive Systeme → FMA Software → HP OEM FSE & FMA →  
**ARCHIVEMANAGER → FILELOCK → OPENARCHIVE**

# Positioning of GRAU DATA

- Concentration on **Software** Solutions for Data Archiving
  - Flexible, scalable, hardware independent
  - Compliant Archiving according to local legislation
- **ARCHIVEMANAGER**
  - Tiered Storage HSM & Archiving Software (Win & Linux)
  - Scalable to PetaBytes
  - **OPENARCHIVE** as Linux Open Source Derivative
- **FILELOCK**
  - Compliance for standard disk storage
  - 0,5 TB – 20 TB target market
- FileServerArchiver (**FSA**) - Datamigration for Windows Fileserver

# ARCHIVEMANAGER & OPENARCHIVE

- Development since 2000
- More than 100 man years of development to date
- Scalable solution from 1 TB - PB, ExaByte . . . .
- Linux and Windows Common Code Base
- FileSystem Interface (NFS; CIFS...)
- API for additional functionality as an option available
- New software architecture with version 4 in 2012
- **OPENARCHIVE** = Linux based Open Source Version

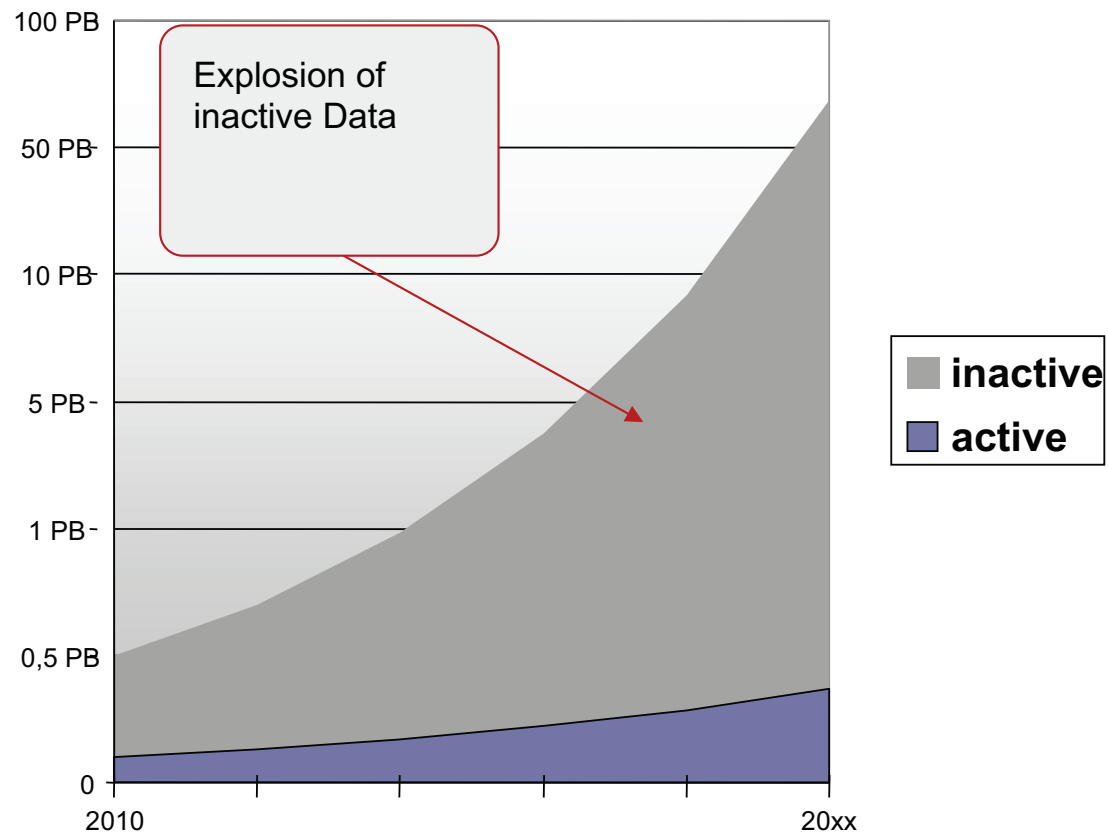


# Extract of customer list

Allgaier Werke	Finanzministerium NRW	LKA Brandenburg	Rheinische Universität Bonn	UVEX & Co. KG Fürth
Altmühltaler Mineralbrunnen GmbH	FHNW Nordwestschweiz	LKA Kiel	Roche Diagnostics Penzberg	Valio Ltd. Finnland
Amcor Belgien	FRoSTA AG	LKA Schleswig-Holstein	Roche Diagnostics Graz	Volkswagen AG Wolfsburg
AREVA NP GmbH	Gegenbauer Holding AG	LKW WALTER AG Österreich	Saueressig GmbH + Co. KG	VR NetWorld GmbH
Athlon Car Lease Germany	GKFL Financial Services AG	Lohmann und Rauscher GmbH	Sauerstoffwerk Friedrichshafen	WAK GmbH Karlsruhe
Avery Dennison Zweckform GmbH	geobra Brandstätter GmbH & Co. KG	MAN	Schindler	WISAG
AVU Gevelsberg	hünersdorff GmbH	Manor AG Schweiz	Schönmackers	WMF AG Geislingen
BASF IT Services GmbH	ibau GmbH	Mercedes AMG GmbH	Seco Tools GmbH	T-Systems Schweiz AG
BAST	IREKS	Messe München GmbH	Sedus Stoll AG	Universitätsklinikum Jena
Berger Bau GmbH	Kassenärztliche Vereinigung Hannover	Mediathek Austria	Sick AG	UVEX GmbH
Brother International GmbH	Lapp Service GmbH	Mühlbauer AG	SÜWAG Kundenservice GmbH	
Buderus Gießerei Wetzlar GmbH	LDS (Landesverband Nordrhein Westfalen)	NEC Deutschland	swisswindos AG Schweiz	
Bundesarchiv Deutschland	Kadaster Apeldoorn	Novabase IMS Portugal	Stadtwerke Ulm	
Charité Berlin	KarstadtQuelle Bank (KQB)	Otto	Stadt Rotterdam	
Cinesite (Audio/Video)	Kia Motors Deutschland GmbH	Papierfabrik August Koehler	tegos GmbH	
DKBB (Dt. kath. Blindenbücher)	Lapp Services	Pharmaserv GmbH & Co. KG	TelDaFax Services GmbH	
DVGW e.V. Bonn	L'Oréal Karlsruhe	Playmobil	Temmler Werke GmbH	
DWP Bank	LBM Rheinland Pfalz	Polizei Sachsen	Teraport (M+W Zander)	
EADS	LKA Baden-Württemberg	Porvenir Columbia	Th. Geyer GmbH	
Engel Austria	LKA Bayern	Profil Verbindungstechnik GmbH & Co. KG	Tipp24 AG London	
F. HOFFMANN-LA ROCH AG CH			Tönsmeier	

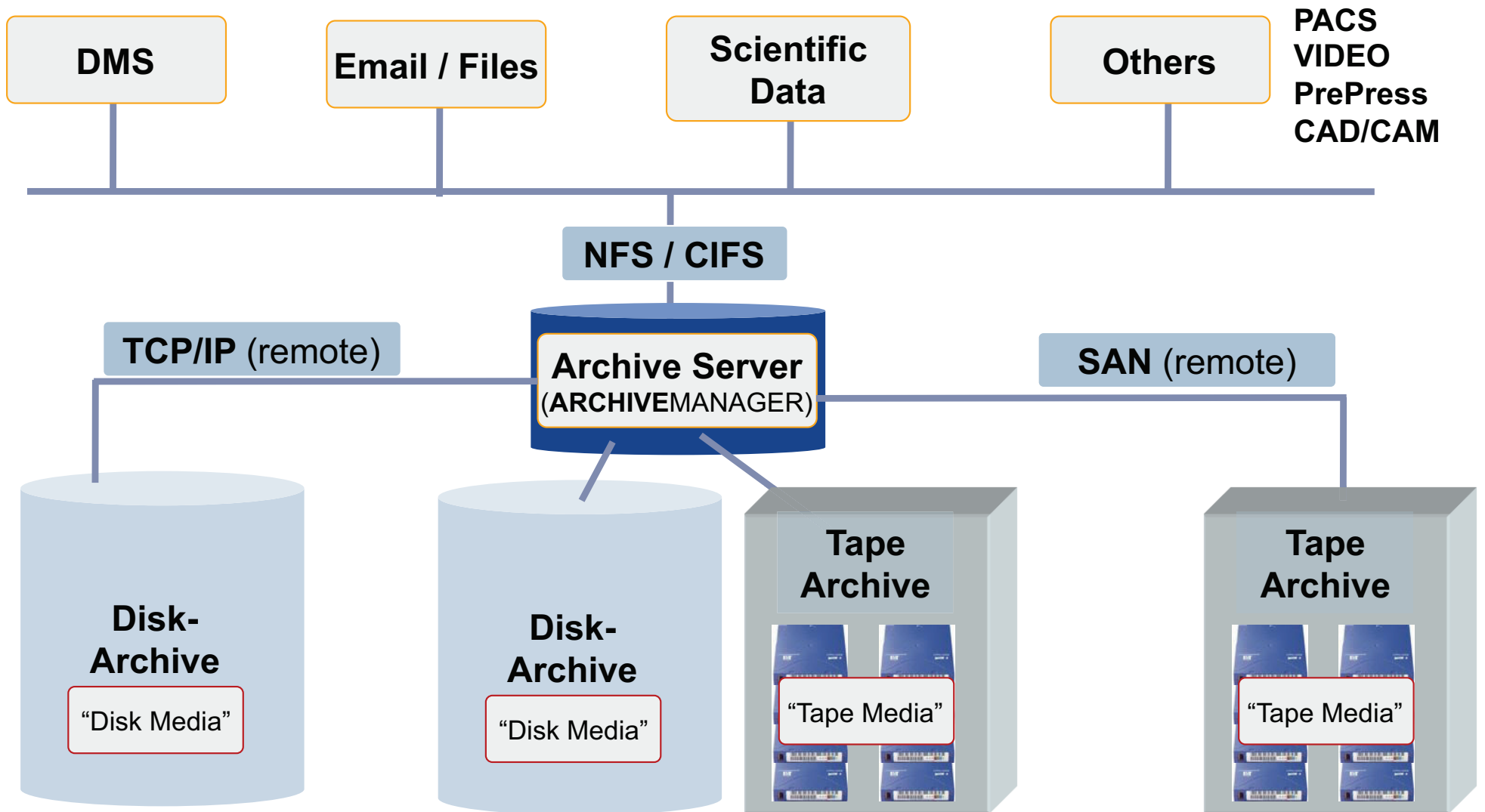
# The Problem

## Development of Data Growth



**The volume of inactive data is growing faster than the volume of active data**

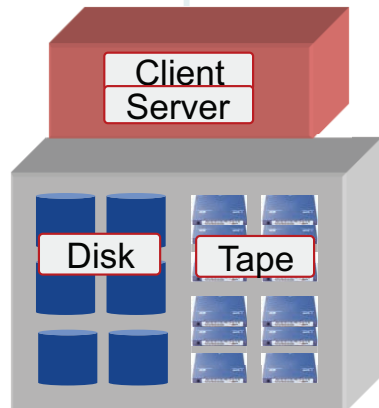
# How it works



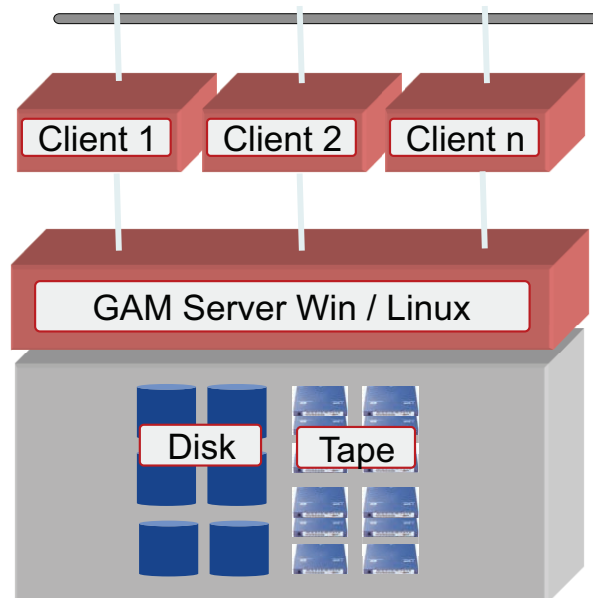
# Client – Server Architecture

## Advantages of different configurations

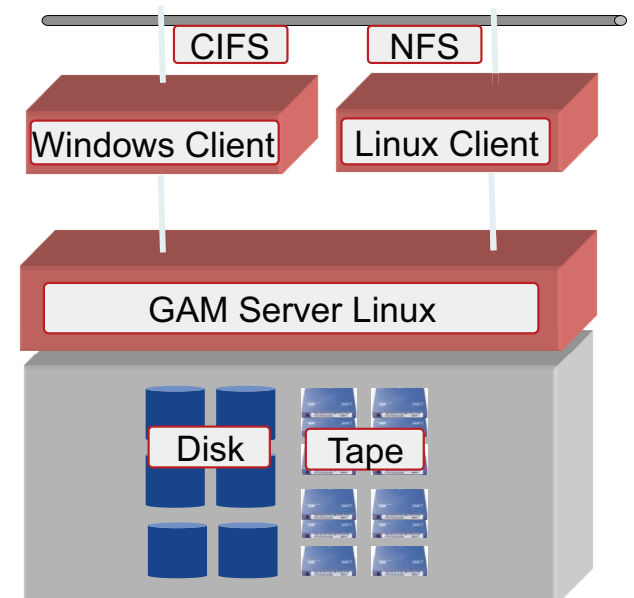
Keep it simple  
(all in one box)



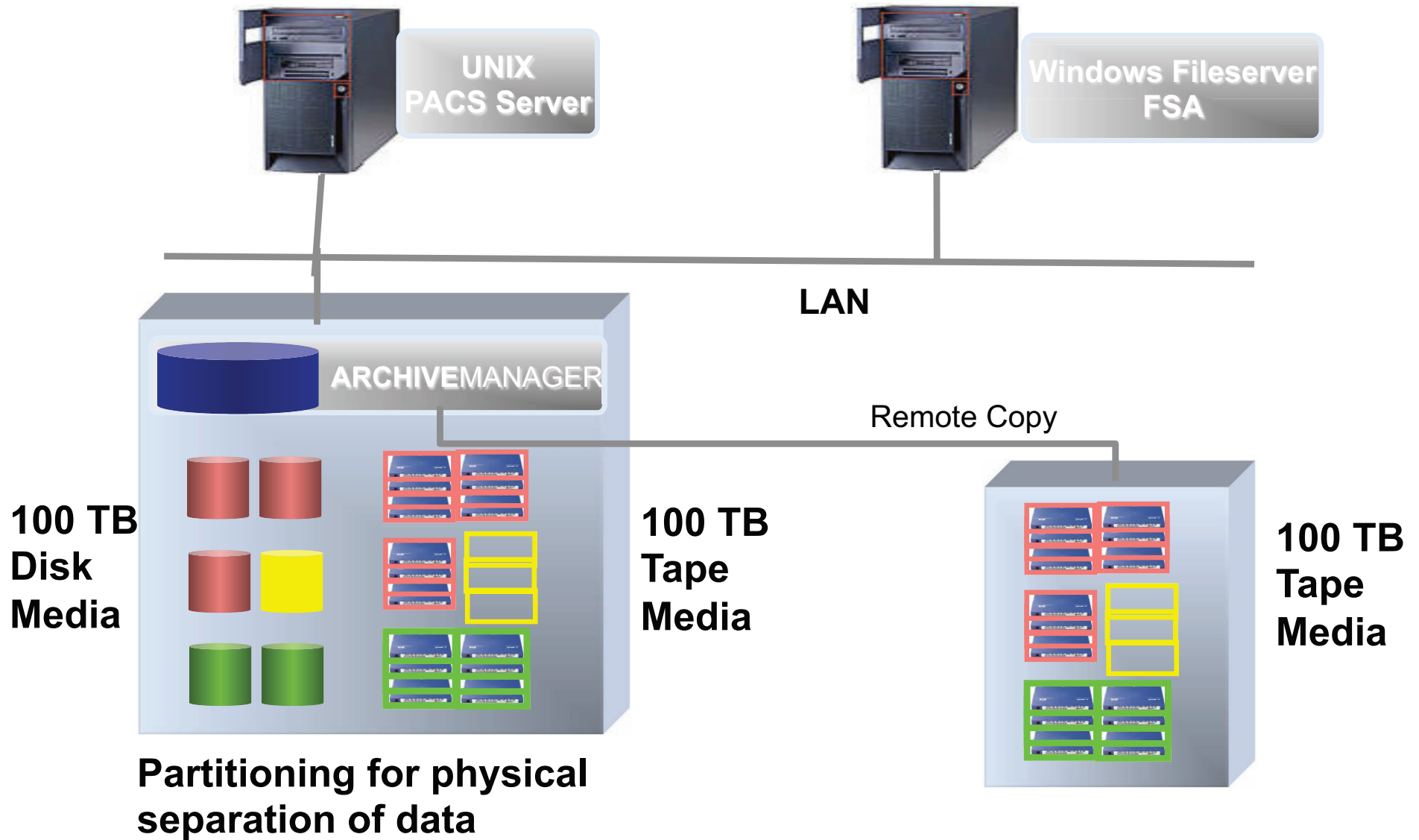
Several clients  
for high throughput



Windows / Linux Clients  
for seamless integration  
into CIFS or NFS world



# Customer example – separation of clients

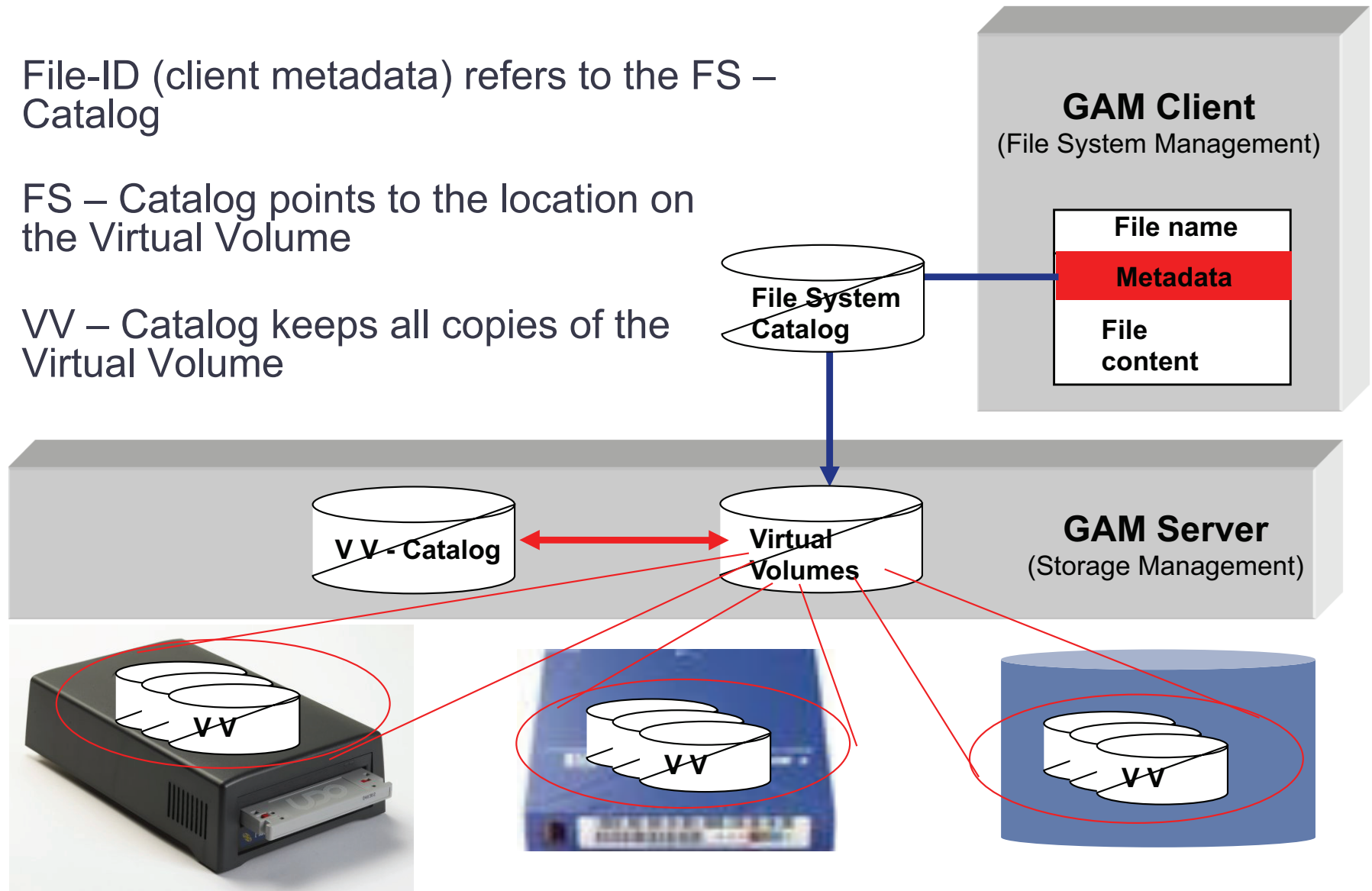


# Key Features

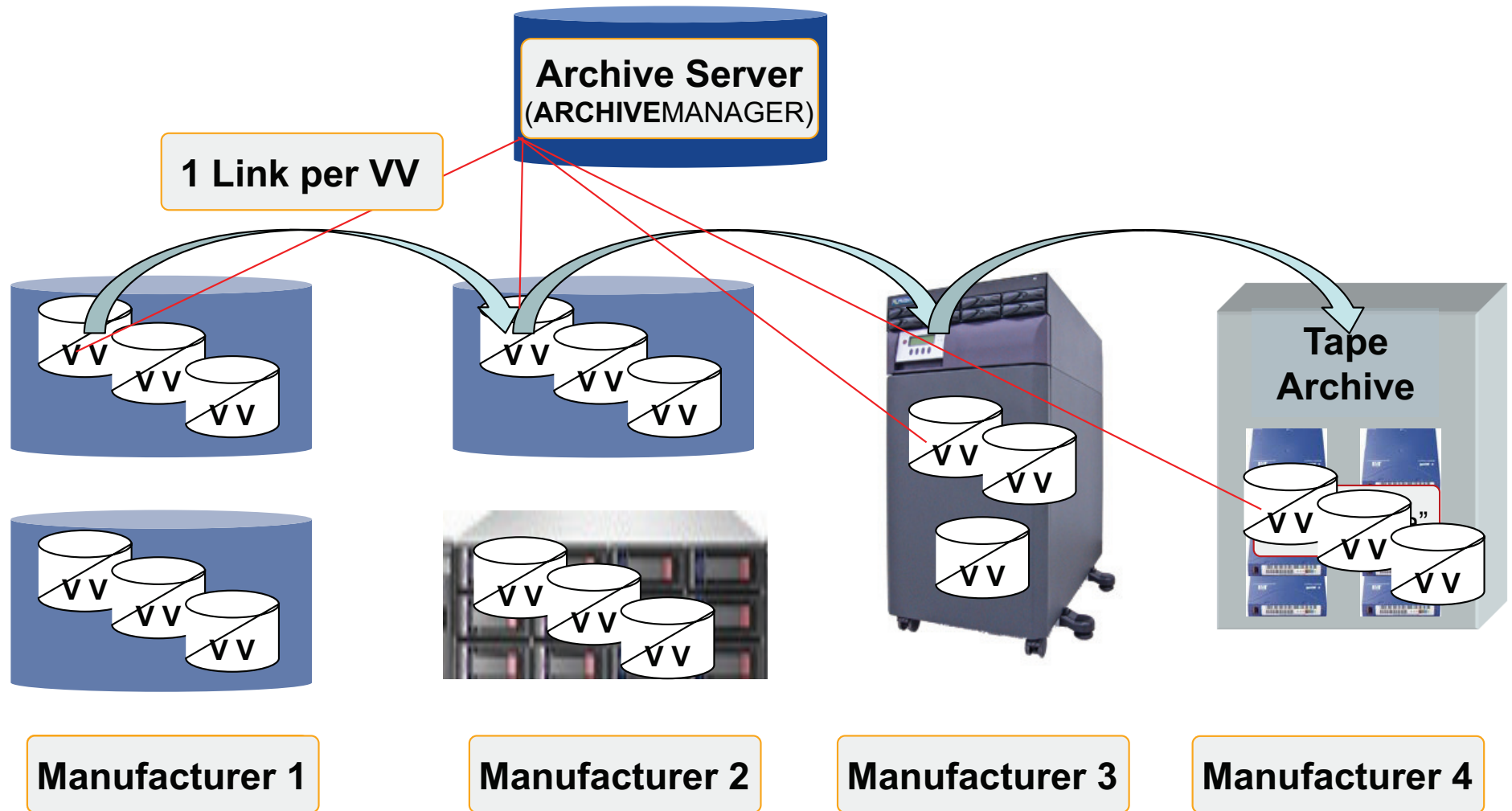
- Online access to „unlimited Content“
- Multiple media strategy
  - secure and cost effective archiving on tape and / or RDX
  - fast access to disk
- Partitioning for different Applications („data separation“)
- Remote Copy functionality
- Several levels of Backup / Recovery Options
- Free selection of Archive Media and Hardware
- Direct access through file system (additional API optional)
- Native support for CIFS (Active Directory) & NFS

# Virtual Volume Layer - two step indirection (V4)

- File-ID (client metadata) refers to the FS – Catalog
- FS – Catalog points to the location on the Virtual Volume
- VV – Catalog keeps all copies of the Virtual Volume



# Simple Migration through generations of HW (V4)



# Application Triggered Migration (API)

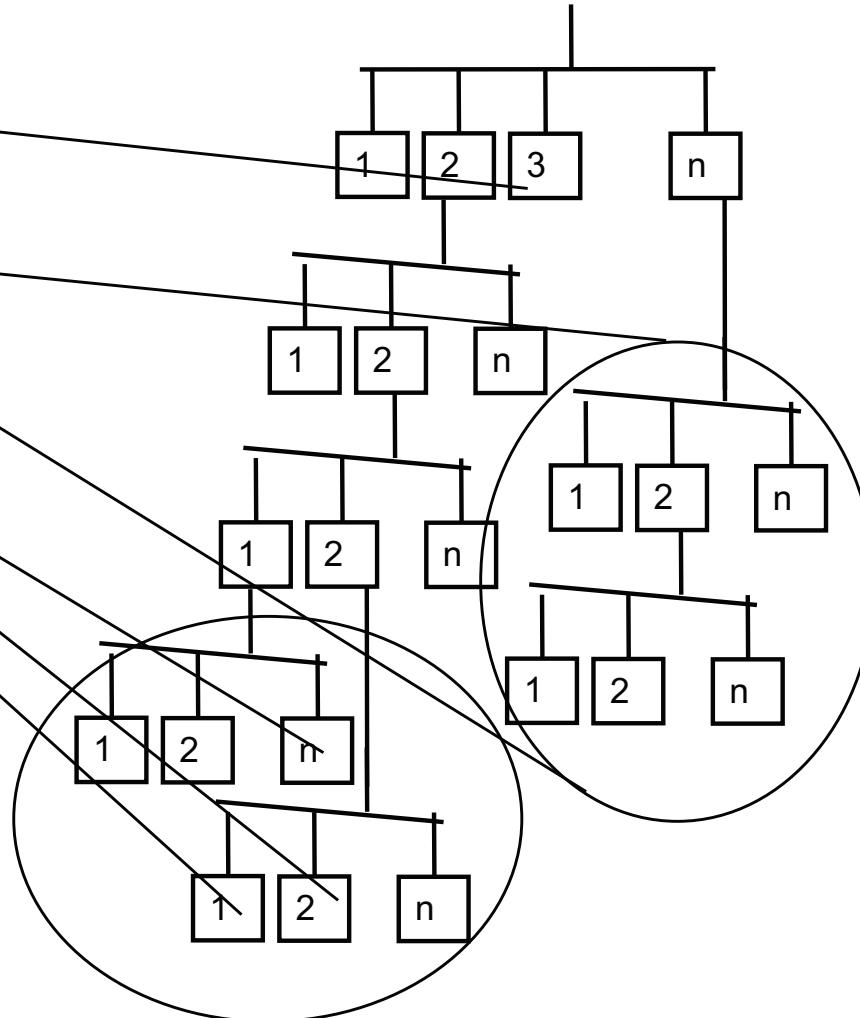
- Triggered by

- Filename

- Directory

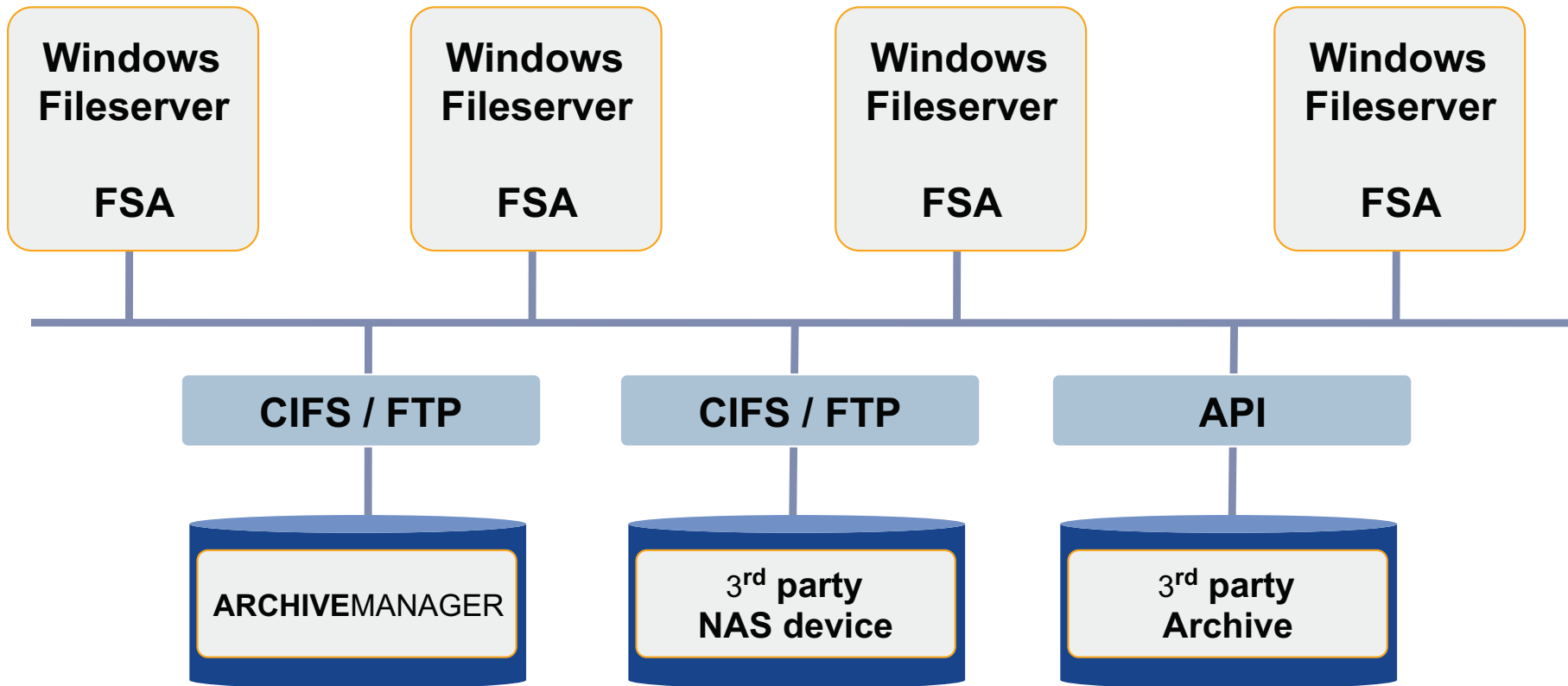
- Wildcard

- List of files

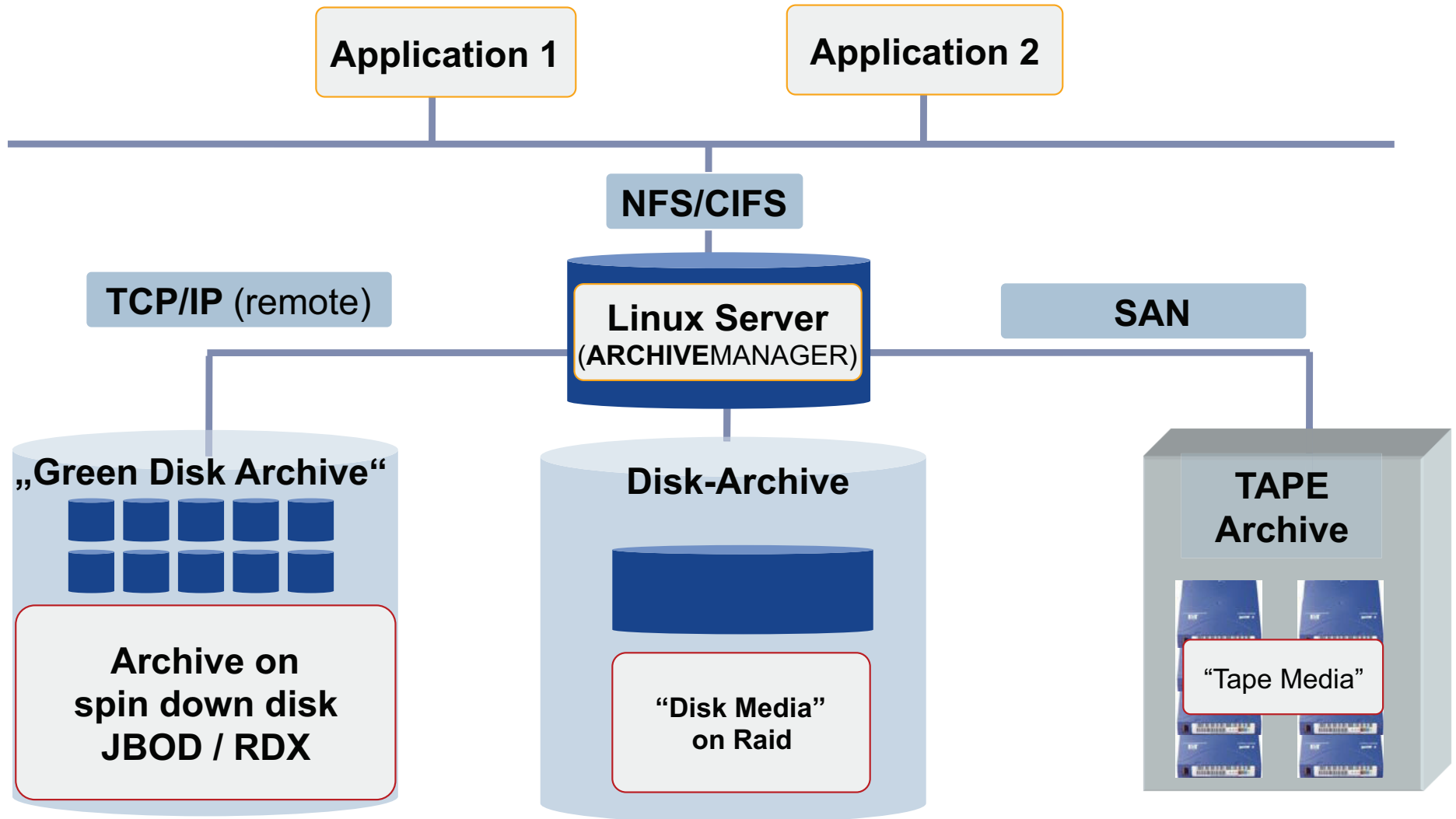


# FileServerArchiver ( FSA )

- FSA is the new generation software for migrating data off Windows Fileservers
- Inactive data may be moved into various Archives
- Windows Cluster Support available



# Support of spin down disks (V4)



# Advantage of a Partnership with GRAU DATA

- Software Technology is
  - proven
  - scalable
  - flexible
  - cost effective
- Long term independency through open source option
- License options
  - Licensed product GAM
  - OpenArchive = Open Source
  - plus: individual source code agreement.
- Direct contact to lab / development

# The Final Destination of Your Data

[www.graudata.com](http://www.graudata.com)

